

All Over the Map 2012

A COMPARISON OF PROVINCIAL CLIMATE CHANGE PLANS



David
Suzuki
Foundation

SOLUTIONS ARE IN OUR NATURE

ALL OVER THE MAP 2012

A comparison of provincial climate change plans

March 2012

Written by Miranda Holmes, with contributions from Paul Lingl, Dale Marshall, Ian Bruce, Morag Carter and Faisal Moola

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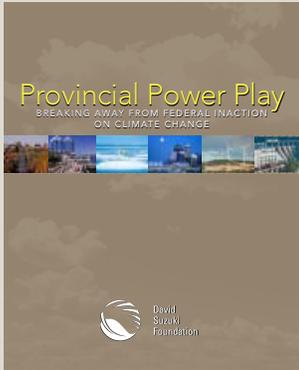
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This work builds on and updates the 2008 report *Provincial Power Play: Breaking Away From Federal Inaction on Climate Change*.

The report found that in the absence of effective policies from Canada's federal government to tackle global warming, many provinces had stepped up to implement their own plans and policies. *Provincial Power Play* documented this shift, assessing each province's climate change plans and programs and comparing the relative merits of each.

This report updates the status of each province's efforts, and provides analysis for moving forward.

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Introduction

CLIMATE CHANGE: Fate of ecosystems and global economy depends on choices we make today

THE SCIENCE OF CLIMATE CHANGE is becoming clearer and starker. In just over four years — since the UN's Intergovernmental Panel on Climate Change's last assessment report — scientists have concluded that the climate is more sensitive than previously thought, that the risks are greater and more costly (both economically and in human lives), and that quick and more dramatic reductions to heat-trapping emissions are needed to sustain the health of ecosystems and the global economy.

Throughout 2011 Canada and the United States — both disproportionately large per capita emitters of greenhouse gases — have seen increasing numbers of extreme weather events (e.g., floods, tornadoes and hailstorms across the Prairies; flooding in Quebec, Ontario and Nova Scotia). Increasingly, scientists are able to measurably demonstrate that particular extreme weather events would not have been as severe without human-induced climate change.¹

A peaking of global emissions by 2015 at the latest, with sharp declines thereafter, is what is most likely required to keep average global warming below 2 °C, the level that has been used as a threshold for avoiding dangerous impacts of climate change. Groups of countries such as the Alliance of Small Island States and the Africa Group, which represent the most vulnerable to climate change impacts, are now calling for the threshold to be lowered to 1.5 °C. This is because these countries are already experiencing devastating consequences like sea level rise associated with temperature increases.

An IPCC report outlining the level of effort for an effective global response to climate change suggests that industrialized countries like Canada should take responsible action and cut emissions in the range of 25 to 40 per cent below 1990 levels by 2020.² This target range is seen by many, including most developing countries and the Climate Action Network International, as a minimum target. And given the improved understanding of climate science, reductions greater than 40 per cent in the next decade are being called for.³

Considering the urgency of climate change, it should be encouraging that all Canadian provinces and territories have recently reduced GHG emissions. However, in the majority of cases this decrease is associated with the economic downturn of 2009 rather than policy and investments, and is therefore likely to reverse with economic recovery.

1 "Extreme Weather Is a Product of Climate Change", Scientific American, 28 June 2011. www.scientificamerican.com/article.cfm?id=extreme-weather-caused-by-climate-change

2 Intergovernmental Panel on Climate Change. 2007. Fourth Assessment Report, Working Group III, Table 13.7.

3 See for example Climate Action Network International. 2009. "Fair Ambitious & Binding: Essentials for a Successful Climate Deal." Available at www.climateactionnetwork.org/sites/default/files/CAN_FAB_Essentials_1.pdf

Considering this urgency, it should be encouraging that all Canadian provinces and territories have recently reduced greenhouse gas emissions (according to the most recent figures available from Environment Canada⁴). Unfortunately, this decrease in emissions in the majority of cases is not because of policy or a decision to invest in clean energy but is rather associated with the economic downturn of 2009 and is therefore illusory and likely to reverse with the economic recovery.

Canada could be making a positive contribution in the fight against climate change. Environmental factors notwithstanding, there is an economic impetus. The best research shows strong action that dramatically reduces Canada's emissions while preserving a strong economy and strong job growth is possible.⁵ And, as the Stern Review⁶ shows, the economic costs of inaction are much greater than the economic costs of tackling the challenge head on.

Weak federal programs

Despite the strong evidence for the serious impacts of climate change and the economic data that show action is possible and warranted, the Canadian government continues to abandon its responsibility on climate change action. Its refusal to regulate industrial pollution until U.S. legislation is in place is just the latest excuse for delay. Its "on again, off again" approach to the home energy-efficiency retrofit program and its decision to not replenish the now-empty fund for clean energy means that, in most cases, federal programs, even when they exist, are ineffective and getting weaker. In an October 2011 review by the Office of the Auditor General of Canada, the Environment Commissioner reported that the federal government's strategy is "disjointed, confused and non-transparent"⁷ and that overall the government's policies are now projected to be 90 per cent weaker than they were in 2007.⁸

Canada suffered a further loss of credibility when the federal government continuously undermined progress at a gathering of world leaders for the UN climate change summit in Durban, South Africa, in December 2011. Canada was identified by countries like South Africa, Brazil and India as a barrier to working out an effective response to global warming.⁹ The Canadian government even went so far as to threaten developing countries with pulling their international development assistance if they did not support the Canadian government's anti-Kyoto stance and its weak position on a second legally binding international agreement to reduce global warming.¹⁰ Canada's decision to withdraw from the Kyoto Protocol, the only international agreement with binding commitments to reduce emissions, only hours after the UN summit was over, was further described by the international community as, "a reckless and totally irresponsible act."¹¹ A government spokesperson for the low-lying Pacific island state of Tuvalu stated, "For a vulnerable country like Tuvalu, its an act of sabotage on our future."¹²

4 Environment Canada. 2011. "National Inventory Report, 1990-2009," Part 3.

5 "Climate Leadership, Economic Prosperity", David Suzuki Foundation and Pembina Institute, October 2009. www.davidsuzuki.org/publications/reports/2009/climate-leadership-economic-prosperity

6 Stern Review: The Economics of Climate Change siteresources.worldbank.org/INTINDONESIA/Resources/226271-1170911056314/3428109-1174614780539/SternReviewEng.pdf

7 "Double blow: Canada's environmental record slammed by auditor, Europeans", Heather Scoffield, The Canadian Press, 3 October 2011.

8 2011 October Report of the Commissioner of the Environment and Sustainable Development, Office of the Auditor General of Canada, October 3, 2011. www.oag-bvg.gc.ca/internet/English/parl_cesd_201110_e_35765.html

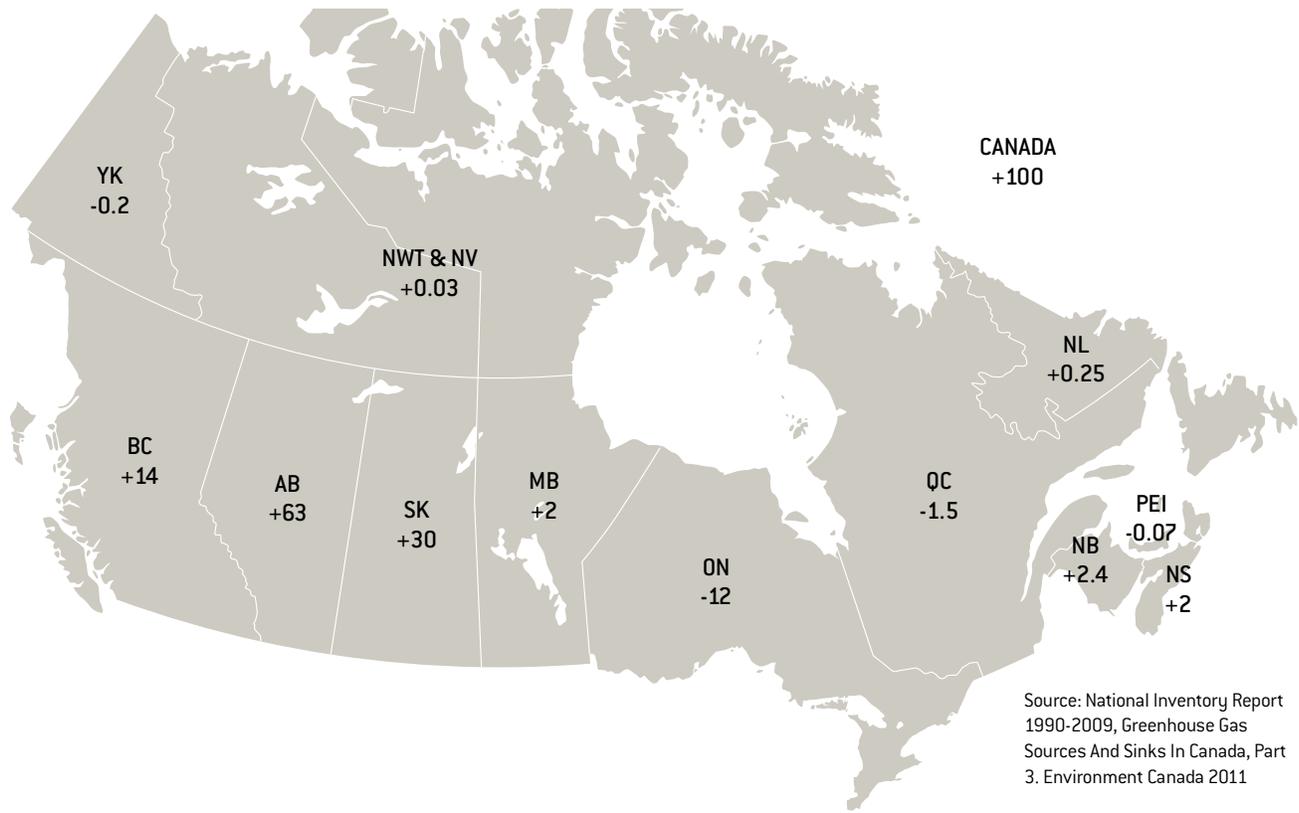
9 "Climate talks: Jayanthi Natarajan applauded for stirring speech in Durban" The Times of India, December 10, 2011. See http://articles.timesofindia.indiatimes.com/2011-12-10/global-warming/30501920_1_climate-talks-climate-change-small-island-countries

10 "Durban talks progress as hosts urge Canada not to bully" Post Media News, December 3, 2011. www.canada.com/business/Durban+talks+progress+hosts+urge+Canada+bully/5807804/story.html

11 China, Japan say Canada's Kyoto withdrawal "regrettable", Reuters, December 13, 2011. <http://in.reuters.com/article/2011/12/13/china-canada-climate-idINDEE7BC06B20111213>

12 Ibid.

FIGURE 1: CHANGES IN PROVINCIAL GHG EMISSIONS SINCE 1990 IN METRIC TONNE CO2E



Provincial leaders

Fortunately, many provinces and territories are implementing more ambitious climate change policies. As in the U.S., where California and other states began acting long before Washington, a number of provincial governments are filling the leadership void with breakthrough policies, programs and targets from which important lessons can be learned and shared.

- Both B.C. and Quebec have introduced economic incentives to shift to cleaner choices through carbon taxes and Quebec's move to cap and reduce industrial emissions. The B.C. carbon tax has now reached \$25 per tonne of carbon emissions and will increase to \$30 this year, heightening the incentive to reduce fossil fuel consumption and invest in energy-efficiency and clean energy production. The government of the Northwest Territories is considering options for introducing a carbon tax.
- Quebec and B.C. have also regulated vehicle fuel-efficiency in line with California standards (a much stronger approach than the Canadian federal government's plan).
- Ontario's revolutionary Green Energy Act¹³ has already resulted in billions of dollars in investment in clean energy production and jobs.
- Three provinces representing 75 per cent of Canada's population have made commitments to establish cap-and-trade systems: Quebec has moved forward with the January 2012 launch of the Western Climate Initiative, with B.C. and Ontario preparing to follow. Canadian provinces have set more ambitious goals for reducing industrial greenhouse gas pollution than the participating U.S. states.

The highest increases by MtCO2e are found in Alberta and Saskatchewan, where emissions from oil sands are projected to triple in the next decade unless leadership is taken.

13 Ontario Ministry of Energy. 2010. "Ontario's Green Energy Act." www.mei.gov.on.ca/en/energy/gea/

- Nova Scotia has already capped its electricity emissions, responsible for almost half of the province's emissions.
- Three provinces — Ontario, New Brunswick and Manitoba — have shut down polluting power plants, and have promised more shutdowns.
- Six provinces and territories have either strengthened their building codes to make new buildings much more energy efficient or have announced that they will.

No province is doing as much as it could, and provincial targets remain below what the science says is necessary, but a lot is happening, creating a critical mass of Canadian provinces.

Provincial laggards

This trend is not, however, universal. Other provinces and territories are taking a more piecemeal approach, with some actually going backwards.

Alberta and Saskatchewan, for example, rather than acting to curb global warming emissions, are investing heavily in more polluting industries. The latest data available show that Canada's 2009 greenhouse gas emissions were 17 per cent higher than 1990 levels.¹⁴ As Figure 1 illustrates, most of the increases come from these two provinces. This is particularly shocking when one considers that Alberta and Saskatchewan represent only 14 per cent of the population and 19 per cent of the economy of Canada.¹⁵ As illustrated in Figure 2, per capita GHG emissions in these two provinces are nearly five times what they are in the rest of Canada.

Future growth in carbon pollution is also expected to come from these two provinces. Emissions from the oil sands (found only in Alberta and Saskatchewan) are projected to triple in the next decade unless leadership is taken.¹⁶ Environment Canada documents¹⁷ show the oil sands will be responsible for 95 per cent of Canada's growth in industrial greenhouse gas pollution over the next decade if nothing is done to curtail them. This doesn't include emissions from coal-fired power plants that are still being built in Alberta.

Much has been said about the jurisdictional divide on climate change. The provinces are responsible for natural resource management, including oil and gas developments. They also have control over their electricity sectors and the ability to legislate provincewide building codes. The federal government has the authority to regulate pollution and greenhouse gases that, due to their serious impact on people and the environment, are considered toxic under the Canadian Environmental Protection Act. So, all major sources of emissions contributing to climate change can be addressed through both federal and provincial policies.

In 2010, Canadian MPs attempted to reverse the minority government's lack of leadership and effort on climate change by passing the Climate Change Accountability Act. Seven months later, the Conservative majority in the Senate defeated the bill, an ignominious end to a bill that the House of Commons had approved – twice.

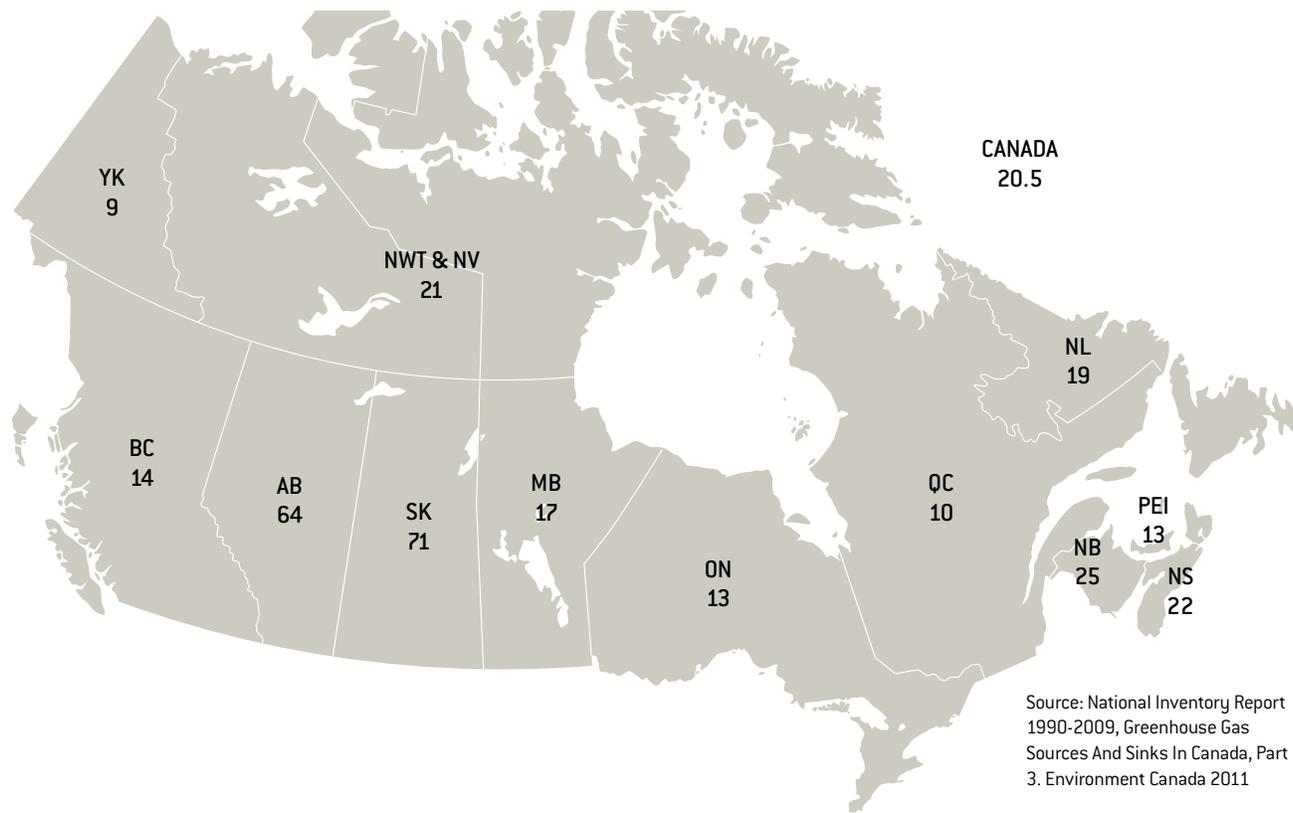
¹⁴ Ibid.

¹⁵ Statistics Canada. 2010. "Gross domestic product, expenditure-based, by province and territory." www40.statcan.gc.ca/101/cst01/econ15-eng.htm

¹⁶ "Canadian Oil Sands and Greenhouse Gas Emissions", Pembina Institute, August 2010. pubs.pembina.org/reports/briefingnoteosghg.pdf

¹⁷ "Turning the Corner", Environment Canada, March 2008. www.publications.gc.ca/collection_2009/ec/En88-2-2008E.pdf

FIGURE 2: PER CAPITA GHG EMISSIONS, 2009 (TONNES OF CO₂e)



Climate action thwarted

In April 2010 the majority of Canadian Members of Parliament attempted to reverse the minority Conservative government's lack of leadership and effort on climate change by passing the Climate Change Accountability Act (Bill C-311). The Act required the federal government to set regulations to meet a medium-term target of reducing greenhouse gas emissions to 25 per cent below 1990 levels by 2020, and a long-term target to reduce emissions 80 per cent below 1990 levels by 2050. (The Act modestly met the minimum greenhouse gas reduction targets scientists say are required.)

Seven months later, the Conservative majority in the Senate defeated the bill, which had been passed by the House of Commons, at first reading and without a single word of debate. It was an ignominious end to a bill that the House of Commons had approved — twice. A defeat of any bill this early in the Senate process hasn't happened for many decades. Canada's new official Opposition has recently announced it will re-introduce the bill as a private member's bill in the new Parliament. However, now that the Conservative government has a majority in both the House of Commons and the Senate, prospects for the new legislation seem slight unless clean energy, sustainable transportation and other vital climate policies find new support from members of the government.

There have been calls for a nationally mandated federal policy on climate change, with regulations and programs in place to level the playing field for all. A level playing field — with industries and citizens facing the same rules across the country — could produce a dynamic environment with all provinces bringing their strengths and working together while ensuring each region of the country takes responsibility for its impacts. A responsible federal strategy should be designed to incorporate lessons learned from innovative programs in Ontario, B.C. and Quebec, which, applied federally, could benefit every province and territory.

What Canada needs is a full suite of policies to tackle all sources of greenhouse gases. In each case, technologies already exist to dramatically cut emissions. We understand which policies work. The only missing ingredient is political leadership.

A comprehensive plan

What Canada needs is a full suite of policies to tackle all sources of greenhouse gases. In each case, technologies already exist to dramatically cut emissions. We understand which policies work. The only missing ingredient is political leadership. Those actions and policies include:

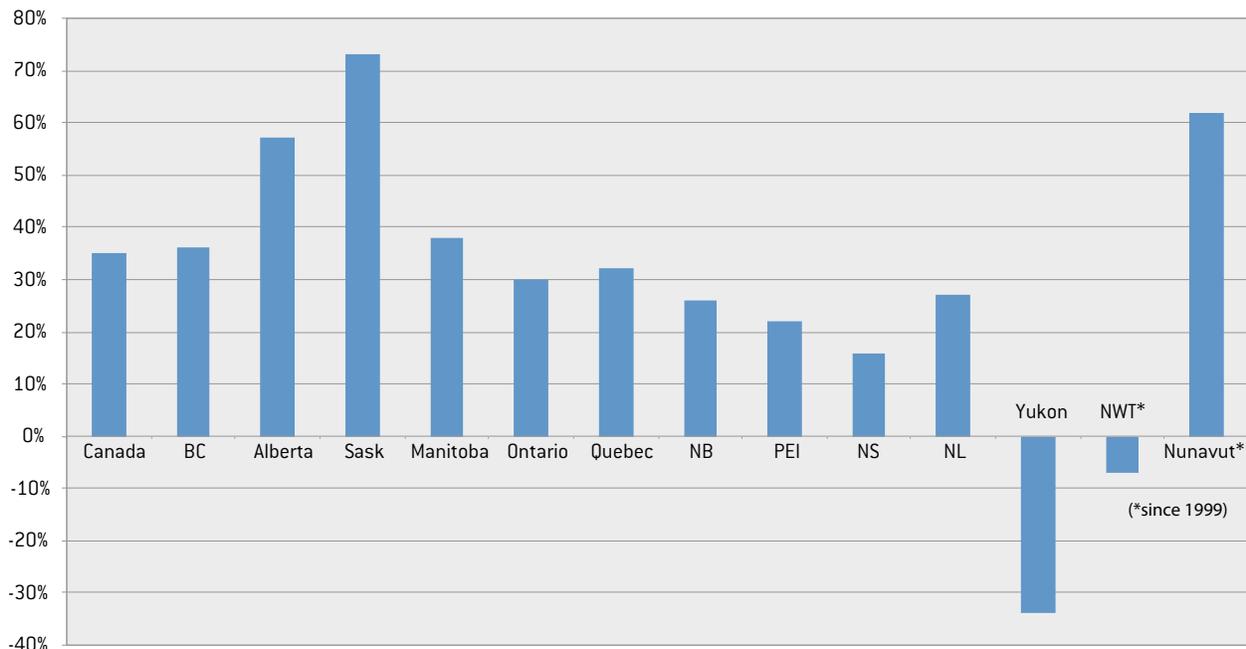
Canada can move to build healthy, pedestrian- and transit-friendly communities by developing and investing in a national transit strategy (Canada is currently the only G8 country without one) while adopting stronger vehicle efficiency regulations.

- **SPURRING CLEAN ENERGY AND INNOVATION** by introducing a price on greenhouse gas emissions. This addresses one of the fundamental problems in Canada's economic system (with the exception of B.C. and possibly Quebec and very small emission pricing policies of Alberta): It now costs nothing to dump carbon pollution into our air. A price on emissions could be in the form of a carbon tax or a cap-and-trade system — or both. If cap-and-trade is pursued, rules need to be simple and transparent so industries do not “game” the system and undermine its effectiveness.
- **ADDRESSING GROWING ROAD TRANSPORTATION EMISSIONS** by mobilizing a sustainable transportation network. Canada can move to build healthy, pedestrian- and transit-friendly communities by developing and investing in a national transit strategy (Canada is currently the only G8 country without one) while adopting stronger vehicle efficiency regulations. Vehicle fuel-efficiency standards will ensure that cars that use less fuel and emit fewer emissions are available to Canadians. Other options need to be seriously funded, such as active transportation infrastructure so people have options to bike or walk. Sprawl also has to be tackled in a serious way. We simply cannot afford to build sprawling cityscapes because of the traffic congestion and health problems they cause.
- **RE-ENERGIZING OUR HOMES AND BUILDINGS** Canada can build an innovative green construction industry while creating the most energy-efficient new and existing homes and buildings in the world by continually adopting cutting-edge building codes. It also means investing significant funding into retrofitting the existing building stock, since much of this infrastructure will be around for decades.
- **ACCELERATING RENEWABLE POWER WITH INCENTIVES.** Targeted incentives for clean energy, called feed-in tariffs, have been successful in other countries — and in Ontario — at significantly increasing clean, renewable energy in the electricity system while creating thousands of domestic manufacturing jobs. However, technologies that provide “green heat” options for our homes and workplaces have been ignored. These include solar hot water heaters and geothermal energy systems that can heat and cool buildings. It makes no sense to build new buildings without these technologies and yet we continue to do it every day in Canada.
- **AGRICULTURAL PROGRAMS** to reduce emissions from soil, such as low- or zero-till partnerships between government and farmers.
- **REGULATIONS TO ENSURE ALL LANDFILLS ARE CAPPED**, with the captured methane used for energy.
- **REGULATIONS ON FUGITIVE EMISSIONS FROM OIL AND GAS.** Fugitive releases are largely avoidable and can be regulated to ensure we drastically reduce the amount of emissions from fugitive sources such as leaks from natural gas pipelines.

Emissions trends

As previously noted, recently recorded decreases in greenhouse gas emissions for most provinces and territories in Canada are based on 2009 figures. Most are the result of the economic downturn of 2008/09 rather than of far-reaching climate action. In some cases, such as Ontario's closure of coal-fired power plants, some gains will be maintained. However, in many cases, it is likely that as the economy recovers emissions

FIGURE 3: PERCENTAGE INCREASE IN GHG EMISSIONS FROM ROAD TRANSPORT 1990–2009



Source: National Inventory Report 1990-2009, Greenhouse Gas Sources And Sinks In Canada, Part 3. Environment Canada 2011

will again rise, as they already appear to be. It is therefore encouraging to see some provinces making progress on climate change.

Two trends do, however, cause serious concern.

The first is the rush to exploit as quickly as possible oil and gas resources in all jurisdictions that have them. This is most notable in the case of Alberta’s exploitation of the oil sands, undertaken despite the incredible social and environmental toll (local air pollution, greenhouse gas emissions, water pollution, impacts on human health, impacts on wildlife and biodiversity, high use of fresh water). This problem is certainly not limited to Alberta.

Other provinces are keen to develop unconventional forms of oil and gas such as shale gas and offshore oil. For example, shale gas is being portrayed as a bonanza by governments in B.C., Quebec and New Brunswick, all seemingly prepared to ignore the serious impacts of its development to their environment. These impacts include high fugitive emissions of greenhouse gases, chemical contamination of groundwater and impacts on wildlife. Strong public opposition is rising in these provinces in response to the potential impacts.

Governments need to think seriously about the notion of prioritizing clean energy development, and leaving petroleum resources in the ground when the environmental costs outweigh the benefits. At the very least, a more careful rate of development is often warranted, one that does not overly constrain Canada’s ability to reduce greenhouse gas emissions and tackle climate change.

The second cause for concern is the complete lack of progress on reversing emissions from road transportation. In many jurisdictions, this remains one of the single biggest sources of greenhouse gas emissions.

Though modest commitments and investments have been made in sustainable forms of transportation, including transit and biking, no government has adequately tackled the issue of urban sprawl — a major cause of the problem. Spending continues on new roads and highways. As a consequence, distance travelled by car, truck or SUV continues to climb in Canada and so do the emissions that come from that travel. As Figure 3 illustrates, greenhouse gas emissions from road transportation continue to rise in every province. Over the past decade, improved vehicle fuel efficiency and improvements in public transit, where they have occurred, have

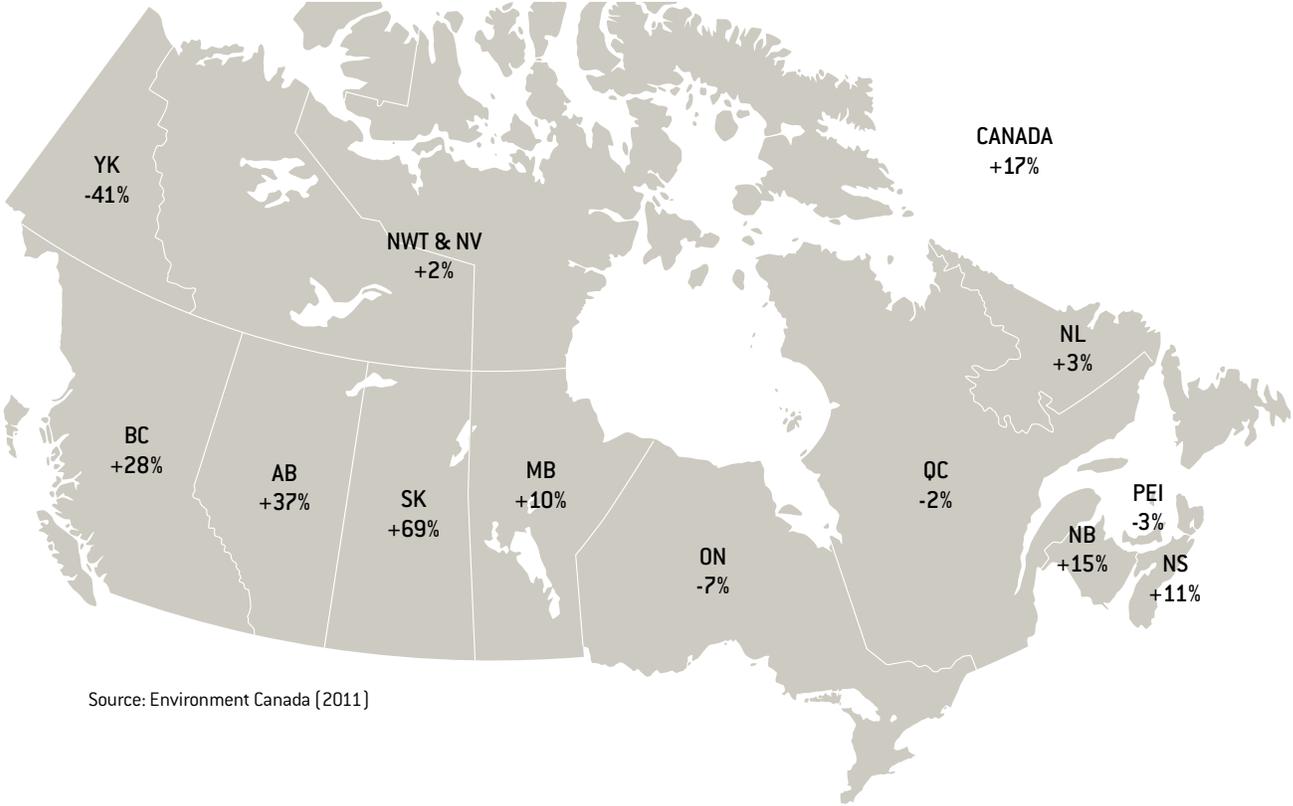
failed to reduce absolute emission levels. Increased use of heavy-diesel trucks over rail for freight transport has certainly contributed to emissions, but the fact remains that unlike Europeans, too many Canadians lack access to effective transit service (or don't live in walkable communities) and therefore depend on their vehicles for commuting and personal travel.

Those two trends are widespread. They apply just as much to past champions of climate change, such as Quebec and B.C., as they do to Alberta and Saskatchewan, which have received their fair share of criticism. It is one of the main reasons why emissions in Canada continue to rise, despite all the progressive provincial programs discussed above and laid out in the following pages.

Governments have been reluctant to implement policies to address transport emissions because of the direct and habitual relationship individuals have with their cars. But this is mostly influenced by the fact that most Canadians have yet to be presented with viable transportation alternatives. Having a national transit investment strategy for Canada would be a good start to providing real choice. Shifting the percentage of trips by car to sustainable modes of transportation such as transit, biking and walking is critical because achieving absolute emission reductions from efficiency standards alone (the least noticeable tool for car owners) is difficult with increasing population and economic growth. Additional levers will also be required, such as higher gas prices from emissions pricing, road tolls and highway user charges, and zoning for more city density.

As noted in the previous provincial leadership section, there are reasons to be hopeful about the future of climate change in Canada. However, the rush to exploit oil and gas, across-the-board lack of meaningful measures to tackle transportation, and continued absence of leadership from the federal government are equally important reasons for concern.

FIGURE 4: PERCENTAGE INCREASE IN GREENHOUSE GAS EMISSIONS, 1990–2009



Source: Environment Canada (2011)

TABLE 1: 2011 RANKING OF PROVINCIAL/TERRITORIAL CLIMATE CHANGE POLICIES

Best	None
Very Good	Ontario Quebec British Columbia
Good	Nova Scotia Prince Edward Island
Fair	Manitoba New Brunswick Northwest Territories
Poor	Newfoundland and Labrador Nunavut Yukon
Worst	Alberta Saskatchewan

CHANGE SINCE 2008 (IN ORDER OF 2011 RANKING)

Ontario	Up	Ontario's pioneering Green Energy Act is already reaping environmental and economic benefits for the province and could serve as a blueprint for other jurisdictions.
Quebec	Same	Quebec is still leading the field in many areas, including being the first province to enact a modest cap-and-trade system on industrial GHG emissions, although its commitment to expanding oil and gas exploration and road and highway building threaten progress and its standing.
British Columbia	Down	Top-ranked in 2008, B.C., although it leads the country on pricing carbon pollution, has lost momentum and stalled on implementing measures to ensure it meets its 2020 reduction target with the threat of shale gas and the potential development of a gas-powered LNG terminal that could undermine the province's leadership.
Nova Scotia	Up	Although concerns remain about past failures, Nova Scotia has taken important steps, including a hard cap to reduce GHG emissions from the power sector.
Price Edward Island	Up	With emissions already below 1990 levels, P.E.I. has made strong commitments to increasing both energy efficiency and renewable energy.
Manitoba	Down	Although Manitoba has shown some leadership on energy efficiency, there have been too many broken promises and half (if any) measures to reduce emissions from major sources.
New Brunswick	Same	Progress has stalled in New Brunswick with a change of provincial government. It remains to be seen whether the new government will continue to stall, go forward or go backward.
Northwest Territories	Up	The government of the Northwest Territories still relies more on subsidies than regulations, but it has made a commitment to increasing renewable energy and is considering a carbon tax.
Newfoundland and Labrador	Same	Although the government of Newfoundland and Labrador has, more so than many jurisdictions, led by example in tackling its own emissions, its long-awaited updated action plans detail no concrete steps to tackle and reduce emissions from major sources.
Nunavut	Down	The territory of Nunavut still has no GHG reduction targets and has failed to include promising measures in official strategies.
Yukon	Same	Despite an admirable goal for government of Yukon operations to be carbon neutral by 2020, there are no territory-wide GHG reduction targets or plans to tackle emissions from industry.
Alberta	Same	Alberta's commitment to heavily polluting, damaging and unsustainable fossil fuel industries continues unabated with a recent analysis showing the province is only on track to achieve one third of its pollution-reduction target for 2020.
Saskatchewan	Down	It is difficult to imagine any jurisdiction taking the threats of climate change less seriously than Saskatchewan currently does.

TABLE 2: 2011 ASSESSMENT OF PROVINCIAL/TERRITORIAL GOVERNMENTS' CLIMATE CHANGE POLICIES

	Y=Yes		N=No		A=Announced but not yet implemented					NA=Not applicable			
ACTION PLAN AND POLICIES — MITIGATION	BC	AB	SK	MB	ON	QC	NB	PEI	NS	NL	YK	NWT	NUN
Has a current climate change action plan?	Y	Y	A	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Set emission reduction targets comparable to Kyoto?	N	N	N	Y	N	Y	N	N	N	N	N	N	N
Has set 2° C above pre-industrial temperatures as the upper limit for average global warming?	N	N	N	N	N	Y	N	N	N	N	N	N	N
Addressed emissions from sector with highest emissions?	Y	N	N	N	N	N	N	N	Y	N	N	N	N
Addressed emissions from sector with fastest-growing emissions?	Y	N	A	N	Y	N	N	N	Y	N	N	N	N
Has a broad-based carbon pricing policy (carbon tax or cap-and-trade)?	Y	N	N	N	A	A	N	N	N	N	N	N	N
Has meaningful energy efficiency, conservation and renewable energy policies?	Y	N	Y	Y	Y	Y	N	Y	Y	N	A	N	N
Has strong building code for energy efficiency?	A	N	N	Y	Y	A	N	N	Y	N	A	N	N
Has meaningful transportation policies?	A	N	N	N	N	N	N	N	N	N	N	N	N
Has policies that address urban sprawl?	Y	N	N	N	Y	A	N	N	N	N	N	NA	NA
Has meaningful policies to address emissions from industry?	Y	N	A	N	A	A	N	NA	N	N	N	N	N
Has a program to address emissions from government?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Has a policy or program to protect natural carbon stores in forests and peatlands?	N	N	N	N	Y	N	N	Y	N	N	N	N	N
Uses the full suite of policy instruments, including regulations and disincentives?	Y	N	N	N	Y	N	N	N	A	N	N	N	N
Has reduced emissions since 1990?	N	N	N	N	Y	Y	N	Y	N	N	Y	NA	NA
Has reduced emissions 2006–2009?	Y	N	N	Y	Y	Y	Y	Y	N	N	Y	Y	N
Reduced emissions in 2009? ^a	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
CLIMATE CHANGE ADAPTATION													
Has a meaningful plan to adapt to climate change impacts?	Y	N	A	N	Y	Y	A	A	N	N	N	A	Y
Has a science advisory body that advises government on adaptation to climate change?	Y	N	N	N	Y	Y	N	N	N	N	Y	N	N
GOVERNANCE AND ACCOUNTABILITY													
Has established a cross-governmental climate change secretariat?	Y	N	A	N	Y	Y	Y	N	Y	Y	A	N	N
Reports on actions and outcomes from climate action plan?	Y	Y	N	N	Y	Y	Y	N	Y	N	Y	A	A

Note: ^aReducing GHG emissions in the reporting year has been a grading criterion for all David Suzuki Foundation reports on provincial and territorial climate action. The economic downturn of 2008/09 reflects (in some, if not all cases) illusory reductions that may have already been reversed.

British Columbia

Strengths

- Full climate change action plan with target to reduce greenhouse gas pollution by 33 per cent below 2007 levels by 2020 (equivalent to 12 per cent below 1990 levels by 2020).¹⁸
- High-level climate change adaptation strategy.
- Carbon tax, now \$25/tonne, will go up by \$5/tonne in 2012, and applies to three quarters of B.C.'s emissions.
- 2008 vehicle fuel-efficiency act matched California standards.
- Increased targets on energy efficiency, conservation and renewable energy.
- Municipalities required to set targets and develop plans to reduce GHG emissions.

Weaknesses

- Subsidies to oil and gas sector and plans to develop shale gas and a potential gas-powered Liquefied Natural Gas (LNG) plant terminal make carbon emission reductions more difficult.
- Lacks strong safeguards to ensure renewable energy is low-impact and supported by local communities.
- Ambitious public transit plan in question because of lack of financial support from the province.
- A plan to build a third dam on the Peace River is being pursued without a full evaluation of the ecological values of the region or a provincewide assessment of low-impact renewable energy resources.
- Has yet to implement measures recommended by Climate Action Team to reach legislated GHG targets.



Nearly a quarter of B.C.'s emissions are from road transportation. GHG emissions from road transportation have increased by 36 per cent since 1990, largely because of the increased number of vehicles on the road and an increase in the number of fuel-inefficient SUVs and trucks.

¹⁸ Government of B.C. 2008. Climate Action Plan. www.livesmartbc.ca/attachments/climateaction_plan_web.pdf

Missed opportunities

- Remains committed but missed January 2012 start date for cap-and-trade to regulate industrial emissions with California and Quebec partners.
- Loopholes in the 2010 low-carbon fuel standard could significantly diminish its efficacy, and standard fails to encourage Canada's oil sands companies to invest in cleaner processes.
- Government could be using a portion of carbon tax revenue to invest in clean energy and public transit infrastructure.
- Government failing to funnel enough of the tax reductions to compensate low-income households most affected by increased energy prices.
- B.C.'s old growth forests are among the ecosystems with the highest carbon storage per hectare on the planet. However, ongoing clearcut logging and other human-caused disturbances are resulting in significant emissions (63 million tonnes of carbon emissions in 2009), which are neither accounted for nor managed effectively by the province.
- Although B.C. is the first North American jurisdiction to develop a carbon-neutral public sector strategy, public institutions should be allowed the flexibility to invest in low-emission projects for their own facilities rather than being forced to purchase carbon offsets that are invested only in private companies.

Greenhouse gas emissions¹⁹

According to the most recent figures available, British Columbia's highest-ever GHG emissions were in 2008. Although emissions were reduced by 3.2 per cent in 2009, they are still 28 per cent higher than 1990 levels.

Nearly a quarter of B.C.'s emissions are from road transportation. Greenhouse gas emissions from road transportation have increased by 36 per cent since 1990, largely because of the increased number of vehicles on the road and an increase in the number of fuel-inefficient SUVs and trucks. A shift from rail to road transport of freight has also contributed to the increase.

The second largest source (23 per cent) of emissions is from oil and gas production (including fugitive emissions). This sector has experienced a 94 per cent increase in emissions since 1990 and a 22 per cent increase since 2005. The cause is increased production of natural gas, including increased CO₂ venting. Increased natural gas development is also straining B.C.'s electricity generation. BC Hydro forecasts that gas production will be the fastest-growing consumer of electricity. This will place pressure to develop new generation facilities that will have environmental impacts, increase prices for other consumers and offset efficiency gains in other sectors. This could result in B.C. relying on increased carbon-intensive electricity imports from Alberta and Washington State.

Although GHG emissions are still 54 per cent higher than 1990 levels, there has been a 31 per cent decrease in GHG emissions from electricity and heat generation since they peaked in 2000. The decrease reflects increased hydroelectric output, which has reduced the need for gas-fired electricity production.

19 Environment Canada. 2011. "National Inventory Report, 1990-2000." Annex 15.

Climate change action plan and policies

The B.C. government has a full climate change action plan with a target to reduce its greenhouse gas pollution by 33 per cent below 2007 levels by 2020 (equivalent to 12 per cent below 1990 levels by 2020).²⁰ (Although the B.C. target is much stronger than the federal government's commitment, it nonetheless falls short of the 25 to 40 per cent reductions science says are required to avoid dangerous levels of global warming.)

B.C. has a high-level climate change adaptation strategy.²¹ The government is developing a more detailed adaptation plan and has a science advisory body to offer guidance. It has also created an endowment fund to support the Pacific Institute for Climate Solutions to assess B.C.'s vulnerability to climate change, including sector-specific research.

That said, the government has yet to implement the necessary solutions identified by the Climate Action Team, an independent body of B.C. stakeholders, to reach the province's legislated greenhouse gas targets.²²

MITIGATION AND ADAPTATION

The B.C. government has recognized that putting a price on greenhouse gas emissions is one of the best incentives for reducing emissions. The province's carbon tax is supported by most British Columbians, a large percentage of whom believe the tax should be extended beyond fossil fuels to cover all sources of greenhouse gases.²³ The \$25 per tonne carbon tax will increase to \$30 per tonne in 2012.

Large institutions in the province have made changes to their investment decisions because of the carbon tax. The University of British Columbia decided to phase out fossil fuels for heating and is pursuing renewable energy instead due to an \$18 million incentive from the carbon tax.²⁴ In addition, evidence suggests that B.C. consumers are also responding, as B.C.'s gasoline consumption has dropped by three per cent compared to the rest of Canada, with the province now having the lowest per-capita gasoline use in country.²⁵

Unfortunately, the provincial government is failing to take full advantage of the carbon tax. For example, a portion of the revenue from the carbon tax could be used to invest in clean energy and public transit infrastructure, which would further decrease GHG emissions. This move has been proposed by numerous B.C. mayors and other stakeholders and is supported by the official Opposition. The government has also failed in its last two budgets to funnel enough of the tax reductions to low-income households to properly compensate families most affected by increased energy prices.²⁶

Although the government introduced a low carbon fuel standard in January 2010 to reduce the carbon content of fuels being used in the province,²⁷ the regulations include major loopholes that allow more polluting oil from the oil sands to be counted as conventional oil and that ignore some emissions created in the production of biofuels.²⁸

The B.C. government has recognized that putting a price on GHG emissions is one of the best incentives for reducing emissions. The province's carbon tax is supported by most British Columbians, a large percentage of whom believe the tax should be extended beyond fossil fuels to cover all sources of greenhouse gases.

20 Government of B.C. 2008. Climate Action Plan. See www.livesmartbc.ca/attachments/climateaction_plan_web.pdf

21 Government of B.C. "Preparing for Climate Change: British Columbia's Adaptation Strategy." www.livesmartbc.ca/attachments/Adaptation_Strategy.pdf

22 Meeting British Columbia's Targets: A Report from the B.C. Climate Action Team, July 2008. www.env.gov.bc.ca/cas/mitigation/pdfs/CAT_FINAL_REPORT_July_23_2008.pdf

23 "British Columbians support the carbon tax: poll", Pembina Institute, 30 June 2011. www.pembina.org/media-release/2234

24 "B.C. Climate Policy", April 2009, Pembina Institute, David Suzuki Foundation et al. See: www.pembina.org/pub/1810

25 "Has B.C.'s Carbon Tax Worked?", The Tyee, November 23, 2011. See: www.sustainableprosperity.ca/article2114

26 For an analysis of the distribution of the tax reductions, see Lee, Marc and Toby Sanger, "Is BC's Carbon Tax Fair? An Impact Analysis for Different Income Levels", Canadian Centre for Policy Alternatives, 30 October 2008. www.policyalternatives.ca/publications/reports/bcs-carbon-tax-fair

27 B.C. Ministry of Energy, Mines and Petroleum Resources. 2009. "Renewable And Low Carbon Fuel Regulation Enacted." Press Release. [December 21]. www2.news.gov.bc.ca/news_releases_2009-2013/2009EMPR0024-000796.htm

28 "A Comparison of California and British Columbia's Low Carbon Fuel Standards", Environmental Defence and Natural Resources Defense Council, 2010. <http://environmentaldefence.ca/reports/comparison-california-and-british-columbias-low-carbon-fuel-standards>

In 2011, the B.C. government announced it had achieved its carbon-neutral goal for public sector operations — the first province or state in North America to do so.

B.C. remains committed to establishing a cap-and-trade system as part of the Western Climate Initiative, although it missed the official January 2012 start with California and Quebec. Significant reductions in industrial GHG emissions could result if B.C. sets a high level of auctioning for emission permits and disallows or strictly limits the use of offsets. It remains to be seen how stringent B.C.'s approach will be.

On June 30, 2011, the provincial government announced that it had achieved its carbon-neutral goal for public sector operations (the first province or state in North America to do so). The province estimates that carbon neutral projects will reduce carbon output by 36,500 tonnes, create 500 jobs and save organizations about \$12.6 million in annual energy costs.²⁹ Although this goal has created some positive outcomes, there are several major problems with the province's strategy. First, more emphasis should be put on reducing emissions versus "offsetting" emissions. Second, public institutions such as schools and hospitals are required to purchase offsets through the Pacific Carbon Trust, which invests in projects owned by private companies only, instead of having the flexibility to invest in the energy efficiency of their own operations. This is the equivalent of a financial transfer from the public purse to the private sector.³⁰ In some cases the companies receiving public funds are also B.C.'s largest industrial polluters. Moreover, weaknesses in the offset rules mean that several projects with dubious environmental benefits have been funded, calling into question future of the program.³¹ Finally, the B.C. government's supportive Public Sector Energy Conservation Agreement, a \$75-million provincial energy-efficiency fund for public institutions whose projects save the public sector \$12.6 million per year in energy costs, has recently run dry. Fortunately, B.C.'s environment minister recently voiced an openness to review and possibly amend the program, but only time will tell if the program will be fixed.

B.C.'s old growth forests are among the ecosystems with the highest carbon storage per hectare on the planet. However, ongoing clearcut logging and other human-caused disturbances are resulting in significant emissions (63 million tonnes of CO₂ in 2009), which are neither accounted for nor managed effectively by the province.

The province needs a comprehensive provincial forest global warming policy to ensure that provincial forestlands remain a carbon sink and no longer contribute to B.C.'s overall emissions as a significant carbon source. This policy should ensure that all emissions from forest management and other human land use are accounted for, and that the province commits to increased forest conservation and improved management of timberlands.

ENERGY EFFICIENCY

The Clean Energy Act was tabled in April 2010 and included a commitment to fill 66 per cent of new energy demand through energy efficiency and conservation measures (up from 50 per cent).³²

So far, B.C. has no enforceable provincewide building code to impose energy efficiency standards. However, an ongoing Greening the Building Code initiative focuses on code changes to ensure all new homes will be built to the equivalent of EnerGuide 80 in 2011. The province is participating in national discussions to establish an improved energy code for larger, more complex buildings.³³

As part of this initiative, in June 2011 a new building regulation came into effect in 36 participating B.C. jurisdictions requiring all new homes to be built to accommodate future installation of a renewable energy system, including having an area designated for a solar collector for heating water. Promoting the benefits,

29 "Carbon-neutral B.C.: A first for North America", B.C. government press release, 30 June 2011. www2.news.gov.bc.ca/news_releases_2009-2013/2011ENV0032-000805.htm

30 "Taxing the public for a private good is a bad idea" by MLA Bob Simpson. Vancouver Sun, July 4, 2011.

31 "Climate changing for province's carbon offset" by Craig McInnes, Vancouver Sun, September 16, 2011.

32 "New Act Powers B.C. Forward With Clean Energy And Jobs", Office of the Premier of B.C., 28 April 2010. www2.news.gov.bc.ca/news_releases_2009-2013/2010PREM0090-000483.htm

33 B.C. government website. www.housing.gov.bc.ca/building/green/

the government points out that solar water heating can reduce GHG emissions from single family homes by up to two tonnes per year.³⁴ This is currently a voluntary measure.

RENEWABLE ENERGY

The Clean Energy Act also includes a commitment that 93 per cent of B.C.'s electricity supply should come from clean or renewable sources (up from 90 per cent). A net-zero clause requires any new fossil fuel electricity be offset.³⁵

However, the B.C. government has yet to put into place strong social and environmental safeguards to ensure renewable energy development is truly low-impact and enjoys the support of affected communities. Compounding this are provisions within the act that decrease the oversight of the B.C. Utilities Commission and shift power instead to the B.C. Cabinet.³⁶

It is also a concern that the B.C. government has announced its intention to build a third dam on the Peace River (Site C) without conducting a full evaluation of the ecological values of the region or a provincewide assessment of low-impact renewable energy resources.³⁷ Twenty-six B.C. environmental groups called for the province to develop renewable resources in a way that assures they are low-impact.³⁸

TRANSPORTATION

In 2008, B.C. passed a vehicle fuel-efficiency act. The act matches California standards, ensuring that average vehicle fleet fuel efficiency will improve by 30 per cent by 2016.³⁹ This is a significantly stronger approach than the standards proposed by the federal government. In addition, the B.C. government is investing \$17 million to encourage clean electric and hydrogen vehicles. The program includes consumer incentives for the purchase of new battery electric, fuel cell electric, plug-in hybrid electric and compressed natural gas vehicles and capital investments for dedicated charging and fuelling stations.⁴⁰

Unfortunately, the B.C. government is pursuing contradictory policies that will undermine greenhouse gas pollution reductions expected from other policies. These include over \$1 billion in subsidies to the oil and gas sector⁴¹ and funding for new highway construction, including twinning the Port Mann Bridge and expanding Highway 1 within Metro Vancouver.

Although the B.C. Transit Plan is a fairly ambitious \$11.1-billion plan to expand and fund public transportation in major urban areas, provincial funding is not on pace to deliver the B.C. government's share of \$4.75 billion.

Unfortunately, the B.C. government is pursuing contradictory policies that will undermine GHG pollution reductions expected from other policies. These include over \$1 billion in subsidies to the oil and gas sector and funding for new highway construction, including twinning the Port Mann Bridge and expanding Highway 1 within Metro Vancouver.

34 "Greening the Building Code - Communities adopt solar power", B.C. government press release, 14 June 2011. www.newsroom.gov.bc.ca/2011/06/greening-the-building-code-communities-adopt-solar-power.html

35 "New Act Powers B.C. Forward With Clean Energy And Jobs", Office of the Premier of B.C., 28 April 2010. www2.news.gov.bc.ca/news_releases_2009-2013/2010PREM0090-000483.htm

36 For a critique of the Clean Energy Act see "Pembina Institute Assessment of the B.C. Clean Energy Act", Pembina Institute, 5 May 2010. <http://pubs.pembina.org/reports/pembina-assessment-of-the-clean-energy-act-final.pdf>

37 "Protecting the Peace: statement on B.C.'s Site C project", David Suzuki Foundation, 19 April 2010. www.davidsuzuki.org/media/news/2010/04/bcs-site-c-project-statement/

38 "Recommendations for Responsible Clean Electricity Development in British Columbia", David Suzuki Foundation, Pembina Institute, Watershed Watch Salmon Society, West Coast Environmental Law, 17 December 2009. <http://pubs.pembina.org/reports/clean-electricity-recommendations.pdf>

39 Government of B.C. 2008. "Greenhouse Gas Reduction (Vehicle Emissions Standards) Act." www.leg.bc.ca/38th4th/3rd_read/gov39-3.htm

40 www.newsroom.gov.bc.ca/2011/11/new-rebates-help-bc-drivers-plug-into-clean-cars.html

41 "Foot off the gas", Ben Parfitt, Canadian Centre for Policy Alternatives, 2007. www.policyalternatives.ca/sites/default/files/uploads/publications/BC_Office_Pubs/bc_2007/bc_oil_gas_web.pdf

BRITISH COLUMBIA OVERVIEW

Y=Yes N=No A=Announced but not yet implemented NA=Not applicable

MITIGATION

Has a current climate change action plan?	Y
Set emission reduction targets comparable to Kyoto?	N
Has set 2°C above pre-industrial temperatures as the upper limit for average global warming?	N
Addressed emissions from sector with highest emissions?	Y
Addressed emissions from sector with fastest-growing emissions?	Y
Has a broad-based carbon-pricing policy (carbon tax or cap-and-trade)?	Y
Has meaningful energy efficiency, conservation and renewable energy policies?	Y
Has strong building code for energy efficiency?	A
Has meaningful transportation policies?	A
Has policies that address urban sprawl?	Y
Has meaningful policies to address emissions from industry?	Y
Has a program to address emissions from government?	Y
Has a policy or program to protect natural carbon stores in forests and peatlands?	N
Uses the full suite of policy instruments, including regulations and disincentives?	Y

GHG EMISSIONS TRENDS

Has reduced emissions since 1990?	N
Has reduced emissions 2006–2009?	Y
Reduced emissions in 2009?	Y ^a

CLIMATE CHANGE ADAPTATION

Has a meaningful plan to adapt to climate change impacts?	Y
Has a science advisory body that advises government on adaptation to climate change?	Y

GOVERNANCE AND ACCOUNTABILITY

Has established a cross-governmental climate change secretariat?	Y
Reports on actions and outcomes from climate action plan?	Y

Note: ^aReducing GHG emissions in the reporting year has been a grading criterion for all David Suzuki Foundation reports on provincial and territorial climate action. The economic downturn of 2008/09 reflects (in some, if not all cases) illusory reductions that may have already been reversed.

For further detail: BC Climate Action Plan, www.livesmartbc.ca/government/plan.html; Greenhouse Gas Reduction (Vehicle Emissions Standards) Act, www.leg.bc.ca/38th4th/3rd_read/gov39-3.htm; Clean Energy Act, www.leg.bc.ca/39th2nd/1st_read/gov17-1.htm; Renewable & Low Carbon Fuel Requirements Regulation, www.empr.gov.bc.ca/RET/RLCFRR/Pages/default.aspx#; B.C. Transit Plan, www.th.gov.bc.ca/transit_plan/Provincial_Transit_Plan.pdf

Conclusion

Although the B.C. government made significant advances in climate change action in 2007 and 2008, its efforts appear to have lost momentum over the past two years. Research shows a gap exists between the measures put into place and the legislated 2020 greenhouse gas emissions target.⁴² Though still among provincial leaders, B.C. has an opportunity to embrace the clean energy economy and show further progress on global warming by redoubling its efforts. In particular, regulating emission decreases from industrial facilities, setting and enforcing strong energy efficiency standards for buildings and homes, and securing long-term, stable investment in green infrastructure such as public transit is urgently needed.

42 "Mind The Gap", Pembina Institute, 2007. <http://pubs.pembina.org/reports/mindthegap-full.pdf>

Ranking

	2005	2006	2008	2011
Best			X	
Very Good				X
Good				
Fair				
Poor	X	X		
Worst				

Recommendations

The B.C. government should:

- Strengthen the carbon tax by setting a long-term price on carbon pollution beyond 2012, improve the fairness of the tax by increasing the low-income tax credit in step with annual increases, expand the application of the carbon tax to include industrial process emissions (through the existing carbon tax at least until an equivalent cap-and-trade system is in place), and dedicate a portion of revenues (on a regional basis) to green infrastructure such as transit.
- Ensure that a price on emissions (through the carbon tax or a cap-and-trade system) for all industrial sectors is in place in 2012. (If a cap-and-trade approach is chosen, B.C. should ensure that the cap aligns with B.C.'s legislated emission targets and that auctioning for emission quotas [permits] is as close as possible to 100 per cent while disallowing or strictly limiting the use of offsets and closing other loopholes.)
- Put into place a schedule for funding the province's full transit plan and ensure every budget allocates the necessary resources so that the plan is achieved.
- Complete and implement a detailed, sector-by-sector adaptation plan with guidance from the science advisory body and important stakeholders, including the environmental community.
- Commit to itemizing all subsidies to fossil fuel production in B.C. and implement a plan to phase them out over the next three years.
- Decision-making on provincial government funding for all future transportation or energy projects based on whether they will increase or decrease global warming pollution.
- Set and enforce leading-edge energy efficiency standards for buildings and homes.
- Ensure that a full environmental assessment, including an evaluation of the ecosystem values in the area, is undertaken on the Site C project proposal. Determine whether the project will go ahead and, if so, how it will proceed based on that assessment.
- Develop and implement a rigorous framework that ensures all proposed renewable energy projects can be truly classified as "low-impact."
- Significantly engage the B.C. public on the issue of global warming, including the impacts and costs of present and future climatic changes, the necessary actions required to deeply reduce greenhouse gas pollution, and the role of government, industry and the public in this undertaking.
- Review the Carbon Neutral Government program and restore resources for the public sector to reduce emissions, such as the \$75 million Public Sector Energy Conservation Agreement. Secondly, strengthen the quality of carbon offsets.

B.C.'s efforts appear to have lost momentum over the past two years. Though still among provincial leaders, B.C. has an opportunity to embrace the clean energy economy and show further progress on global warming by redoubling its efforts.

Alberta

PHOTO COURTESY CLICKR BEE VIA FLICKR

Strengths

- Met its goal to have 12.5 per cent of its total electricity by 2008 generated from renewable and alternative sources (primarily hydro, wind and biomass).
- Establishing a Climate Change Action Centre to help municipalities increase energy efficiency.
- \$2 billion committed for GreenTRIP public transit initiative.
- A climate change adaptation strategy has been promised.

Weaknesses

- Continues to be the largest GHG emitter in Canada, and emissions have increased more than in any other province since 1990.
- Oil sands industry responsible for one third of Canada's GHG emission increases since 1990 and the number of oil sands barrels produced is proposed to double within the decade.
- Climate strategy allows Alberta's GHG emissions to keep growing until 2020, and a recent analysis of the plan concludes that the province will likely only achieve one third of its emission reduction goal for 2020.⁴³
- Strategy assumes 70 per cent of atmospheric GHG emission reductions after 2020 will be achieved through unproven carbon capture and storage (CCS) technology while the province fails to support the policies to spur required innovation and clean technology deployment.



Alberta continues to be the largest GHG emitter in Canada, responsible for 34 per cent of the country's emissions, and 63 per cent of the growth in national GHGs since 1990.

43 "Responsible Action? An Assessment of Alberta's Greenhouse Gas Policies", Pembina Institute, December 2011. www.pembina.org/media-release/2298

- Intensity-based emissions trading targets allow absolute emissions to continue rising.
- Alberta's \$15/tonne partial carbon price (Specified Gas Emitter Regulation) applies to only 12 per cent of emissions from large industrial polluters reducing the equivalent incentive for clean energy (carbon price) to less than \$5/tonne of emissions.⁴⁴ (This is well short of the \$95 to \$255/tonne required for CCS technology that forms the foundation of the Alberta government's plan.)
- Two-for-one offset credits to companies participating in CCS projects fail to encourage companies to reduce their pollution.
- No plan to reduce coal-fired power, which is responsible for approximately 82 per cent of Alberta's electricity generation.⁴⁵ Rather than prioritizing renewable energy and energy efficiency, the province is funding research into unproven "clean coal" technologies.

Missed opportunities

- Alberta has missed many opportunities to increase its partial \$15/tonne carbon price. Economic analysis shows that for Alberta to achieve its 2050 GHG emission reduction targets, the carbon charge needs to be *at least* \$100/tonne.⁴⁶ For Canada to meet science-based targets, the carbon price needs to be approaching \$200/tonne by 2020.⁴⁷
- In 2006, Alberta had the highest installed capacity of wind power in the country.⁴⁸ Four years later, Alberta had less than half the installed capacity of Ontario.⁴⁹ Had Alberta implemented more aggressive policies to support renewables, such as the successful feed-in tariffs used by Ontario, it could have expanded its wind energy base much faster.
- Recent debates on the oil and gas royalty structure, as well as heightened concern about global warming, gave the former premier and government the opportunity to modify the royalty structure to encourage emission reductions. The government instead reduced royalty rates on many different categories of oil and gas production to *increase* development but with less return for the value of the resources to the public.⁵⁰
- In the same month that it announced the creation of the Municipal Climate Change Action Centre, the government was challenged by the Energy Efficiency Alliance for delaying implementation of a new provincewide building code to raise standards to EnerGuide 80.⁵¹

In 2006, Alberta had the highest installed capacity of wind power in the country. Four years later, Alberta had less than half the installed capacity of Ontario.

44 Mark Jaccard PowerPoint presentation, "Canadian Climate Policy: Regional Impacts and Future Prospects", November 2010.

45 National Inventory Report, Part 3 (page 87)

46 Economic Analysis of Climate Change Abatement Opportunities for Alberta, M.K. Jaccard and Associates, Inc., 12 October 2007. <http://pubs.pembina.org/reports/ab-reduction-opportunities-jaccard.pdf>

47 "Climate leadership, economic prosperity", David Suzuki Foundation and Pembina Institute, October 2009. www.pembina.org/pub/1909

48 "Provincial Power Play", David Suzuki Foundation, 2008, p. 18. www.davidsuzuki.org/publications/downloads/2008/DSF_ProvincialPowerPlay_Web.pdf

49 Canadian Wind Energy Association, April 2011 www.canwea.ca/pdf/Canada%20Current%20Installed%20Capacity_e.pdf

50 Government of Alberta. 2010. "Alberta stimulates new energy investment, new technologies." Press Release. Available at <http://alberta.ca/acn/201005/28441DB838B27-0336-BB5C-D5EDFEDE158ED1F6.html>.

51 "Building Code in Alberta Needs to Update its Energy Efficiency Standards", Canadian Energy Efficiency Alliance, 24 January 2011. www.energyefficiency.org/News/PressReleases.html#buildingcode

Greenhouse gas emissions⁵²

Alberta continues to be the largest GHG emitter in Canada, responsible for 34 per cent of the country's emissions, and 63 per cent of the growth in national GHGs since 1990.⁵³ Although the province represents only 10 per cent of Canada's population, it contributes more than a third of the country's total GHG emissions. (It is second only to Saskatchewan in per capita emissions.) Since 1990, Alberta's carbon pollution has grown more than that of any province or U.S. state.⁵⁴

Mining and fossil fuel industries (including fugitive emissions) account for 41 per cent of Alberta's GHG emissions. There has been a 47 per cent increase in overall emissions from this sector since 1990. The majority of the increases are from increased oil sands extraction and upgrading, accounting for a 167 per cent increase in emissions since 1990,⁵⁵ although increased natural gas and coal production have also contributed, both directly and in fugitive emissions. Over the last few years, GHG emissions have also increased per barrel of oil sands produced (average emission intensity) as more marginal and deeper (in-situ) bitumen reserves are exploited and provincial requirements for cleaner production technologies remain absent.⁵⁶

Alberta's continued use of coal is a major reason electricity and heat generation make up the second largest source (21 per cent) of GHG emissions.

Road transport contributes nearly 10 per cent of GHG emissions. This source has seen a 57 per cent increase in GHGs since 1990 and a nine per cent increase over the past four years. A greater number of vehicles on the road and a shift to energy inefficient SUVs and trucks have contributed to this increase. However, a major factor is increased trucking of equipment and goods related to the oil sands industry, which is also credited with much of the 60 per cent increase in GHG emissions from railways and other transport.

Although the reporting framework allows the enormous impacts of Alberta's oil sands production to be disaggregated over multiple source categories (see Oil Sands, page 25), the industry is responsible for one third of Canada's GHG emission increases since 1990.⁵⁷ It has been estimated that by 2020 GHG emissions from Alberta's oil sands will exceed the entire emissions of Denmark, Belgium or Austria.⁵⁸

Although Alberta represents only 10 per cent of Canada's population, it contributes more than a third of the country's total GHG emissions. Since 1990, Alberta's carbon pollution has grown more than that of any province or U.S. state.

Alberta climate change action plan and policies

Alberta was the first province in Canada to introduce GHG regulation legislation. Unfortunately, the legislation (which came into force in July 2007⁵⁹) and its associated regulations are still very weak.

In 2008, the government produced a weak and vague climate change action strategy that will allow Alberta's GHG emissions to keep growing until 2020 and likely beyond if policies are not strengthened. Based on announced measures within the climate plan, including a weak carbon price, and the fact that the government's targets have not been put into legislation,⁶⁰ a recent analysis projects Alberta will only likely achieve a third of the province's relatively weak emissions goal for 2020.⁶¹

52 Environment Canada. 2011. "National Inventory Report, 1990-2009." Annex 15.

53 Environment Canada. 2011. "National Inventory Report, 1990-2009." Annex 12 and 15

54 *Responsible Action? An Assessment of Alberta's Greenhouse Gas Policies*, Pembina Institute, December 2011. www.pembina.org/media-release/2298

55 Email correspondence by Environment Canada to the Pembina Institute. See Endnote 10 in "Responsible Action? An Assessment of Alberta's Greenhouse Gas Policies (Dec 2011)

56 *Responsible Action? An Assessment of Alberta's Greenhouse Gas Policies*, Pembina Institute, supra note 54.

57 North America Climate Change Action by State and Province (Meera Fickling, Peterson Institute for International Economics). www.iie.com/publications/papers/fickling0811.pdf

58 "Oilsands emit more than entire countries", CBC News, 13 September 2009. www.cbc.ca/news/canada/story/2009/09/13/greenpeace-oilsands.html

59 "Turning the Corner: Detailed Emissions and Economic Modelling", Environment Canada. www.publications.gc.ca/collection_2009/ec/En88-2-2008E.pdf

60 "Highlights of Provincial Greenhouse Gas Reduction Plans", Pembina Institute, August 2009, p. 1. <http://pubs.pembina.org/reports/highlights-of-provincial-greenhouse-gas-reduction-plans.pdf> [page 1]

61 *Responsible Action? An Assessment of Alberta's Greenhouse Gas Policies*, Pembina Institute, supra note 54.

OIL SANDS

When Environment Canada released its most recent National Inventory Review (NIR) of greenhouse gas emissions in May 2011, many people noted that key information about the contribution of Alberta's oil sands industry was missing.⁶²



The full impact of the oil sands on Canada's total GHG emissions is difficult to discern from NIRs, as these direct and indirect emissions are disaggregated over various categories, including mining and oil gas extraction, petroleum refining, pipelines, heat generation, transportation and fugitive emissions. Previous NIRs were, however, much more forthcoming, acknowledging in 2010, for example, that direct GHG emissions from the oil sands industry had increased by 600 per cent since 1990 and that the industry was largely responsible for a 98 per cent increase in emissions from off-road diesel and railways.⁶³

In response to persistent media enquiries, Environment Canada eventually disclosed that overall greenhouse gas emissions from Alberta's oil sands industry increased by 11 per cent between 2008 and 2009.⁶⁴

Canada's current targets for reducing GHG emissions to 17 per cent below 2005 levels by 2020 — equivalent to a three per cent increase from 1990 levels, weaker than Kyoto 10 years later — fall very far short of the 25 to 40 per cent below 1990 levels best science suggests is required to avert catastrophic climate change.⁶⁵ Alberta's oil sands industry is responsible for one third of Canada's greenhouse gas emission increases since 1990.⁶⁶ Allowing unchecked growth of the heavily polluting and environmentally devastating oil sands industry in Alberta (and its expansion into Saskatchewan) will single-handedly ensure Canada cannot meet even these inadequate targets.

By failing to rein in or tackle emissions from the oil sands industry the Canadian government is also ignoring its responsibility to ensure industrial development respects environmental limits.⁶⁷

It is disturbing that Environment Canada is not transparent about the full environmental impact of the oil sands. Concealing key statistics about the industry will not build public trust that the industry can change and become more environmentally responsible. According to the agency's July 2011 report on Canadian emission trends, greenhouse gas emissions from the oil sands industry will increase by 30 per cent between 2005 and 2020 — almost completely cancelling out a 31 per cent projected decrease in emissions from electricity generation over the same period.⁶⁸ Andrew Nikiforuk, an award-winning Canadian author, has estimated that by 2020 greenhouse gas emissions from the Alberta oil sands industry could exceed the entire emissions of Denmark, Belgium or Austria.⁶⁹ The federal government even risks losing all credibility on its promise to reduce the Canada's emissions by 17 per cent by 2020 by allowing Canada's oil sands emissions to continue to skyrocket. The federal government has promised regulations to reduce emissions from large industrial polluters, responsible for half of Canada's total emissions, at least three times in the past five years but has yet to enact the rules.

62 "Digging into the data from Canada's latest greenhouse gas emissions report", Pembina Institute, 3 June 2011. www.pembina.org/blog/545

63 Environment Canada National Inventory Report 1990-2008, Part 3, p.88

64 "Oilsands greenhouse gas emissions shot up in 2009: Environment Canada", Ottawa Citizen (et al.), 2 June 2011.

65 Intergovernmental Panel on Climate Change. 2007. Fourth Assessment Report, Working Group III, Table 13.7.

66 North America Climate Change Action by State and Province www.iiie.com/publications/papers/fickling0811.pdf

67 "Duty Calls: Federal responsibility in Canada's oilsands", Environmental Defence, Equiterre and Pembina Institute, October 2010. pubs.pembina.org/reports/ed-fedpolicy-report-oct2010-web-redo.pdf

68 "Canada's Emissions Trends", Environment Canada, July 2011, p.22. www.ec.gc.ca/Publications/E197D5E7-1AE3-4A06-B4FC-CB74EAAA60F/CanadasEmissionsTrends.pdf.

69 "Oilsands emit more than entire countries", CBC News, supra note 58.

MITIGATION AND ADAPTATION

If effectiveness and accountability form key evaluation criteria, then Alberta is doing very little to reduce GHG emissions. Instead, it is banking on technology demonstration projects and other actions that are unlikely to be deployed at a significant scale to reduce GHG emissions without stronger market-based incentives or government policies.

Its climate change strategy talks about plans to reduce emissions in three “wedges”: energy efficiency, greening energy production, and carbon capture and storage.

The major focus for reducing emissions (70 per cent) is CCS.⁷⁰ Although CCS technology is unproven, the government has committed to pumping \$2 billion into its development.⁷¹ The government is offering two-for-one carbon offset credits to companies participating in the \$745-million Shell Quest CCS project.⁷² Particularly worrying for many in Alberta is the introduction of legislation that would see the government assuming long-term liability for all CO₂ stored underground, leaving taxpayers on the hook.⁷³

The province has legislated an emissions-trading system for heavy industry. Existing large industrial facilities (those emitting more than 100,000 tonnes annually) must reduce their emissions relative to their production by 12 per cent below the facility's average 2003-2005 baseline emissions intensity, starting July 2007. While this may sound good on paper, because the target is intensity-based, it actually allows absolute emissions to continue rising.

In addition to the inherent weakness of the government's intensity-based regulation, there are several ways large emitters can avoid responsibility to reduce their emission including:

- Investing in Alberta-based offset projects or buying emission performance credits from other companies in Alberta. A recent review of Alberta's offset registry unveiled that more than 82 per cent of the 10 megatonnes of credits issued for compliance in the last two years came from projects starting up between January 2002 and January 2007 — before the emission trading system was announced. These therefore do not represent emission reductions accredited to the policy.⁷⁴
- Contributing \$15/tonne to the Climate Change and Emissions Management Fund (i.e., technology fund), but only for the small portion of emissions that would exceed the 12 per cent intensity-based target.

In the program's first year, more than half the government's claimed reductions from large industrial facilities came from paying into the technology fund (approximately \$40 million in total) or from buying offsets, rather than from making real, in-house emission reductions.

The stated objective of the fund (which as of September 2011 has collected \$257 million and subsequently committed \$126 million in 27 projects⁷⁵) is to “drive innovation, test and implement new technologies, and achieve the goal of greening energy production.”⁷⁶ Although the fund has invested in a fairly full array of technologies and recognizes the need for near-term reductions, a report by the Pembina Institute projects

If effectiveness and accountability form key evaluation criteria, then Alberta is doing very little to reduce GHG emissions.

70 <http://environment.gov.ab.ca/info/library/7894.pdf> [page 20]

71 “Highlights of Provincial Greenhouse Gas Reduction Plans”, Pembina Institute, August 2009, p. 2. <http://pubs.pembina.org/reports/highlights-of-provincial-greenhouse-gas-reduction-plans.pdf>

72 “Province, feds partner with industry to move CCS technology forward”, Government of Alberta press release, 24 June 2011. <http://alberta.ca/home/NewsFrame.cfm?ReleaseID=/acn/201106/30771C28EE8FC-F24F-E03C-1BA374D3C893A32B.html>

73 “Alberta gov't moves to assume carbon-capture liability”, Sierra Club, 2002. <http://prairie.sierraclub.ca/en/in-the-news/alberta-govt-moves-assume-carbon-capture-liability>

74 Responsible Action? An Assessment of Alberta's Greenhouse Gas Policies”, Pembina Institute, supra note 54.

75 Alberta's Climate Change and Emissions Management Fund (assessed 16 January, 2011) Government of Alberta's <http://environment.alberta.ca/02486.html>

76 “Greening Energy Production”, Government of Alberta website. <http://environment.alberta.ca/02255.html>

that the government estimate of the volume of emission reductions that the fund is likely to achieve is 35 to 72 per cent less than the 2.3 megatonnes per year emission reductions that government projects by 2020.⁷⁷

Further, the \$15/tonne only applies to excess emissions (above the 12 per cent target), which means all emissions below the target are free for polluters. The average fee for industry fossil fuel emissions has therefore been estimated to be less than \$5/tonne when accounting for the all emissions and not just those over the target.⁷⁸ Moreover, the \$15/tonne technology fund price effectively creates a \$15/tonne cap on the price of carbon in Alberta's trading system as a whole, which is not adequate to make significant reductions in Alberta's emissions.

If the government were serious about reducing emissions it would substantially increase the current carbon price. Economic analysis shows that, for Alberta to achieve its 2050 GHG emission reduction targets, the carbon charge needs to be *at least* \$100/tonne.⁷⁹

Another concrete step the government could have taken to provide incentive for reducing GHG emissions would have been to significantly increase royalties paid by industry to the public (government). Instead, following a promised review, royalties were either maintained or reduced.⁸⁰ Mineral resources such as oil belong to the people of Alberta — failing to extract maximum value for these resources transfers this value to private producers and should be considered an additional and large subsidy to the fossil fuel industry.

Although the Alberta government publicizes that oil sands companies have reduced GHG emissions per barrel of oil produced by 29 per cent since 1990,⁸¹ this trend has recently reversed and pollution per barrel is increasing (see Greenhouse Gas Emissions), while the number of barrels produced is proposed to double within the decade.⁸² As mentioned, this is largely because the province has done little to effectively curtail the highly polluting industry's expansion. In fact, the Alberta government currently provides 18 subsidies to the oil sector totalling \$1.05 billion annually. This is in addition to the federal government's subsidies of \$1.03 billion to the Albertan oil industry, making Alberta the recipient of 73 per cent of all federal and provincial oil subsidies in the country.⁸³ According to Environment Canada's most recent report on emission trends, GHG emissions from the oil sands industry will increase by 30 per cent between 2005 and 2020.⁸⁴

It is also disappointing that, while coal facilities are covered under Alberta's GHG regulations, there is no plan to reduce coal-fired power, which is responsible for approximately 82 per cent of the province's electricity generation.⁸⁵ In fact, the province continues to approve coal-fired power plants. Genesee III was recently completed and is now spewing greenhouse gases and other air pollutants. Another possible coal-fired power plant, to be built by Maxim Power, is trying to circumvent new federal emission regulations for coal plants even after federal Environment Minister Peter Kent promised that such loopholes would not be allowed.⁸⁶ Instead of

It is also disappointing that, while coal facilities are covered under Alberta's GHG regulations, there is no plan to reduce coal-fired power, which is responsible for approximately 82 per cent of the province's electricity generation. In fact, the province continues to approve coal-fired power plants.

77 Pembina Institute estimates that the Climate Change and Emissions Management Fund will achieve 0.5 to 1.5 megatonnes of emissions reduction per year by 2020 versus the Alberta Government estimates a of 2.3 megatonnes. See "Responsible Action? An Assessment of Alberta's Greenhouse Gas Policies", Pembina Institute, December 2011. AND Alberta's Climate Change and Emissions Management Fund (assessed 16 January, 2011) Government of Alberta's <http://environment.alberta.ca/02486.html>

78 Mark Jaccard PowerPoint presentation, "Canadian Climate Policy: Regional Impacts and Future Prospects", Nov. 2010.

79 Economic Analysis of Climate Change Abatement Opportunities for Alberta, M.K. Jaccard and Associates, Inc., 12 October 2007. <http://pubs.pembina.org/reports/ab-reduction-opportunities-jaccard.pdf>

80 "Alberta royalty review changes in brief", Alberta Oil, 24 March 2010. www.albertaoilmagazine.com/2010/03/royalty-review-changes-in-brief/

81 Alberta's Clean Energy Future — Government of Alberta, www.oilsands.alberta.ca/ghg.html

82 Ibid.

83 Fossil Fuels — At What Cost? (IISD, November 2010)

84 "Canada's Emissions Trends", Environment Canada, July 2011, p.22. www.ec.gc.ca/Publications/E197D5E7-1AE3-4A06-B4FC-CB74EAAA60F/CanadasEmissionsTrends.pdf.

85 National Inventory Report, Part 3 [page 87].

86 "Ottawa to electricity firms: don't rush to beat pending emissions rules," the Globe and Mail, September 9, 2011.

prioritizing renewable energy and energy efficiency, the province has chosen to fund a potential yet unproven “clean coal” demonstration project.⁸⁷

ENERGY EFFICIENCY

Alberta has increased its commitment to energy efficiency.⁸⁸ The province has adopted a green building policy for construction of new government-owned facilities, and is developing green procurement guidelines.⁸⁹

In February 2010 it announced the establishment of the Climate Change Action Centre to help municipalities increase energy efficiency of their operations and improve community-wide conservation.⁹⁰ Consumer rebates ranging from \$100 to \$10,000 are available to new buyers who purchase energy-efficient homes and to existing homeowners who improve their homes’ energy efficiency.⁹¹

However, in the same month that the creation of the Municipal Climate Change Action Centre was announced, the government was challenged by the Energy Efficiency Alliance for delaying implementation of a new provincewide building code to raise standards to EnerGuide 80.⁹²

RENEWABLE ENERGY

Alberta was once a pioneer in wind energy. In 1993 the province installed the country’s first commercial wind farm.⁹³ In 2006, Alberta had the highest installed capacity of wind power in Canada.⁹⁴ By 2010, with 807 MW, Alberta had less than half the installed capacity of Ontario (1,636 MW).⁹⁵ Had Alberta implemented more aggressive policies to support renewables, such as the successful feed-in tariffs used by Ontario, it could have expanded its wind energy base much faster. This is particularly the case as wind energy has been identified as having by far the most potential of any renewable energy source in Alberta⁹⁶.

Although somewhat lacking in ambition compared to other provinces, Alberta did meet its goal to have 12.5 per cent of its total electricity generated from renewable and alternative sources by 2008.⁹⁷ This has been achieved primarily with hydro, wind and biomass. There is a goal to reach 20 per cent by 2020.⁹⁸

The province’s latest Energy Strategy commits to “not only support renewable energy development, but promote a market for its consumption.”⁹⁹ Unfortunately, no measures are detailed for achieving this.

Ninety per cent of electricity used by Alberta government buildings comes from green power sources, including wind power.¹⁰⁰ As a result, emissions from government operations have been reduced substantially.

The province’s latest Energy Strategy commits to “not only support renewable energy development, but promote a market for its consumption.” Unfortunately, no measures are detailed for achieving this.

87 “Alberta’s 2008 Climate Change Strategy”, p. 119. <http://environment.gov.ab.ca/info/library/7894.pdf>

88 2009 National Energy Efficiency Report Card (Canadian Energy Efficiency Alliance, August 2010)

89 Greening the Alberta Government, Government of Alberta website. <http://environmentuat.alberta.ca/02259.html>

90 “Community partnership drives cleaner energy future”, Government of Alberta website, 11 February 2010. <http://alberta.ca/home/NewsFrame.cfm?ReleaseID=/acn/201002/27812BDF216D8-9144-BD10-5B58D645CEA3858A.html>

91 “Energy Efficiency Rebates”, Government of Alberta website. <http://environment.alberta.ca/0920.html>

92 “Building Code in Alberta Needs to Update its Energy Efficiency Standards”, Canadian Energy Efficiency Alliance, 24 January 2011 www.energyefficiency.org/News/PressReleases.html#buildingcode

93 National Inventory Report, Part 3 (page 87).

94 “Provincial Power Play”, David Suzuki Foundation, 2008, p. 18. www.davidsuzuki.org/publications/downloads/2008/DSF_ProvincialPowerPlay_Web.pdf

95 Canadian Wind Energy Association, April 2011 www.canwea.ca/pdf/Canada%20Current%20Installed%20Capacity_e.pdf

96 “Greening the Grid”, Pembina Institute, 14 January 2009. <http://pubs.pembina.org/reports/greeningthegrid-fs.pdf>

97 Electricity Statistics, Government of Alberta website. www.energy.alberta.ca/Electricity/682.asp

98 “Turning the Corner: Detailed Emissions and Economic Modelling Annex 3: Provincial/Territorial Targets and Actions”, Environment Canada. www.publications.gc.ca/collection/ec/En88-2-2008E.pdf

99 Launching Alberta’s Energy Future, page 28.

100 Greening the Alberta Government, Government of Alberta website. <http://environmentuat.alberta.ca/02259.html>

ALBERTA OVERVIEW

Y=Yes N=No A=Announced but not yet implemented NA=Not applicable

MITIGATION

Has a current climate change action plan?	Y
Set emission reduction targets comparable to Kyoto?	N
Has set 2°C above pre-industrial temperatures as the upper limit for average global warming?	N
Addressed emissions from sector with highest emissions?	N ^a
Addressed emissions from sector with fastest-growing emissions?	N ^a
Has a broad-based carbon pricing policy (carbon tax or cap-and-trade)?	N
Has meaningful energy efficiency, conservation and renewable energy policies?	N
Has strong building code for energy efficiency?	N
Has meaningful transportation policies?	N
Has policies that address urban sprawl?	N
Has meaningful policies to address emissions from industry?	N ^a
Has a program to address emissions from government?	Y
Has a policy or program to protect natural carbon stores in forests and peatlands?	N
Uses the full suite of policy instruments, including regulations and disincentives?	N

GHG EMISSIONS TRENDS

Has reduced emissions since 1990?	N
Has reduced emissions 2006–2009?	N
Reduced emissions in 2009?	Y ^b

CLIMATE CHANGE ADAPTATION

Has a meaningful plan to adapt to climate change impacts?	N
Has a science advisory body that advises government on adaptation to climate change?	N

GOVERNANCE AND ACCOUNTABILITY

Has established a cross-governmental climate change secretariat?	N
Reports on actions and outcomes from climate action plan?	Y

^aAlthough Alberta's Specified Gas Emitters Regulation contains policies to cover both the sector with the highest emissions and the sector with the fastest-growing emissions, the policies are neither adequate nor meaningful.

^bReducing GHG emissions in the reporting year has been a grading criterion for all David Suzuki Foundation reports on provincial and territorial climate action. The economic downturn of 2008/09 reflects (in some, if not all cases) illusory reductions that may have already been reversed.

For further details see: Alberta's 2008 Climate Change Strategy, <http://environment.gov.ab.ca/info/library/7894.pdf>; Provincial Energy Strategy, "Launching Alberta's Energy Future," www.energy.gov.ab.ca/Org/pdfs/AB_ProvincialEnergyStrategy.pdf

TRANSPORTATION

Alberta has done little to tackle the rapidly increasing emissions from road transportation. That said, the government has committed \$2 billion for GreenTRIP, a public transit initiative that will “give Albertans better access to public transit and reduce Alberta’s carbon footprint.”¹⁰¹ It is also offering rebates of up to \$10,000 to taxi operators who are transitioning their fleet to hybrid vehicles.¹⁰²

Conclusion

Alberta continues to lag far behind almost all other provinces in addressing climate change. While it has made progress in reducing emissions from government operations and implementing a partial but weak emissions-trading system for heavy industry, the province’s overall emissions continue to grow rapidly (other than 2009, when the economic downturn led to emission reductions across Canada and around the world). The Alberta government’s 2008 climate action plan was even weaker and vaguer than its 2002 plan, freely acknowledging GHG emissions in the province will continue to grow until 2020. The climate plan, which states that Alberta is “not prepared to forgo the opportunities our strong and vibrant economy provides”,¹⁰³ makes it clear the government erroneously believes there is a trade-off between a healthy environment and a healthy economy. The prime minister may attempt to brand it as an “ethical” form of energy¹⁰⁴ (and the reporting framework may allow the Canadian government to disaggregate its impacts over multiple source categories), but Alberta’s oil sands industry is responsible for one third of Canada’s greenhouse gas emission increases since 1990.¹⁰⁵

While Alberta has made progress in reducing emissions from government operations and implementing a partial but weak emissions-trading system for heavy industry, the province’s overall emissions continue to grow rapidly

Ranking

	2005	2006	2008	2011
Best				
Very Good				
Good				
Fair				
Poor	X	X		
Worst			X	X

101 “GreenTRIP program ready to roll to support public transit”, Government of Alberta press release, 22 June 2010. <http://alberta.ca/acn/201006/28647600F68AB-9D3D-8FDB-3964EB27F31BF3DF.html>

102 “Energy Efficiency Rebates”, Government of Alberta website. <http://environment.alberta.ca/0920.html>

103 “Alberta’s 2008 Climate Change Strategy”. <http://environment.gov.ab.ca/info/library/7894.pdf>

104 “Harper’s embrace of ‘ethical’ oil sands reignites ‘dirty’ arguments”, Globe and Mail, 8 January 2011.

105 North America Climate Change Action by State and Province [Meera Fickling, Peterson Institute for International Economics]. www.iie.com/publications/papers/fickling0811.pdf

Recommendations

The Alberta government should:

- Go back to the drawing board and create a new climate action plan that recognizes the urgency of the climate change problem, and includes much stronger medium- and long-term emission-reduction targets.
- Place a moratorium on new oil sands projects until a strong regulatory system can be developed that addresses GHG emissions, water use, impacts on water and air quality, and biodiversity impacts.
- Immediately put into place a strategy to rapidly reduce reliance on and eventually eliminate emissions from coal-fired power.¹⁰⁶ Policy options to include a meaningful carbon price, regulations requiring a stringent environmental performance standard, mandatory shutdown as plants near the end of their lives, and energy-efficiency and clean-power initiatives used by the province to reduce emissions from government operations.
- Develop climate change policies for sectors that are not covered by the present plan but that also contribute to global warming, such as road transportation and agriculture.
- Abandon the weak emission intensity-based regulation for large industrial emitters including the use of offset credits for compliance. Instead apply the current partial carbon levy to every tonne of GHG emissions. The price of carbon needs to increase quickly from (the partial) \$15/tonne carbon price to reach \$200/tonne¹⁰⁷ by 2020 to achieve the deep emission reductions scientists say are needed to avert dangerous climate change.¹⁰⁸ This is in line with the government's Energy Strategy commitment to "review its emissions targets and carbon charges for large industrial facilities, and ensure appropriate increases are made to both."¹⁰⁹
- Enact rules to ensure the Climate Change and Emissions Management Fund is used to make an adequate number of near-term emission reductions (i.e., a "tonne for tonne" reduction approach) and that the emission reductions achieved would not have occurred without this investment.
- Increase transparency and accountability by following through on its commitment to prepare an annual report card to communicate progress on meeting its energy strategy objectives.¹¹⁰ It should further prepare an annual report card on its progress in meeting its climate change plan goals in line with the Auditor General of Alberta's recommendations.¹¹¹
- Choose to not embrace nuclear power, as its Energy Strategy indicates the province is considering.¹¹²
- Phase out subsidies to the fossil fuel industry, and adjust its royalty framework so producers of fossil fuels with higher carbon intensities pay higher royalties.

Alberta should go back to the drawing board and create a new climate action plan that recognizes the urgency of the climate change problem, and includes much stronger medium- and long-term emission-reduction targets.

106 All measures needed for Alberta to end its coal dependency are detailed in "Greening The Grid", Pembina Institute, 14 January 2009. www.pembina.org/pub/1763

107 "Climate leadership, economic prosperity", David Suzuki Foundation and Pembina Institute, October 2009. www.pembina.org/pub/1909

108 North America Climate Change Action by State and Province (Meera Fickling, Peterson Institute for International Economics, April 2010) www.iie.com/publications/papers/fickling0811.pdf

109 "Launching Alberta's Energy Future", p.40. www.energy.gov.ab.ca/Org/pdfs/AB_ProvincialEnergyStrategy.pdf

110 "Launching Alberta's Energy Future", p.49. www.energy.gov.ab.ca/Org/pdfs/AB_ProvincialEnergyStrategy.pdf

111 Report of the Auditor General of Alberta — October 2008, 96. See: www.oag.ab.ca/files/oag/Oct_2008_Report.pdf

112 "Launching Alberta's Energy Future", p.23-24. www.energy.gov.ab.ca/Org/pdfs/AB_ProvincialEnergyStrategy.pdf

Saskatchewan

PHOTO COURTESY ELEEPHOTOGRAPHY VIA FLICKR



Saskatchewan, with three per cent of the population, has the highest per capita GHG emissions in the country. At 69 per cent above 1990 levels its emissions growth is also the highest in Canada.

Strengths

- Announced plans to more than double the province's wind capacity.
- Renewed funding for residential energy-efficiency improvements.

Weaknesses

- Highest per capita GHG emissions in Canada (71 tonnes per person).
- GHG emission levels 69 per cent higher than 1990 levels.
- GHG reduction targets for 2020 reduced from 32 per cent below 2004 levels to 20 per cent below 2006 levels.
- Only 29 per cent of emissions covered by proposed regulations.
- Province remains committed to maximizing oil sands exploitation.
- SaskPower target to conserve 300 MW by 2017 reduced to 100 MW.
- Eliminated both Climate Change Secretariat and Office of Energy Conservation.
- Substantial cuts to renewable energy programs.
- No plan to end overreliance on coal-fired power plants.

Missed opportunities

- Rather than strengthening the existing climate change plan, Saskatchewan's current government gutted it, including many good renewable energy and energy-efficiency programs.
- Partnership with federal government could have strengthened funding for renewable energy, energy-efficiency and conservation, rather than investing heavily in carbon capture and storage projects.

Greenhouse gas emissions¹¹³

Saskatchewan, with three per cent of the population, has the highest per capita GHG emissions in the country (71 tonnes per person). At 69 per cent above 1990 levels its emissions growth is also the highest in Canada.

More than a third of emissions come from mining and fossil fuel industries (including fugitive emissions). There has been a 130 per cent increase in emissions from this sector since 1990. Oil production in Saskatchewan (Canada's second largest producer) has more than doubled since 1990. At the same time natural gas production increased by nearly 20 per cent.

The second largest source (20 per cent) of GHG emissions is electricity and heat generation. This sector has experienced a 40 per cent increase in emissions since 1990. As demand for electricity has grown rapidly from large industrial customers (and, to a lesser extent, from an increased population), coal remained the primary source (over 60 per cent) of electricity generation in Saskatchewan.

Emissions from agriculture have increased by 52 per cent since 1990 and now contribute 16 per cent to the province's GHG total. The primary cause of increased emissions is the 60 per cent increase in the cattle population. Further emission increases have been caused by the 157 per cent increase in the use of synthetic nitrogen fertilizer and the 20 per cent increase in the hog population.

Road transportation emissions are also on the increase (73 per cent higher than 1990). Although the number of vehicles on the road in Saskatchewan has more than doubled since 1990, a large contributor is the increased use of fuel-inefficient SUVs, vans and pickups for both private use and in the mining and fossil fuel industries. Another major contributing factor has been the decline in railroad services in Saskatchewan since 1990. Rail line abandonment has reduced the number of locations from which grain can be shipped and has forced farmers to haul their grain longer distances by truck.

Saskatchewan has taken several steps backward on climate change since 2008, and although new regulations have been proposed, these policies are too weak to achieve the current provincial climate change goal.

Saskatchewan climate change action plan and policies

Saskatchewan has taken several steps backward on climate change since 2008, and although new regulations have been proposed, these policies are too weak to achieve the current provincial climate change goal.

The government has lowered GHG reduction targets for 2020 from 32 per cent below 2004 levels to 20 per cent below 2006 levels to "reduce impacts on the Saskatchewan economy."¹¹⁴

The government has also abolished a \$320-million fund dedicated to addressing climate change and has eliminated both the Climate Change Secretariat and the Office of Energy Conservation established by the previous government. The latter have been replaced with an Office of Climate Change, the primary purpose of which appears to be pursuing carbon offset (rather than reduction) programs, including exploring the use of carbon capture and storage in Saskatchewan, but without effective policies that could make such a technology feasible on a large scale.¹¹⁵

113 Environment Canada. 2011. "National Inventory Report, 1990-2009." Annex 15.

114 Management and Reduction of Greenhouse Gases and Adaptation to Climate Change Technical Briefing Package, 11 May 2009. www.environment.gov.sk.ca/adx/asp/adxGetMedia.aspx?DocID=1625,1601,104,81,1,Documents&MediaID=1722&Filename=Greenhouse+Gases+Backgrounder.pdf

115 Management and Reduction of Greenhouse Gases and Adaptation to Climate Change, Technical Briefing Package, 11 May 2009. www.environment.gov.sk.ca/adx/asp/adxGetMedia.aspx?DocID=1625,1601,104,81,1,Documents&MediaID=1722&Filename=Greenhouse+Gases+Backgrounder.pdf

CARBON CAPTURE AND STORAGE

Carbon capture and storage (CCS) is featured prominently in the climate change strategies of the federal government and the governments of Alberta and Saskatchewan. These governments seem to view CCS as the silver bullet that will reduce atmospheric greenhouse gas emissions from the oil sands and the gas- and coal-fired power sectors at some undefined point in the future. In the meantime, the promise of CCS has been used as a justification to allow emission-intensive sectors to continue and even increase their emissions. For instance, since 2008 Alberta alone has dedicated \$2 billion to fund several CCS pilot projects, including some for oil sands facilities, with another \$2 billion spent by the federal government.¹¹⁶ However, no new oil sands operations or thermal power plants have yet implemented CCS technology as a result of these subsidies.¹¹⁷

CCS has recently been embraced in Saskatchewan, the province with the highest per capita greenhouse gas emissions and the most staggering increase in emissions since 1990. A significant contributor to this is the province's continuing support for coal for most of its electricity generation.

In April 2011 the government of Saskatchewan signalled its intention to remain married to coal for "many years to come" with the announcement of a \$1.24 billion plan to construct a commercial scale carbon capture and storage facility as part of upgrades to its coal-fired Boundary Dam Power Station. The province estimates this "clean electricity" plant will capture one million tonnes of carbon dioxide annually. The carbon emissions are proposed to be injected and stored underground into mature oil fields. The resulting increased pressure within the oil fields from the injected emissions will be used to extract more oil. Although the Minister Responsible for Saskatchewan Power Corporation went so far as to say the project would "forge an environmentally sustainable path for the production of coal-fired electricity in Saskatchewan"¹¹⁸, there are valid reasons for caution and concern. Foremost, CCS is still not a proven technology, and many CCS projects, including one in Saskatchewan, have been abandoned due to high costs. Thus, throwing unwavering support behind this one technology is risky, especially when there are proven clean energy options that are cost-effective. There are also significant environment costs for mining coal.

Perhaps what is most concerning about support from the federal government and the governments of Alberta and Saskatchewan for CCS projects is that although they claim they support cleaner technology to reduce emissions from industrial polluters, these governments oppose the policies that would make a technology like CCS economically viable for large-scale use, a necessary requirement if it is to be an effective solution. It's as if these governments are saying they support growing a garden (i.e., clean technology) but don't support planting any seeds (i.e., the policies that would make CCS feasible).

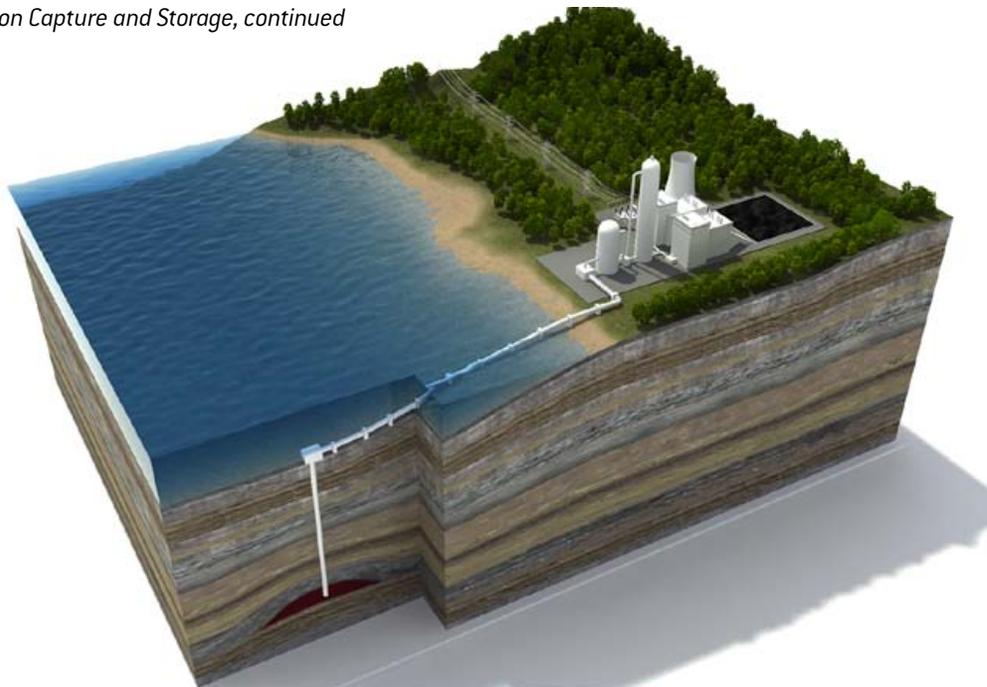
The world's leading economic experts have concluded that it is critical to set a price on carbon emissions through a carbon tax or a regulatory cap to reduce greenhouse gas emissions, as this economic signal would spur the development and diffusion of clean energy and energy-efficiency technologies to replace polluting activities. Neither the federal government nor the governments of

116 Government of Alberta. 2008. "Alberta surges ahead with climate change action plan." News Release. <http://alberta.ca/home/NewsFrame.cfm?ReleaseID=/acn/200807/23960039FB54D-CC21-7234-31C3E853089A1E6C.html>.

117 Highlights of Provincial Greenhouse Gas Reduction Plans, Pembina Institute, August 2009 pubs.pembina.org/reports/highlights-of-provincial-greenhouse-gas-reduction-plans.pdf

118 "Government approves \$1.24 billion Carbon Capture Project", SaskPower press release, 26 April 2011. www.saskpower.com/news_publications/news_releases/?p=1187&linkid=news_releases

Carbon Capture and Storage, continued



Alberta or Saskatchewan, however, have supported a strong price on carbon through a cap-and-trade system or a carbon tax.

For CCS technology to be economically viable, carbon emissions should be priced in the range of about \$95 to \$255 per tonne, according to government and industry energy experts.¹¹⁹ However, the only price signal implemented so far is by the government of Alberta, which has put in place weak emission regulations (the equivalent of a partial carbon tax as it applies only to 12 per cent of emissions from large emitters¹²⁰) that are estimated to be equivalent to a mere \$5 per tonne price on emissions — well short of an adequate incentive for industry to invest in and install CCS.¹²¹

In the absence of an appropriate carbon-pricing mechanism, public funding of CCS is an insufficient incentive for sectors to develop and implement CCS. Until a strong price signal has been established, governments could make better use of taxpayers' money by reallocating funding from CCS toward proven technologies and measures that achieve low-impact, long-term greenhouse gas reductions. Furthermore, it is extremely difficult to justify providing public subsidies to the oil and gas sector to develop cleaner technologies given the fact that this sector — during a lengthy period of record-breaking profits — has one of the poorest research and development investment records in Canada, with a meagre 0.36 per cent of revenues spent on research and development, less than one-tenth the Canadian industrial average of 3.8 per cent.¹²²

Finally, there are still insufficient scientific studies demonstrating the long-term impacts and risks associated with CCS. A comprehensive environmental impact assessment should be used when evaluating energy options and their associated risks.

119 The Pembina Institute (December 2011) *Responsible Action? An assessment of Alberta's Greenhouse Gas Policies*. www.pembina.org/pub/2295

120 *Ibid.*

121 Mark Jaccard Powerpoint presentation, "Canadian Climate Policy: Regional Impacts and Future Prospects", Nov. 2010.

122 National Advisory Panel on Sustainable Energy Science and Technology (2006) *Powerful Connections: Priorities and Directions in Energy Science and Technology in Canada*.

MITIGATION AND ADAPTATION

New regulations are intended to reduce venting and flaring of associated gas (natural gas produced in association with oil production). The standards will come into effect in July 2012 for new wells and in 2015 for existing wells and facilities.¹²³ However, if the Saskatchewan premier (who is fond of pointing out that “dinosaurs didn’t stop dying at the Saskatchewan-Alberta border”¹²⁴) remains committed to maximizing recovery of the province’s estimated 1.5 billion barrels of bitumen, any potential benefits the new regulations might achieve in reducing GHG emissions will be more than negated.

Only 29 per cent of the province’s emissions will be covered by proposed regulations requiring large scale emitters to reduce GHG emissions by two per cent a year between now and 2020. (SaskPower will be regulated, but with the exception of major refineries in Regina and Lloydminster, the oil and gas industry — the province’s largest source of GHG emissions — will largely escape regulation.)¹²⁵

There is no plan to change overreliance on highly polluting coal-fired power plants (the second-largest contributor to GHG emissions).

ENERGY EFFICIENCY

Many of the energy-efficiency programs and targets established by the former government have been slashed, abandoned or downgraded by the current government. For example, a target for SaskPower to conserve 300 MW by 2017 has been reduced to 100 MW.

In March 2011, the government announced that it was renewing funding for the Saskatchewan EnerGuide for Houses program. Residents can be reimbursed up to \$5,000 for home improvements — including geothermal heating systems and solar hot water systems.¹²⁶ Rebates are also available to people who buy new homes with an EnerGuide for New Homes rating of 80 or above.¹²⁷ With the vast majority of demand for electricity and heat generation coming from large industrial customers, these programs will have a small impact on total provincial GHG emissions.

RENEWABLE ENERGY

In October 2009, the Saskatchewan government announced plans to more than double the province’s wind capacity with a 200 MW expansion. In March 2011, the 26 MW Red Lily wind farm began generating power.

This is one of the few positive developments in an otherwise bleak turn of events. For the most part, the current government has made substantial funding cuts to the renewable energy programs established by the previous provincial government.

Instead of increasing funding for renewable energy, energy efficiency and conservation, the province is spending \$1.24 billion to explore an expensive and unproven carbon capture and storage demonstration project in Saskatchewan.¹²⁸ (See pages 34 and 35.)

123 S-10 and S-20: Saskatchewan Upstream Petroleum Industry Associated Gas Conservation Standards. www.er.gov.sk.ca/Default.aspx?DN=6fb656b8-83d7-4e1f-8844-655c74a23b10

124 “Saskatchewan Oil Sands Seminar, Premier Brad Wall’s Remarks”, 12 December 2007. www.gov.sk.ca/adx/asp/adxGetMedia.aspx?mediald=413&PN=Shared

125 “Summary of the Management and Reduction of Greenhouse Gases Regulations” Saskatchewan Ministry of Environment, see: [www.environment.gov.sk.ca/adx/asp/adxgetmedia.aspx?MediaID=3209&Filename=Summary of Management and Reduction of GHG Regulations.pdf](http://www.environment.gov.sk.ca/adx/asp/adxgetmedia.aspx?MediaID=3209&Filename=Summary%20of%20Management%20and%20Reduction%20of%20GHG%20Regulations.pdf)

126 Saskatchewan EnerGuide for Houses Program. www.saskenergy.com/saving_energy/NEW%20grant%20chart%20%28March%20%202011%29-formatting%20%20new%20date.pdf

127 Saskatchewan Energy Efficient Rebate for New Homes. www.saskenergy.com/saving_energy/New%20Homes%20Q%20and%20As%20-%20June%202011.pdf

128 “Government approves \$1.24 billion Carbon Capture Project”, SaskPower press release, 26 April 2011. www.saskpower.com/news_publications/news_releases/?p=1187&linkid=news_releases

Many of Saskatchewan’s energy-efficiency programs and targets established by the former government have been slashed, abandoned or downgraded by the current government.

SASKATCHEWAN OVERVIEW

Y=Yes N=No A=Announced but not yet implemented NA=Not applicable

MITIGATION

Has a current climate change action plan?	A
Set emission reduction targets comparable to Kyoto?	N
Has set 2°C above pre-industrial temperatures as the upper limit for average global warming?	N
Addressed emissions from sector with highest emissions?	N
Addressed emissions from sector with fastest-growing emissions?	A
Has a broad-based carbon pricing policy (carbon tax or cap-and-trade)?	N
Has meaningful energy efficiency, conservation and renewable energy policies?	Y
Has strong building code for energy efficiency?	N
Has meaningful transportation policies?	N
Has policies that address urban sprawl?	N
Has meaningful policies to address emissions from industry?	A
Has a program to address emissions from government?	Y
Has a policy or program to protect natural carbon stores in forests and peatlands?	N
Uses the full suite of policy instruments, including regulations and disincentives?	N

GHG EMISSIONS TRENDS

Has reduced emissions since 1990?	N
Has reduced emissions 2006–2009?	N
Reduced emissions in 2009?	Y ^a

CLIMATE CHANGE ADAPTATION

Has a meaningful plan to adapt to climate change impacts?	N
Has a science advisory body that advises government on adaptation to climate change?	A

GOVERNANCE AND ACCOUNTABILITY

Has established a cross-governmental climate change secretariat?	A
Reports on actions and outcomes from climate action plan?	N

^aReducing GHG emissions in the reporting year has been a grading criterion for all David Suzuki Foundation reports on provincial and territorial climate action. The economic downturn of 2008/09 reflects (in some, if not all cases) illusory reductions that may have already been reversed.

For further detail see: Saskatchewan Energy and Climate Change Plan 2007, <http://dforbes.sasktelwebhosting.com/PDFS/saskclimatechange2007.pdf>; Management and Reduction of Greenhouse Gases and Adaptation to Climate Change Act, www.legassembly.sk.ca/bills/pdfs/3_26/bill-126.pdf

TRANSPORTATION

The Saskatchewan government's Go Green website acknowledges that transportation is a major contributor to the province's GHG emissions. To address this problem, the website suggests people carpool, take a bus or get on their bikes.¹²⁹ No other substantive policies are on offer to address transport emissions.

129 Saskatchewan Go Green website. www.environment.gov.sk.ca/Default.aspx?DN=11252faf-3423-4060-9f83-037e8209896b

Conclusion

The Saskatchewan Party government hasn't simply stalled action on climate change — it has reversed it. The province, Canada's largest per capita emitter of GHGs, has cut its targets for reducing emissions. Saskatchewan has lowered its target for reducing its emissions from 32 per cent below 2004 levels by 2020 to 20 per cent below 2006 levels (which were 60 per cent above 1990 levels¹³⁰). Major economic development activities in the non-renewable resource sectors present a huge challenge. Other than a heavy reliance on voluntary agreements, almost nothing has been done to help meet the new and inadequate target for reducing GHG emissions. Although the Management and Reduction of Greenhouse Gases Act has potential, it currently contains many weaknesses. Only 29 per cent of the province's emissions will be covered by the proposed regulations requiring large-scale emitters to reduce GHG emissions by two per cent a year between now and 2020. A target for SaskPower to conserve 300 MW by 2017 has been reduced to 100 MW. It is difficult to imagine a province taking the threats of climate change less seriously.

The Saskatchewan Party government hasn't simply stalled action on climate change — it has reversed it. The province, Canada's largest per capita emitter of GHGs, has cut its targets for reducing emissions.

Ranking

	2005	2006	2008	2011
Best				
Very Good				
Good				
Fair				
Poor			X	
Worst	X	X		X

Recommendations

The government of Saskatchewan should:

- At a minimum, reinstate previous GHG emission reduction target of 32 per cent below 2004 levels by 2020 and develop a credit credible climate plan that supports it. (In today's terms, this would constitute a 38 per cent reduction from current GHG emission levels by 2020.)
- Establish a cap-and-trade system that regulates emission reductions from *all* heavy industry and is supported by a strong emission target, and remove loopholes by eliminating or strictly limiting the use of carbon offsets.
- Slow down oil and gas development and put a moratorium on oil sands projects until a climate change plan compatible with the province's previous emissions reduction targets is in place.
- Re-establish all the funding for renewable energy, energy conservation and methane-gas capture that has been eliminated, and then further enhance it.
- Retain the mandate that all new electricity options be free of carbon emissions and allow SaskPower to make future investments based on lowest-cost options.
- Recognize the long-term need for a sustainable economy in Saskatchewan and begin the process of designing and creating one.

130 Environment Canada. 2011. "National Inventory Report, 1990-2009." Annex 15

Manitoba



PHOTO COURTESY GURDONARK VIA FLICKR

Strengths

- Effectively shut down the province's only coal-fired power plant by banning non-emergency use of coal.
- Adopted standards for large appliances, Power Smart programs and a strong green building strategy.
- Substantially increased minimum energy efficiency of furnaces and hot water heaters sold in Manitoba.
- Green Energy Equipment Tax Credit expanded to include solar, as well as geothermal.
- Acting on carbon stores with announcement of two new protected areas and commitment made to develop a new boreal peatlands stewardship strategy.
- Collaborating with Mitsubishi Heavy Industries in eight renewable energy areas.
- Energy retrofit programs initiated for First Nations communities and housing developments in Winnipeg.
- Announced plan to use small wind turbines to replace diesel in four remote, off-grid communities.

Weaknesses

- In 2008, the Manitoba government lowered its GHG emission reduction target from 18 per cent below 1990 by 2010 (with the possibility of achieving 23 per cent reductions by 2012) to 6 per cent below 1990 by 2012. According to Manitoba's auditor general, the current climate action plan is unlikely to meet even this reduced target.
- The only carbon tax in Manitoba is on coal, which is not commonly used in the province.
- Manitoba reneged on its commitment to adopt California vehicle emission standards, ignoring the recommendation of its own Vehicle Standards Advisory Board.



Manitoba's GHG emissions have remained fairly constant for the past decade. As of 2009, overall emissions were 10 per cent higher than 1990 levels.

- Failure to meaningfully tackle emissions from road transportation has resulted in substantial increases in car commuting and a decrease in the use of public transit.
- Increased highway speed limits will cause vehicle emissions to rise.
- Lowered the tax on aviation fuel used for hauling cargo.
- Reneged on promises to offset increased GHG emissions from urban sprawl.
- No public data exists as to energy efficiency resources, or to quantify actual energy use or emissions reductions.
- The four-year period between assessments of government's climate change policies and programs is much too long to take corrective action if programs are unsuccessful.

Missed opportunities

Despite the significant potential for wind power in Manitoba, expansion has been slow and is further stymied by an arduous process for establishing long-term power purchase agreements and the lack of a feed-in-tariff, which makes Manitoba unattractive to investors.

- Despite the significant potential for wind power in Manitoba, expansion has been slow and is further stymied by an arduous process for establishing long-term power purchase agreements and the lack of a feed-in-tariff, which makes Manitoba unattractive to investors.
- Though Manitoba was the second Canadian province to join the Western Climate Initiative, the government failed to join the WCI's cap-and-trade system launch in January 2012.
- A program to assist farmers to reduce on-farm emissions is voluntary and insufficiently funded to meet demand.
- Significant parts of the Climate Change and Emissions Reduction Act have yet to be revealed, including green building standards and vehicle fuel-efficiency standards.
- Regulations requiring landfills to capture their methane emissions covers only the province's three largest landfills and excludes hundreds of smaller ones.

Greenhouse gas emissions¹³¹

Manitoba's greenhouse gas emissions have remained fairly constant for the past decade. As of 2009, overall emissions were 10 per cent higher than 1990 levels.

Agriculture contributes a third of total GHG emissions in the province. There has been a 31 per cent increase in emissions from this sector since 1990. The two main contributing factors are an increase in the beef and swine populations for export and an increase in emissions from agricultural soils due to the increased use of fertilizer and the intensification of existing farmland.

The second-largest source (25 per cent) of emissions is road transport. This sector has experienced a 38 per cent increase in GHG emissions since 1990, which can be attributed to a combination of increased number of vehicles on the road, the shift from cars to more polluting SUVs, increases in the speed limit and the shift from rail to road for freight transport.

Although there has been a 15 per cent decrease since 1990 in emissions from residential, commercial and industrial buildings, this source still accounts for 12 per cent of Manitoba's overall emissions. The residential sector is responsible for this decrease, the result of switching to higher efficiency heating systems, retrofitting of homes and a switch to geothermal and hydroelectricity for heat.

131 Environment Canada. 2011. "National Inventory Report, 1990-2009." Annex 15.

Manitoba climate change action plan and policies

In 2002, the Manitoba government set its GHG emission reduction target to 18 per cent below 1990 by 2010 with the possibility of achieving 23 per cent by 2012.¹³² In 2008, the government legislated a weakened target of 6 per cent below 1990 by 2012.¹³³ Although this is still one of the strongest in Canada, Manitoba's emissions in 2009 [latest available data] were 10 per cent *above* 1990 levels.¹³⁴ According to a December 2010 report by Manitoba's auditor general, "the 2008 action plan in place at the time of our audit is not expected to achieve the target level of emissions for 2012 of 17.5 megatonnes [6 per cent below the 1990 level]."¹³⁵

Significant parts of the Climate Change and Emissions Reduction Act have yet to be revealed.¹³⁶ These include green standards for buildings owned or funded by the province, fuel-efficiency standards for vehicles, and provisions keeping older vehicles off Manitoba's roadways.

Regulations under the Climate Change and Emissions Reduction Act only require landfills that dispose of 750,000 tonnes of solid waste per year to capture their methane emissions.¹³⁷ This minimum threshold includes only the three largest landfills in the province and excludes hundreds of smaller ones.

A four-year period between assessments of government's climate change policies and programs, as dictated by the Climate Change and Emissions Reduction Act, is much too long to take corrective action if those programs are unsuccessful at reducing emissions sufficiently.

MITIGATION AND ADAPTATION

There have been many broken promises and missed opportunities in Manitoba, not the least of which is reducing the province's GHG reduction target for 2012 by nearly 75 per cent.

Although Manitoba was the second Canadian province to join the Western Climate Initiative, the government failed to join the WCI's cap-and-trade system launch in January 2012.

Currently, the only carbon tax in Manitoba is on coal, which is not commonly used in the province. (The province should, however, be commended for prohibiting Manitoba Hydro from using coal other than for "emergency provisions," effectively shutting down the province's only coal-fired power plant.¹³⁸)

The government has also reneged on promises to offset increased GHG emissions from urban sprawl by installing geothermal heat pumps in suburban developments.

Manitoba did put a program in place to assist farmers in reducing on-farm emissions through, for example, changing manure storage methods, reducing fertilizer use and using zero or minimal tillage practices.¹³⁹ However, the program is voluntary, does not have sufficient funds to meet demand and has no reporting mechanism to track performance.

On a brighter note, in 2009 the Manitoba government announced the creation of two new protected areas that will significantly increase carbon stores in the province. It has also committed to develop a new boreal

There have been many broken promises and missed opportunities in Manitoba, not the least of which is reducing the province's GHG reduction target for 2012 by nearly 75 per cent.

132 Government of Manitoba. 2002. "Kyoto and Beyond: A plan of Action to Meet and Exceed Manitoba's Kyoto Targets." http://www.climatechangeconnection.org/Resources/documents/Kyoto_and_beyond.pdf

133 Government of Manitoba. 2008. "Climate Change and Emissions Reduction Act." <http://web2.gov.mb.ca/laws/statutes/ccsm/c135e.php?ccsm=c135>

134 Environment Canada. 2010. "National Inventory Report, 1990-2008." Annex 15.

135 Report to the Legislative Assembly: Performance Audits, Office of the Auditor General of Manitoba, December 2010, page 7. www.oag.mb.ca/reports/rtl_performance_audits_2010.pdf

136 Government of Manitoba. 2008. "The Climate Change and Emissions Reductions Act." <http://web2.gov.mb.ca/laws/statutes/ccsm/c135e.php?ccsm=c135>

137 Government of Manitoba. 2009. "Prescribed Landfills Regulation." <http://web2.gov.mb.ca/laws/regs/pdf/c135-180.09.pdf>

138 Government of Manitoba. 2009a. "Coal-Fired Emergency Operations Regulation." <http://web2.gov.mb.ca/laws/regs/pdf/c135-186.09.pdf>

139 Manitoba Agriculture, Food and Rural Initiatives. 2010. "Manitoba Sustainable Agriculture Practices Program." www.gov.mb.ca/agriculture/soilwater/climate/fcc04s00.html

peatlands stewardship strategy, which, it is hoped, will focus on the need to protect carbon stores.¹⁴⁰ (The government has yet to establish its advisory council or develop and implement a strategy.)

ENERGY EFFICIENCY

Manitoba prides itself on being a “shining star” when it comes to energy efficiency, estimating that its Power Smart program has reduced emissions by 700,000 tonnes.¹⁴¹

The government has increased the minimum energy efficiency of furnaces and hot water heaters to levels that approach the best available technologies. Replacement furnaces sold in Manitoba are now required to have a minimum efficiency of 92 per cent, replacement hot water boilers a minimum of 82 per cent efficiency, and replacement low-pressure steam boilers a minimum efficiency level of 80 per cent.¹⁴²

The Green Energy Equipment Tax Credit has been expanded and now provides a 10 per cent tax credit on the purchase of solar water systems, as well as geothermal systems.¹⁴³

Energy retrofit programs for First Nations communities and housing developments in Winnipeg have been initiated. This includes the Manitoba Hydro First Nations Power Smart Program, and pilot projects in the Island Lake community and Peguis First Nation.¹⁴⁴

RENEWABLE ENERGY

Despite the significant potential for wind power in Manitoba, expansion has been slow. In 2004 Manitoba promised 1,000 MW of wind power capacity by 2014. Seven years later, capacity is only 242 MW,¹⁴⁵ with only two of 11 licensed wind energy projects¹⁴⁶ granted long-term power purchase agreements (PPA) by Manitoba Hydro. The arduous process involved in obtaining power agreements and access to transmission is inhibiting development of wind power. In addition, the lack of a feed-in-tariff makes Manitoba unattractive to investors.

There are signs this may be changing. In December 2010, Manitoba signed an MOU with Mitsubishi Heavy Industries, identifying potential for collaborations in eight renewable energy areas, including wind, solar, biofuels and electrification of transportation.¹⁴⁷

The government has also recognized the role wind could play in remote, off-grid communities. In June 2010, Manitoba Hydro announced plans to erect community-sized wind energy turbines to end diesel reliance in four First Nations communities.¹⁴⁸

On a brighter note, in 2009 Manitoba announced the creation of two new protected areas that will significantly increase carbon stores in the province.

140 Government of Manitoba. 2009. “Province Commits To New Boreal Peatlands Stewardship Strategy: Selinger.” Press release. (December 9).

141 “Energy Efficiency”, Manitoba government website. www.gov.mb.ca/conservation/climate/mb_doing/energy_efficient.html

142 Government of Manitoba. 2009. “Energy Efficiency Standards for Replacement Forced Air Gas Furnaces and Small Boilers Regulation.” <http://web2.gov.mb.ca/laws/regs/pdf/e112-181.09.pdf>

143 Manitoba Finance. 2009. “Green Energy Equipment Tax Credit.” www.gov.mb.ca/finance/tao/solar.html

144 “First Nations Power Smart Program Announced”, Manitoba Hydro press release, 22 April 2010. <https://www.hydro.mb.ca/NewsReleases/GetDetail?hdnAct=E&hdnTXT=%27First%20Nations%20Power%20Smart%20Program%20Announced%27>

145 Canadian Wind Energy Association, April 2011. www.canwea.ca/pdf/Canada%20Current%20Installed%20Capacity_e.pdf

146 Consultations/Legislation, Manitoba Wildlands. <http://manitobawildlands.org/consult.htm#ongoing>

147 “Province Signs Memorandum of Understanding with Mitsubishi Heavy Industries”, Government of Manitoba press release, 16 December 2010. <http://news.gov.mb.ca/news/index.html?item=10421>

148 “Electricity Service Improvements to 4 Diesel-Powered Communities”, Manitoba Hydro press release, 22 June 2010. <https://www.hydro.mb.ca/NewsReleases/GetDetail?hdnAct=E&hdnTXT=%27Electricity%20Service%20Improvements%20to%204%20Diesel-Powered%20Communities%27>

TRANSPORTATION

Road transportation is Manitoba's second greatest source of greenhouse gases (after agriculture). Despite this, the province still lacks any meaningful policies to reduce those emissions.

The Manitoba government has reneged on its 2007 joint commitment with British Columbia to adopt "a vehicle emission standard consistent with California tailpipe emissions standards, commencing in 2010 or sooner."¹⁴⁹ This decision ignored the Manitoba Vehicle Standards Advisory Board's recommendations concerning policies to reduce transportation emissions, including the board's preferred option that Manitoba adopt California fuel-efficiency standards.¹⁵⁰

In 2008, Manitoba increased the speed limit on four-lane provincial highways, ignoring the fact that emissions go up with higher speeds and that the truckers' association opposed the move.¹⁵¹

It is hardly surprising, therefore, that between 1996 and 2006:

- Manitoba had the greatest percentage increase in vehicle kilometres travelled in Canada.
- Winnipeg's increase in the number of people commuting by car was the greatest of Canada's 35 metropolitan areas.
- Manitoba (bucking the Canadian trend) saw a *decrease* in commuters using public transit.¹⁵²
- In addition, in July 2009 the province lowered the tax on aviation fuel used for hauling cargo both domestically and within North America, handing \$700,000 in tax savings to the airlines industry.¹⁵³

Conclusion

The Manitoba government, for most of the past decade, made some impressive commitments on climate change. Even its reduced target to decrease GHG emissions to "at least 6 percent less than Manitoba's total 1990 emissions" by 2012¹⁵⁴ is fairly strong compared to some jurisdictions. Unfortunately, these commitments have often not been followed up by action. Manitoba has been a leader in some areas, such as in energy efficiency and the implementation of ground-source heat pumps that can harness geothermal energy. However, policies to tackle the greatest sources of emissions — from agriculture and road transportation — have been at best voluntary or weak and at worst non-existent. Emissions in those sectors, and in the province as a whole, continue to rise. A recent report by Manitoba's auditor general holds out almost no hope of the province reaching its legislated 2012 GHG target.¹⁵⁵

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149 B.C.—Manitoba M.O.U., 23 October 2007. www2.news.gov.bc.ca/news_releases_2005-2009/20070TP0163-001351-Attachment1.pdf

150 "Reducing Greenhouse Gas Emissions from Passenger Vehicles in Manitoba", Manitoba Vehicle Standards Advisory Board, January 2009. www.gov.mb.ca/conservation/climate/pdf/vsab_report.pdf

151 "MTA blasts decision to OK speed limit hike", Today's Trucking, 28 February 2008. www.todaystrucking.com/news.cfm?intDocID=19177&CFID=934&CFTOKEN

152 Manitoba Science, Technology, Energy, and Mines. 2009. "MOVING FORWARD — Reducing Greenhouse Gas Emissions from Passenger Vehicles in Manitoba." www.gov.mb.ca/conservation/climate/pdf/exec_summary.pdf

153 Manitoba Finance. 2009. "Budget Paper D: Taxation Adjustments." www.gov.mb.ca/finance/budget09/papers/taxation.pdf

154 Manitoba Climate Change and Emissions Reductions Act. <http://web2.gov.mb.ca/laws/statutes/ccsm/c135e.php?ccsm=c135>

155 Report to the Legislative Assembly: Performance Audits, Office of the Auditor General of Manitoba, December 2010, page 7. www.oag.mb.ca/reports/rtl_performance_audits_2010.pdf

MANITOBA OVERVIEW

Y=Yes N=No A=Announced but not yet implemented NA=Not applicable

MITIGATION

Has a current climate change action plan?	Y
Set emission reduction targets comparable to Kyoto?	Y
Has set 2°C above pre-industrial temperatures as the upper limit for average global warming?	N
Addressed emissions from sector with highest emissions?	N ^a
Addressed emissions from sector with fastest-growing emissions?	N ^a
Has a broad-based carbon pricing policy (carbon tax or cap-and-trade)?	N ^b
Has meaningful energy efficiency, conservation and renewable energy policies?	Y
Has strong building code for energy efficiency?	Y
Has meaningful transportation policies?	N
Has policies that address urban sprawl?	N
Has meaningful policies to address emissions from industry?	N
Has a program to address emissions from government?	Y
Has a policy or program to protect natural carbon stores in forests and peatlands?	N
Uses the full suite of policy instruments, including regulations and disincentives?	N

GHG EMISSIONS TRENDS

Has reduced emissions since 1990?	N
Has reduced emissions 2006–2009?	Y
Reduced emissions in 2009?	Y ^c

CLIMATE CHANGE ADAPTATION

Has a meaningful plan to adapt to climate change impacts?	N
Has a science advisory body that advises government on adaptation to climate change?	N

GOVERNANCE AND ACCOUNTABILITY

Has established a cross-governmental climate change secretariat?	N
Reports on actions and outcomes from climate action plan?	N

Notes:

^aMeasures to address GHG emissions from agriculture are voluntary and underfunded, from road transportation are weak or nonexistent.

^bPolicy is not “broad-based” as carbon tax only covers coal, which is little used in Manitoba, and the implementation of a cap-and-trade system under the WCI has been delayed.

^cReducing GHG emissions in the reporting year has been a grading criterion for all David Suzuki Foundation reports on provincial and territorial climate action. The economic downturn of 2008/09 reflects (in some, if not all cases) illusory reductions that may have already been reversed.

For further details see: Next Steps: 2008 Action on Climate Change (Government of Manitoba website, www.gov.mb.ca/beyond_kyoto/index.htm); Climate Change and Emissions Reduction Act (Government of Manitoba website, <http://web2.gov.mb.ca/laws/statutes/ccsm/c135e.php?ccsm=c135>); Manitoba Sustainable Agriculture Practices Program (www.gov.mb.ca/agriculture/soilwater/climate/fcc04s00.htm); Kyoto and Beyond: A plan of action to meet and exceed Manitoba’s Kyoto targets, 2002 (www.climatechangeconnection.org/Resources/documents/Kyoto_and_beyond.pdf)

Ranking

	2005	2006	2008	2011
Best	X			
Very Good				
Good			X	
Fair		X		X
Poor				
Worst				

Recommendations

The Manitoba government should:

- Look seriously at tackling emissions from agriculture and road transportation, the two greatest sources of GHGs. Immediate steps it could and should take are:
 - Significantly increasing funding for and making mandatory its agricultural strategy to reduce emissions from agriculture and animal operations.
 - Implementing the recommendations of its own vehicle standards advisory board, including regulating vehicle fuel efficiency, so they are in line with California standards (as Quebec and B.C. have done) rather than rely on the very weak proposed federal standards.
- Proclaim the remainder of the Climate Change and Emissions Reduction Act.
- Speed up the legislative process and join the WCI's emissions trading scheme.
- Implement a feed-in tariff for renewable power, including wind. This policy can be undertaken in parallel with licensing larger-scale renewable energy projects.
- Increase funding for and participation in the Sustainable Agriculture Practices Program.
- Develop and implement a boreal carbon stewardship strategy as quickly as possible, as promised in December 2009.
- Assess annually progress on reducing emissions through climate programs and policies. The existing two-year period (in the short term) and four-year periods (in the medium term) are inadequate to learn lessons and make important course corrections.
- As Manitoba's auditor general recommends, move from estimates and projections of emissions to clear inventory and reporting of emissions data.

The Manitoba government should look seriously at tackling emissions from agriculture and road transportation, the two greatest sources of GHGs.

Ontario



Canada's most populous province has one of the lowest levels of emissions per capita. Emissions have been steadily decreasing over the past few years. In 2009, overall emissions were 18 per cent lower than 2005 and seven per cent below 1990 levels.

Strengths

- One of the more ambitious targets for reducing emissions by the year 2020 — 15 per cent reductions compared to 1990.
- Far-reaching Green Energy and Green Economy Act is spurring development of clean energy, innovation and jobs.¹⁵⁶
- Government-legislated shutdown of all coal-fired power plants by 2014.
- Introduced Far North Act to permanently protect about half of the province's north.¹⁵⁷
- Received A+ grade on a 2009 assessment of its energy-efficiency programs.¹⁵⁸
- Established expert panel on climate change adaptation.
- Green Belt Act has protected undeveloped land surrounding Toronto, curtailing some urban sprawl.
- As of January 2012, all new homes must meet or surpass the EnerGuide 80 rating.
- Autonomous Environmental Commissioner provides independent assessments of progress.

Weaknesses

- Current climate change action plan is very short on details.
- Lacks comprehensive carbon pricing policy but could move quickly to implement a cap-and-trade system as enabling legislation is in place.
- Still failing to address emissions from transportation.

156 See Ontario Ministry of Energy. 2010. "Ontario's Green Energy Act." www.mei.gov.on.ca/en/energy/gea/

157 Ontario Ministry of Natural Resources. 2010. "Far North Ontario." www.mnr.gov.on.ca/en/Business/FarNorth/

158 Canadian Energy Efficiency Alliance. 2009. "2009 National Energy Efficiency Report Card." www.energyefficiency.org/ReportCard/2009/2009%20Report%20Card_FINAL_Ir.pdf

- Blocked 2007 consensus between provincial and territorial premiers on adopting California fuel-efficiency standards for all new vehicles.
- Despite projected cost and public opposition, government remains committed to investing in nuclear power.

Missed opportunities

- Despite passing enabling legislation,¹⁵⁹ the Ontario government opted out of the January 2012 launch of the Western Climate Initiative's cap-and-trade program, citing the need for more time to secure emissions data from large industrial facilities.¹⁶⁰
- According to the Ontario Clean Air Alliance, data from Ontario Power Generation show Ontario's electricity supply now outstrips peak demand, even without the power generated from the remaining coal-fired power plants. The government could therefore close remaining coal-fired power plants well ahead of schedule, fulfilling its promise while significantly improving air quality in the province.¹⁶¹
- In its 2010 budget, Ontario shelved a \$4 billion investment in public transit, further delaying potential GHG emission reductions in road transportation.
- The Places to Grow plan for the Golden Horseshoe will do little to curtail urban sprawl.

Greenhouse gas emissions¹⁶²

At 23.9 per cent of total emissions, Ontario ranks second to Alberta in its contribution to Canada's greenhouse gas emissions. That said, Canada's most populous province has one of the lowest levels of emissions per capita. Emissions have been steadily decreasing over the past few years. In 2009, overall emissions were 18 per cent lower than 2005 and seven per cent below 1990 levels.¹⁶³

Road transportation is the single greatest contributor (27 per cent) to GHG emissions. Emissions from this sector are 30 per cent higher than 1990 levels, caused by a combination of more vehicles on the road, a shift from cars to SUVs and trucks and a shift from rail to road freight transport.

Industrial processes (including metals, mineral and chemical production) represent 11 per cent of GHG emissions. A dramatic 93 per cent decrease in 1990 levels emissions from the chemical industry is largely attributed to changes in the industrial process in Canada's only adipic acid production plant.

Electricity and heat generation contribute nine per cent of Ontario's GHG emissions. This sector had a 52 per cent decrease in emissions between 2007 and 2009 as a result of the closure of coal-fired power plants, and to a much lesser extent, the recession. Emissions are now 37 per cent lower than 1990 levels.

GHG emissions from residential, commercial and institutional buildings are 19 per cent higher than 1990 levels as a result of increased population and a shift in the economy toward services (e.g., finance, insurance, real estate), leading to an increase in commercial floor space.

In Ontario, road transportation is the single greatest contributor (27 per cent) to GHG emissions.

159 Government of Ontario. 2010. "Reducing Greenhouse Gas Emissions." www.news.ontario.ca/ene/en/2009/12/reducing-greenhouse-gas-emissions.html

160 Annual Greenhouse Gas Progress Report 2011, Environmental Commissioner of Ontario. www.eco.on.ca/uploads/Reports%20-%20GHG/2011/11GHG.pdf

161 'Finishing the coal phase out', Ontario Clean Air Alliance, 10 January 2011. www.cleanairalliance.org/files/phaseout2011.pdf

162 Environment Canada. 2011. "National Inventory Report, 1990-2009." Annex 15.

163 Environment Canada. 2011. "National Inventory Report, 1990-2009." Annex 14.

Climate change plans and policies

Ontario has one of the more ambitious targets for reducing emissions by the year 2020 — 15 per cent reductions compared to 1990 (although this is still weaker than the 25 to 40 per cent reductions suggested by the best science¹⁶⁴).

The current 2011-14 climate change action plan¹⁶⁵ is far more extensive than the province's previous eight-page plan. Although it identifies 37 actions to be undertaken (including establishment of a climate change adaptation directorate), it is still remarkably short on details about how the province will meet its targets or the expected emission reductions from its different policies. The Environmental Commissioner of Ontario warns: "At this time there is no plan, mechanism or tools in place which would allow the 2020 target to be met."¹⁶⁶

MITIGATION AND ADAPTATION

Some major steps to reduce Ontario's greenhouse gas emissions have been taken since our last report. For example, the government legislated a shutdown of all Ontario coal-fired power plants by 2014. Due to early shutdowns, emissions from electricity have been declining. In October 2010, four more units at the Lambton and Nanticoke power plants were closed.

Ontario's Green Energy and Green Economy Act is the most far-reaching policy in North America to spur the development of clean energy.¹⁶⁷ (See following section on renewable energy.) This innovative piece of legislation has already spurred billions in investment in renewable energy projects and has produced more than 40 new or announced renewable energy-related manufacturing facilities¹⁶⁸, employing an estimated 20,000 workers with a goal to create 50,000 clean energy jobs by 2012.¹⁶⁹

The Far North Act permanently protects at least 225,000 hectares (about half the province's North) and enables community-based land-use planning to determine which areas are protected and which are open to resource use.¹⁷⁰ This has the potential to protect northern boreal forests, which are both rich in biodiversity and important carbon stores.

It is regrettable, however, that after passing legislation for a cap-and-trade system to allow Ontario to design and enable regulations on industrial emissions and join the Western Climate Initiative's (WCI) cap-and-trade program,¹⁷¹ the government announced in April 2011 that it would not participate in the January 2012 launch of the WCI program. Lacking verified emissions data from regulated facilities was cited as the reason for this reversal.¹⁷² However, the newly elected premier, Dalton McGuinty, recommitted to enacting the cap on Ontario's GHG emissions during the fall 2011 provincial election — a policy that would also strengthen the province's efforts to spur innovation and jobs in its fast-growing clean-energy sector. Only time will tell if this commitment holds.¹⁷³

164 Intergovernmental Panel on Climate Change. 2007. Fourth Assessment Report, Working Group III, Table 13.7.

165 www.ene.gov.on.ca/stdprodconsume/groups/lr/@ene/@resources/documents/resource/stdprod_085423.pdf

166 Annual Greenhouse Gas Progress Report 2011, Environmental Commissioner of Ontario, p6. www.eco.on.ca/uploads/Reports%20-%20GHG/2011/11GHG.pdf

167 Ontario Ministry of Energy. 2010. "Ontario's Green Energy Act." www.mei.gov.on.ca/en/energy/gea/

168 See: <http://maps.google.ca/maps/ms?msid=200094734607147788938.000494b97d030df2ad688&msa=0>

169 "Green Energy Act Creates 20,000 Jobs" (July 2011) Government of Ontario, Ministry of Energy news release: <http://news.ontario.ca/mei/en/2011/07/green-energy-act-creates-20000-jobs.html>

170 Ontario Ministry of Natural Resources. 2010. "Far North Ontario." www.mnr.gov.on.ca/en/Business/FarNorth/

171 Government of Ontario. 2010. "Reducing Greenhouse Gas Emissions." www.news.ontario.ca/ene/en/2009/12/reducing-greenhouse-gas-emissions.html

172 Annual Greenhouse Gas Progress Report 2011, Environmental Commissioner of Ontario. www.eco.on.ca/uploads/Reports%20-%20GHG/2011/11GHG.pdf

173 McGuinty says he'll support 'right' cap-and-trade plan" Published by the Canadian Press/CTV, September 21, 2011. <http://ottawa.ctv.ca/servlet/an/local/CTVNews/20110921/mcguinty-cap-trade-110921/20110921?hub=OttawaHome>

Ontario has one of the more ambitious targets for reducing emissions by the year 2020 — 15 per cent reductions compared to 1990 (although this is still weaker than the 25 to 40 per cent reductions suggested by the best science).

ENERGY EFFICIENCY

Ontario received the highest grade on a 2009 assessment of its energy-efficiency programs, which include providing home retrofit incentives, ensuring that electricity and natural gas distributors undertake conservation programs and strengthening its building code.¹⁷⁴

During the federal government's home retrofit program, Ontario matched the financial incentive given by the Canadian government for homeowners to make their homes more energy efficient. The Ontario incentive remained despite cancellation of the federal program (which the 2011 federal budget is now reinstating).

As of January 2012, all new homes built in Ontario must be more energy efficient, meeting or surpassing the EnerGuide 80 rating on new houses.¹⁷⁵

However, the Ontario Energy Board (OEB) has decided to freeze funding for natural gas conservation programs for the next three years.¹⁷⁶ This is a baffling move considering that OEB staff recommended a significant increase in funding, and that managing energy demand is the least expensive way to close the energy-demand gap and reduce greenhouse gas emissions.

RENEWABLE ENERGY

Billions of dollars in investments have flowed into the province since the passage of the Green Energy Act. Ontario now ranks second in North America for installed solar capacity¹⁷⁷ and first in Canada for wind capacity (more than double any other province¹⁷⁸). The government's Long Term Energy Plan, released in November 2010, paves the way for further dramatic increases in wind capacity, which will provide significant benefits (including environmental) for Ontario. (See pages 50 and 51.)

Unfortunately, flying in the face of its forward thinking on the potential for wind energy in Ontario, the government's energy plan also includes a commitment for 50 per cent of the province's energy to be generated by nuclear power.¹⁷⁹ This commitment has been made despite evidence that renewables can meet all Ontario's energy demands.¹⁸⁰ Unspecified billions of dollars (which could have been invested in renewable energy sources) will be spent on modernizing the existing Darlington and Bruce nuclear plants and building two new nuclear units at Darlington. With the extremely high cost of generating nuclear power and the unresolved issues surrounding nuclear waste disposal, this appears to be a step backwards.

Ontario now ranks second in North America for installed solar capacity and first in Canada for wind capacity (more than double any other province).

174 Canadian Energy Efficiency Alliance. 2009. "2009 National Energy Efficiency Report Card." www.energyefficiency.org/ReportCard/2009/2009%20Report%20Card_FINAL_lr.pdf

175 Ontario Ministry of Municipal Affairs and Housing. 2009. "Amendments to the Building Code Act, 1992 and the Building Code." Background.

176 Environmental Commissioner of Ontario. 2010. Annual Energy Conservation Progress Report, 2010 (Volume One): Managing a Complex Energy System. pp. 39-42. www.ecoissues.ca/index.php/Budget_Freeze_for_Natural_Gas_Conservation:_Who_Will_Pick_Up_the_Cheque%3F

177 U.S. Solar Market Trends 2010, Interstate Renewable Energy Council, p11. <http://irecusa.org/wp-content/uploads/2011/07/IREC-Solar-Market-Trends-Report-revised070811.pdf>

178 Canadian Wind Energy Association. 2011. "Powering Canada's Future." www.canwea.ca/pdf/Canada%20Current%20Installed%20Capacity_e.pdf

179 Ontario's Long Term Energy Plan, November 2010. www.mei.gov.on.ca/en/pdf/MEI_LTEP_en.pdf

180 "Renewable is Doable", Pembina Institute, August 2007. www.pembina.org/pub/1496.

At 1,656 MW, Ontario already generates twice as much wind power as any other province. Over the next seven years the province plans to add a further 5.6 GW of installed capacity of wind energy to the Ontario grid.



THE WIND ENERGY BONANZA

In 1993 Alberta commissioned Canada's first commercial wind farm. In 2002 Manitoba made major — and unfulfilled — commitments to develop wind energy. Now Ontario is reaping the environmental and economic benefits of investing in wind power due to the province's Green Energy and Green Economy Act.

At 1,656 MW, Ontario already generates twice as much wind power as any other province. Over the next seven years the province plans to add a further 5.6 GW of installed capacity of wind energy to the Ontario grid — an almost fivefold increase.

According to a recent analysis of Ontario's Long-Term Energy Plan,¹⁸¹ this commitment to increasing wind energy will directly and indirectly create 80,328 person years of employment (a conservative estimate that the report's authors acknowledge does not include the incalculable number of induced jobs created).

Ontario's wind strategy will also bring a total market value of \$16.4 billion, of which more than half will remain in the province — more than \$1 billion per year.

In addition, it is anticipated that over the 20-year life span of the projects \$1.1 billion of revenues will be paid to local Ontario municipalities with:

- Over \$1 billion in lease payments paid to landowners.
- Over \$145 million in taxation paid to local municipalities.
- As some federal and provincial politicians wring their hands and claim they simply cannot afford to tackle climate change, voters may look at these figures and ask how they can afford not to.

181 "The Economic Impacts of the Wind Energy Sector in Ontario 2011-2018", ClearSky Advisors Inc. 27 May 2011 www.canwea.ca/pdf/economic_impacts_wind_energy_ontario2011-2018.pdf

FIGURE 3: WIND POWER IN CANADA IN MW

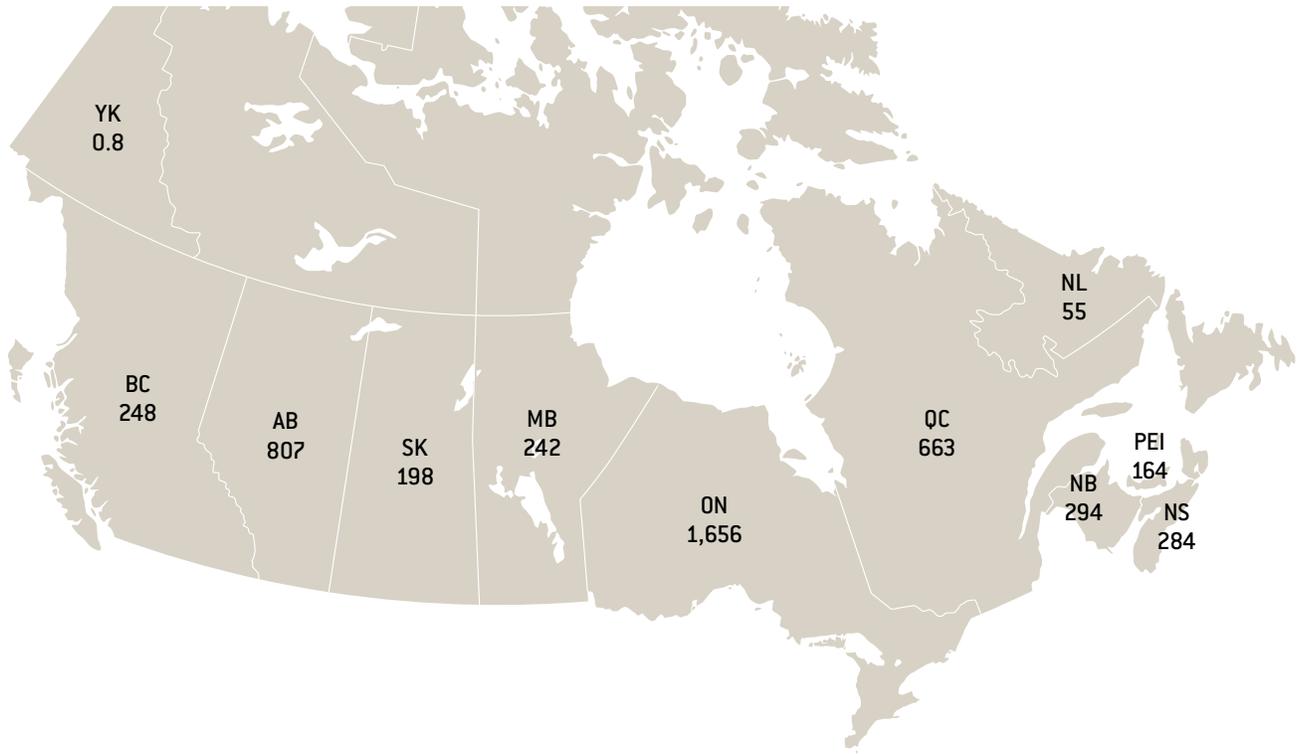
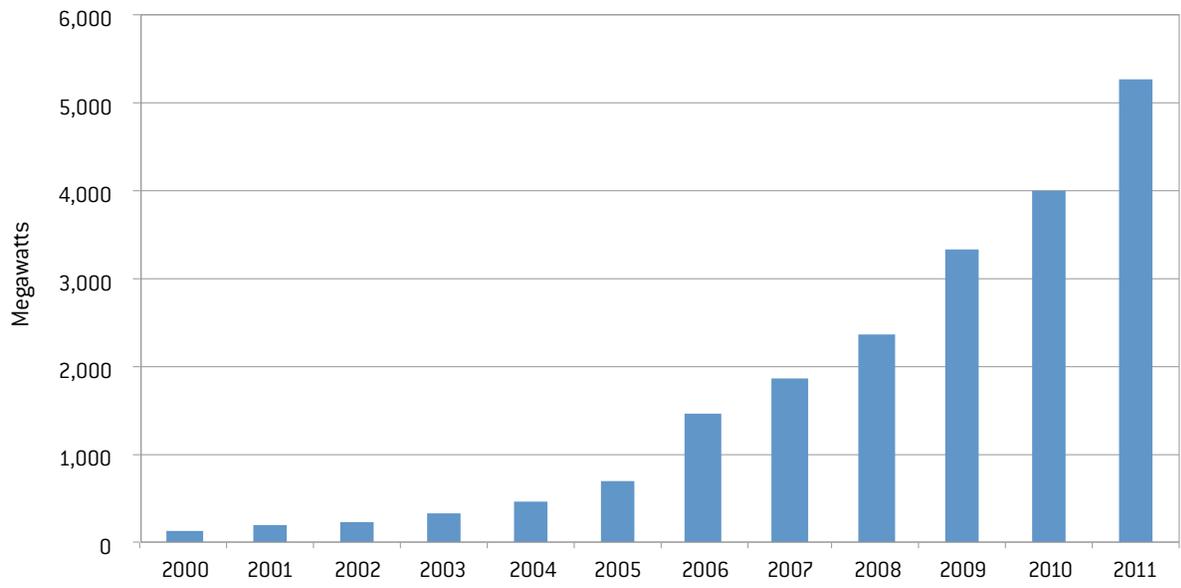


FIGURE 4: WIND POWER INSTALLED CAPACITY (MW), 2000 TO 2011



Source: Canada's current installed capacity, Canadian Wind Energy Association, June 2011, www.canwea.ca/pdf/Canada%20Current%20Installed%20Capacity_e.pdf

TRANSPORTATION

Addressing emissions from transportation remains a big weakness for Ontario.

Road transport continues to be the biggest source of greenhouse gas pollution. There are no major policies to address these in any meaningful way.

In 2007, Ontario Premier Dalton McGuinty blocked a consensus among provincial and territorial premiers on adopting California fuel-efficiency standards for all new vehicles. Subsequently, the federal government has passed regulations that are weaker than business-as-usual projections for the duration of the regulations.¹⁸²

Rather than delaying or cutting \$4 billion in transit funding in the 2010 budget,¹⁸³ the Ontario government could have used its full \$11.5-billion investment to leverage private-sector interest in establishing manufacturing facilities for transit infrastructure in the province, much as it did in the renewable energy sector.

The Green Belt Act has been successful in protecting much of the undeveloped land in the greenbelt surrounding Toronto and in curtailing some urban sprawl. However, Ontario's Places to Grow plan for the Golden Horseshoe¹⁸⁴ is not sufficiently aggressive in curtailing sprawl, as it sets urban intensification targets that are in line with historical growth patterns.

Conclusion

If Ontario is to meet its 2020 emissions reduction target, it will have to invest in greening its transportation network by recommitting to a full transit plan, curtailing urban sprawl, using carbon pricing and working with the federal government on stronger fuel-efficiency regulations.

The Ontario government has implemented some strong policies with regard to reducing pollution from the electricity sector, notably the legislated commitment to shut down coal-fired power plants and the 2009 Green Energy and Green Economy Act. These have already reduced emissions in the province and have resulted in multi-billion-dollar investments in clean energy. At 1,636 MW, Ontario now has more than double the wind capacity of any other province.¹⁸⁵ Plans to participate in the January 2012 launch of the Western Climate Initiative cap-and-trade program were deferred, with the province citing a lack of emission data on large emitters. However, the newly elected premier promised during the 2011 fall election to enact the WCI cap-and-trade system. This could be a significant step forward for the province, but only time will tell. Road transportation is the highest and fastest-growing source of emissions compared to all others and the province has largely neglected this sector. If Ontario is to meet its 2020 emissions reduction target, it will have to invest in greening its transportation network by recommitting to a full transit plan, curtailing urban sprawl, using carbon pricing and working with the federal government on stronger fuel-efficiency regulations. Unfortunately, greenhouse gas emissions are projected to rise during the 2014-2020 period due to lack of a more robust climate change plan and an anticipated shift back to natural gas as older nuclear plants are retired. As a result of all these challenges, the Environmental Commissioner of Ontario warned in May 2011 that "at this time there is no plan, mechanism or tools in place which would allow the 2020 target to be met."¹⁸⁶

182 Partington, PJ and Matthew Bramley. 2010. "Pembina Institute Comments on Proposed Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations." Pembina Institute.

183 Ontario Ministry of Finance. 2010. "2010 Ontario Budget Backgrounder: Managing Responsibly." www.fin.gov.on.ca/en/budget/ontariobudgets/2010/bk_managing.html

184 Growth Plan for the Greater Golden Horseshoe, Ontario Ministry of Public Infrastructure Renewal. <https://www.placestogrow.ca/images/pdfs/FPLAN-ENG-WEB-ALL.pdf>

185 "Powering Canada's Future", Canadian Wind Energy Association, April 2011.

186 Annual Greenhouse Gas Progress Report 2011, Environmental Commissioner of Ontario, p6. www.eco.on.ca/uploads/Reports%20-%20GHG/2011/11GHG.pdf

ONTARIO OVERVIEW

Y=Yes N=No A=Announced but not yet implemented NA=Not applicable

MITIGATION

Has a current climate change action plan?	Y
Set emission reduction targets comparable to Kyoto?	N
Has set 2°C above pre-industrial temperatures as the upper limit for average global warming?	N
Addressed emissions from sector with highest emissions?	N
Addressed emissions from sector with fastest-growing emissions?	Y
Has a broad-based carbon pricing policy (carbon tax or cap-and-trade)?	A
Has meaningful energy efficiency, conservation and renewable energy policies?	Y
Has strong building code for energy efficiency?	Y
Has meaningful transportation policies?	N
Has policies to address urban sprawl?	Y
Has meaningful policies to address emissions from industry?	A
Has a program to address emissions from government?	Y
Has a policy or program to protect natural carbon stores in forests and peatlands?	Y
Uses the full suite of policy instruments, including regulations and disincentives?	Y

GHG EMISSIONS TRENDS

Has reduced emissions since 1990?	Y
Has reduced emissions 2006–2009?	Y
Reduced emissions in 2009?	Y ^a

CLIMATE CHANGE ADAPTATION

Has a meaningful plan to adapt to climate change impacts?	Y
Has a science advisory body advising government on adaptation to climate change?	Y

GOVERNANCE AND ACCOUNTABILITY

Has established a cross-governmental climate change secretariat?	Y
Reports on actions and outcomes from climate action plan?	Y

Note: ^aReducing GHG emissions in the reporting year has been a grading criterion for all David Suzuki Foundation reports on provincial and territorial climate action. The economic downturn of 2008/09 reflects (in some, if not all cases) illusory reductions that may have already been reversed.

Further details in: Climate Ready: Ontario's Adaptation Strategy and Action Plan 2011–2014, www.ene.gov.on.ca/stdprodconsume/groups/lr/@ene/@resources/documents/resource/stdprod_085423.pdf; Green Energy and Green Economy Act, 2009, www.ontla.on.ca/web/bills/bills_detail.do?locale=en&BillID=2145; Environmental Protection Amendment Act (Greenhouse Gas Emissions Trading), 2009, www.ontla.on.ca/web/bills/bills_detail.do?locale=en&Intranet=&BillID=2195; Far North Act, 2010, www.ontla.on.ca/web/bills/bills_detail.do?locale=en&BillID=2205&detailPage=bills_detail_the_bill

Ranking

	2005	2006	2008	2011
Best				
Very Good				X
Good			X	
Fair	X	X		
Poor				
Worst				

Recommendations

The Ontario government should:

- Shut down the remaining coal-fired power plants within the year rather than waiting for the 2014 deadline.
- Establish a schedule for funding the full provincial contribution to the \$11.5-billion transit plan that ensures no delays in implementation.
- Tackle emissions from road transport with a policy including more stringent fuel-efficiency regulations, investment in high-speed rail, low-carbon fuel standards, consumer incentives to purchase low-carbon vehicles, and road pricing.
- Curtail sprawl with strong urban boundary laws and intensification targets for all major urban areas in Ontario. Update and strengthen the Places to Grow plan for the Golden Horseshoe.
- Make Ontario industry a leader in energy-efficiency and cutting-edge clean energy by enacting a cap-and-trade system for all industrial sectors in 2012 that supports the province's binding greenhouse gas emission target, with as high as possible level of auctioning for emission quotas and limiting the use of offsets.
- Conduct a transparent and thorough cost-benefit analysis of funds dedicated to nuclear refurbishment to establish whether there are more cost-effective solutions in the electricity sector.

Quebec



PHOTO COURTESY DATCH78 VIA WIKICOMMONS

Strengths

- Strongest North American target for reducing GHG emissions (20 per cent below 1990 levels by 2020).
- Enacted regulations in January 2012 with state of California to cap and reduce industrial emissions; however, the rules will need to be strengthened over time to support the province's binding emission targets.
- Brought in California-level vehicle fuel-efficiency regulations in January 2010.
- Set goal for 25 per cent of all new vehicles to be electric by 2020.
- Continues to dedicate considerable resources to public transportation.
- Received A+ in 2010 national energy efficiency report card.
- Legislated measures to tackle methane emissions from waste disposal.
- Set goal to divert all organic waste from landfills by 2020.
- Province required to produce annual progress reports on implementation of climate change plan.
- Hydro-Québec indefinitely closed aging Tracy thermal plant.¹⁸⁷

Weaknesses

- Current spending on transportation heavily favours highway expansion over public transit.
- Hydro-Québec given licence to refurbish Gentilly-2 nuclear power plant.
- Continues to favour construction of large hydroelectric dams on previously pristine rivers.
- Considering restarting the Bécancour gas power plant in winter.



Quebec has the lowest per capita emissions of any Canadian province, and has set the strongest North American target for reducing GHG emissions by 2020.

187 Hydro Québec Sustainability Report 2010, page 22, www.hydroquebec.com/publications/en/enviro_performance/pdf/rdd_2010_en.pdf

Missed opportunities

- In 2007, Quebec was the first province to introduce a carbon tax. Although it generates about \$200 million in revenue, which the government allocates to a green fund, the tax is too small to affect the consumption of any fossil fuels. The Quebec government has had ample time over the past four years to increase the level of the tax. (The annual increases to B.C.'s carbon tax incentive are greater than the entire Quebec carbon tax.)
- The temporary hold (pending a full environmental impact study) on the sale of controversial shale gas exploration permits is an important first step, but if shale gas extraction is allowed to proceed, it will be unlikely, if not impossible, for the province to meet its climate change goals.

Greenhouse gas emissions¹⁸⁸

Although it has the lowest per capita emissions of any Canadian province, Quebec is the third-largest contributor to the country's greenhouse gas emissions at 11.8 per cent. After peaking in 2004, the province's emissions are now 1.9 per cent lower than 1990 levels.

GHG emissions from road transportation in Quebec account for a third of the province's overall total and have increased 32 per cent since 1990. A significant proliferation in the number of vehicles, a shift from cars to SUVs and a tripling of the heavy-duty diesel vehicle fleet have all contributed to this increase.

The second-largest contribution (14 per cent) to GHG emissions in Quebec is from commercial, institutional and residential buildings. There has been a 42 per cent reduction in emissions from residential buildings since 1990, but this has been negated by an 83 per cent increase in emissions from commercial and institutional buildings.

Although emissions from industrial processes (including metals, minerals and chemical production) have gone down substantially (30 per cent) since 1990, this sector still accounts for 11 per cent of Quebec's GHGs. The decrease in emissions has been largely attributed to the closure of a magnesium plant and changes in the industrial processes for manufacturing aluminum.

It is unfortunate that Hydro-Québec may negate the benefits of indefinitely shutting down the aging Tracy thermal plant¹⁸⁹ by restarting the Bécancour gas power plant to provide electricity in winter peak periods.

However, it is encouraging to see the province reconsidering its position on exploration and development for onshore shale gas. A temporary hold (pending a full environmental impact study) on the sale of controversial shale gas exploration permits could lead to an outright ban.¹⁹⁰ A recent study by the David Suzuki Foundation and Pembina Institute concluded that expanding shale gas and other unconventional gas sources would make it harder to fight climate change and achieve deep emission reductions. The report also showed that shale gas extraction can result in other environmental impacts such as water contamination and land disturbance. Shale gas requires up to 100 times the number of well pads to extract the same amount of gas as conventional sources.¹⁹¹

188 Environment Canada. 2011. "National Inventory Report, 1990-2009." Annex 15.

189 Hydro Québec Sustainability Report 2010, page 22. www.hydroquebec.com/publications/en/enviro_performance/pdf/rdd_2010_en.pdf

190 "Charest dodges shale-gas bullet with de facto moratorium," *Globe and Mail*, 9 March 2011. www.theglobeandmail.com/news/politics/charest-dodges-shale-gas-bullet-with-de-facto-moratorium/article1936123

191 "Is Natural Gas a Solution to Climate Change?" (July 2011) David Suzuki Foundation and Pembina Institute. See: www.davidsuzuki.org/publications/reports/2011/is-natural-gas-a-climate-change-solution-for-canada/

After transportation, Quebec's next largest contribution to GHG emissions is from commercial, institutional and residential buildings.

Quebec climate change plans and policies

Quebec has set the strongest North American target for reducing GHG emissions by 2020.¹⁹² [Its target of 20 per cent below 1990 by 2020 is nonetheless slightly below the range of 25 to 40 per cent that science suggests is necessary to avoid dangerous climate change.¹⁹³] It is a priority for Quebec to put into place a new climate change plan to meet that target. A working committee composed of governmental and non-governmental experts has been created and the plan should be unveiled in 2012.

Although the province is required to produce annual progress reports on the implementation of its climate change plan¹⁹⁴ — a good accountability measure — the reports could be much more transparent in assessing the emission reductions gained from each policy and listing the measures that have not yet been acted upon.

MITIGATION AND ADAPTATION

In January 2012, Quebec became the first province to enact a cap-and-trade system for large industrial emitters, along with California, under the Western Climate Initiative.¹⁹⁵ Although this leadership is welcome, the regulations will need to be strengthened over time to align with the province's emission targets, including phasing out loopholes such as the large number of offsets that can be used for compliance.¹⁹⁶

In 2007, Quebec was also the first province to introduce a carbon tax and was commended for doing so, especially since revenues were used exclusively to make investments that would have environmental benefits (such as in public transit). Unfortunately, the tax (about \$4 per tonne of carbon emissions, as opposed to B.C.'s \$25 per tonne and rising) is too low to have any meaningful impact on the consumption of fossil fuels. The Quebec government has had ample time over the past four years to increase the level of this tax. (To illustrate the small scale of the carbon price, the annual increases to British Columbia's carbon tax are greater than the entire Quebec carbon tax.)

The province has taken strong measures to address GHG emissions from the waste sector. Legislation has been passed requiring all landfills that accept more than 50,000 tonnes of solid waste to install systems to capture and store methane emitted when waste decomposes.¹⁹⁷ In addition, the province has set a goal of diverting all organic waste from landfills by 2020,¹⁹⁸ committing to invest \$650 million for infrastructure to compost organic waste and capture any methane emissions.¹⁹⁹

Quebec has set a goal of diverting all organic waste from landfills by 2020, committing to invest \$650 million for infrastructure to compost organic waste and capture any methane emissions.

192 Département du Développement Durable, Environnement et Parcs, Gouvernement du Québec. 2009. "With a target reduction of 20% by 2020, Québec remains a leader in the fight against climate change." Press Release. [23 November 2009]. www.mddep.gouv.qc.ca/communiqués_en/2009/c20091123-cibleges.htm

193 Intergovernmental Panel on Climate Change. 2007. Fourth Assessment Report, Working Group III, Table 13.7.

194 Government of Quebec. 2010. « Quatrième bilan de la mise en œuvre du plan d'action 2006–2012 sur les changements climatiques. » www.mddep.gouv.qc.ca/changements/plan_action/bilans/bilan4.pdf

195 L'Assemblée Nationale du Québec. 2011. « Adoption of the Regulation Respecting the Cap-and-Trade System for Greenhouse Gas Emission Allowances ». See news release : www.mddep.gouv.qc.ca/communiqués_en/2011/c20111215-carbonmarket.htm www2.publicationsduquebec.gouv.qc.ca/dynamicSearch/telecharge.php?type=5&file=2009C33F.PDF

196 "Ensuring the Environmental Integrity of Quebec's Cap-and Trade System for Global Warming Emissions" (September 2011) David Suzuki Foundation and Equiterre. See: www.davidsuzuki.org/blogs/climate-blog/2011/09/dsf-submission-to-the-quebec-government-on-proposed-cap-and-trade-system-regulations/

197 Département du Développement Durable, Environnement et Parcs, Gouvernement du Québec. 2008. « Règlement sur l'enfouissement et l'incinération de matières résiduelles (REIMR) » www.mddep.gouv.qc.ca/matieres/reimr.htm

198 "More organic waste, 'more jobs'", *Montreal Gazette*, 16 March 2011. www2.canada.com/montrealgazette/news/business/story.html?id=598fcf59-0317-47ea-a31e-0644b99b437f

199 Département du Développement Durable, Environnement et Parcs, Gouvernement du Québec. 2009. « Allier économie et environnement Québec lance une nouvelle politique de gestion des matières résiduelles. » Press release. (November 16). www.mddep.gouv.qc.ca/infuseur/communiqué.asp?No=1589

ENERGY EFFICIENCY

Quebec was awarded an A+ in a national energy efficiency report card. The grade recognized the province's investments in sustainable transportation infrastructure, efforts to encourage the purchase of energy-efficient vehicles and greening of its own vehicle fleets. The province was also commended for enacting a new, stronger building code, and for producing progress reports to measure and evaluate its objectives.²⁰⁰

RENEWABLE ENERGY

According to Quebec's climate change plan, projects in development will increase the province's wind capacity from 663 MW²⁰¹ to 990 MW in 2012 and to 4,000 MW by 2015.²⁰²

As highly commendable as this is, it is unfortunate that the province continues to favour building large hydroelectric dams on previously pristine rivers, such as the Romaine River.

It is also unfortunate — and a poor reflection of Quebec's avowed commitment to low-impact renewable energy sources — that the government has decided to grant licences to Hydro-Québec to refurbish Gentilly-2, the province's only remaining nuclear power plant.

TRANSPORTATION

Road transportation is the biggest single source of GHG emissions in Quebec. In some key areas, the province leads the field in tackling GHG emissions from this sector.

For example, provincial vehicle fuel-efficiency regulations in line with California's leading standards came into force in January 2010.²⁰³

Quebec has also announced that it plans to invest \$250 million in clean electric cars and charging stations so that 25 per cent of all new light passenger vehicle sales, or five per cent of the province's total light vehicle fleet, are electric vehicles by 2020.²⁰⁴

In addition, the province has allocated consistent resources (including \$130 million per year through the Green Fund) to public transportation and is on target to achieve the provincial transit ridership target, an eight per cent increase from 2006 to 2012. However, to reach the province's legislated emission reduction goal for 2020 and address many overcrowded transit lines and infrastructure needs, an independent body of urban transportation experts has urged the province to increase Quebec's carbon tax in stages until 2015, then generate revenues from the cap-and-trade system (as the cap-and-trade system will cover transportation fuels/emissions and have a set minimum carbon price of \$18 per tonne in 2015) and invest most of the revenues to improve transit capacity, coverage and service.²⁰⁵

Unfortunately, some major investment decisions made by Quebec's Ministry of Transportation are at odds with the province's climate change goals, such as spending proposed for new roads and highways expansion.

Quebec has also announced that it plans to invest \$250 million in clean electric cars and charging stations so that 25 per cent of all new light passenger vehicle sales, or five per cent of the province's total light vehicle fleet, are electric vehicles by 2020.

200 Canadian Energy Efficiency Alliance. 2010. "2009 National Energy Efficiency Report Card." www.energyefficiency.org/ReportCard/2009/2009%20Report%20Card_FINAL_Ir.pdf

201 Canadian Wind Energy Association. 2011. "Powering Canada's Future." www.canwea.ca/pdf/Canada%20Current%20Installed%20Capacity_e.pdf

202 Quebec climate change strategy, 2008. www.mddep.gouv.qc.ca/changements/plan_action/2006-2012_en.pdf

203 Département du Développement Durable, Environnement et Parcs, Gouvernement du Québec. 2009. « Règlement québécois sur les émissions de GES des véhicules légers : Québec met en vigueur les normes californiennes. » Press Release. [December 2009].

204 "Running on Green Power: The Quebec Government unveils its 2011-2020 Action Plan for Electric Vehicles" See press release: <http://communiqués.gouv.qc.ca/gouvqc/communiqués/GPQE/Avril2011/07/c2361.html?slang=en>

205 "Pleins à craquer: La politique québécoise du transport collectif victime de son succès", TRANSIT — Alliance pour le financement des transports collectives au Québec, November 2011. See: www.transitquebec.org/wp-content/uploads/2011/11/TRANSIT-Pleins-%C3%A0-craquer-Novembre-2011lr.pdf

QUEBEC OVERVIEW

Y=Yes N=No A=Announced but not yet implemented^a NA=Not applicable

MITIGATION

Has a current climate change action plan?	Y
Set emission reduction targets comparable to Kyoto?	Y
Has set 2°C above pre-industrial temperatures as the upper limit for average global warming?	Y
Addressed emissions from sector with highest emissions?	N
Addressed emissions from sector with fastest-growing emissions?	N
Has a broad-based carbon pricing policy (carbon tax or cap-and-trade)?	A
Has meaningful energy efficiency, conservation and renewable energy policies?	Y
Has strong building code for energy efficiency?	A
Has meaningful transportation policies?	N
Has policies that address urban sprawl?	A
Has meaningful policies to address emissions from industry?	A
Has a program to address emissions from government?	Y
Has a policy or program to protect natural carbon stores in forests and peatlands?	N
Uses the full suite of policy instruments, including regulations and disincentives?	N

GHG EMISSIONS TRENDS

Has reduced emissions since 1990?	Y
Has reduced emissions 2006–2009?	Y
Reduced emissions in 2009?	Y ^b

CLIMATE CHANGE ADAPTATION

Has a meaningful plan to adapt to climate change impacts?	Y
Has a science advisory body that advises government on adaptation to climate change?	Y

GOVERNANCE AND ACCOUNTABILITY

Has established a cross-governmental climate change secretariat?	Y
Reports on actions and outcomes from climate action plan?	Y

Notes:

^aAnnounced, but not fully implemented, e.g., WCI cap-and-trade compliance system and emission coverage.

^bReducing GHG emissions in the reporting year has been a grading criterion for all David Suzuki Foundation reports on provincial and territorial climate action. The economic downturn of 2008/09 reflects (in some, if not all cases) illusory reductions that may have already been reversed.

Further details in: Quebec and Climate Change: 2006–2012 Action Plan www.mddep.gouv.qc.ca/changements/plan_action/2006-2012_en.pdf / Plan d'action 2006–2012 sur les changements climatiques, www.mddep.gouv.qc.ca/changements/; Quebec Energy Strategy 2006–2015. www.mrnf.gouv.qc.ca/english/publications/energy/strategy/energy-strategy-2006-2015-summary.pdf; Regulation respecting a cap-and-trade system for greenhouse gas emission allowances, www.mddep.gouv.qc.ca/changements/carbone/reglementPEDE-en.pdf

Although most of the investment is directed to refurbish existing infrastructure, expanding road and highway capacity, particularly in Montreal, will only increase greenhouse gas emissions and encourage urban sprawl.²⁰⁶

To reach its 2020 target and growing transit ridership demand, Quebec will need to significantly increase funding for transit in the coming years and to reverse investment ratios, which are currently heavily skewed in favour of roads over transit.²⁰⁷

Conclusion

Quebec is at a crossroads. The province remains a leader on climate change in Canada. It has adopted the most ambitious emissions-reduction target in North America for 2020. It also adopted new regulations in January 2012 to cap and reduce emissions from large industrial facilities (with a goal to expand the cap to transportation emissions in 2015) in partnership with California and other potential WCI jurisdictions. On the other hand, proposals to expand oil and shale gas development and continued new road and highway expansion threaten to undermine progress. Passing California standards for vehicle fuel efficiency and continuing to fund public transit are good initiatives, but road transport remains the greatest source of greenhouse gas pollution. In the electricity sector, Quebec needs to continue the push for energy efficiency and low-impact renewables such as wind power, which complement existing hydro-power dams. Building more dams and refurbishing the Gentilly-2 nuclear power plant are approaches that lack the creativity and innovation that Quebec has shown in the recent past. Quebec has a tremendous opportunity to be the climate action leader in North America, and the province can seize that position in its updated, and much anticipated, climate action plan (2013–2020) to be released this year.

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Ranking

	2005	2006	2008	2011
Best	X	X		
Very Good			X	X
Good				
Fair				
Poor				
Worst				

²⁰⁶ Ibid.

²⁰⁷ www.transitquebec.org

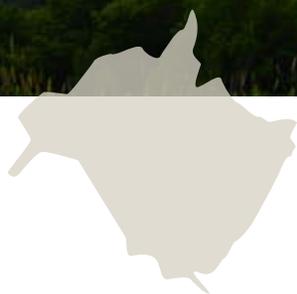
Recommendations

The Quebec government should:

- Develop and release as quickly as possible an updated climate change action plan that would allow the province to reach its 2020 GHG target entirely within the province. Policy development should not pause while the plan is being developed. An energy strategy for 2015-2020 should also be published with new, increased targets on renewable energy implementation (as has been done in Ontario recently).
- Ramp up provincial investment for Quebec's public transit network to meet transit authorities' development and operational needs toward 2020. Immediately redirect proposed spending on highway expansion to sustainable transportation solutions and infrastructure. Maintain current proportion of green fund investment directed toward transit — 65 per cent — as revenues from the new cap and trade system increase available funding.
- Set a schedule for the gradual increase in the carbon tax toward 2015 when transportation is included under the WCI to avoid a price shock, and gradually increase green fund revenues in the 2013-2015 period.
- Put into place policies that constrain urban sprawl and promote transit-oriented development. Funding transit and regulating vehicles for their fuel efficiency, though good measures, will be insufficient to reduce emissions from road transportation if sprawl continues unabated.
- Research shows shale gas is not a green “bridging” fuel. Shale gas development is likely to increase Quebec's emissions, and may threaten Quebec's GHG emissions reduction targets unless other sectors reduce emissions further to create space for this new industry. This evidence should be reflected in the province's ongoing strategic environmental assessment on shale gas and in Quebec's updated climate action plan.
- Maintain the moratorium on the development of offshore oil and gas in the Gulf of the St. Lawrence until the province has had the opportunity to investigate their full environmental, social and economic implications. The moratorium should be removed only when wide public consultation shows a high degree of support from Quebec citizens, including those who will be in the vicinity of any development. If development is to proceed, strategies must be implemented to fully mitigate their impacts, including increased GHG emissions.
- Ensure the greenhouse gas implications of all new projects are evaluated before their implementation. This is especially important for new road and highway construction and oil and gas development, but should also include other major funding and/or infrastructure projects.
- Work with WCI partners to adopt more straightforward and rigorous rules and emission targets for the cap-and-trade system. Current “flexibility” measures (e.g., distributing allowances for free rather than auctioning most or all; allowing offsets; and introducing additional pollution allowance through the creation of reserves) weaken the system and make it much less transparent to the public and stakeholders.

New Brunswick

PHOTO COURTESY GREENCOLANDER VIA FLICKR



New Brunswick may be on track to reduce emissions back to 1990 levels by 2012. However, its 2020 target of being 10 per cent below 1990 levels still falls considerably short of the 25 to 40 per cent range that science suggests.

Strengths

- GHG emissions have been on a downward trend since 2001 and the province may be on track to meet its stated objective of reducing emissions back to 1990 levels by 2012.
- Closed the 50 MW Grand Lake coal plant in March 2010.
- 249 MW of wind power added to the grid.
- Many clean-energy projects supported through Climate Action Fund.
- Increased funding for Efficiency New Brunswick.
- Green Building Policy has been announced.²⁰⁸
- \$32 million allocated to electricity smart grid project.²⁰⁹

Weaknesses

- New Brunswick keen to develop natural gas industry.
- Targets for electricity from renewable sources (10 per cent by 2016) not ambitious.
- Government still lacks strategy to harness “green heat.”
- Virtually no provincial money allocated to public transportation.
- Commitment by previous government to retire the oil-fired Dalhousie power plant has been overturned.

Missed opportunity

- The design of the proposed community feed-in tariff (ComFIT) is overly restrictive and thus unlikely to foster a viable renewable sector.

208 Government of New Brunswick. 2010. “Province of New Brunswick Green Building Policy for New Construction & Major Renovation Projects.” www.gnb.ca/0099/pgbp-e.pdf

209 Communications New Brunswick. 2010. “Environment-friendly projects supported by Climate Action Fund.” Press Release. www.nbpower.com/html/en/about/media/media_release/pdfs/Mar3110En.pdf

Greenhouse gas emissions²¹⁰

Although New Brunswick's emissions in 2009 were still above their 1990 level, emissions have dropped 15 per cent since peaking in 2005.²¹¹ In fact, the province may be on track to reduce emissions back to 1990 levels by 2012.²¹² Its 2020 target of being 10 per cent below 1990 levels still falls considerably short of the 25 to 40 per cent range that science suggests is necessary to avoid dangerous climate change.²¹³

The single biggest source (38 per cent) of GHG emissions in New Brunswick in 2009 was electricity and heat generation. Still 16 per cent higher than 1990 levels, since they peaked in 2005, there has been a decrease of 24 per cent in GHG emissions from this sector. This is largely due to the high cost of oil, which essentially ended exports from the 1,000 MW Coleson Cove oil-powered export plant. In addition, much of the in-province demand it supplied is provided by imports from New England and Hydro-Québec.

Road transportation, at 20 per cent, is the second-largest source of GHGs. Emissions from this sector are 26 per cent higher than in 1990 due to an expanding vehicle fleet (particularly high growth has been seen in heavy-duty diesel vehicles) and a shift from passenger cars to more highly polluting SUVs, vans and small trucks.

In 2009, fossil fuel production and refining accounted for 14 per cent of New Brunswick's total GHG emissions. Since 1990, emissions from this sector have increased by 127 per cent, most of which is attributed to increased petroleum refining to serve the export market in Massachusetts. Some increased emissions are from natural gas production.

The single biggest source (38 per cent) of GHG emissions in New Brunswick in 2009 was electricity and heat generation. However, since 2005, there has been a decrease of 24 per cent in GHG emissions from this sector, largely due to the high cost of oil

Climate change plans and policies

As previously noted, if the current government were to continue to improve on the climate policies of the previous government, the province could be on track to meet its commitment to reduce GHG emissions to 1990 levels by 2012. Whether or not this will happen remains to be seen. So far the new government has said little about climate change but announced that a new climate change action plan for 2012–2020 is under development.²¹⁴

The new government appointed an Energy Commission to consult with the public and special interests about the priorities for an energy policy. The Commission released its recommendations in May 2011,²¹⁵ and the government responded with its energy policy in October 2012. Although, energy efficiency is a cornerstone, the plan fails to recognize the full potential of the province's renewable energy sources.

MITIGATION AND ADAPTATION

The previous New Brunswick government closed the 50 MW Grand Lake coal plant in March 2010 and committed to retiring the aging and polluting 330 MW oil-fired Dalhousie power plant within a year. The new government has vowed to delay the closure to explore options for using a different fuel source.²¹⁶ In addition, it is continuing expensive refurbishment of the Point Lepreau nuclear power plant, intent on bringing it back on line in fall 2012.

It is worrying that New Brunswick remains so keen on developing a natural gas industry. The report of the Environment Commission recommends natural gas be used "as a transition fuel from fossil fuels as the

210 Environment Canada. 2011. "National Inventory Report, 1990-2009." Annex 15.

211 Ibid.

212 See Government of New Brunswick. 2011. "Climate Change Action Plan 2010-2011 Progress Report." www.gnb.ca/0009/0369/0018/ClimateChangeProgressReport2010-2011.pdf

213 Intergovernmental Panel on Climate Change. 2007. Fourth Assessment Report, Working Group III, Table 13.7.

214 New Brunswick Energy Blueprint (October 2011). [www.gnb.ca/0085/pdf/P14-11149%20GNB-Energy-Report%20\(Eng\).pdf](http://www.gnb.ca/0085/pdf/P14-11149%20GNB-Energy-Report%20(Eng).pdf)

215 Final Report New Brunswick Energy Commission, May 2011. www.gnb.ca/Commission/pdf/FinalReport2010-2011.pdf

216 CBC News. 2010. "Tories vow to keep Dalhousie power plant open." www.cbc.ca/canada/new-brunswick/story/2010/06/23/nb-dalhousie-power-plant.html

province moves toward maximizing the use of renewable and clean energy.”²¹⁷ However, recent research shows that investment in natural gas production actually delays the move toward truly clean energy and a reduction in greenhouse gas emissions.²¹⁸

The government has already sold the rights to more than a million hectares of land to explore for shale gas, roughly one seventh of the province.²¹⁹ The province has not conducted any studies to evaluate the expected greenhouse gas emissions, and in particular fugitive emissions, which are often high in shale gas development.

ENERGY EFFICIENCY

Energy efficiency is a cornerstone of the province’s new energy plan. However, this effort will need to be resourced in the 2012 provincial budget to become a reality.

In 2009, the previous New Brunswick government increased funding for Efficiency New Brunswick, totalling \$17.7 million for the 2010/11 fiscal year.²²⁰ The program offered rebates for energy-efficiency measures in construction and upgrade of new and existing residential and commercial buildings, including installation of geothermal and solar heating systems.²²¹

In April 2010, New Brunswick announced a Green Building Policy. Phase one requires large provincial buildings to meet LEED silver standards. Smaller buildings must follow Efficiency NB’s Core Performance Guide and fulfill a list of green building requirements. Phase two, which has now begun, targets all buildings that receive provincial funding.²²²

RENEWABLE ENERGY

The installation of 294 MW of wind power in New Brunswick has contributed more than half the legislated renewable portfolio standard (RPS) under the Electricity Act. This previous RPS dates from 2005 and, as it stood, only required that 10 per cent of electricity generated be from low-impact renewable sources by 2016.²²³ The province should at least double the production target for new renewables.

Although there is an opportunity to achieve this potential for lower-impact renewables, the new energy plan is less aggressive. It changed the RPS from domestic renewable energy generation only to now include existing large scale hydro dams as well as renewable electricity purchased from out of province (electricity imports). Although the new RPS target of 40 percent renewable energy by 2020 sounds more impressive,²²⁴ it will unlikely result in substantially more low-impact renewable energy generation in the province.

In 2010, New Brunswick supported many clean-energy projects through its Climate Action Fund, including a farm-based biogas plant, a biodiesel plant and a project to capture and use methane from a landfill.

In 2010, New Brunswick supported many clean-energy projects through its Climate Action Fund, including a farm-based biogas plant, a biodiesel plant and a project to capture and use methane from a landfill.

217 Final Report New Brunswick Energy Commission, May 2011. www.gnb.ca/Commission/pdf/FinalReport2010-2011.pdf

218 David Suzuki Foundation and the Pembina Institute. 2011. “Is natural gas a climate change solution for Canada?” www.davidsuzuki.org/publications/reports/2011/is-natural-gas-a-climate-change-solution-for-canada/

219 Penty, Rebecca. 2010. “The ‘shale gale’ revolution.” (May 1). *The Telegraph-Journal*. telegraphjournal.canadaeast.com/rss/article/1035420

220 New Brunswick Department of Finance. 2009. “Main Estimates, 2010-2011.” www.gnb.ca/0160/budget/buddoc2010/ME2010-11_Final.pdf

221 Efficiency New Brunswick www.energycnb.ca/home.html

222 Province of New Brunswick Green Building Policy for New Construction & Major Renovation Projects, *supra* note 208.

223 New Brunswick Electricity Act www.gnb.ca/0062/PDF-regs/2006-58.pdf

224 New Brunswick Energy Blueprint (October 2011). [www.gnb.ca/0085/pdf/P14-11149%20GNB-Energy-Report%20\(Eng\).pdf](http://www.gnb.ca/0085/pdf/P14-11149%20GNB-Energy-Report%20(Eng).pdf)

NEW BRUNSWICK OVERVIEW

Y=Yes N=No A=Announced but not yet implemented NA=Not applicable

MITIGATION

Has a current climate change action plan?	Y
Set emission reduction targets comparable to Kyoto?	N
Has set 2°C above pre-industrial temperatures as the upper limit for average global warming?	N
Addressed emissions from sector with highest emissions?	N
Addressed emissions from sector with fastest-growing emissions?	N
Has a broad-based carbon pricing policy (carbon tax or cap-and-trade)?	N
Has meaningful energy efficiency, conservation and renewable energy policies?	N
Has strong building code for energy efficiency?	N
Has meaningful transportation policies?	N
Has policies that address urban sprawl?	N
Has meaningful policies to address emissions from industry?	N
Has a program to address emissions from government?	Y
Has a policy or program to protect natural carbon stores in forests and peatlands?	N
Uses the full suite of policy instruments, including regulations and disincentives?	N

GHG EMISSIONS TRENDS

Has reduced emissions since 1990?	N
Has reduced emissions 2006–2009?	Y
Reduced emissions in 2009?	Y ^a

CLIMATE CHANGE ADAPTATION

Has a meaningful plan to adapt to climate change impacts?	A
Has a science advisory body that advises government on adaptation to climate change?	N

GOVERNANCE AND ACCOUNTABILITY

Has established a cross-governmental climate change secretariat?	Y
Reports on actions and outcomes from climate action plan?	Y

Note: ^aReducing GHG emissions in the reporting year has been a grading criterion for all David Suzuki Foundation reports on provincial and territorial climate action. The economic downturn of 2008/09 reflects (in some, if not all cases) illusory reductions that may have already been reversed.

For further details: New Brunswick Climate Change Action Plan 2007–2012, www.gnb.ca/0009/0369/0015/0002-e.pdf; Government of New Brunswick, Green Building Policy for New Construction & Major Renovation Projects, April 2010, www.gnb.ca/0099/pgbp-e.pdf; Final Report New Brunswick Energy Commission, May 2011, www.gnb.ca/Commission/pdf/FinalReport2010-2011.pdf; Government of New Brunswick “Climate Change Action Plan 2010-2011 Progress Report,” www.gnb.ca/0009/0369/0018/ClimateChangeProgressReport2010-2011.pdf

The previous New Brunswick government released a Community Energy Policy²²⁵ that offers a Community feed-in tariff (ComFIT) of 10 cents/kWh for renewable energy projects no larger than 15 MW. A feed-in tariff is a strong policy tool for getting clean power onto the grid. Unfortunately, the design of this particular one is overly restrictive and is unlikely to foster a viable renewable sector, as it fails to cover the costs of production for most renewable technologies. It is to be hoped that the new government will continue with and improve upon the existing community energy policy.

The former government also allocated \$32 million to an electricity smart grid project to increase the penetration of renewables into the system and reduce GHGs.²²⁶ We hope this funding will continue.

New Brunswick still lacks a strategy to harness “green heat,” using solar or geothermal energy to heat and cool buildings and heat water. These technologies are economically viable options that can dramatically reduce reliance on fossil fuels for heating and power in residential and institutional buildings.

TRANSPORTATION

Although road transportation is New Brunswick’s second-largest source of GHGs, almost nothing is being done to curb emissions from this sector.

The province currently allocates virtually no money to public transportation, other than funds provided by the federal government. This needs to be addressed immediately if New Brunswick is to have any chance of meeting its commitments to New England governors and Eastern Canadian premiers to double the use of public transportation in the province by 2020.

Conclusion

New Brunswick’s new government has said little about climate action although it has announced it is developing a new climate change action plan and reiterated its commitment to continued emission reductions beyond 2012. It appointed an Energy Commission to consult with the public and special interests about the priorities for energy policy. The commission released its recommendations in May 2011²²⁷ and the government responded with its energy policy in October 2012. While energy efficiency is a cornerstone, the energy plan fails to recognize the full potential of the province’s renewable energy sources. The former government began taking action that decreased emissions — closing polluting power plants, funding clean energy projects and investing in energy efficiency. Now the newly elected government needs to reaffirm its commitment to continue to cut greenhouse gas emissions. It can go further in supporting energy efficiency and renewable energy in the forthcoming action plan or go backwards, by keeping the polluting Dalhousie thermal generation plant open and plunging ahead with shale gas development. What to do with emissions from road transportation is also a defining issue. New Brunswick could still meet its 2012 target for reducing GHG emissions depending on the decisions it makes over the coming months on the final form of its energy policy.

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225 “Community energy policy announced”, New Brunswick government press release, 10 February 2009. www.gnb.ca/cnb/news/ene/2010e0178en.htm

226 Communications New Brunswick. 2010. “Environment-friendly projects supported by Climate Action Fund.” www.nbpower.com/html/en/about/media/media_release/pdfs/Mar3110En.pdf

227 Final Report New Brunswick Energy Commission, May 2011. www.gnb.ca/Commission/pdf/FinalReport2010-2011.pdf

Ranking

	2005	2006	2008	2011
Best				
Very Good				
Good				
Fair			X	X
Poor	X	X		
Worst				

Recommendations

The government of New Brunswick should:

- Look to build on some of the successes of the previous government while fixing the weaknesses from its plan (see below).
- Fix the community feed-in tariff (ComFIT) with a variable tariff based on the cost of production and a reasonable rate of return for different renewable energy technologies to be viable.
- Maintain the promise to shut down the expensive and polluting Dalhousie power plant.
- Stop investing in refurbishment of the Point Lepreau power plant, shut it down and replace it with strong policies on renewable energy, energy efficiency and green heat.
- At a minimum double the 2016 renewables commitment and then reach that target.
- Develop a green heat strategy for passive solar and geothermal energy.
- Put a moratorium on new oil and natural gas development or exploration licences until the province has been able to assess the full environmental implications. The moratorium should be kept in place unless wide public consultations show a high degree of support from New Brunswick citizens for oil and gas development, including those who will be most affected.
- Implement a plan to develop a more widespread public transit system and a schedule for financing it.
- Enact legislation to cap greenhouse gas emissions from power plants and the fossil fuel sector.

Prince Edward Island

PHOTO COURTESY CPHOFFMAN42 VIA FLICKR



With steady decreases since 2005, P.E.I. has already exceeded its stated objective to reduce greenhouse gas emissions to 1990 levels by 2010. Emissions are now four per cent lower than 1990 levels.

Strengths

- Already exceeded target of reducing GHG emissions to 1990 levels.
- Climate change strategy sets goal of reducing emissions to 75 to 85 per cent below 2001 levels by 2050.²²⁸
- Energy strategy commits to doubling renewable energy portfolio standard from 15 per cent to 30 per cent by 2013.²²⁹
- 2025 target to reduce current CO₂e emitted per megawatt hour of electricity use by 20 per cent.
- Climate strategy reinforces commitment to energy efficiency and recognizes need for new energy-efficient building standards.
- Some voluntary measures have been taken to address GHG emissions from agriculture (currently contributing 20 per cent of PEI's overall emissions). Part of the 12 per cent reduction in emissions from 2008 to 2009 has been attributed to the new Alternative Land Use Service (which is taking marginal land out of production to convert into forest) and new fertilizer management practices. Although more could be done.
- Expanded Charlottetown public transit system and increased ridership.
- Committed to incorporating climate change outcomes into environmental impact assessment process.
- Progress made on 2006 Greening Government initiative, ensuring fuel efficiency in new government vehicles.
- Implemented range of research projects in climate change adaptation through the Atlantic Regional Adaptation Collaborative Program.

²²⁸ PEI Climate Change Strategy, p.8 www.gov.pe.ca/photos/original/env_globalstr.pdf

²²⁹ PEI Energy Strategy, p. 23 www.gov.pe.ca/photos/original/env_snergyst.pdf

Weaknesses

- Reneged on 2008 commitment to adopt “California-like” vehicle emissions standards, opting for lower Canada/U.S. federal fuel-efficiency standards.
- Climate strategy places an “aggressive” emphasis on biofuels despite acknowledging they offer very little benefit for the climate.²³⁰
- Electricity demand expected to increase by 20 to 30 per cent over next 10 years, contributing increasing GHG emissions from growing residential electricity consumption.²³¹
- Little progress made on 2008 commitment to increase public education around climate change.
- Has not implemented promised annual progress reports on GHG reduction efforts.

Missed opportunities

- Although the province has implemented a number of the energy-efficiency recommendations in the 2008 study it commissioned from the Vermont Energy Investment Corporation, it has not adopted multiple recommendations for reducing GHG emissions from transportation (responsible for a third of the province’s emissions).
- The government stated in its climate strategy that an “integral” part of its response to climate change would be the creation of a Centre for Climate Change Strategies, which would develop climate action plans and help build community consensus. More than three years later, the provincial government has still not created the centre.

Road transportation is the single biggest source (33 per cent) of P.E.I.’s GHGs. Emissions from this sector increased 22 per cent between 1990 and 2009.

Greenhouse gas emissions²³²

Prince Edward Island contributes 0.3 per cent to Canada’s total GHG emissions. With steady decreases since 2005, P.E.I. has already exceeded its stated objective to reduce greenhouse gas emissions to 1990 levels by 2010.²³³ Emissions are now three per cent lower than 1990 levels.

Road transportation is the single biggest source (33 per cent) of P.E.I.’s GHGs. Emissions from this sector increased 22 per cent between 1990 and 2009. During that time there has been a 32 per cent increase in the vehicle fleet of the island, which includes increased residential use of more heavily polluting SUVs and trucks.

Although residential, commercial and institutional energy emissions have decreased by 10 per cent since 1990, they still account for 26 per cent of the province’s GHGs. The decrease has been credited to increased energy efficiency and a change in consumer behaviour in response to a 29 per cent increase in heating oil prices between 2007 and 2008.

The greatest decrease since 1990 has been seen in electricity and heat generation emissions, which have been reduced by almost 100 per cent. Most of the electricity consumed in P.E.I. is provided by New Brunswick via underwater transmission cables. That, combined with the installation and operation of wind farms, is the major factor in P.E.I. almost eliminating GHG emissions from this sector.

230 PEI Climate Change Strategy, p.17 www.gov.pe.ca/photos/original/env_globalstr.pdf

231 Ibid. p.12

232 Environment Canada. 2011. “National Inventory Report, 1990-2009.” Annex 15.

233 PEI, 2010 State of the Environment, www.gov.pe.ca/photos/original/eef_soe_2010.pdf (page 32).

Climate action and policies

Prince Edward Island has been identified as one of the areas in Canada most vulnerable to sea level rise, as well as other climate impacts. The provincial climate change strategy, released in November 2008, discusses at length the need for adaptation, and the government has implemented a range of research projects in this area through the Atlantic Regional Adaptation Collaborative Program.²³⁴

MITIGATION AND ADAPTATION

The strategy considers energy use, transportation, agriculture, adaptation, public education and actions by the government to green its own operations, identifying 47 action items for government. It also sets a goal of reducing emissions to 75 to 85 per cent below 2001 levels by 2050.²³⁵ Unfortunately, the strategy lacks details (such as short- or medium-term targets) on how this will be achieved. However, P.E.I. has the same target established under the New England governors/Eastern Canadian premiers meetings: a 10 per cent reduction in GHGs below 1990 by 2020.

Measures have been taken to address GHG emissions from agriculture (currently contributing 20 per cent of P.E.I.'s overall emissions). Some credit for the nearly 12 per cent reduction in emissions from 2008 to 2009 has been given to the new Alternative Land Use Service²³⁶ (which is taking marginal land out of production to convert into forest) and new fertilizer management practices. Unfortunately, few programs have been implemented, and many of those discussed are likely to be voluntary. These include financial incentives for reforestation of marginal agricultural land.

Despite commitments made in the 2008 strategy to increase efforts in public education around climate change, little progress has been made in this area. Even the climate change website it promised to create remains buried on the government website, where it offers little information to the public.²³⁷

ENERGY EFFICIENCY

The P.E.I. climate strategy reinforces the government's commitment to energy efficiency and promises support in the form of grants, loans, tax breaks and other financial incentives. The P.E.I. Office of Energy Efficiency has implemented a number of energy-efficiency programs for residential, commercial and institutional buildings, multi-residential housing and a business energy savings plan, which are expected to achieve a GHG reduction of 150 kt over the next 10 years.²³⁸ Household energy consumption alone has already been reduced by more than 20 per cent.²³⁹

The climate strategy recognizes the need for new energy-efficient building standards — a major gap in the last climate strategy, as P.E.I. acknowledges it is one of only two jurisdictions in Canada without a provincewide building code.²⁴⁰ The standards have yet to be developed or implemented, although the municipalities of Charlottetown and Summerside have implemented their own standards.²⁴¹

In 2008, P.E.I.'s Department of Energy, Environment and Forestry released a study by the Vermont Energy Investment Corporation showing that P.E.I. could reduce forecasted electricity use by 11 per cent and non-

234 Atlantic Climate Adaptation Solutions Association website atlanticadaptation.ca/pei_projects

235 PEI Climate Change Strategy, p. 8 www.gov.pe.ca/photos/original/env_globalstr.pdf

236 Alternative Land Use Services guidelines. www.gov.pe.ca/photos/original/af_alusguide.pdf

237 www.gov.pe.ca/environment/climatechange

238 Department of Environment, Energy and Forestry annual report, 2009, p.46. www.gov.pe.ca/photos/original/eef_annual08-09.pdf

239 Environment Canada. 2011. "National Inventory Report, 1990-2009." Annex 15

240 PEI Energy Strategy, p.16

241 Provincial Power Play (page 51).

P.E.I.'s strategy identifies 47 action items for government and sets a goal of reducing emissions to 75 to 85 per cent below 2001 levels by 2050. Unfortunately, it lacks details (such as short- or medium-term targets) on how this will be achieved.

electric energy use by eight per cent by 2017²⁴² — saving the province and residents \$148 million over 10 years of implementation.²⁴³ The P.E.I. Office of Energy Efficiency has implemented a number of the recommendations in regard to energy efficiency for buildings and businesses. However, multiple recommendations for reducing GHG emissions from transportation (responsible for one third of the province's emissions) have not been adopted.

RENEWABLE ENERGY

The P.E.I. energy strategy commits the province to doubling its renewable energy portfolio standard from 15 per cent to 30 per cent by 2013,²⁴⁴ with a goal of generating 500 MW of wind energy in that period,²⁴⁵ up from a current total of 164 MW.²⁴⁶ P.E.I. met its earlier target of generating 15 per cent of its electricity from renewable sources in 2007, three years ahead of its 2010 deadline.

Currently 21 per cent of P.E.I. electricity is generated by renewable energy (wind power).²⁴⁷ One-fifth of the 500 MW by 2013 goal will be for domestic use.²⁴⁸ The province recently enacted the P.E.I. Energy Accord, which calls for additional wind capacity to increase the province's share of wind power to 33 per cent.²⁴⁹

TRANSPORTATION

Although the climate strategy includes measures to reduce emissions from transportation — P.E.I.'s largest emission source — they are fairly weak. It also acknowledges demand for gasoline and diesel is predicted to grow 30 per cent and 50 per cent respectively, compared to 1990 figures.²⁵⁰

The strategy committed to adopting a “California-like” vehicle-emissions standard that would cut emissions by an amount equal to taking 10,000 vehicles off the road. Unfortunately, since making this commitment, the government has decided to instead opt for the much lower fuel-efficiency standards jointly announced by the federal governments in Canada and the U.S. in May 2010.

The climate strategy places an “aggressive” emphasis on biofuels (including ethanol), despite acknowledging that biofuels may have very little benefit for the climate.²⁵¹ As of 2008, imported oil accounted for 76 per cent of P.E.I.'s total energy supply²⁵² (46 per cent from transportation and 30 per cent from petroleum-based heating fuels²⁵³). This dependence could instead be reduced by increasing the use of electric vehicles and heating systems powered by P.E.I.'s own wind turbines. However, it must be acknowledged that the P.E.I. government has little control over the federally mandated biofuel standards, or the operations of companies supplying the province with fuel from outside its jurisdiction.

On the positive side, the public transit system in and around Charlottetown has been expanded and is enjoying increasing ridership.²⁵⁴

In addition, the government is making some progress on its Greening Government initiative (launched in 2006), by requiring new government vehicles to be more fuel-efficient.

P.E.I. met its earlier target of generating 15 per cent of its electricity from renewable sources in 2007, three years ahead of its 2010 deadline.

242 Energy Efficiency Initiative Designs and Achievable Potential for Prince Edward Island, 22 April 2008. www.gov.pe.ca/photos/original/eestudy08.pdf

243 PEI Energy Strategy, p.13 www.gov.pe.ca/photos/original/env_snergyst.pdf

244 PEI Energy Strategy, p.23 www.gov.pe.ca/photos/original/env_snergyst.pdf

245 PEI Wind Energy, p.5. www.gov.pe.ca/photos/original/wind_energy.pdf

246 Canadian Wind Energy Association www.canwea.ca/farms/index_e.php

247 PEI Energy Accord www.gov.pe.ca/photos/original/energyaccord.pdf (page 4).

248 Prince Edward Island Wind Energy, www.gov.pe.ca/photos/original/wind_energy.pdf

249 Department of Finance, Energy and Municipal Affairs <http://www.gov.pe.ca/energy>

250 PEI Climate Change Strategy, p.20. www.gov.pe.ca/photos/original/env_globalstr.pdf

251 Ibid. p.17

252 PEI Energy Strategy, p.9. www.gov.pe.ca/photos/original/env_snergyst.pdf

253 Ibid. p.29.

254 Department of Environment, Energy and Forestry annual report, 2009, p. 46. www.gov.pe.ca/photos/original/eef_annual08-09.pdf

P.E.I. OVERVIEW

Y=Yes N=No A=Announced but not yet implemented NA=Not applicable

MITIGATION

Has a current climate change action plan?	Y
Set emission reduction targets comparable to Kyoto?	N
Has set 2°C above pre-industrial temperatures as the upper limit for average global warming?	N
Addressed emissions from sector with highest emissions?	N
Addressed emissions from sector with fastest-growing emissions?	N
Has a broad-based carbon pricing policy (carbon tax or cap-and-trade)?	N
Has meaningful energy efficiency, conservation and renewable energy policies?	Y
Has strong building code for energy efficiency?	N
Has meaningful transportation policies?	N
Has policies that address urban sprawl?	N
Has meaningful policies to address emissions from industry?	NA
Has a program to address emissions from government?	Y
Has a policy or program to protect natural carbon stores in forests and peatlands?	Y ^a
Uses the full suite of policy instruments, including regulations and disincentives?	N

GHG EMISSIONS TRENDS

Has reduced emissions since 1990?	Y
Has reduced emissions 2006–2009?	Y
Reduced emissions in 2009?	Y ^b

CLIMATE CHANGE ADAPTATION

Has a meaningful plan to adapt to climate change impacts?	A ^c
Has a science advisory body that advises government on adaptation to climate change?	N

GOVERNANCE AND ACCOUNTABILITY

Has established a cross-governmental climate change secretariat?	N
Reports on actions and outcomes from climate action plan?	N

Notes:

^aApplies to marginal land only.

^bReducing GHG emissions in the reporting year has been a grading criterion for all David Suzuki Foundation reports on provincial and territorial climate action. The economic downturn of 2008/09 reflects (in some, if not all cases) illusory reductions that may have already been reversed.

^cAlthough P.E.I. does not have its own adaptation strategy, regional and provincial work plans have been developed as part of the Regional Adaptation Collaborative.

Further details in: Prince Edward Island and Climate Change: A Strategy for Reducing the Impacts of Global Warming, www.gov.pe.ca/photos/original/env_globalstr.pdf; PEI Energy Strategy, www.gov.pe.ca/photos/original/env_snergyst.pdf; P.E.I. Energy Accord, PEI Department of Finance, Energy and Municipal Affairs, www.gov.pe.ca/energy

Conclusion

Prince Edward Island has been identified as one of the areas in the country most vulnerable to sea level rise and other impacts of climate change. The province's 2008 climate change strategy sets impressive long-term targets (including a 2050 goal of reducing GHG emissions by 75 to 85 per cent of 2001 levels) but provides little detail on how goals are to be achieved. Currently 21 per cent of P.E.I. electricity is generated by renewable energy (wind power). There is a goal to reach 500 MW by 2013, of which 100 MW will be for domestic use.²⁵⁵ The province recently enacted the P.E.I. Energy Accord, which calls for additional capacity to increase the province's share of wind power to 33 per cent.²⁵⁶ Although many laudable targets have been set, too few have been mandated and acted upon. The province still has a long way to go before it can justify its 2007 rebranding of itself as "Canada's Green Province."²⁵⁷

Ranking

	2005	2006	2008	2011
Best				
Very Good				
Good				X
Fair	X	X	X	
Poor				
Worst				

Although P.E.I. has set many laudable targets, too few have been mandated and acted upon. The province still has a long way to go before it can justify its 2007 rebranding of itself as "Canada's Green Province."

Recommendations

The P.E.I. government should:

- Reconsider its approach to biofuels, which displace food crops and offer little climate benefit.²⁵⁸ Instead of implementing the proposed Renewable Fuel Standards,²⁵⁹ which would focus on biofuels, P.E.I. should adopt the Low Carbon Fuel Standard, which would reward *any* fuels with lower GHGs. This would help to ensure the full lifecycle assessment of fuels (including biofuels) is considered.
- Increase funding for existing energy-efficiency programs.
- Introduce standard offer contracts to encourage the installation of more renewable energy (including feed-in tariffs for community-based projects).
- Follow through on the commitment in its climate strategy to review its current land-use and development policies, and encourage options that are energy efficient and reduce GHGs.²⁶⁰
- Develop a plan and policy framework for addressing emissions from the transportation sector to be co-ordinated with the forthcoming land-use planning policy.

255 Island Wind Energy www.gov.pe.ca/photos/original/wind_energy.pdf

256 PEI Department of Environment, Energy and Forestry website. www.gov.pe.ca/eef/

257 "Anne of 'Green' Gables, indeed", *Ottawa Citizen*, 26 April 2007. www.canada.com/ottawacitizen/news/story.html?id=2fe77a9d-e799-428a-9cb5-536a79053bef

258 PEI Climate Change Strategy, p.18 www.gov.pe.ca/photos/original/env_globalstr.pdf

259 PEI Energy Strategy, p.30. www.gov.pe.ca/photos/original/env_snergyst.pdf

260 PEI Climate Change Strategy, p.28 www.gov.pe.ca/photos/original/env_globalstr.pdf

- Continue to implement policies to maximize energy efficiency savings in the province, as identified in the Vermont Energy Investment Corporation report.
- Commit in legislation to California vehicle fuel-efficiency standards and other measures to reduce emissions from transportation.
- Implement stronger policies to reduce emissions from agriculture, the largest source of emissions for P.E.I. after road transportation.
- Finalize an adaptation strategy.
- Introduce a carbon tax, which can either be revenue neutral or help fund action items in the climate change strategy. Either way, the price should be increased over time to reduce energy consumption levels.
- Finance and implement the Centre for Climate Change Strategies.
- Create a Climate Change Secretariat within government, as this would provide a “one-stop shop” for climate initiatives, similar to the Office of Energy Efficiency.²⁶¹
- Continue to expand the public transportation system, to reduce the need for personal vehicles and emissions from transportation.
- Significantly engage the P.E.I. public on the issue of global warming, including the impacts and costs of present and future climatic changes, the necessary actions required to deeply reduce greenhouse gas pollution, and the role of government, industry and the public in this undertaking.

261 PEI Energy Strategy, p.13. www.gov.pe.ca/photos/original/env_snergyst.pdf

Nova Scotia



PHOTO COURTESY ANVILCLOUD FLICKR

Strengths

- Remains committed to reduce overall GHG emissions to 10 per cent below 1990 levels by 2020.
- Hard cap legislated on emissions from Nova Scotia Power Inc. (NSPI), mandating emissions decrease to 25 per cent below 2007 levels by 2020.
- Renewable electricity plan includes a commitment for 25 per cent of electricity to come from renewable sources by 2015.
- Target for NSPI to reach 40 per cent of total sales from renewable sources by 2020.
- Established independent Efficiency Nova Scotia to help citizens reduce GHG pollution.
- Provincial building code requires all new residential dwellings to meet the EnerGuide 80 rating.
- Reduced GHG emissions from waste by nearly 50 per cent by diverting organic waste from landfills.
- Halifax “solar city” program will install solar water heating in 500+ homes every year.
- Nova Scotia municipalities required to produce climate action plans by 2014.

Weaknesses

- Failed to implement 2007 commitment to adopt California emissions standards by 2010.
- Continued heavy reliance on coal- and oil-fired power plants.
- Extended by four years the 2010 deadline for NSPI to meet its mercury emissions targets.
- Aggressive move toward exploration and production of onshore natural gas, including shale gas and coalbed methane.
- Promotion of large-scale forest biomass as a “carbon neutral” source of renewable electricity.
- Disproportionate amount of money spent on highway and road construction, compared to improving and promoting public transport.
- The province’s goal of 40 per cent renewable energy generation by 2020 relies too heavily on hydropower imported from Newfoundland and Labrador’s Lower Churchill Falls megaproject.



Although Nova Scotia’s emissions represent only three per cent of Canada’s total emissions, its per capita emissions are the fourth-highest amongst the provinces.

Missed opportunities

- The province is setting generous tariffs for its proposed community-based feed-in tariff (COM-FIT) program. Given its potential, it is not surprising that so much emphasis has been placed on promoting tidal power — a renewable sector still very much in the development stage. It is unfortunate that the program is not open to *all* forms of renewable energy. Solar power, for example, is not included.
- A deal between NSPI and Newfoundland and Labrador utility Nalcor to develop and export hydroelectric power from Churchill Falls²⁶² could have achieved the province's goal to reach 40 per cent renewable energy by 2020. Instead, only 10 per cent of the electricity outlined in the deal will stay in Nova Scotia.
- The government's strategy for the use of forest products and other biomass for energy should have given priority to using biomass for highly efficient, smaller-scale, distributed energy systems rather than power production.
- The province still lacks a plan for developing combined heat and power to significantly increase the efficiency with which energy resources are used in the province.

Greenhouse gas emissions

Unfortunately, Nova Scotia appears to be moving aggressively toward exploration and production of onshore natural gas, including shale gas and coalbed methane, two activities that have significant potential impacts on water quality and GHG emissions and other pollutants.

Nova Scotia remains committed to reduce overall greenhouse gas emissions to 10 per cent below 1990 levels by 2020 (although this target is weaker than the 25 to 40 per cent science suggests is required).²⁶³ The province's GHG emissions are currently 10 per cent higher than 1990 levels. Although its emissions represent only three per cent of Canada's total emissions, its per capita emissions are the fourth-highest amongst the provinces.

Electricity and heat generation produce nearly half the province's GHG emissions (46 per cent). The continued reliance on and increasing use of coal has resulted in a 42 per cent increase in GHG emissions from this sector since 1990.²⁶⁴

The second-biggest single source of emissions is road transport, which accounts for 17 per cent and has increased by 16 per cent since 1990. The increase is largely the result of a greater number of heavy-duty diesel trucks used in the expanding oil and gas and manufacturing sectors, along with a shift from passenger cars to more polluting SUVs.²⁶⁵

Although residential emissions have decreased by 48 per cent since 1990, this gain has been negated by a 111 per cent increase in commercial and institutional emissions.²⁶⁶

Unfortunately, Nova Scotia appears to be moving aggressively toward exploration and production of onshore natural gas, including shale gas and coalbed methane, two activities that have significant potential impacts on water quality and greenhouse gases emissions and other pollutants.²⁶⁷

On a brighter note, GHG emissions from waste²⁶⁸ have decreased by 40 per cent since 1990. This is largely the result of a management program that reduced methane and CO₂ emissions by banning landfilling and incineration of organic waste.

262 "Emera to invest in development of Lower Churchill and enhanced Atlantic Canada electricity system" www.emera.com/en/home/mediacentre/recentnews/2010/newsreleasedetails.aspx?SourceParams=reqid-1498210

263 Intergovernmental Panel on Climate Change. 2007. Fourth Assessment Report, Working Group III, Table 13.7.

264 Environment Canada. 2011. "National Inventory Report, 1990-2009." Annex 15.

265 Ibid.

266 Ibid.

267 Nova Scotia Department of Energy. 2010. "Onshore Oil & Natural Gas - Current Activity." www.gov.ns.ca/energy/oil-gas/onshore/current-activity/

268 Environment Canada. 2011. "National Inventory Report, 1990-2009." Annex 15.

Climate change action plans and policies

The 2007 Environmental Goals and Sustainable Prosperity Act (EGSPA) committed Nova Scotia to reducing overall greenhouse gas emissions to 10 per cent below 1990 levels by 2020.²⁶⁹ Although the target is consistent with the regional target established by the New England governors and Eastern Canadian premiers, it falls far short of the 25 to 40 per cent reductions science suggests are necessary to avoid dangerous climate change.²⁷⁰

The EGSPA requires the province to produce annual progress reports to track achievements and failures.²⁷¹

MITIGATION AND ADAPTATION

Regrettably, key targets in the act have since been amended or abandoned. For example, a commitment to adopt California vehicle fuel-emissions standards by 2010 has been shelved.

In April 2010, Nova Scotia produced a Renewable Electricity Plan that includes a commitment for 25 per cent of its electricity to come from renewable sources by 2015. (A 2007 EGSPA target of 18.5 per cent renewable energy by 2013 was amended in this plan.) There is also a target for NSPI to reach 40 per cent of total sales from renewable sources by 2020.²⁷²

Halifax was one of the first Canadian municipalities to develop a climate change adaptation plan.²⁷³ All other municipalities in Nova Scotia are now required to produce climate change action plans by 2014, detailing both mitigation and adaptation strategies. A Climate Change Adaptation Clearinghouse has been established to assist municipalities in the process.²⁷⁴

The government of Nova Scotia's failure to meet past commitments casts some doubt on its current commitments to emission reductions, renewable energy implementation and energy-efficiency gains. Particularly troubling is the government granting NSPI a four-year delay on meeting mercury-emissions targets for its power plants.²⁷⁵ There are alternative ways to limit and mitigate power price increases that don't compromise environmental quality.²⁷⁶

ENERGY EFFICIENCY

Since our last report, Nova Scotia has made strides toward reducing GHG emissions through improved energy efficiency.

In January 2010, the province established Efficiency Nova Scotia, an independent administrator with a mandate to help citizens use less energy and reduce greenhouse gas pollution.²⁷⁷ It is Canada's first independent, ratepayer-funded efficiency agency whose fairly aggressive goal is to reduce Nova Scotia's net energy usage by two per cent every year.²⁷⁸ (Unfortunately, the enabling legislation for the agency left out these

The government of Nova Scotia's failure to meet past commitments casts some doubt on its current commitments to emission reductions, renewable energy implementation and energy-efficiency gains.

269 See Bramley (2005).

270 Intergovernmental Panel on Climate Change. 2007. Fourth Assessment Report, Working Group III, Table 13.7.

271 Government of Nova Scotia. 2010. "Environmental Goals and Sustainable Prosperity (EGSPA) progress reports." www.gov.ns.ca/nse/egspa/

272 Nova Scotia Department of Energy. 2010. "Renewable Electricity Plan." www.gov.ns.ca/energy/resources/EM/renewable/renewable-electricity-plan.pdf

273 HRM Climate SMART Community Action Guide to Climate Change and Emergency Preparedness, September 2006. adaptation.nrcan.gc.ca/projdb/pdf/185b_e.pdf

274 Adaptation Clearinghouse website. climatechange.gov.ns.ca/content/adaptation/

275 Government of Nova Scotia press release, "Province Steps in to Limit Power Rate Increases," 22 July 2010. www.gov.ns.ca/news/details.asp?id=20100722003

276 For example: "Energy Cost Politics and the Environment in Nova Scotia", Canadian Centre for Policy Alternatives. www.policyalternatives.ca/sites/default/files/uploads/publications/Nova_Scotia_Office/2010/10/NS_Energy_Cost_Politics_10.pdf

277 Efficiency Nova Scotia website. www.energycyns.ca/for_homes/homeowners/

278 Nova Scotia Utility and Review Board. 2009. "NSPI 2009 Integrated Resource Plan Update Report." www.nspower.ca/site-nsp/media/nspower/2009%20IRP%20UPDATE%20-%20FINAL%20REPORT%20COMBINED%20REDACTED.pdf

clear targets.) Efficiency Nova Scotia offers rebates to new homeowners and builders to maximize energy efficiency.²⁷⁹

The 2007 Environmental Goals and Sustainable Prosperity Act (EGSPA) updated the province's building code. As of January 2011, all new residential dwellings had to meet the EnerGuide rating of 80.²⁸⁰

Still lacking is any concrete plan for developing combined heat and power to significantly increase the efficiency with which energy resources are used in the province.

RENEWABLE ENERGY

Nova Scotia has set a commendable goal for its privately owned utility company, Nova Scotia Power Inc., to generate 40 per cent of the province's electricity through renewable sources by 2020. Achieving this goal relies heavily on allocating renewable energy credits to out-of-province projects.

In November 2010, a deal was announced between NSPI's parent company and the Newfoundland and Labrador utility Nalcor to develop and export hydroelectric power from Lower Churchill Falls.²⁸¹ Only 10 per cent of the hydropower transmitted will remain in Nova Scotia, with the remainder destined for export markets. There is no guarantee that the hydropower will displace coal, and some experts are concerned that this deal may limit the potential for expansion of wind power as there is currently no differentiation between these two types of "renewables" in the targets. In addition, the risk in relying heavily on this project to achieve renewable energy targets is considerable as neither an environmental assessment nor aboriginal negotiations have been completed. It is far from certain that the megaproject will be online, as estimated, by 2017.

Nova Scotia's Renewable Electricity Plan²⁸² proposes a community-based feed-in tariff (COM-FIT) program to allow communities, co-operatives, First Nations groups and non-profits that develop small-scale green energy projects to access the grid at a fixed price.²⁸³ The program's proposed tariffs are in some instances higher than those paid in Ontario and Vermont.²⁸⁴ Given its potential, it is not surprising that attractive tariffs and strong emphasis have been placed on promoting tidal power — a renewable sector still very much in the development stage. However, it is disappointing that solar power (a proven technology) has been deliberately omitted from inclusion.²⁸⁵ There is, however, some potential for addressing this through gas tax-funded²⁸⁶ local solar projects in municipal climate change adaptation plans.

279 Efficiency Nova Scotia rebate guide. www.energycyns.ca/for_homes/energy_savings_programs/performanceplus/rebate_guide2/

280 Environmental Goals and Sustainable Prosperity Act (2007). nslegislature.ca/legc/bills/60th_1st/1st_read/b146.htm

281 "Emera to invest in development of Lower Churchill and enhanced Atlantic Canada electricity system" www.emera.com/en/home/mediacentre/recentnews/2010/newsreleasedetails.aspx?SourceParams=reqid-1498210

282 Nova Scotia Renewable Electricity Plan www.gov.ns.ca/energy/resources/EM/renewable/renewable-electricity-plan.pdf

283 Ibid.

284 "Nova Scotia's Proposed ComFIT Tariffs Circulated", 7 January 2011. "Nova Scotia's Proposed ComFIT Tariffs Circulated", Alliance for Renewable Energy, 7 January 2011. www.allianceforrenewableenergy.org/2011/01/nova-scotias-proposed-comfit-tariffs-circulated.html

285 Ibid.

286 Gas Tax Fund, Canada-Nova Scotia Infrastructure Secretariat. www.nsinfrastructure.ca/pages/Gas-Tax-Fund.aspx

NOVA SCOTIA OVERVIEW

Y=Yes N=No A=Announced but not yet implemented NA=Not applicable

MITIGATION

Has a current climate change action plan?	Y
Set emission reduction targets comparable to Kyoto?	N
Has set 2°C above pre-industrial temperatures as the upper limit for average global warming?	N
Addressed emissions from sector with highest emissions?	Y
Addressed emissions from sector with fastest-growing emissions?	Y
Has a broad-based carbon pricing policy (carbon tax or cap-and-trade)?	N
Has meaningful energy efficiency, conservation and renewable energy policies?	Y
Has strong building code for energy efficiency?	Y
Has meaningful transportation policies?	N
Has policies that address urban sprawl?	N
Has meaningful policies to address emissions from industry?	N
Has a program to address emissions from government?	Y
Has a policy or program to protect natural carbon stores in forests and peatlands?	N
Uses the full suite of policy instruments, including regulations and disincentives?	A

GHG EMISSIONS TRENDS

Has reduced emissions since 1990?	N
Has reduced emissions 2006–2009?	N
Reduced emissions in 2009?	Y ^a

CLIMATE CHANGE ADAPTATION

Has a meaningful plan to adapt to climate change impacts?	N
Has a science advisory body that advises government on adaptation to climate change?	N

GOVERNANCE AND ACCOUNTABILITY

Has established a cross-governmental climate change secretariat?	Y
Reports on actions and outcomes from climate action plan?	Y

Note: ^aReducing GHG emissions in the reporting year has been a grading criterion for all David Suzuki Foundation reports on provincial and territorial climate action. The economic downturn of 2008/09 reflects (in some, if not all cases) illusory reductions that may have already been reversed.

Further details in: Environmental Goals and Sustainable Prosperity Act, nslegislature.ca/legc/bills/60th_1st/1st_read/b146.htm; Greenhouse Gas Emissions Regulations, 2009, www.gov.ns.ca/just/regulations/regs/envgreenhouse.htm; Nova Scotia Renewable Electricity Plan www.gov.ns.ca/energy/resources/EM/renewable/renewable-electricity-plan.pdf

Nova Scotia has taken some important steps over the past few years, but there are also still some large holes in the present plan, including the absence of provincewide strategies for heat generation and gaps in policies to seriously address emissions from road transportation.

The Nova Scotia government's promotion of large-scale forest biomass as a "carbon neutral" source of renewable electricity²⁸⁷ has been described by Ecology Action Centre as the "worst possible scenario for forest biomass energy."²⁸⁸ Not only is the strategy in conflict with the province's stated goal of reducing clearcutting by 50 per cent by 2015, it also fails to take into account additional GHG emissions from that harvesting.²⁸⁹ Another major flaw of the strategy is its failure to give priority to using biomass for highly efficient, smaller-scale, distributed energy systems rather than power production.

Although the province has done little to promote the use of geothermal energy systems, it does offer individuals and businesses a partial rebate on the cost of installing solar heating. The program is administered by Efficiency Nova Scotia.²⁹⁰

Halifax has gone further, introducing a "solar city" program that will lead to the installation of solar water heating in 500 to 700 homes in the municipality every year. Residents pay no upfront cost with repayments through property taxes less than the amount saved on existing heating costs. The program provides access to a "one-window" approach for securing government rebates and incentives for solar heating.²⁹¹

TRANSPORTATION

Although transportation is the second-biggest source of GHG emissions in Nova Scotia, the province shows no willingness to tackle this problem.

A commitment made in the 2007 EGSPA that Nova Scotia would "adopt emissions standards for greenhouse gases and air pollutants from new motor vehicles, such as the standards adopted by the State of California by the year 2010" was not implemented. Unwilling to lead by example, the provincial government says it is waiting for national guidelines and "will continue to encourage the federal government to upgrade the national standards."²⁹²

The province continues to spend over \$300 million a year on new highway and road construction, by far the largest recipient of capital expenses.²⁹³

Conclusion

Nova Scotia has taken some important steps over the past few years, most notably with its hard cap on greenhouse gas emissions from the power sector to reduce these by 25 per cent over the next decade. Renewable energy and efficiency programs and targets should help address power sector emissions, which make up close to half the province's total emissions. However, there remain some credibility issues with respect to Nova Scotia's past lapses (e.g., introducing California vehicle emission standards, renewable energy implementation and mercury emissions). There are also still some large holes in the present plan, including the absence of provincewide strategies for heat generation and gaps in policies to seriously address emissions from road transportation. Hopefully, Nova Scotia will strengthen its leadership in these areas.

287 Nova Scotia Department of Energy. 2010. "Renewable Electricity Plan." www.gov.ns.ca/energy/resources/EM/renewable/renewable-electricity-plan.pdf

288 "Nova Scotia achieves the worst possible scenario for forest biomass energy", Ecology Action Centre, 26 January 2011. www.ecologyaction.ca/content/nova-scotia-achieves-worst-possible-scenario-forest-biomass-energy

289 See, for example, Manomet Center for Conservation Sciences, "Manomet Study of Woody Biomass Energy Released", 10 June 2010. www.manomet.org/sites/manomet.org/files/ManometBiomassPressRel06%2009%2010%201630.pdf

290 Efficiency Nova Scotia website. www.energyncs.ca/

291 "Can Halifax be Canada's 'Solar city'?" The Coast, 5 November 2010. www.thecoast.ca/RealityBites/archives/2010/11/05/can-halifax-be-canadas-solar-city

292 EGSPA Progress Report 2010. www.gov.ns.ca/nse/egspa/docs/EGSPA.2010.Annual.Report.pdf

293 Nova Scotia Ministry of Finance. "Estimates and Supplementary Detail for the fiscal year 2010–2011." at www.gov.ns.ca/finance/site-finance/media/finance/budget2010/EstimatesAndSupDetail2010-11.pdf

Ranking

	2005	2006	2008	2011
Best				
Very Good				
Good				X
Fair			X	
Poor	X	X		
Worst				

Recommendations

The Nova Scotia government should:

- Put a halt to issuing licences for exploration and development of onshore natural gas reserves until the province has assessed the full extent of the impacts on air and water quality, including greenhouse gas emissions; consulted Nova Scotians on whether and how to undertake these activities; and, if development is to proceed, develop a plan for addressing all impacts in a meaningful way.
- Complement regulations on the electricity sector and investments in energy efficiency by developing a combined heat and power strategy and a strategy to harness much more passive solar and geothermal energy.
- Extend Halifax’s “solar city” initiative across the province.
- Ensure that renewable energy standards reflect the best science and deliver GHG emission reductions. This is especially important with respect to greenhouse gases emitted through the harvesting of forests to be used for energy. Modify the biomass strategy so it has clear sustainability objectives and criteria such as prioritizing smaller scale, distributed energy systems.
- Develop a plan to reduce emissions from the transportation sector. Shifting budget resources from new highways into sustainable modes of transportation would be a good first step. Fulfilling the promise to match California’s fuel-efficiency standards rather than relying on the weak federal proposal would also help.
- Establish a provincial climate change adaptation advisory panel to develop an adaptation strategy for the province.
- Develop a strategy to utilize hydro imports to complement the development of other low-carbon technologies and reduce coal dependence.
- Ensure communities have equitable access to the electricity grid to benefit from renewable energy generation opportunities through the COM-FIT. Expand COM-FIT to more forms of energy in the future.

Newfoundland and Labrador



PHOTO COURTESY PROVINCE OF NEWFOUNDLAND VIA FLICKR

Strengths

- Two new wind farms could reduce sulphur and CO2 emissions by around 14 per cent.
- Construction completed on Ramea wind/hydrogen energy project.
- Wind and small hydro projects being developed to reduce diesel use in isolated communities.
- Surpassed target for hybrid vehicles in government fleet.
- Office of Climate Change, Energy Efficiency and Emissions Trading established.
- Homeowner energy audits and retrofit grants available.
- Committed to 25 per cent increase in energy efficiency in new and renovated government buildings.

Weaknesses

- No targets to reduce GHG emissions from heavy industry.
- Flaring guidelines to address increased emissions from the oil and gas sector are voluntary.
- Inadequate assessment of capacity of Lower Churchill megaproject to reduce GHG emissions.
- Focus on megaprojects drawing resources away from other renewable energy generation.
- Proposed Argentia wind farm blocked by lack of provincial commitment to buy its power.
- Regulation of oil and gas industry ignores many environmental and ecosystem impacts.
- No sign of government energy-efficiency standards being extended to the private sector.



Fluctuating increases and decreases in Newfoundland and Labrador's GHG emissions suggest changes in emissions are driven not by the efforts of the province but by factors beyond the government's influence.

Missed opportunities

- Instead of promoting distant megaprojects requiring construction of long-distance transmission lines, the government could have emphasized the possibilities of developing decentralized, small-scale renewable energy projects, especially for remote communities.
- The government has committed only to observer status in the Western Climate Initiative, rather than full participation.
- The 2011 Energy Efficiency Plan does not prioritize investment in cost-effective measures in all sectors.
- Rather than simply offer rebates to citizens who purchase energy-efficient vehicles, the province could have enacted California fuel-efficiency standards for new-vehicle purchases to effectively address emissions from on- and off-road transportation, the province's largest source of GHGs.
- A review of offshore oil spill preparedness, commissioned by the province and released in December 2010, turned out to be another wasted opportunity. No experts on ocean ecosystems were consulted and, as a result, information about the impacts of oil spills on species and ocean ecosystems was incomplete, out-of-date or non-existent.

Greenhouse gas emissions²⁹⁴

In its 2011 climate change action plan, the government has committed to the Conference of New England Governors and Eastern Canadian Premiers GHG reduction targets of 10 per cent below 1990 levels by 2020 and 75 to 85 per cent below 2001 levels by 2050. (An earlier target to reduce GHG emissions to 6 per cent below 1990 levels by 2012 has been abandoned.) The present target falls well below the 25 to 40 per cent reductions science suggests are needed immediately.²⁹⁵

As of 2009, down from a peak in 2007, the province's GHG emissions were 2.7 per cent higher than 1990 levels. Unfortunately, fluctuating increases and decreases in Newfoundland and Labrador's GHG emissions suggest changes in emissions are driven not by the efforts of the province but by factors beyond the government's influence. GHG emissions are far more affected by warmer winters, furnace-oil prices, seafood prices, shutdowns of paper mills and production stoppages on oil platforms than they are by the province's current, ineffectual climate action plan.²⁹⁶

The single largest source (22 per cent) of GHG emissions in Newfoundland and Labrador is road transportation. The 27 per cent increase in emissions from this sector since 1990 is attributed to a combination of an increase in the size of the provincial fleet and increased private use of fuel-inefficient SUVs, vans and pickups.

Fossil fuel production and refining account for 19 per cent of emissions. Mining and oil and gas extraction (including fugitive sources) contribute a further 14 per cent. Emissions from these sectors have increased by 50 per cent since 1990, which were, until 1997, from petroleum refining and conventional mining. In 1997, offshore petroleum operations began in Newfoundland and Labrador, leading to substantial increased emissions, with offshore-gas flaring a dominant component. Given the weak regulation of flaring, recent minor decreases in these emissions were the result not of effective policies but merely of the fact that with age oil fields produce less gas to flare.

GHG emissions from electricity and heat generation have decreased 47 per cent from 1990 levels. These decreases are due to increased hydroelectric capacity and wind power combined with decreased demand

Newfoundland and Labrador's 27 per cent increase in road transportation emissions since 1990 is attributed to an increase in the size of the provincial fleet and increased private use of fuel-inefficient SUVs, vans and pickups.

294 Environment Canada. 2011. "National Inventory Report, 1990-2009." Annex 15.

295 Intergovernmental Panel on Climate Change. 2007. Fourth Assessment Report, Working Group III, Table 13.7.

296 www.env.gov.nl.ca/env/climate_change/govt_action/climatechangeplanfinal.pdf

resulting from warmer winters, population decline and the closure of two large paper mills. It is unlikely these decreases will be sustained as industrial demand is expected to increase sharply over the next few years, with the opening of a nickel-processing plant in Long Harbour²⁹⁷ scheduled for 2012. Most of this additional demand will be met by increased production from the Holyrood bunker-oil power plant, with corresponding increases in GHGs emissions and other pollution.

Climate change action plans and policies

In 2008, we reported that an updated version of the province's climate change action plan would be released that year. Three years later, it has now been published. The 2011 plan acknowledges the huge threat climate change poses to Newfoundland and Labrador but makes few concrete proposals to reduce GHG emissions from major sources. Although the plan commits to establishing GHG reduction targets for large industry by 2012, it does so with the proviso that any actions should not economically disadvantage the province's oil and gas sector. This lack of commitment is further illustrated by the government's decision to limit its involvement in the Western Climate Initiative to that of an observer.

MITIGATION AND ADAPTATION

Newfoundland and Labrador's 2011 plan acknowledges the huge threat climate change poses to the province, but makes few concrete proposals to reduce GHG emissions from major sources.

The oil and gas industry in Newfoundland and Labrador, already functioning in a high-risk environment, is moving into even more dangerous territory with existing or proposed drilling at great depths or in environmentally sensitive areas, such as the semi-enclosed waters of the Gulf of St. Lawrence. The regulations for flaring, for addressing other greenhouse emissions and for operational spills and potential catastrophic spills are weak. The regulatory body, the Canada-Newfoundland Offshore Petroleum Board, sees offshore oil development almost exclusively from an engineering and business perspective.

Although C-NLOPB is a joint federal-provincial body, the province has exercised little influence to balance the board to ensure environmental concerns are given equal weight to industrial interests. None of the current C-NLOPB board members has a solid background in natural sciences, much less in environmental, ocean and ecosystem sciences. This is despite the fact that the oil industry operates in a much more extreme environment in Newfoundland and Labrador than it does in the site of the recent major oil disaster in the Gulf of Mexico.

It is disappointing that the provincial government has so far shown no inclination to act on the October 2010 recommendation of the Wells inquiry that a completely separate and autonomous Safety Authority should be established and properly funded.²⁹⁸

It is even more disappointing that a review of offshore oil spill preparedness, commissioned by the province²⁹⁹ and released in December 2010, proved another wasted opportunity. The report was written entirely from an engineering/industry point of view. No experts on ocean ecosystems were contacted. The result was that information about the impacts of oil spills on species and ocean ecosystems was incomplete, outdated or non-existent. Despite these critical flaws, the report has been favourably received by the provincial government, leaving it with a false sense of security, and quite likely ill-prepared to effectively prevent or respond to a major oil spill, including the impacts on marine and ocean ecosystems.

297 "\$2B hydromet plant to be built in Long Harbour", CBC, 12 November 2008. www.cbc.ca/news/canada/newfoundland-labrador/story/2008/11/12/inco-hydrome.html.

298 Canada-Newfoundland and Labrador Offshore Helicopter Safety Enquiry, October 2010. www.cnlopb.nl.ca/pdfs/ohsi/ohsir_vol1.pdf

299 Prevention and Remediation Requirements and Practices in Newfoundland and Labrador, Department of Natural Resources, Government of Newfoundland and Labrador, December 2010, www.nr.gov.nl.ca/nr/publications/energy/nloffshore_oil_review.pdf

ENERGY EFFICIENCY

The province is to be commended for leading by example in energy-efficient building standards. It is committed to increasing energy efficiency in new and renovated government buildings and publicly funded buildings by 25 per cent and achieving a LEED Silver Standard. In 2011, the newly constructed Natural Resources Building in St. John's became the first provincial government building to receive the Building Owners and Manufacturers Association Building Environmental Standards (BOMA BESt) Level 3 certification.

The government would, however, do well to extend its own high standards to the rest of the province. A provincial building code with strong energy-efficiency standards needs to be implemented (particularly for new buildings). The code could also make energy efficiency know-how a condition of licensing construction companies and tradespeople.

The 2007 energy plan³⁰⁰ contained a suite of policy actions related to energy efficiency, including homeowner energy audits and retrofit grants, as well as funding to provide audits and retrofits to low-income households. The 2011 energy efficiency plan maintains the province's commitment to these programs. However, funding remains insufficient — it should be increased and eligibility for the program extended to renters.

Unfortunately, the proposed removal of the provincial portion of HST on electricity and other forms of home heating will not only reduce incentives for energy efficiency, but will also likely limit the government's ability to fund the residential energy-efficiency programs in amounts necessary for their success.

It is also unfortunate that neither the 2007 plan nor the 2011 plan prioritize investment in cost-effective energy-efficiency measures in all sectors.

RENEWABLE ENERGY

There have been a number of positive developments in wind energy.

Two new wind farms have been built in the province. Estimates show they could displace 300,000 barrels of oil annually and reduce sulphur and carbon dioxide emissions by around 14 per cent.³⁰¹

Construction has also been completed on the Ramea wind/hydrogen energy project on Northwest Island. The project will provide wind energy from three turbines and create hydrogen from surplus wind power to supplement (and eventually replace) diesel use in this isolated community.³⁰²

The Coastal Labrador Wind Monitoring Program is currently investigating the wind and small hydro potential of four isolated communities in Labrador to reduce their use of diesel generators.

Unfortunately, the province's commitment to expanding wind energy is now in doubt. In a troubling development, the proposed wind farm in Argentia was blocked by lack of commitment from the province to buy its power.³⁰³ In the absence of new wind generation, the projected increase in demand for electricity will be met by ramping up the burning of bunker oil (and GHG emissions) by the thermal power plant in Holyrood. New wind farms could alleviate this need until the Lower Churchill project (see below) is completed and then, by addressing local power needs, allow more energy from the Lower Churchill to be exported. Blocking new wind farms sends a regrettable signal that the province sees wind energy not as a complement to the Lower Churchill project, but as a financial competitor to existing and future hydro projects.

The overall impact of the Lower Churchill mega hydro project on reducing GHG emissions is difficult to assess. The project would reduce emissions by replacing electricity generation from bunker oil, as well as providing low-emission energy to those mainland jurisdictions to which electricity can be exported. However,

Newfoundland and Labrador's two new wind farms could displace 300,000 barrels of oil annually and reduce sulphur and carbon dioxide emissions by around 14 per cent.

300 Newfoundland & Labrador Energy Plan. www.nr.gov.nl.ca/energyplan/EnergyReport.pdf

301 St. Lawrence Wind Power Project, 18 September 2009. www.greenr.ca/2009/09/18/st-lawrence-wind-farm-energy-project/

302 Ramea Report, Nalcor, January 2010. www.nalcorenergy.com/assets/nalcorenergyrameareport_january2010.pdf

303 "Lower Churchill before wind power", The Telegram, 22 January 2011. www.thetelegram.com/Business/2011-01-22/article-2149121/Lower-Churchill-before-wind-power-1

the magnitude of these reductions is unclear: 85 per cent of the province's citizens already have access to renewable energy,³⁰⁴ mostly from existing hydro developments, so the provincial GHG reductions will be limited. Reductions in out-of-province emissions will depend on the amount of energy sold, on whether this energy will replace fossil fuels or renewables, and whether it will fulfill the existing demand. These GHG reductions must then be weighed against the downsides, including some GHG emissions from the construction and from decomposing organic matter after the reservoir is filled, and significant impacts on the landscape and terrestrial and aquatic ecosystems within the Churchill basin and along the way of the new transmission corridor to Newfoundland.

Megaprojects like Lower Churchill draw political and financial capital away from other renewable energy generation with much smaller environmental impact, such as a network of community-owned wind farms, with existing hydro, possible energy storage and the link to the mainland used to even out the energy supply into the grid. Such alternatives, although proposed in the public discourse, have not received a fair evaluation.

The government's 2011 climate action plan commits to "utilize revenues from non-renewable energy resources to further support clean energy development".³⁰⁵ However, such investment appears to be earmarked for Lower Churchill and other hydro megaprojects. It is a pity that the plan fails to emphasize the possibilities of developing decentralized, small-scale renewable energy projects, especially for remote communities. Instead, it recommitments the province to building more long-distance transmission lines.

TRANSPORTATION

The province's commitment to ensuring 25 per cent of car and SUV purchases for the provincial fleet would be energy efficient has been exceeded. Over 40 per cent of vehicles purchased since 2008 have been hybrids.³⁰⁶

Incentives are being considered for citizens to buy more fuel-efficient vehicles. Rather than simply offering rebates toward the purchase of energy-efficient vehicles, the province could consider enacting California fuel-efficiency standards for new vehicle purchases to effectively address emissions from transportation, the province's single largest source of GHGs. However, such measures have been dismissed in the 2011 climate action plan, with the government claiming the provincial "population is too small to support unique vehicle efficiency standards".

Although money from the Newfoundland and Labrador Green Fund has been invested in promoting cycling in St. John's and installing hybrid devices on six buses, the government contends its cities are not large enough to support mass transit.

The current climate action plan relies almost exclusively on public education and consumer choice to achieve any reductions in GHG emissions from transportation.

Conclusion

It is disappointing that Newfoundland and Labrador's long-awaited updated climate change action plan falls so short on targets (it sets none for large industry) and effective actions to reduce the province's GHG emissions. Since the first plan was produced in 2005 there have been significant decreases in GHG emissions from electricity and heat generation, but these have been offset by increases from mining and fossil fuel industries. It should be encouraging to note that overall emissions declined in 2008 and 2009. Unfortunately, these reductions (almost certainly caused by the global economic downturn and other factors) are unlikely to be sustained over a longer term. The government has done a good job of increasing vehicle and building

304 Focusing Our Energy, page 31. www.nr.gov.nl.ca/energyplan/EnergyReport.pdf

305 Charting Our Course: Climate Change Action Plan 2011. www.exec.gov.nl.ca/exec/cceeet/publications/climate_change.pdf

306 "Green Vehicle Targets Exceeded", 6 April 2011. www.releases.gov.nl.ca/releases/2011/tw/0406n06.htm

It is disappointing that Newfoundland and Labrador's long-awaited updated climate change action plan falls so short on targets (it sets none for large industry) and effective actions to reduce the province's GHG emissions.

NEWFOUNDLAND AND LABRADOR OVERVIEW

Y=Yes N=No A=Announced but not yet implemented NA=Not applicable

MITIGATION

Has a current climate change action plan?	Y
Set emission reduction targets comparable to Kyoto?	N
Has set 2°C above pre-industrial temperatures as the upper limit for average global warming?	N
Addressed emissions from sector with highest emissions?	N
Addressed emissions from sector with fastest-growing emissions?	N
Has a broad-based carbon pricing policy (carbon tax or cap-and-trade)?	N
Has meaningful energy efficiency, conservation and renewable energy policies?	N
Has strong building code for energy efficiency?	N
Has meaningful transportation policies?	N
Has policies that address urban sprawl?	N
Has meaningful policies to address emissions from industry?	N
Has a program to address emissions from government?	Y
Has a policy or program to protect natural carbon stores in forests and peatlands?	N
Uses the full suite of policy instruments, including regulations and disincentives?	N

GHG EMISSIONS TRENDS

Has reduced emissions since 1990?	N
Has reduced emissions 2006–2009?	N
Reduced emissions in 2009?	Y ¹⁹

CLIMATE CHANGE ADAPTATION

Has a meaningful plan to adapt to climate change impacts?	N
Has a science advisory body that advises government on adaptation to climate change?	N

GOVERNANCE AND ACCOUNTABILITY

Has established a cross-governmental climate change secretariat?	Y
Reports on actions and outcomes from climate action plan?	N

Note: ¹⁹Reducing GHG emissions in the reporting year has been a grading criterion for all David Suzuki Foundation reports on provincial and territorial climate action. The economic downturn of 2008/09 reflects (in some, if not all cases) illusory reductions that may have already been reversed.

For further details see: Charting Our Course: Climate Change Action Plan 2011. www.exec.gov.nl.ca/exec/cceeet/publications/climate_change.pdf; Moving Forward: Energy Efficiency Action Plan 2011. www.exec.gov.nl.ca/exec/cceeet/2011_energy_efficiency_action_plan.html; Focusing Our Energy (2007) www.nr.gov.nl.ca/energyplan/EnergyReport.pdf; Responding to Climate Change in Newfoundland and Labrador (Public Discussion Document, 2010), www.exec.gov.nl.ca/exec/cceeet/publications/climate_change_discussion.pdf

energy efficiency in its own operations, but it is failing to extend its influence to other sectors of the province. (The head leads, but the body doesn't follow.) A 2012 target to reduce GHG emissions to 6 per cent below 1990 levels has been abandoned, replaced with a GHG reduction target of 10 per cent below 1990 levels by 2020. With so little concrete action elsewhere, the province is relying too heavily on the Lower Churchill hydroelectric project to achieve its target — this despite the project's still undetermined costs and timeline (not to mention considerable environmental costs).

Ranking

	2005	2006	2008	2011
Best				
Very Good				
Good				
Fair				
Poor				
Worst	X	X	X	X

Recommendations

The government of Newfoundland and Labrador should:

- Set much stronger GHG reduction targets and timelines than those established by the Conference of New England Governors and Eastern Canadian Premiers.
- Establish a strong carbon price (through a carbon tax or cap-and-trade system) to reduce emissions from heavy industry and avoid dangerous climate change.
- Enact California fuel-efficiency standards for new-vehicle purchases.
- Address GHG emissions and other environmental problems and risks caused by the offshore oil industry through a radical reform of the regulating body, C-NLOPB.
- Strengthen the mandate and resources of the Office of Climate Change, Energy Efficiency and Emissions Trading to develop programs to educate and deliver efficiency programs for all sectors.
- Extend the high-energy efficiency standards the government is applying to itself to the rest of the province by:
 - putting strong energy-efficiency standards into the building code (particularly for new buildings),
 - increasing funding to energy-efficiency programs (particularly for low-income families) and extending these programs to renters,
 - establishing sufficient and sustained investments in energy efficiency (especially for the building sector) and conservation, and
 - making energy efficiency know-how a condition of licensing construction companies and tradespeople.
- Develop and support sustainable transportation initiatives (e.g., regional public transportation for densely populated areas such as northeast Avalon).

Yukon



PHOTO COURTESY STUDIOLIT VIA FLICKR

Strengths

- Climate action plan commitment to 20 per cent reduction in GHG emissions from government operations by 2015.
- Commitment to carbon-neutral internal operations by 2020.
- Commitment to 20 per cent increase in both energy efficiency and renewable energy by 2020.
- GreenHome energy efficiency standards in government-funded residential construction.
- Committed to meet or exceed LEED certified energy-efficiency standard in government-funded commercial and institutional construction and renovation.
- Working with the Northern Climate Exchange at Yukon College to develop adaptation strategies for Yukon and, in collaboration with the governments of Nunavut and Northwest Territories, to complete a Pan-Territorial Adaptation Strategy.
- Climate change included in annual State of the Environment report.
- Proposed a climate change secretariat to co-ordinate action and report to the public on progress.



The Yukon territory's contribution of 0.05 per cent to Canada's GHG emissions is the lowest in the country. Overall greenhouse gas emissions declined 41 per cent in the Yukon between 1990 and 2009.

Weaknesses

- No territory-wide targets for reducing GHG emissions.
- Aggressively promoting oil and gas development, as well as mining activity.
- Energy plan relies too heavily on switching off-grid communities from diesel to oil and natural gas.
- Carbon capture and storage being discussed as an offsetting measure.

Missed opportunities

- Yukon's small population and lack of an already entrenched oil and gas industry could allow it to be innovative in both mitigation and adaptation, especially through the use of public engagement.
- \$140 million is being spent on a 5-10 MW hydro enhancement project. Although this is a renewable energy project, it will likely have negative impacts on salmon spawning in the Mayo River and freshwater fish in the Mayo Lake. This money could have been used to establish wind power in the Yukon, to diversify energy sources and displace diesel burned to generate electricity.

Greenhouse gas emissions³⁰⁷

The Yukon territory's contribution of 0.1 per cent to Canada's GHG emissions is the lowest in the country. Overall greenhouse gas emissions declined 41 per cent in the Yukon between 1990 and 2009.

The fastest-growing source of GHG emissions in the Yukon between 1990 and 2009 (the year on which Environment Canada's GHG inventory is based) was fossil fuel production and refining. A major contributor to this increase is the Kotaneelee Fields natural gas extraction, collection and transportation facility, which transports raw natural gas via pipelines to British Columbia for further processing. However, these figures are unlikely to reflect current emissions. With the Kotaneelee Fields almost played out, there will have been major decreases since 2009.

Similarly, an 84 per cent decrease in emissions from electricity and heat generation between 1990 and 2009 (attributed to decreased mining activity and an increase of residents to the hydro-powered grid) will be a poor reflection of the current situation. Since 2009 there has been a mining boom. Adding the Minto Mine to the hydro grid has maxed it out (particularly in winter months), resulting in substantially increased use of diesel generators. With two more mines scheduled to go online, this situation will only worsen unless substantial action is taken.

There will also be a large, currently unreported spike in emissions from helicopters and planes as a result of the boom. Substantial increases are also likely in road and off-road transportation, which in 2009 accounted for half the Yukon GHG emissions (37 per cent and 13 per cent respectively).

Climate change action plans and policies

The government recognizes the impact climate change is already having. It is working closely with the Northern Climate Exchange at Yukon College to develop adaptation strategies for the Yukon. It is also working with the governments of Nunavut and Northwest Territories to complete a Pan-Territorial Adaptation Strategy.

MITIGATION AND ADAPTATION

The Yukon's 2009 climate change action plan commits the government to reduce GHG emissions from its internal operations by 20 per cent by 2015 and to ensure internal operations are carbon neutral by 2020.³⁰⁸ Unfortunately, this laudable commitment does not extend to municipalities, nor can it be applied to First Nations or federal government operations. It also most definitely does not apply to industry. In fact, there are currently *no* territorial-wide targets for reducing GHG emissions.

Of the three territories, so far the Northwest Territories is the only jurisdiction to recognize the important role a carbon tax could play in reducing industrial GHG emissions. This is a pity, as a pan-territorial carbon

307 Environment Canada. 2011. "National Inventory Report, 1990-2009." Annex 15.

308 Yukon Government Climate Change Action Plan, 2009. p. 23. environmentyukon.gov.yk.ca/monitoringenvironment/ccactionplan.php

The fastest-growing source of GHG emissions in the Yukon between 1990 and 2009 (the year on which Environment Canada's GHG inventory is based) was fossil fuel production and refining.

tax could be a powerful instrument. It would level the playing field across Northern Canada and send a clear message that an area already experiencing climate change is not open for business as usual.

It is difficult to accurately assess progress to date. Although the government does require climate change be included in the State of the Environment report submitted annually to the legislature, the reports are not particularly timely. The 2008 report³⁰⁹ was released in March 2011.

ENERGY EFFICIENCY

The Yukon government has made a commitment to GreenHome energy efficiency standards in government-funded residential construction. It also requires government-funded commercial and institutional construction and renovation to meet or exceed LEED-certified energy efficiency standard. There is no sign of a territorial-wide building code to extend these standards into the private sector.

Some effort is being made to encourage individuals to decrease their contributions to GHG emissions.

The Yukon Energy Solutions Centre provides advice on renewable-energy technologies and programs, housing retrofits, fuel prices and the economic and social costs and environmental impacts of energy choices. Its Good Energy Rebate Program provides rebates for the most energy-efficient kitchen and laundry appliances and for solar domestic hot water.³¹⁰

The Home Repair Program provides homeowners with an opportunity to borrow up to \$35,000 to repair their principal residence for energy efficiency.

RENEWABLE ENERGY

The Yukon energy strategy commits the territory to increasing renewable energy by 20 per cent by 2020. This could, as the strategy acknowledges, substantially reduce diesel use in off-grid communities. (It is unfortunate that the strategy appears to give equal weight to replacing imported diesel with local oil and gas.³¹¹)

Hydropower has been a source of energy in the Yukon since the 1940s, often historically developed as a taxpayer-funded resource for mining companies. The government anticipates it will continue to play a major role in the territory's renewable energy strategy. For example, \$140 million (half from the federal government's Green Infrastructure fund) is currently being spent on the 5-10 MW Mayo B hydro enhancement project. Although this project will displace considerable GHG emissions, it is also likely to have negative impacts on salmon spawning in the Mayo River and freshwater fish in the Mayo Lake. This money could have been used to establish wind power in the Yukon, to diversify energy sources and displace diesel burned to generate electricity.

The Yukon is the only northern territory with any existing major wind energy projects (800 kW installed in Whitehorse in the 1990s). Smaller-scale wind projects are now seen as viable options for reducing GHG emissions from diesel-reliant communities. A wind-monitoring service has been established to help off-grid residents interested in wind energy determine if the wind resource at their location merits the investment in wind-generation equipment.³¹²

In addition, the Rural Electrification Program provides loans to install power, either by connecting to the electrical grid or through stand-alone photovoltaic, hydro or wind power systems.³¹³

The Yukon government has made a commitment to GreenHome energy efficiency standards in government-funded residential construction. Some effort is also being made to encourage individuals to decrease their contributions to GHG emissions.

309 Yukon State of the Environment Report 2008, March 2011. www.env.gov.yk.ca/monitoringenvironment/documents/state_of_env_report2008.pdf

310 Energy Solution Centre www.energy.gov.yk.ca/aboutesc.html

311 Energy Strategy for Yukon, p.4, www.energy.gov.yk.ca/pdf/energy_strategy.pdf

312 Pan-Territorial Renewable Energy Inventory, April 2011 www.anorthernvision.ca/documents/RenewableEnergyInventoryEN.pdf

313 Ibid.

YUKON OVERVIEW

Y=Yes N=No A=Announced but not yet implemented NA=Not applicable

MITIGATION

Has a current climate change action plan?	Y
Set emission reduction targets comparable to Kyoto?	N
Has set 2°C above pre-industrial temperatures as the upper limit for average global warming?	N
Addressed emissions from sector with highest emissions?	N
Addressed emissions from sector with fastest-growing emissions?	N
Has a broad-based carbon pricing policy (carbon tax or cap-and-trade)?	N
Has meaningful energy efficiency, conservation and renewable energy policies?	A
Has strong building code for energy efficiency?	A
Has meaningful transportation policies?	N
Has policies that address urban sprawl?	N
Has meaningful policies to address emissions from industry?	N
Has a program to address emissions from government?	Y
Has a policy or program to protect natural carbon stores in forests and peatlands?	N
Uses the full suite of policy instruments, including regulations and disincentives?	N

GHG EMISSIONS TRENDS

Has reduced emissions since 1990?	Y
Has reduced emissions 2006–2009?	Y
Reduced emissions in 2009?	Y ^a

CLIMATE CHANGE ADAPTATION

Has a meaningful plan to adapt to climate change impacts?	N
Has a science advisory body that advises government on adaptation to climate change?	Y

GOVERNANCE AND ACCOUNTABILITY

Has established a cross-governmental climate change secretariat?	A
Reports on actions and outcomes from climate action plan?	Y

Note: ^aReducing GHG emissions in the reporting year has been a grading criterion for all David Suzuki Foundation reports on provincial and territorial climate action. The economic downturn of 2008/09 reflects (in some, if not all cases) illusory reductions that may have already been reversed.

For further detail see: Yukon Government Climate Change Action Plan, environmentyukon.gov.yk.ca/monitoringenvironment/ccactionplan.php; Energy Strategy for Yukon, www.energy.gov.yk.ca/pdf/energy_strategy.pdf

Both the Yukon and the Northwest Territories are considering the integration of photovoltaic power into community grid systems. All three territories are working to develop policies and pricing for self-generated or non-utility electricity sold back into the grid.³¹⁴

The Yukon government also sees considerable potential for biomass to meet renewable-energy targets and is currently developing a biomass strategy.

Finally, Yukon has considerable geothermal potential for power production. Geothermal resources in Yukon are second only to B.C. and could be a boon to local communities' power needs.

³¹⁴ Ibid.

TRANSPORTATION

While recognizing transportation as the single biggest contributor to GHG emissions in the Yukon, no substantive measures have been taken to address or curb these emissions.

The energy strategy identifies as its priorities for reducing emissions from transportation (in both the short and long term) as:

- supporting local food production,
- increasing efficiency and conservation, and
- encouraging energy-efficient transportation, such as public transit.

No commitments are made or details given on how any of these goals will be achieved.³¹⁵

Conclusion

Although the Yukon's 2009 GHG emissions were well below 1990 levels, aggressive promotion of oil, gas and mining projects is likely to lead to a dramatic increase in emissions in the coming years. Admirable targets have been set for the government's internal operations (carbon neutral by 2020), but there are currently no territory-wide targets for reducing GHG emissions. It is anticipated that targets will be announced this year. While the desire to benefit economically from its natural resources is understandable, long-term vision is needed. Hopefully, the targets set will show some commitment to minimizing emissions from industry. It is worrying that carbon capture and storage even merits a mention as a potential offsetting measure in the Yukon's climate plan.³¹⁶ The Yukon would do far better to follow the lead of the Northwest Territories in investigating the potential for a carbon tax.

While Yukon's desire to benefit economically from its natural resources is understandable, long-term vision is needed. Hopefully, the targets set will show some commitment to minimizing emissions from industry.

Ranking

	2005	2006	2008	2011
Best				
Very Good				
Good				
Fair				
Poor	X	X	X	X
Worst				

Recommendations

The Yukon government should:

- Stop promoting fossil-fuel developments, which will only add to an unsustainable global energy system.
- Either alone or in conjunction with the other territories introduce a carbon tax. (A pan-territorial carbon tax would level the playing field and send a clear message that an area already experiencing climate change is not open for business as usual.)
- Join and implement the Western Climate Initiative's cap-and-trade system launched in January 2012.
- Reject carbon capture and storage as a supposed offsetting measure.
- Prioritize development of renewable energy for use by diesel-dependent off-grid communities.
- Implement as quickly as possible a territory-wide climate change adaptation strategy.

315 Energy Strategy for Yukon, www.energy.gov.yk.ca/pdf/energy_strategy.pdf

316 Yukon Government Climate Change Action Plan, p.24 environmentyukon.gov.yk.ca/monitoringenvironment/ccactionplan.php

Northwest Territories



PHOTO COURTESY SAVILLEN VIA FLICKR



The government of the Northwest Territories accepts that its greenhouse gas emissions will double or even triple in the next few years.

Strengths

- Carbon tax being considered for updated 2011-2015 climate change strategy.
- Committed to spending \$15 million per year in support of alternative energy projects.
- Two-year pilot project is testing “net-billing” for small-scale alternative energy projects.
- Housing Corporation committed to ensuring all units meet the EnerGuide 80 standard.
- Committed to bringing hydropower from the Taltson Dam to the diamond mines north of Yellowknife.

Weaknesses

- Accepts GHG emissions will double or triple in next few years.
- Increased electricity subsidies for diesel-reliant communities.
- Current climate plan only addresses three per cent of GHG emissions (those from government).
- No policy or targets for industrial emissions.
- Heavy reliance on information programs and subsidies.
- Continues to promote the Mackenzie Gas Project.
- Little progress on a territory-wide building code for energy efficiency.

Missed opportunities

- Delays and rising costs have threatened completion of the diamond mine hydroelectric project.
- Subsidies that favour increased use of diesel for power could have been used to increase residential and commercial energy efficiency and to promote alternative energy production.
- The current climate change action plan acknowledges that an adaptation strategy “needs to be developed,” but only promises one on implementation of the action plan.
- This current action plan does not include any new policy approaches to reducing emissions.

Greenhouse gas emissions³¹⁷

Although the Northwest Territories (like the other northern territories) is disproportionately impacted by climate change, it contributes less than 0.2 per cent to Canada's total greenhouse gas emissions.

In 1990, the Northwest Territories and Nunavut were one territory. They became separate territories in 1999, and Environment Canada began to report on them individually. The total GHG emissions from the two territories are 1.9 per cent higher than they were in 1990.

The single biggest source (29 per cent) of GHG emissions in the Northwest Territories is transport (civil aviation and road transportation). Although emissions from road transportation have remained relatively constant since 1999, emissions from civil aviation have decreased by 70 per cent since they peaked in 2006. The decrease is because of a drop in exploration activities by mining companies.

The second largest source (27 per cent) is mining and oil and gas extraction. Since the territories separated in 1999, there has been a 55 per cent increase in GHG emissions from this sector.

As a result of wider use of hydroelectricity and efforts to replace diesel use with natural gas, emissions from electricity and heat generation have decreased by 74 per cent since 1999.

Climate change plans and policies

The government of the Northwest Territories accepts that its greenhouse gas emissions will double or even triple in the next few years.

MITIGATION AND ADAPTATION

It is encouraging that the role a carbon tax could play in reducing GHG emissions is recognized in the discussion paper that will form an updated climate change strategy.³¹⁸ (A decision on how to move forward is expected from the new territorial government.) The government does not yet have a policy or targets for industrial emissions, which make up more than a third of the territory's total GHG emission sources.

The current NWT climate plan only addresses three per cent of the territory's total GHG emissions, those from government. Elsewhere it relies almost exclusively on delivering information programs and subsidies.

The territorial government continues to promote the Mackenzie Gas Project as a solution to climate change.³¹⁹ As pointed out in our 2008 report, the basis for this claim is that natural gas produced in the Mackenzie will be used to displace coal for power production. Even if this claim were true (and there is scant evidence it has happened elsewhere), it is almost certain the natural gas from Mackenzie would be used in Alberta to produce unconventional crude from the oil sands, the most unsustainable of energy projects and the opposite of the cure for climate change.

Even if natural gas is limited to more conventional use, such as in power production and heating buildings, research shows it does not act as a transition fuel in the fight against climate change, but rather leads to greater greenhouse gas emissions.³²⁰

The NWT government continues to promote the Mackenzie Gas Project as a solution to climate change, although it is almost certain the natural gas from the project would be used in Alberta's oil sands projects.

317 National Inventory Report 1990-2009, Greenhouse Gas Sources And Sinks In Canada, Part 3. Environment Canada 2011

318 Renewing the Northwest Territories Greenhouse Gas Strategy 2011-2015, www.enr.gov.nt.ca/_live/documents/content/Taking_Action_to_Reduce_Emissions.pdf

319 Governments of Canada & of The Northwest Territories Final Response To the Joint Review Panel Report for the Proposed Mackenzie Gas Project, November 2010. www.ceaa-acee.gc.ca/Content/1/5/5/155701CE-6B5C-4F54-84E3-5D9B8297CD15/MGP_Final_Response.pdf

320 "Is natural gas a climate change solution for Canada?", David Suzuki Foundation and Pembina Institute. www.davidsuzuki.org/publications/reports/2011/is-natural-gas-a-climate-change-solution-for-canada

ENERGY EFFICIENCY

Residential, commercial and industrial sources account for nearly one fifth of GHG emissions in the territory. Efforts to reduce emissions from this source could pay dividends.

Recognizing this, the Northwest Territories Housing Corporation has now committed to ensuring all units it designs and builds meet the EnerGuide 80 energy standard for houses. As commendable as this is, NWT HC homes represent only a small portion of the housing stock. Little progress has been made in adopting a strong territory-wide building code for energy efficiency.

Subsidies that favour increased use of diesel for power would have offered more benefits had they been used to increase residential and commercial energy efficiency.

RENEWABLE ENERGY

In 2008, the NWT government committed to spending \$15 million per year in support of alternative energy projects. It has produced a biomass strategy³²¹ and has increased subsidies for alternative energy.

In a Pan-Territorial Renewable Energy Review, the NWT government stated its key priorities as expanding hydro development (including the proposed Taltson Dam project — see below) and mini-hydro for small communities. It also acknowledged that wind is the most available renewable energy in high Arctic communities. Pilot wind/diesel hybrid projects are already planned.³²²

The territorial government recently launched a two-year pilot project to test the idea of “net-billing” for small-scale alternative energy projects. The pilot project allows ratepayers who install alternative energy systems up to five kilowatts in size to receive from the power companies the cost of displaced diesel for energy that they feed into the grid.

The NWT government remains committed to bringing hydropower from Taltson Dam to the diamond mines north of Yellowknife. If transmission lines were completed, as much as 300 kilotonnes of CO₂e could be eliminated. However, the project has yet to undergo the environmental assessment process and meaningful consultation with First Nations.³²³

In 2010, in a somewhat backwards step, the NWT government increased electricity subsidies for diesel-reliant communities, reducing by 80 per cent the unsubsidized rate previously paid by businesses. It also increased subsidized kilowatt hours available in winter months from 700 to 1,000. The net impact of these changes will be an increase in GHG emissions. As a result, government money that could have been invested in alternative energy projects will instead be used to compensate the NWT Power Corporation for lost revenue.

TRANSPORTATION

Despite the large proportion of the territory’s GHG emissions coming from civil aviation and road transportation, no measures are contained in the current climate plan to tackle the impact of this sector. Subsidies at airports and on roads only serve to exacerbate the problem.

It is hoped that substantive measures to tackle transport-related GHG emissions will be detailed in the 2011–2015 climate change strategy.

321 NWT Biomass Strategy. www.enr.gov.nt.ca/_live/documents/content/NWT_Biomass_Energy_Strategy_2010.pdf

322 Pan-Territorial Renewable Energy Review www.anorthernvision.ca/documents/RenewableEnergyInventoryEN.pdf

323 “Taltson hydro expansion put on hold”, CBC, 2 March 2011 www.cbc.ca/news/canada/north/story/2011/03/02/nwt-taltson-hydro-expansion.html

In a somewhat backwards step, the NWT government increased electricity subsidies for diesel-reliant communities and increased subsidized kilowatt hours available in winter months — government money that could have been invested in alternative energy projects.

NORTHWEST TERRITORIES OVERVIEW

Y=Yes N=No A=Announced but not yet implemented NA=Not applicable

MITIGATION

Has a current climate change action plan?	Y
Set emission reduction targets comparable to Kyoto?	N
Has set 2°C above pre-industrial temperatures as the upper limit for average global warming?	N
Addressed emissions from sector with highest emissions?	N
Addressed emissions from sector with fastest-growing emissions?	N
Has a broad-based carbon pricing policy (carbon tax or cap-and-trade)?	N
Has meaningful energy efficiency, conservation and renewable energy policies?	N
Has strong building code for energy efficiency?	N
Has meaningful transportation policies?	N
Has policies that address urban sprawl?	NA
Has meaningful policies to address emissions from industry?	N
Has a program to address emissions from government?	Y
Has a policy or program to protect natural carbon stores in forests and peatlands?	N
Uses the full suite of policy instruments, including regulations and disincentives?	N

GHG EMISSIONS TRENDS

Has reduced emissions since 1990?	NA ^a
Has reduced emissions 2006–2009?	Y
Reduced emissions in 2009?	Y ^b

CLIMATE CHANGE ADAPTATION

Has a meaningful plan to adapt to climate change impacts?	A
Has a science advisory body that advises government on adaptation to climate change?	N

GOVERNANCE AND ACCOUNTABILITY

Has established a cross-governmental climate change secretariat?	N
Reports on actions and outcomes from climate action plan?	A

Notes:

^a1990 figures predate the separation of Nunavut and the Northwest Territories in 1999. Figures prior to 1999 are totals for the two territories.

^bReducing GHG emissions in the reporting year has been a grading criterion for all David Suzuki Foundation reports on provincial and territorial climate action. The economic downturn of 2008/09 reflects (in some, if not all cases) illusory reductions that may have already been reversed.

Further details in: Northwest Territories Greenhouse Gas Strategy 2007–2011, www.enr.gov.nt.ca/_live/documents/content/Greenhouse_Gas_Strategy_FINAL.pdf; Renewing the Northwest Territories Greenhouse Gas Strategy 2011–2015 (Discussion paper), www.enr.gov.nt.ca/_live/documents/content/Taking_Action_to_Reduce_Emissions.pdf

Conclusion

Although the government of the Northwest Territories has not adopted any new policy instruments since 2008, there have been some positive developments. A discussion paper released prior to formalizing the territory's 2011-2015 climate change strategy recognizes the important role a carbon tax could play in reducing greenhouse gas emissions. A proposal to transmit hydroelectric power to the diamond mines north of Yellowknife could dramatically decrease the territory's greenhouse gas emissions. The government has increased its commitment to investing in and promoting wind and other forms of clean, renewable energy.

Ranking

	2005	2006	2008	2011
Best				
Very Good				
Good				
Fair				X
Poor	X	X	X	
Worst				

Recommendations

The government of the Northwest Territories should:

- Set emission-reduction targets for all major sources of emissions, including industry, and policies to reach them.
- Either alone or in conjunction with the other territories, introduce the proposed carbon tax. (A pan-territorial carbon tax would level the playing field and send a clear message that an area already experiencing climate change is not open for business as usual.)
- Eliminate subsidies for roads and airports.
- Build on NWT Housing Corporation's commitment to EnerGuide 80 energy standards for new homes by mandating the same standards for all new residential and commercial buildings throughout the NWT.

Nunavut



Strengths

- Committed to developing alternative energy resource study to serve as basis of renewable energy plan.
- Homeowners can receive rebates of 50 per cent of cost of home repairs and appliance purchases to improve energy efficiency.

Weaknesses

- No targets or measures to reduce greenhouse gas emissions.
- No mention of reducing environmental impact of transportation.
- Plans to develop uranium and oil and gas resources.

Missed opportunities

- The energy strategy and the new climate change strategy provided opportunities for Nunavut to set goals and strategies to reduce its greenhouse gas emissions. This hasn't been done.
- Nunavut's transportation strategy ignores measures that could decrease rather than increase emissions from this sector.



Nunavut is continuing to put its efforts almost exclusively into adaptation, offering few concrete measures to mitigate. This is not surprising as people in Nunavut are already experiencing much more dramatic effects of climate change than most Canadians.

Greenhouse gas emissions³²⁴

In 1990 Nunavut and the Northwest Territories were one territory. They became separate territories in 1999 and Environment Canada began to report on them individually.

Nunavut, a territory that will feel disproportionate impacts of climate change, contributes an insubstantial 0.05 per cent to Canada's greenhouse gas emissions. More than half (52 per cent) of Nunavut's emissions in 2009 came from off-road diesel. Since 1999 these emissions have increased by 347 per cent. As intercity travel is done almost exclusively by air, it is not surprising that the second-largest contributor to GHG emissions is civil aviation (36 per cent). This has not changed much since 1999.

Taken together to reflect changes since 1990, GHG emissions in Nunavut and the Northwest Territories have increased by 1.9 per cent. Over that period, the population of the territories has increased by 26 per cent. Per capita GHG emissions are 19 per cent lower than 1990 levels.

Climate change plans and policies

In June 2011, the government of Nunavut released a climate change adaptation document³²⁵ that thoroughly reviewed the projected impacts of climate change on the territory.

MITIGATION AND ADAPTATION

Unfortunately, like the 2003 climate change strategy, the new document sets no targets or deadlines for reducing greenhouse gas emissions beyond a 2003 commitment to "control and reduce greenhouse gas emissions" by 2013.³²⁶ (In 2009 Nunavut GHG emissions were 19 per cent higher than 1999 when the territory was formed.)

As in our last report, the government in Nunavut is continuing to put its efforts almost exclusively into adaptation, offering few concrete measures to mitigate. This is not surprising as people in Nunavut are already experiencing much more dramatic effects of climate change than most Canadians.

The overall focus of Nunavut's 2007 energy strategy³²⁷ is clearly on energy security. This is not surprising, given the territory's small population, limited resources and high vulnerability to global warming.

The first listed objective of the strategy is to increase energy conservation and efficiency in the territory, and the second objective is to foster adoption of clean, renewable energy sources. These objectives could lead to significant reductions in GHG emissions if legislation was implemented to back them up.

Unfortunately, the final objective is to expand uranium mining and oil and gas exploration and production in the territory — activities that would more than negate advances gained through energy efficiency and renewables. With mineral exploration in Nunavut steadily increasing since 2008, it is likely the reduction in GHG emissions from mining and oil and gas since 1999 will be quickly reversed.

ENERGY EFFICIENCY

Nunavut has shown some leadership in increasing the energy efficiency of homes. For example, it worked with the Canada Mortgage and Housing Corporation (CMHC) to design energy-efficient affordable housing appropriate for local culture and tradition.³²⁸

324 National Inventory Report 1990-2009, Greenhouse Gas Sources And Sinks In Canada, Part 3. Environment Canada 2011

325 Climate Change Impacts and Adaptation in Nunavut (2011) env.gov.nu.ca/sites/default/files/3154-315_climate_english_sm.pdf

326 Ibid.

327 Nunavut Energy Strategy 2007 www.gov.nu.ca/files/lkummatiit%20Energy%20strategy_sept%202007_eng.pdf

328 'Nunavut-friendly housing wins award', Siku News. www.sikunews.com/News/Canada-Nunavut/Nunavut-friendly-housing-wins-award-2231

More than half of Nunavut's emissions in 2009 came from off-road diesel. Since 1999 these emissions have increased by 347 per cent.

In 2010 Nunavut introduced a homeowner energy-efficiency rebate program. The territory will rebate 50 per cent of the cost (up to \$2,000) incurred by individuals for home repairs that improve energy efficiency, purchase of energy efficient appliances and installation of renewable energy sources.³²⁹

These measures are to be commended. With a growing population in the territory, expanding efforts to increase energy efficiency now could delay or avoid the need to increase fossil fuel usage as alternative electricity sources are developed.

Unfortunately, there have also been some setbacks. For example, the Energy Efficiency Act (which would, among other measures, have banned incandescent light bulbs) was never implemented. Having failed to make its way through the legislative process in 2008, it has not been reintroduced.

Most current energy efficiency measures are focused on residential use. One of the many benefits of a carbon tax (see following section) would be the impetus such a tax would give industry to be more efficient.

RENEWABLE ENERGY

Nunavut currently relies on diesel generators for its power. Renewable energy could end this dependency. As acknowledged in the recently completed Pan-Territorial Renewable Energy Inventory,³³⁰ the potential for wind and tidal energy is vast and far exceeds any predicted demand increase.

The government of Nunavut has committed to developing an alternative energy resource study over the next three years, which will serve as the basis of a renewable energy plan for the territory.³³¹

Several solar projects are being developed across Nunavut to capitalize on the long summer days. There are also plans for wind pilot projects, including one to test the feasibility of using wind energy to make hydrogen.

Both large and small-scale hydroelectricity projects will be considered as part of Nunavut's renewable energy plan. It is encouraging that the territory is considering implementing an independent power purchase plan, which, under the right circumstances, could favour investment in hydro projects that do less damage to the environment than fossil fuel energy and are more appropriate for serving the needs of small communities.

A step the territory could take immediately would be to reverse its 2006 decision to rebate the Nunavut Fuel Tax to companies involved in mining. The rebate offers no incentive for mining companies to improve energy efficiency or to use alternative energy. It would have been far more effective to offer rebates for expenditure on renewable energy.

Carbon tax benefits

Instead of encouraging fossil fuel use by mining companies, the government of Nunavut might consider following the Northwest Territories government's lead in reviewing the feasibility of introducing a carbon tax. Taxing mining and other resource companies on the basis of carbon emissions could fund renewable-energy infrastructure projects such as small-scale hydro, which would provide communities with clean energy for years to come. (It could also be invested to address intergenerational equity issues arising from resource development, ensuring some of today's revenues will benefit future generations.)

TRANSPORTATION

Nunavut's 2007 energy strategy referred to a review of transportation energy use in the territory. Measures listed that might be included in a revised transportation strategy included a five per cent reduction target for government-related travel, testing of hybrid vehicles, implementing public transit models appropriate to communities like Iqaluit, and graduated registration fees based on the size of vehicle engines.

329 Pan-Territorial Renewable Energy Inventory, April 2011 www.anorthernvision.ca/documents/RenewableEnergyInventoryEN.pdf

330 Ibid.

331 Ibid.

A step Nunavut could take immediately would be to reverse its 2006 decision to rebate the Nunavut Fuel Tax to companies involved in mining. The rebate offers no incentive for mining companies to improve energy efficiency or to use alternative energy.

NUNAVUT OVERVIEW

Y=Yes N=No A=Announced but not yet implemented NA=Not applicable

MITIGATION

Has a current climate change action plan?	Y
Set emission reduction targets comparable to Kyoto?	N
Has set 2°C above pre-industrial temperatures as the upper limit for average global warming?	N
Addressed emissions from sector with highest emissions?	N
Addressed emissions from sector with fastest-growing emissions?	N
Has a broad-based carbon pricing policy (carbon tax or cap-and-trade)?	N
Has meaningful energy efficiency, conservation and renewable energy policies?	N
Has strong building code for energy efficiency?	N
Has meaningful transportation policies?	N
Has policies that address urban sprawl?	NA
Has meaningful policies to address emissions from industry?	N
Has a program to address emissions from government?	Y
Has a policy or program to protect natural carbon stores in forests and peatlands?	N
Uses the full suite of policy instruments, including regulations and disincentives?	N

GHG EMISSIONS TRENDS

Has reduced emissions since 1990?	NA ^a
Has reduced emissions 2006–2009?	N
Reduced emissions in 2009?	Y ^b

CLIMATE CHANGE ADAPTATION

Has a meaningful plan to adapt to climate change impacts?	Y
Has a science advisory body that advises government on adaptation to climate change?	N

GOVERNANCE AND ACCOUNTABILITY

Has established a cross-governmental climate change secretariat?	N
Reports on actions and outcomes from climate action plan?	A

^a1990 figures predate the separation of Nunavut and the Northwest Territories in 1999. Figures prior to 1999 are totals for the two territories.

^bReducing GHG emissions in the reporting year has been a grading criterion for all David Suzuki Foundation reports on provincial and territorial climate action. The economic downturn of 2008/09 reflects (in some, if not all cases) illusory reductions that may have already been reversed.

For further detail: Nunavut Climate Change Strategy (2003), env.gov.nu.ca/sites/default/files/Climate%20Change%20Full%20English%20low.pdf; Nunavut Energy Strategy (2007), www.gov.nu.ca/files/ikummatiit%20Energy%20strategy_sept%202007_eng.pdf; Climate Change Impacts and Adaptation in Nunavut (2011), env.gov.nu.ca/sites/default/files/3154-315_climate_english_sm.pdf; Nunavut Transportation Strategy Nunavut Transportation Strategy, www.edt.gov.nu.ca/apps/UPLoads/fck/file/trans_eng.pdf

Unfortunately, even these small steps do not appear in the 2009 transportation strategy.³³² Instead, the strategy focuses almost entirely on road construction and improvement in trails for off-road travel. (Off-road diesel was the single largest source of GHG emissions in 2009 — up 347 per cent since 1999 when the territory was formed.³³³) There are only two mentions of climate change. The first flags the unknown impacts permafrost

332 Nunavut Transportation Strategy www.edt.gov.nu.ca/apps/UPLoads/fck/file/trans_eng.pdf

333 National Inventory Report 1990-2009, Greenhouse Gas Sources And Sinks In Canada, Part 3. Environment Canada 2011

warming may have on existing and future roads. The second notes the need to limit the impact of increased marine activity resulting from reductions in sea ice.

Conclusion

While it is understandable that a territory that is already experiencing significant climate change impacts should focus so much on adaptation measures, it is missing an opportunity to lead by example. The territory is so vulnerable to climate change that it needs to send a clear and forceful signal to the rest of Canada and the world that reducing greenhouse gas emissions and minimizing climate change as much as possible is of paramount importance. Its approach so far does not do this. More thought needs to be put into how it can also address its own contribution to global warming so that others can be inspired to do the same.

Ranking

	2005	2006	2008	2011
Best				
Very Good				
Good				
Fair			X	
Poor	X	X		X
Worst				

While it is understandable that a territory that is already experiencing significant climate change impacts should focus so much on adaptation measures, it is missing an opportunity to lead by example.

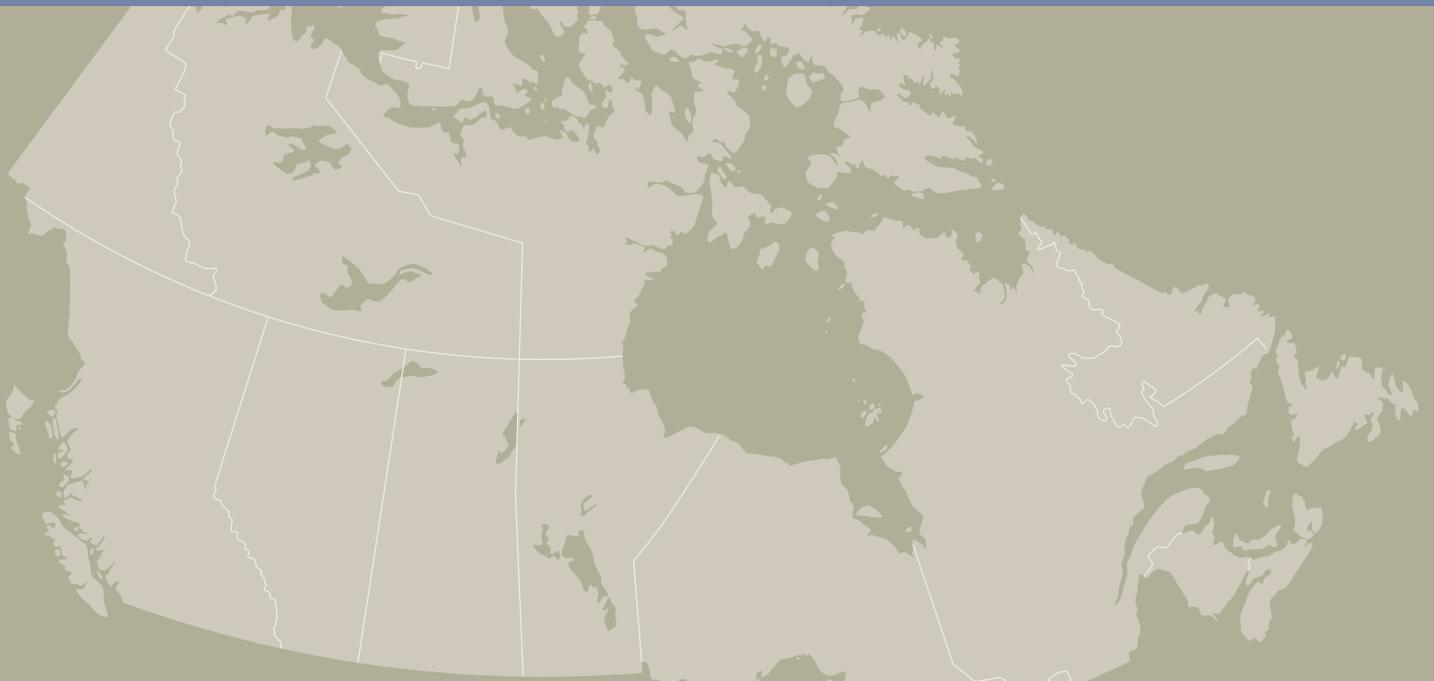
Recommendations

The government of Nunavut should:

- Review and develop mitigation strategies to be adopted in conjunction with existing adaptation strategies.
- Revise the current transportation strategy to include and weigh greenhouse gas considerations.
- Reconsider the development of uranium mining, a risky and unsustainable industry.
- Either alone or in conjunction with the other territories, introduce a carbon tax. (A pan-territorial carbon tax would level the playing field and send a clear message that an area already experiencing climate change is not open for business as usual.)
- With or without a carbon tax, require all new oil and gas development be carbon neutral, including the implementation of GHG accounting methodologies, the development of mitigation strategies to reduce emissions from operations, and the purchase of high-quality offsets for remaining emissions.
- Give favourable consideration to the potential of renewable energy technologies other than large-scale hydro projects.
- Implement strong energy-efficiency standards in building codes for homes and commercial buildings.
- Develop strong land-use plans for new housing promoting density and integrated energy systems.



In the absence of effective policies from Canada's federal government to tackle global warming, many provinces have stepped up to implement their own plans and policies. This report documents the shift, assessing each province's climate change plans and programs and comparing the relative merits of each. It updates the status of each province's efforts, and provides analysis for moving forward.



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