

Climate Change Action Plan 2008-2009 Progress Report

Building on Success

Be smart! *Take Action* on Climate Change

September 2009



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Message from the Minister

As Minister of Environment, I am very pleased to be part of a government that is taking action on climate change and I'm delighted to share our progress with New Brunswickers.

In June of 2007, our government released the first ever *New Brunswick Climate Change Action Plan*, the ambitious plan that outlines our collective vision for reducing greenhouse gas emissions, adapting to climate change impacts, and engaging stakeholders and the public.

The first year of this built *in New Brunswick for New Brunswick* plan saw efforts concentrated on building a foundation on which we could work in future years.

The second year of this plan saw many achievements that are moving us closer to meeting the goals set out in the plan and meeting our goal of being a self-sufficient province by 2026.

During the first two years of the plan, 90 per cent of the commitments have been implemented or achieved. This is very good news for New Brunswick.

As a province, we have taken a position of leadership in Atlantic Canada in a number of activities that are critical to the success of the plan. A great deal of work has been done in areas such as the development of wind energy and engaging youth and the general public in a dialogue about climate change. Strong efforts have also been made in collaborating with the other Atlantic provinces on an adaptation strategy to deal with the impacts of climate change.

We are working with government departments, businesses, groups, organizations and individuals to encourage every New Brunswicker to take action against climate change and help us achieve results.

This progress report is proof that our plan is working. I would like to thank everyone for their contribution.

The third year of the plan is now underway and I look forward to sharing our progress as we continue *Building on Success*.



Rick Miles
Minister of Environment



Introduction



The Province of New Brunswick made great strides during the second year of implementation of the *New Brunswick Climate Change Action Plan* (NBCCAP). New Brunswick moved forward on implementing the NBCCAP's commitments and built on the successes achieved during the previous year. Several government departments actively led climate change activities. At the same time, many communities, industries, businesses, non-profit organizations and individuals have greatly contributed to progress.

The NBCCAP is an ambitious plan that outlines the collective vision of the Province of New Brunswick for reducing greenhouse gas (GHG) emissions; adapting to climate change; and engaging stakeholders and the public. "It is a plan made *in* New Brunswick, *for* New Brunswick," Premier Shawn Graham says. "As a result of the environmental and socio-economic benefits that the *New Brunswick Climate Change Action Plan* stands to deliver to New Brunswickers, our province will be an even more attractive place for people to live and earn a living and for companies to do business. In so doing, it will help our province be sustainable and move forward even faster on the road to self-sufficiency by 2026."

Some highlights from the second year:

- two years after releasing the NBCCAP, the Province of New Brunswick started or has completed 90 per cent of the commitments in the plan;
- between 2004 and 2007, overall emissions had declined by 2.5 megatonnes (Mt), a decrease of 12 per cent;
- the 2008 throne speech emphasized the commitment to energy efficiency standards in the building code; it also touched on a green building policy to achieve emissions reduction targets set out in NBCCAP;
- TransAlta Energy Corp. commissioned 32 wind turbines in a 96-megawatt (Mw) wind farm southwest of Moncton in Kent Hills;

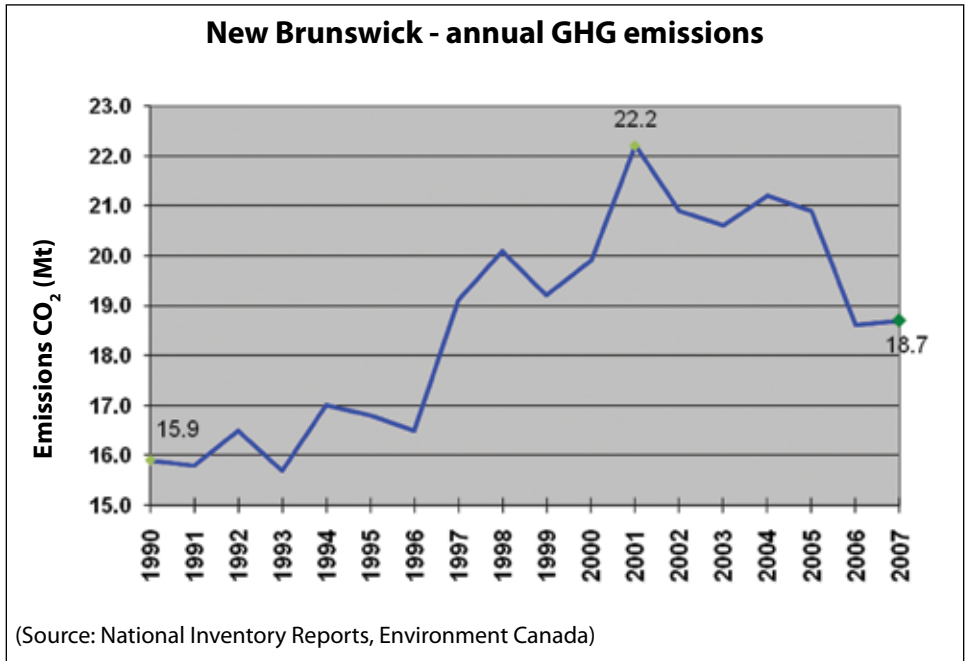
- the Department of Transportation released a multi-modal strategy and an intelligent transportation systems strategy to improve provincial intermodal and multimodal transportation;
- the Province of New Brunswick led the Atlantic provinces in a regional climate change adaptation collaborative initiative and a climate change adaptation strategy for Atlantic Canada; and
- the Mayors' Eco-Challenge, and the Climate Change Youth Engagement Network Initiative - Rock the Boat *Our Climate, Our Change*, were successful and innovative public engagement initiatives.

The Province of New Brunswick remains committed to contributing to regional and national initiatives to address climate change in the short-term and long-term. The Province of New Brunswick also remains committed, with federal leadership and support, to reducing its GHG emissions to 1990 levels by 2012. The combination of actions being undertaken position the Province of New Brunswick to realize further reductions of 10 per cent below 1990 levels by 2020.

The New Brunswick situation

New Brunswick greenhouse gas (GHG) emissions

In 2007, GHG emissions from all sources in New Brunswick amounted to 18.7 megatonnes (Mt), or 2.5 per cent of the Canadian total of 747 Mt of carbon dioxide (CO₂). Between 2004 and 2007, overall emissions declined by 2.5 Mt (12 per cent), with emissions from large industries and electricity generation, falling by 16 per cent.



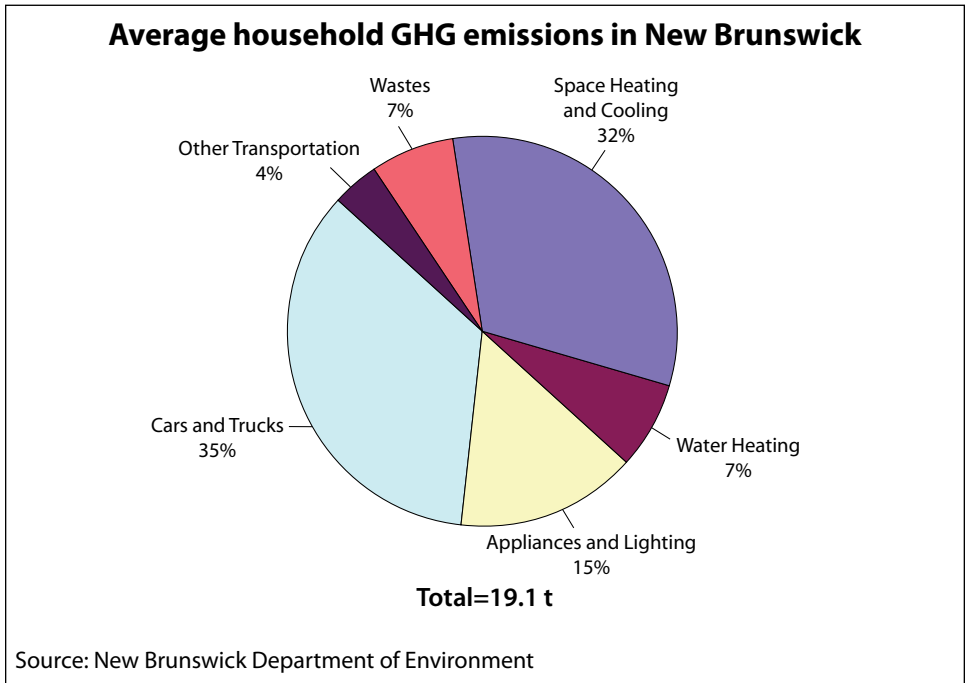
New Brunswick's GHG emissions increased steadily from 1990 until 2001; since 2001, however, emissions have gradually been declining.

Electricity generation remained the leading contributor of GHG emissions in New Brunswick, but its share of emissions has been declining. In terms of overall emissions: electricity generation accounted for 37 per cent of emissions in 2007, down from 42 per cent in 2004. The introduction of wind energy, extended

periods of higher rainfall levels available for hydro electricity generation and energy purchases from neighbouring utilities contributed to a reduction in GHG emissions at NB Power; at the same time, these three developments displaced the utility's fossil-based electricity generation; in turn, they reduced the province's overall GHG emissions.

New Brunswick household GHG emissions

Thirty-one per cent of New Brunswick's total GHG emissions were attributable to household activities and to the choices New Brunswickers made every day. Household, transportation and space heating/cooling choices were the leading contributors to GHG emissions.



Cars, trucks, air travel and other transportation accounted for 39 per cent of GHG emissions. New Brunswickers can make a difference and take action on climate change in the transportation section by adopting fewer carbon-dependent lifestyle choices; and by using alternative transportation options such as carpooling or public transportation. Space heating and cooling accounted for the second-largest percentage, 32 per cent. New Brunswickers can use energy more efficiently at home by installing a programmable thermostat and by setting the thermostat at a comfortable level.

Adapting to climate change

It is important to New Brunswick, government, communities, industry and individuals, to understand the risks and opportunities posed by climate change to the economy, society and the environment. The Province of New Brunswick is developing appropriate policy responses, take action and provide communication as it continues to understand better the implications and range of vulnerabilities posed by climate change.

The importance of partnerships

Government, industry, communities and individuals share the responsibility for managing the environment in a sustainable manner, reducing GHG emissions and adapting to climate change. The NBCCAP includes collective actions to achieve these objectives.

Actions to reduce or avoid GHGs



Using energy more efficiently is a key factor in achieving greenhouse gas emission reductions and it makes our energy system less expensive to operate.
NBCCAP 2007-2012

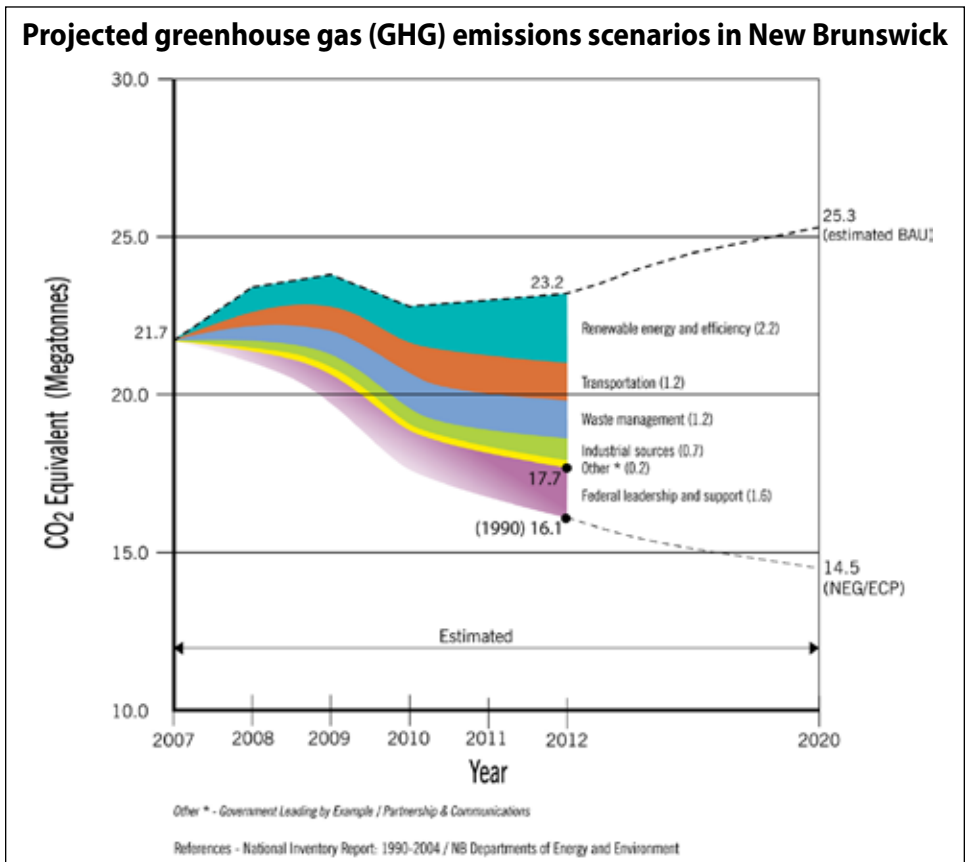
What used to be a source of debate not that long ago is now accepted as a call to action. The International Intergovernmental Panel on Climate Change warns that human activities, especially the release of GHG emissions through the burning of fossil fuels, have been contributing to climate change and severe environmental consequences: rising sea levels, storm surges, heavy precipitation and flooding, heat waves, seasonal drought and forest fires.

Mindful of this context, the Province of New Brunswick acknowledges that action is needed to reduce or avoid GHG emissions. The implementation of the NBCCAP sets in motion a variety of emission reduction commitments that will enable the Province of New Brunswick to reduce its GHG emissions to 1990 levels by 2012. Examples of actions included in the plan are: using more GHG-free energy; improving energy management; switching to cleaner fuels; improving waste

management; and using project assessment reviews and other environmental approval processes to minimize project emissions.

The 2007 version of the NBCCAP was based on 2004 information. The following graph illustrates the projected GHG emission reductions for each of the commitment categories outlined in the NBCCAP compared to a Business As Usual (BAU) projection. The BAU predicts an increase in emissions if the Province of New Brunswick proceeded without abiding by the NBCCAP. Implementing the NBCCAP commitments will enable the Province of New Brunswick to realize a reduction of total GHG emissions of 5.5 Mt annually in 2012. This commitment will be strengthened through the leadership and support from the federal government, particularly in the area of GHG regulation of large industrial facilities.

By following the NBCCAP and including federal regulation actions, the Province of New Brunswick will be able to decrease GHGs to 1990 levels and, by 2020, meet the Conference of New England Governors / Eastern Canadian Premiers (NEG/ECP) reduction target of 10 per cent below 1990.



Energy efficiency and renewable energy

Cleaner energy options are being made more widely available, and programs are being implemented to help ensure that all types of energy will be used more efficiently. NBCCAP 2007-2012

Electricity generation was the leading contributor of GHG emissions in New Brunswick in 2007. Significantly, however, New Brunswick was becoming less reliant on fossil fuel electrical generation. Between 2004 and 2007, overall GHG emissions from electricity generation decreased by 25 per cent.

Progress:

Efficiency NB:

- continued to work with the Department of Supply and Services to develop a green building policy to ensure new and existing government buildings will be constructed and operated consistent with sustainable design and green principles;
- continued the building energy labelling pilot project started in 2007-2008 in partnership with the Department of Supply and Services, Perth-Andover, Saint John, Miramichi and Fredericton. Information was collected on 65 municipal and government buildings;
- increased participation in the Residential Existing Homes Program. In 2008-2009, initial audits were conducted on 8,535 homes, and retrofits were completed on 3,120 homes. In 2007-2008, by comparison, initial audits were conducted on 6,443 homes, and retrofits were completed on 1,017 homes. The upgrades undertaken under this program since its inception have reduced GHG emissions by 26,628 t per year;
- administered the Energy Smart Commercial Buildings Energy Efficiency Upgrades Program. Efficiency NB signed up 107 participants in the program, in 2008-2009, compared to 89 in 2007-2008; and
- completed the GHG quantification report on the Bright Ideas Commercial Lighting program, which encourages the installation of premium energy-efficient lighting in construction and renovation projects. Since its inception in 2007, the program has reduced energy consumption by end-users by 2.2 million kwh and reduced annual GHG emissions by 2,000 t.

Department of Public Safety and Department of Environment:

- established an inter-departmental committee that made recommendations on the adoption of energy standards in buildings. This initiative runs parallel with the building code reform process, including the passing of the *Building*

Code Act in 2009, the development of regulations by 2011, and the adoption of new national energy codes for houses and buildings in 2011-2012.

Department of Energy:

- began an analysis of amendments to regulations under the *Energy Efficiency Act*, to increase regulated efficiency levels and to increase the number of appliances and industrial products included in the regulations;
- released the *New Brunswick Developer's Guide to Renewable Energy* to help developers understand and use the development and approval process;
- worked with New Brunswick Federation of Woodlot Owners to assess small-scale biomass opportunities for co-generation, district heating and facility heating;
- is reviewing the Electricity from Renewable Resources Regulations under the *Electricity Act* with a view to increasing the requirements; and
- commissioned a study to assess the potential for new small-scale hydro generation facilities in New Brunswick.

NB Power:

- eliminated its residential declining blockrate by introducing a new flat energy rate. NB Power took this step in support of the February 2008 decision by the Energy and Utilities Board. The new rate, which took effect on Jan. 5, 2009, applies to newly constructed single-family dwellings, including duplexes, row-housing and semidetached homes. With a flat energy rate, the rate per KWh does not vary with volume. As a result, customers building new homes are better positioned to decide which long-term heating options to adopt; and
- published a payback price for customer based embedded or small renewable energy generation projects.

Department of Natural Resources:

- implemented a policy for exploration and development of wind power on provincial Crown land. The department issued a 30-year wind farm lease to TransAlta Energy Corp. in Albert County. This was the largest commercial wind farm in Atlantic Canada and New England;
- released its Crown Land Forest Biomass Harvesting Policy in November 2008 and reviewed proposals for harvest;
- implemented an interim policy, Allocation of Crown Lands for research in support of In-Stream Tidal Power Generation. Following a call for proposals, the department issued Crown land leases to Irving Oil Ltd. in partnership with the Huntsman Marine Science Centre to explore tidal power in the Bay of Fundy; and

- is working on a strategy to encourage increased reforestation of abandoned farmland.

Department of Agriculture and Aquaculture:

- signed a national agricultural agreement, Growing Forward, which will put in place programs encouraging energy efficiency on farms and on-farm renewable energy.

Department of Environment:

- continued to administer the New Brunswick Environmental Trust Fund (NBETF), which provided more than \$522,000 to 17 GHG reduction projects:
 - the University of New Brunswick geodesy and geomatics engineering department examined the use of interactive mapping in determining the potential for renewable energy sources in urban centres, using Fredericton as a case study;
 - the K.C. Irving Chair in Sustainable Development at the Université de Moncton, in co-operation with the University of New Brunswick, developed strategies for the adaptation and mitigation of climate change in New Brunswick, with the objective of influencing public policies and government programs as well as educating about climate change;
 - the Université de Moncton helped community groups, municipalities and non-profit organizations develop and implement wind and other renewable energy sources;
 - the Chaleur Standing Committee on Economic and Sustainable Development educated business owners and community leaders about sustainable development, with a focus on local implications. The committee also implemented green and environmentally sustainable practices within businesses and communities in the region. It fosters regional support to further its objectives;
 - the Fondation du Collège Bathurst Inc. adopted the concept of a green campus (green plan) for the New Brunswick Community College, Bathurst campus;
 - Bouctouche continued to implement its green plan. It also examined green energy options for its tourist information centre and implemented a recycling program;
 - Memramcook hired a co-ordinator to implement recommendations from its green plan;
 - Caraquet, Shippagan, Cap-Pelé, Edmundston municipalities and the rural community of Beaubassin-est created green plans;

- Saint John continued a project to determine if water temperature conditions in the harbour are adequate for use in heating and air conditioning systems with heat pumps;
- Grand Falls replaced signal lights with energy-efficient LED bulbs;
- Cape Jourimain and the Parc Écologique de la Péninsule acadienne each installed wind turbines to demonstrate the potential of green energy; and
- EOS Eco-Energy involved Tantramar residents and municipalities to address climate change through local energy conservation initiatives.

Transportation

The Province will work to improve transportation options and help consumers make informed decisions about vehicles, fuels and transportation in general.
NBCCAP 2007-2012

Transportation remained the second largest contributor of emissions in the province in 2007, accounting for 27 per cent of the total. The Province of New Brunswick continued efforts to improve transportation efficiency and reduce GHG emissions in this sector.



Progress:

Department of Transportation:

- released the Intelligent Transportation Systems (ITS) strategy, *Being a Leader with ITS: New Brunswick Intelligent Transportation Systems Strategic Plan 2008-2018*, in November 2008 to improve efficiency of intermodal transportation. The strategy supports the continuation of the National Rural ITS Research Centre at the University of New Brunswick. The strategy identifies 10 projects that will be started during the next five years, including traveller information systems, commercial vehicle operations and facilities management;
- continued technology implementation, including deployment of a new weigh-in-motion site on Route 1 and continued development of a 5-1-1 Travel Condition Information System;

- monitored public and private transportation initiatives that improve efficiency and reduce emissions in the transportation sector. These initiatives included the installation of auxiliary power units on owner-operator trucks and of aerodynamic skirting on van trailers;
- conducted biodiesel trials funded by the New Brunswick Climate Action Fund (NBCAF); and
- continued to work with various municipalities to improve public transit services. From the \$40-million federal funding allocation, investments continued to be made to improve public transit in Fredericton, Moncton and Saint John. Fredericton invested in new buses to reduce fleet age and planned to expand its maintenance facility to increase its fleet. Moncton completely re-designed feeder transit routes to improve transit access to downtown. Saint John launched three park and ride services and neared completion of a new transit service garage. In addition, a funding program was established for a new transit service as well as a rural-to-urban commuter service in Miramichi. The Miramichi transit system services was activated this Summer.

Department of Local Government:

- established a steering committee to develop a public transportation strategy to ensure New Brunswickers have convenient alternatives to their private vehicles and that their mobility needs are met; and
- is developing a model anti-idling bylaw that will be made available to local jurisdictions across New Brunswick.

Department of Public Safety:

- will continue to study best practices in legislative and regulatory policies as they relate to limiting truck speeds.

Department of Environment:

- supported local groups, such as the New Brunswick Lung Association (New Brunswick Climate Change Hub), with anti-idling awareness campaigns; and
- continued to administer the NBETF, which provided \$15,000 to the Saint John Parking Commission to develop a bike plan for the city and surrounding area to encourage alternative methods of commuting.

Department of Energy:

- supported the Atlantica Bioenergy Task Force, which examined all technologies such as using biomass for steam production and producing ethanol in pulp and paper processing; and

- held the Biodiesel Stakeholder Forum in April 2009. The forum brought together stakeholders to advance a biofuel strategy for New Brunswick.

Waste management

New Brunswick has an action plan to reduce and divert waste in order to address broad waste-management issues. The Province will build upon this action plan. NBCCAP 2007-2012

GHG emissions from the waste sector were smaller compared to the other sectors. However, significant environmental benefits can be gained from managing landfill gases because of their methane content, which has 21 times greater global warming potential than CO₂. Reducing, reusing and recycling waste achieves other important economic and environmental benefits.

Progress:

Department of Environment:

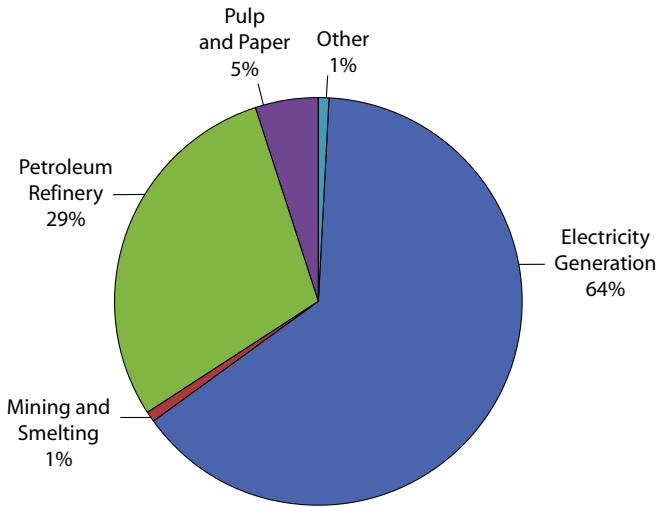
- supported the installation of a methane management system at the Nepisiguit-Chaleur solid waste commission Red Pine landfill. This landfill in combination with the Crane Mountain and Fredericton landfills result in a reduction of more than 130,000 t of CO₂ emissions annually. Systems are being explored or installed in other landfills; and
- supported New Brunswick's solid waste commissions as they made investments in waste diversion and reduction. A multi-material stewardship board known as Recycle NB was created to manage scrap tires and used paint.

Industrial sources

The Province will work with New Brunswick industries and the federal government to help ensure there is fairness and consistency in implementing emission standards for industrial sources among industry sectors and among provinces and territories. NBCCAP 2007-2012

New Brunswick industries are important economic engines of the province. They provide much benefit and that is why efforts are being undertaken to increase the resiliency of existing industry by improving their efficiency to make them more competitive, less wasteful, and less GHG intensive; and by helping to develop green industries and technologies. The federal government is taking a leadership role to regulate GHG emissions from large and industrial facilities.

Large industrial emissions, 11Mt CO₂ equivalent, 2007



Source: New Brunswick Department of Environment

Progress:

Business New Brunswick:

- provided \$51 million in loans and loan guarantees in 2008-09 from the Financial Assistance To Industry Program for energy and productivity efficiency initiatives; and \$170,000 to 22 environmental projects and related initiatives focused on the acquisition of specialized assets, demonstration, efficiency, recycling, technical intelligence, and training under the Technology Adoption and Commercialization Program; and
- in conjunction with a number of partners, both provincial and federal, Business New Brunswick continues to work with a variety of NB companies on initiatives such as efficiency improvements and technology development.

Department of Natural Resources:

- is developing carbon sequestration data for Crown forests to determine how management planning strategies may affect the forest carbon balance. Once these data are compiled, the department will be able to forecast carbon volumes in a manner similar to wood supply forecasting. The department will also be able to test scenarios to determine its forest carbon footprint and to look for potential opportunities for carbon offset value;
- continued to participate on the Canadian Council of Forestry Ministers' Climate Change Task Force, and it is chairing a sub-committee on forest

carbon. The taskforce is in the second year of a three-year schedule to produce a framework about how to write forest management offset protocols. When approved by a program authority, a given protocol will specify how much carbon a certain forestry project may generate; a protocol will also identify resulting offsets available to carbon credit markets; and

- is encouraging exploration for natural gas by providing geological mapping and technical expertise; calling for exploration proposals; streamlining and revising legislation; and promoting this sector at industry conferences. More than \$5 million in exploration commitments were made in southeastern New Brunswick in 2008-09. Corridor Resources was producing 679,617 cubic metres (24 million cubic feet) per day of natural gas in the Sussex area.

NB Power:

- continued the refurbishment project at the Point Lepreau nuclear generating station – including the installation of high-efficiency turbines. During normal operations the plant prevents the emission of 3.13 million t of CO₂ annually.

Department of Energy:

- completed a study that determined a second reactor at Point Lepreau would be feasible;
- continued to work with Atlantic Hydrogen Inc. to determine how companies could use CarbonSaver technology to reduce GHG emissions by delivering low-carbon natural gas that meets customer needs; and
- through the Council of Energy Ministers working group on energy technologies, continued to discuss with the federal government and the other provinces ways to assess emerging technologies such as hydrogen.

Government leading by example

The Province will use the leadership position of the public sector to demonstrate best environmental practices and encourage environmentally sustainable practices within government and beyond. NBCCAP 2007-2012

The best way to convince industry, businesses and individuals to reduce GHG emissions is by example. This is why the Province of New Brunswick has remained committed to acting upon the NBCCAP's objectives in the areas of procurement, transportation, buildings, partnerships and energy management.

Progress:

Department of Supply and Services:

- directed tender specifications requirement for products to be EnergyStar-compliant. This included major appliances, photocopiers, and other office equipment;
- evaluated bids for the vehicle fleet, using the Natural Resources Canada Energuide rating formula for fuel efficiency;
- completed about \$1.2 million in lighting retrofits in 16 schools and government office buildings;
- completed an energy profile on its building stock,
- worked with Efficiency NB to establish a monitoring program and fund retrofit projects;
- completed a study to identify school energy consumption during the summer and possible reductions in energy consumption;
- is undertaking a pilot project at Marysville Place in Fredericton to replace compact fluorescent and light-emitting diode exit lights with more energy-efficient, hightechnology lights;
- requires all new government building projects to obtain Leadership in Energy and Environmental Design (LEED) silver certification, with an emphasis on obtaining points related to energy reduction. The department obtained LEED silver certification for the Upper River Valley Hospital in the spring of 2009. The new schools in Moncton North School and Eleanor Graham School in Rexton were targeted to run at 40 per cent below the national energy code. École Ste-Thérèse, under construction in Dieppe, is expected to obtain LEED silver certification; and
- is working, in conjunction with the Department of Natural Resources (DNR), to construct a new DNR District office designed to meet the LEED silver certification in Richibucto.

Department of Transportation:

- began a five per cent biodiesel project in January 2009 on 12 vehicles including a school bus, grader, plow truck, light truck;
- began a hybrid school bus pilot project in September 2008;
- monitored the results from the replacement of incandescent flashing warning unit lights with 415 light-emitting diodes. The department estimates that, over the next eight years, it will save 157,000 kWh and avoid 60 t of GHG emissions;
- is monitoring the conventional diesel engines in cable ferries through a fuel-efficient engines project, which will reduce fuel consumption to 14 L/hr from 24 L/hr, a 42 per cent reduction; save 100,000 L of fuel; and eliminate 283 t of GHG emissions annually;

- implemented a green policy to make the government fleet more fuel-efficient;
- took into account GHG emissions when buying and renting vehicles; and
- monitored its anti-idling program.

Department of Social Development:

- provided \$5,760,607 to the Energy Retrofit Program, which assisted 903 private homeowners in 744 rental units and 136 rural and native housing units;
- administered the Affordable Rental Housing Program, under which 80 units were built in accordance with Efficiency NB energy-efficiency recommendations;
- was involved in the construction of three nursing homes; another two were under design. All were to conform with Efficiency NB energy-efficiency recommendations; and
- helped with the conversion of 50 units of public housing to use natural gas rather than oil for heating and hot water.

Adapting to the impacts of climate change

Climate change has already made impacts on New Brunswick communities, and they are unavoidable in the immediate future. NBCCAP 2007-2012

Since the effects of climate change cannot be stopped entirely, it is important that measures be taken and adjustments are made to adapt to these changes. People in New Brunswick are already adapting to existing and anticipated effects of climate change. We must all be vigilant and take measures to be well prepared.



Adapting to the impacts of climate change is one of the most important activities we must do as governments, industries, businesses and individuals. Efforts must be undertaken to “climate proof” our activities, our infrastructure and for our resilience, our wellbeing, and our self-sufficiency.

Development policies

Development in New Brunswick’s rural and urban areas must be carried out with consideration of the way it will contribute and respond to the effects of climate change. NBCCAP 2007-2012

The Province of New Brunswick made progress on planning policies to adapt to the expected effects of climate change by considering development that builds on principles of social, economic and environmental sustainability, integrating careful land, water and air planning; and promotes the development of sustainable communities. The Province of New Brunswick will give priority to initiatives that can achieve the most sustainable benefits.

Progress:

Department of Environment:

- is developing a provincial planning policy to be established in regulation; and
- is working to establish Coastal and Wetland Orders or Regulations under the *Clean Environment Act*. These orders or regulations will protect coastal features and provincially significant wetlands.

Department of Natural Resources:

- used coastal mapping projects to study how climate change was eroding coastlines in the province. This information is stored in the New Brunswick Coastal Erosion Database and is used by the departments of Natural Resources and Environment to review coastal development proposals under the Coastal Areas Protection Policy and Submerged Land Policy.

Managing natural resources

Climate change will challenge present practices in the agriculture, aquaculture, forestry, and traditional fishery sectors. NBCCAP 2007-2012

New Brunswick's natural resources have always been a cornerstone of the province's economy and identity. The Province of New Brunswick considers it a priority to make ecosystems in this province more resilient to climate change and to improve their capacity to absorb carbon emissions.

Progress:

Department of Agriculture and Aquaculture:

- in conjunction with the Department of Natural Resources, completed an inventory and assessment of abandoned farmland. The department has completed and is reviewing a draft policy for redeveloping abandoned farmland; and
- signed a national agricultural agreement, Growing Forward, which will support studies on climate change adaptation at the agricultural producer level or regional level.

Department of Environment:

- through the Climate Change Secretariat, established a working group comprised of representatives from government, academia and industry to identify and prioritize the steps required to investigate New Brunswick's underground carbon storage potential; and
- again, through the secretariat, provided funding for a workshop on geological storage of carbon, held at the University of New Brunswick in March 2009. Experts examined issues surrounding this technology and its prospects for use in New Brunswick. The secretariat joined with Irving Oil Ltd. to provide funding to the University of New Brunswick to undertake a preliminary study evaluating the potential for permanently storing large volumes of CO₂ in deep saline reservoirs.

Department of Natural Resources:

- released the New Brunswick Biodiversity Strategy in June 2009 to establish a more diverse ecosystem resilient to climate change. It worked with the Department of Environment to integrate this strategy into a provincial planning policy. The biodiversity strategy:
 - reaffirms New Brunswick's commitment to achieve the national goals described in the Canadian Biodiversity Strategy (1995) and the Biodiversity Outcomes Framework for Canada (2006);
 - identifies biodiversity goals and outcomes that the provincial government, with willing partners, will work within its capacity to achieve;
 - provides a management framework that will facilitate a co-ordinated, collaborative approach to biodiversity conservation;
 - addresses the importance of stewardship in biodiversity conservation and the role that the Province of New Brunswick may play; and
 - identifies high-level strategic management outcomes that will move the biodiversity management process forward in New Brunswick.
- added 5,000 ha under the Protected Natural Areas Program in 2008 to improve protection of New Brunswick's biodiversity;
- in addition, 800 ha of private land were afforded protection under the *Protected Natural Areas Act*;
- released its new long-term management approach for Crown forest in January 2009. Although the strategy called for a reduction of the conservation forest, the Protected Natural Areas within the conservation forest will increase between 60,000 ha to 120,000 ha over the next few years from the current level of 157,800 ha. This translates to between six to eight percent of the Crown forest being protected by 2012, an increase from the current four percent level;

- allocated \$600,000 of the \$6 million Private Land Silviculture Funding program for reforesting abandoned farmland. The department is contributing 90 per cent, while private land owners provide 10 per cent;
- through Forest Protection Limited, bought new water-based aircraft in 2008 to supplement its fleet of land-based water bombers for forest fires. New Brunswick continued to participate in the Canadian Interagency Forest Fire Centre, which coordinates fire management services for the federal government, the provinces and the territories. The centre also helps the United States and other countries. Moreover, the department is a member of the Northeastern Forest Fire Protection Compact; and
- through the Forest Pest Management Section, continued to monitor and forecast pest conditions. The section communicated with other agencies and jurisdictions about the spread of invasive species. The department continued to participate in the development of a national forest pest strategy under the Canadian Council of Forestry Ministers.

Department of Tourism and Parks:

- familiarized product development officers with Green Your Business: A Toolkit for Tourism Operators, which includes climate change considerations, released in the fall of 2008 as a joint project of the Canadian Tourism Commission, Parks Canada and the Tourism Industry Association of Canada. This user-friendly, best practices guide became part of the information and assistance provided by the department to tourism operators.

Risks and damages

It is important to transfer our scientific knowledge of how our environment is being affected by climate change to the development of applied solutions for government, businesses, and communities. NBCCAP 2007-2012

When the province experiences flooding, storm surges or intense precipitation, it becomes evident how vulnerable it is to severe weather. Climate change is a warning of increasing frequency and severity of weather; New Brunswick must be prepared to address this challenge.

Progress:

Department of Environment:

- participated as the lead agency in the Atlantic Regional Adaptation Collaborative in submitting a proposal to Natural Resources Canada to conduct risk and vulnerability assessments in selected communities in

Atlantic Canada. The objectives: to recommend changes to provincial and municipal policies to incorporate climate change adaptation; and to develop tools and approaches that can be used in other Atlantic communities;

- made investments to the monitoring network infrastructure and the Hydrology Center data acquisition systems;
- continued to work with the Canadian Institute of Planners and the Association of Professional Engineers and Geoscientist of New Brunswick in the development of approaches to adaptation;
- continued to administer the NBETF, which provided more than \$220,000 to support six climate change adaptation projects:
 - the Fredericton Area Watersheds Association, in partnership with the University of New Brunswick Environment and Sustainable Development Research Centre, the City of Fredericton and Environment Canada, developed climate change adaptation strategies for New Brunswick municipalities;
 - the University of New Brunswick Environment and Sustainable Development Research Centre:
 - planned to review of hydrologic data to determine if significant trends attributable to climate change can be detected; and
 - examined various responses to climate change, undertook a climate change risk assessment for New Brunswick communities and endeavored to build capacity in the field;
 - the Université de Moncton monitored coastal changes before and after the installation of two types of erosion protection structures;
 - Shippagan examined how rises in sea levels affects the municipal drinking water supply; and
 - the Bathurst Sustainable Development Group worked with the public to encourage water conservation.

Department of Health:

- in partnership with Health Canada, developed a heat alert pilot project and program intended to reduce the rate of heat-related illness in the province. Due to climate change, forecasters suggest that in coming years Fredericton is expected to have a greater number of days exceeding a humidex of 40. Because of this, it has been chosen as the project site in the Atlantic provinces. Other pilot projects will be conducted in Manitoba and Windsor, Ontario. The project is funded through Health Canada until 2012. The end result will be the development of a best practices guide for the preparation of heat alert and response programs; and

- in partnership with Public Health Agency of Canada, implemented a pilot project to develop a comprehensive community plan pilot project outlining processes for responding to an established breeding population of black-legged ticks (and potential illness caused by Lyme disease).

Department of Public Safety:

- completed the first phase of a comprehensive, empirical (evidence-based) risk assessment for the province. It defined the areas of greatest concern and identified phases to be undertaken over the next three years; subsequent phases will examine natural - and human-caused risks to property, the environment and critical infrastructure;
- established a branch within the Police, Fire and Emergency Services Division comprising of the NB 9-1-1 Service and the New Brunswick Emergency Measures Organization (NB-EMO). This change provides a focus for interoperability and multiagency co-ordination, and it will support agencies' work to build a more robust and more integrated emergency management and response framework. In addition, the department developed a whole-of-government system for incident management which was used during the 2008 spring flood;
- acquired a provincial enterprise software license for its incident management system, which was extended to local, provincial, federal and selected private sector partners; and
- NB-EMO undertook a number of research initiatives and developmental projects to assess and communicate risks better to the public; initially for flood risk assessment, the same methodologies will be extended to critical infrastructure interdependency analysis.

Partnerships and communication

Our ability to manage our environment in a sustainable manner, reduce emissions and adapt to climate change impacts relies on our recognition that acting to protect the environment is a shared responsibility. NBCCAP 2007-2012

The Province of New Brunswick knows it cannot reduce GHG emissions on its own. It must involve local, Aboriginal, provincial and federal partnerships. Forging those partnerships requires common cause, and this can only be achieved by adopting clear communication among all those who have a stake in climate change – that would mean, all New Brunswickers.



Partnerships with communities and working with stakeholders

The Province acknowledges that communities will play a critical role in greenhouse gas emission reductions and adaptation strategies to address climate change impacts. *NBCCAP 2007-2012*

The Province of New Brunswick must forge and promote strong partnerships and collective action to meet the goals of the NBCCAP. The Province of New Brunswick has already involved communities and stakeholders to become partners to understand better the climatic changes taking place; to reduce GHG emissions; and to adapt to climate change by sharing ideas, experiences and practices. By joining with communities and stakeholders, the Province of New Brunswick can set realistic targets and provide flexibility for innovations.

Progress:

Department of Local Government:

- is developing regulations under the *Municipalities Act* supporting the authority of municipalities to undertake energy generation; and
- administered the Gas Tax Fund, under which 195 of 408 projects (48 per cent) will reduce GHG emissions. Examples:
 - resurfacing of streets;
 - replacing pumps or pumping station with more efficient ones;
 - installing heating and cooling geothermal to municipal buildings;
 - insulating and replacing exterior doors and windows to make municipal buildings more energy efficient; and
 - replacing lighting systems with more energy efficient systems to municipal buildings.

Department of Environment:

- worked with communities and developers to encourage the implementation of sustainable community design at the local level.

Public education and outreach

The Province recognizes that public awareness and education initiatives are essential in engaging people in making choices that both reduce greenhouse gas emissions and respect the challenges of a changing environment. *NBCCAP 2007-2012*

The Province of New Brunswick works with communities and stakeholders to promote public awareness and education about climate change. The objective is to persuade New Brunswickers and businesses to consider their current commitments; to take action to reduce their GHG emissions; and, finally, to prepare to adapt to future climate changes.

Progress:

Department of Environment:

- joined other departments in delivering presentations at information sessions, workshops and home shows to promote environmental leadership and awareness of commitments that reduce GHG emissions. Promotional and demonstration materials were used to highlight GHG emissions and to encourage New Brunswickers to take action on climate change;

- directed a climate change strategy at three groups: opinion leaders, communities of interest and the public. The strategy focused on the following projects:
 - in February 2009, provincial opinion leaders were brought together for a second forum to share their thoughts on how New Brunswickers may become meaningfully involved in the implementation of the NBCCAP;
 - in partnership with the department and the New Brunswick Environmental Network, the New Brunswick Advisory Council on Youth (NBACY) challenged and involved New Brunswick youth to take action on climate change. A Climate Change Youth Engagement Network was established to explore the implementation of youth-led actions identified by the NBACY; and
 - in partnership with the department, the Cities Association of New Brunswick and Efficiency NB, the New Brunswick Lung Association (New Brunswick climate change hub) successfully called upon municipal leaders to participate in the Mayors' Eco-Challenge 2009. Mayors made a commitment to reduce their personal carbon footprint as part of recognizing the importance of climate change and the need to take action. GHG emissions in New Brunswick were reduced by more than 16 t as a result;
- continued to administer the NBTEF, which provided more than \$569,500 to 25 education projects:
 - the New Brunswick Lung Association:
 - held tire pressure clinics and lunch and learn and educational sessions;
 - expanded on the SIMPLE Driver Stewardship Program, which is designed to influence Canadians to reduce fuel consumption and GHG emissions by the way they drive, maintain and buy their vehicles; and
 - compiled provincial public education resources on climate change. It will be available as a booklet and online;
 - the Conservation Council of New Brunswick:
 - developed an education and awareness program to support the NBCCAP;
 - in partnership with Rogers TV and Efficiency NB, produced a 13-part television series on how to cut energy costs while protecting the environment; and
 - decreased household-related GHG emissions through the development of a residential energy efficiency help program as part of its climate action education centre;

- the Bathurst Sustainable Development Group:
 - opened a climate change action centre as a one-stop location to provide information to the public about climate change, energy efficiency, reducing GHG emissions and the programs available to help persons address climate change; and
 - worked with Efficiency NB, NB Power, the local chamber of commerce, the City of Bathurst and other community partners to conduct a community energy efficiency campaign to distribute information to area households;
- the Cape Jourimain Nature Centre:
 - developed and implemented an education program for schools in the region addressing climate change science and knowledge, adaptations to climate change, and measures persons may take to reduce their impact on the climate; and
 - established an Internet-based network offering links to such topics as education and outreach; renewable energy; nature observation; healthy foods; and the EcoArts. The network is designed to encourage individuals, businesses, non-government organizations, institutions and governments to adopt alternative technologies and energy efficiency;
- the Falls Brook Centre's Signs of Change project targeted specific energy-related behaviours, particularly, personal transportation choices. The message will be communicated through presentations, discussion forums, websites, printed materials and contests;
- Fredericton involved residents, businesses, institutions, schools, and organizations to reduce GHG emissions in a tangible and sustained way;
- the Canadian Parks and Wilderness Society undertook a program to raise awareness about the NBCCAP as it relates to natural areas conservation, forest management and community planning and smart growth;
- Nature New Brunswick used historical scientific data to examine the affects of climate change on plants and animals;
- the Comité de Gestion Environnementale de la Rivière Pokemouche encouraged people to switch to energy efficient fluorescent light bulbs;
- the Groupe de développement durable du Pays de Cocagne educated residents about climate change and how to take action;
- the New Brunswick Climate Change Hub continued to improve public education and build capacity among communities about reducing GHG emissions;
- the Shediac Bay Watershed Association conducted educational and awareness sessions in schools and with local businesses to promote energy consumption and conservation;

- the One Change Climate Change Action Team educated youth from the north end of Saint John about the importance of maintaining a healthy, vibrant and sustainable natural environment. The action team also participated in projects that will contribute to a cleaner, more sustainable neighbourhood;
- the Groupe de développement durable du Pays de Cocagne supported local businesses to deal with climate change;
- the St. Croix Estuary Project equipped the Quoddy Learning Centre as a show-and-do facility to address public concerns about climate change. It will include displays, models and information; it will also offer a program whereby visitors may build hardware to reduce energy consumption and reduce GHG emissions;
- the Comité de l'aménagement rural du Nord-Ouest published a reference document about climate change;
- the Comité de Gestion Environnementale de la Rivière Pokemouche taught school children about the importance of buffer zones and climate change;
- Downtown Fredericton educated local businesses on best management practices for energy conservation; and
- the Comité sauvons nos Rivières Neguac educated the public about climate change.

Moving forward

Implementation

Although the actions contained in this document will be phased in and implemented within the timeline of this plan, additional actions, including those addressing adaptation issues, are long-term and will require a sustained commitment beyond the 2007-2012 period. NBCCAP 2007-2012

The Province of New Brunswick is the main player in implementing the NBCCAP, but it is not the only one. Climate change is too broad a challenge for any one government to tackle; the Province of New Brunswick continues to reach out to business, industry, communities, stakeholders and individuals.

Progress:

the Department of Environment:

- awarded \$34 million, under the NBCAF, to fund 31 projects in support of public-sector, private-sector and not-for-profit initiatives in keeping with the NBCCAP goals. These projects are expected to reduce the equivalent of more than 1.1 Mt of CO₂: 361,817 t in the renewables and energy efficiency sectors; 4,936 t in the transportation sector; 666,311 t in the industrial sector; and 7,477 t in the government-leading-by-example sector; and
- will continue to administer the NBETF, which, in 2009-2010, invested more than \$1 million in climate change mitigation, adaptation and education projects.

Accountability

A Climate Change Secretariat has been created to help co-ordinate activities of government departments and to develop and implement initiatives for achieving the objective of the Climate Change Action Plan and raise awareness of climate change issues. NBCCAP 2007-2012

The Climate Change Secretariat oversees the implementation of the NBCCAP and disseminates information to foster a wider and better understanding of climate change, including tracking and reporting on GHG emissions trends and progress. National, regional, provincial, and local dialogue have been promoted to ensure better co-ordination of commitments whenever possible.

Progress:

- partners such as Efficiency NB, the New Brunswick Climate Change Hub, the Conservation Council of New Brunswick, and provincial and municipal associations are assisting the Province of New Brunswick in implementing the NBCCAP. These efforts will contribute to the NEG/ECP climate change activities and support bilateral (federal, provincial, territorial or international) discussions on climate change;
- the Canadian Standards Association (CSA) is developing a website on behalf of the secretariat that will facilitate the sharing of information on GHG emissions and reduction activities in the province. The CSA is also developing three online carbon emission calculators to estimate GHG emissions resulting from various activities. The website will contain emission information about specific projects and a series of graphics illustrating GHG emissions for the province, with links to associated reports and data tables; and
- Efficiency NB worked with the CSA on GHG quantification reports for four incentive programs.

As the Province of New Brunswick approach the mid-point in implementing the NBCCAP, it has achieved a great deal of progress:

- 90 per cent of NBCCAP commitments have either begun or been achieved. This is up from 70 per cent in the progress report released one year ago;
- New Brunswick has continued to reverse the increase in GHG emissions that occurred from 1990 until 2001. Further reductions are expected over the next two years; and
- New Brunswick remains committed to achieving its NBCCAP targets: reducing GHG emissions to 1990 levels by 2012; and achieving further reductions of 10 per cent below 1990 levels by 2020.

The Province of New Brunswick has made progress in several ways:

- it has undertaken various initiatives on its own;
- it has supported and worked with municipalities, industry, communities, stakeholders and individuals;
- it has worked with federal, regional, provincial and territorial partners; and
- it has worked with the CSA to improve its reporting about climate change.

The public is invited to consult the New Brunswick Climate Change...*Measuring Our Emissions* website, www.carbondashboards.ca/NB_dashboard, to obtain further information.



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