

NEW BRUNSWICK AND CLIMATE CHANGE

**Progress Report Summary
2013–2014**

A photograph of a white, octagonal lighthouse on a grassy cliff overlooking a blue body of water. A child in a white shirt is standing on the grass, holding a small wooden sailboat up in the air. The sky is blue with some clouds.

Commitment to long-term progress

NEW BRUNSWICK
CLIMATE CHANGE
ACTION PLAN
2014–2020



NEW BRUNSWICK AND CLIMATE CHANGE

Commitment to long-term progress

The impacts of climate change touch us all and pose wide-reaching challenges to our communities, environment and economy.

In 2014, the province renewed its Climate Change Action Plan and reaffirmed its Greenhouse Gas (GHG) emission reduction targets for 2020 (10 per cent below 1990 levels) and 2050 (75 and 85 per cent below 2001 levels) and commitment to improved climate-induced resiliency. The action plan is a long-term strategy that can only be achieved through sustained, incremental actions, many of which are described in the plan, while others will require future commitments. The actions we are taking today and tomorrow will help New Brunswick become:

“A province that is prepared for and resilient to the impacts of climate change and has reduced its greenhouse emissions while sustaining economic growth.”

— Vision statement: 2014–2020 Climate Change Action Plan

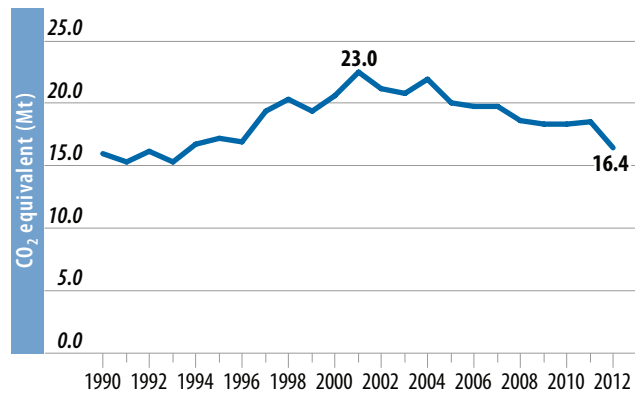
New Brunswick has made significant progress in reducing GHG emissions. Likewise, it has made substantial advancements toward a greater resilience to the impacts of the changing climate. However, there is still much to do if we are to meet our long-term targets, goals and vision.

This report highlights the progress made in reducing GHG emissions and in increasing our resiliency to climate change in 2013–2014.

Reducing Greenhouse Gas (GHG) emissions

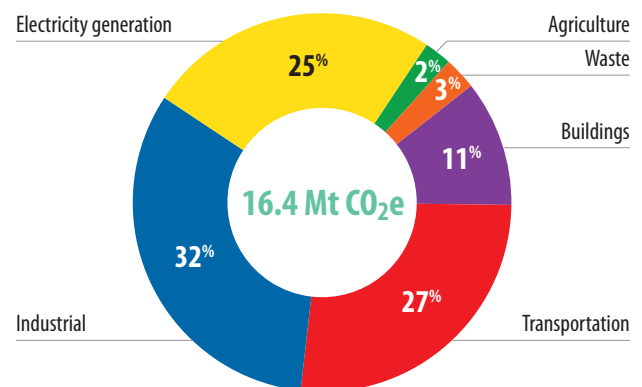
Figure 1 shows New Brunswick’s annual GHG emissions from 1990 to 2012, based on data available in Environment Canada’s 2014 *National Inventory Report*. In 2012, GHG emissions from all sources were 16.4 megatonnes (Mt) of carbon dioxide equivalent (CO₂e), which represents 2.3 per cent of the Canadian total. However, this equates to a 22-tonne-per-capita emission— the third-highest in Canada. During this period, emissions reductions were attributed to energy efficiency and switching to cleaner fuels, most notably in transportation, waste management and electricity generation. Figure 2 shows a breakdown of these emissions.

Figure 1: New Brunswick annual GHG emissions



Source: 2014 National Inventory Report, Environment Canada

Figure 2: New Brunswick GHG emissions in 2012

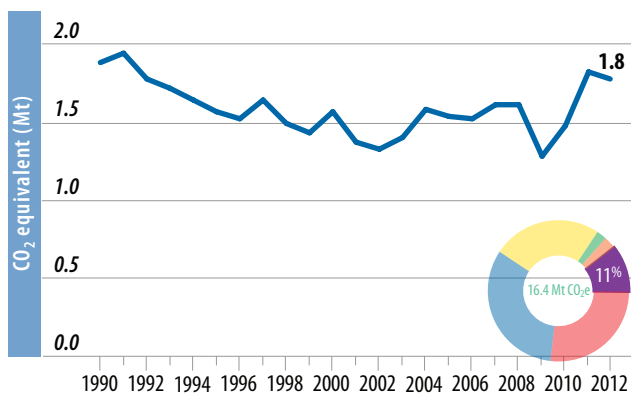


Source: 2014 National Inventory Report, Environment Canada; 2014 LEAP Report, New Brunswick Climate Change Secretariat

Energy efficiency and renewable energy — residential and commercial buildings

Figure 3 shows that emissions for the commercial and residential building sector totalled 1.8 Mt in 2012. Despite early progress in reducing emissions through energy efficiency and conservation programs, emissions in 2012 were relatively unchanged from 1990. This is largely due to growth in new commercial and residential building construction.

Figure 3: Commercial and residential buildings — energy efficiency and renewable energy



Source: New Brunswick Climate Change Secretariat

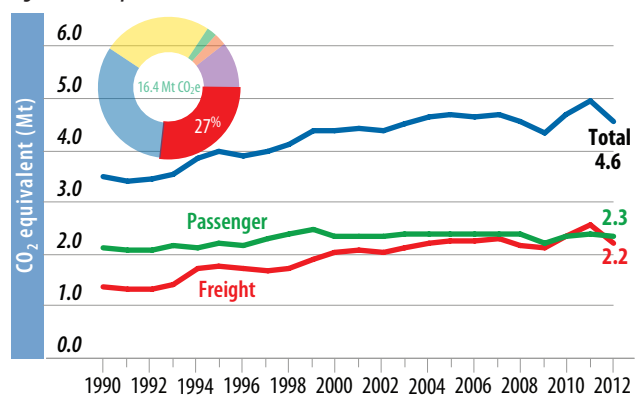
Snapshot of progress during 2013–2014

- In the residential efficiency program, more than 176,500 tonnes of CO₂e have been reduced since Efficiency New Brunswick was launched in 2007, with more than 3,500 homes participating in the program during this period. That amounts to more than 28,607 tonnes of CO₂e savings during this period.
 - In the commercial efficiency program, more than 49,150 tonnes of CO₂e have been reduced since 2007, with more than 150 buildings participating during this period. That amounts to more than 13,400 tonnes of CO₂e savings during this period.
- For further information about the residential and commercial electric energy efficiency programs: <https://www.nbpower.com/en/smart-habits>
- In August 2014, the Department of Energy and Mines issued the *Energy Blueprint – Final Progress Report*, which outlines progress being made on four actions relating to energy efficiency and renewable energy advancements.

Transportation

Figure 4 shows the estimated GHG emissions from transportation in New Brunswick from 1990 to 2012. It can be seen that, for this period, although the total GHG emissions from transportation have increased since 1990 by 35 per cent, emissions have levelled off in passenger vehicles. Total emissions from the transportation sector were 4.6 Mt in 2012, which include road passenger (2.4 Mt) and road freight (2.2 Mt).

Figure 4: Transportation



Source: New Brunswick Climate Change Secretariat

Snapshot of progress during 2013–2014

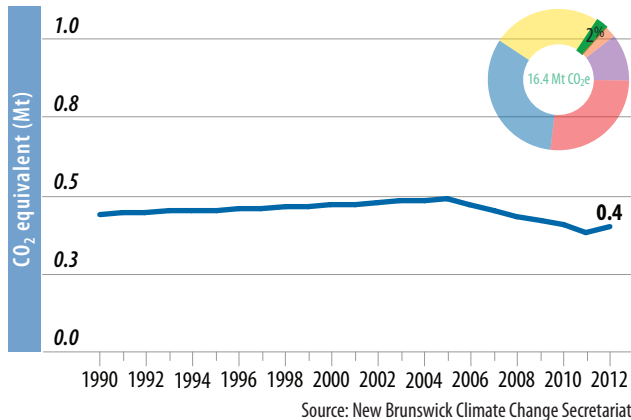
- The New England Governors and Eastern Canadian Premiers (NEG-ECP) committed in 2013, through Resolution 38-2, to further advance sustainable transportation systems and the use of alternative fuel vehicles - with a continued commitment to regional initiatives. Resolution 38-2 also commits to work toward achieving a five-per-cent fleet market share penetration of alternative fuel vehicles by 2020 and facilitate the availability of refueling stations to support those vehicles.
- About 30 plug-in electric vehicles are registered in New Brunswick, not including hybrid electric (non-plug-in) vehicles.
- In 2014, the New Brunswick Electric Vehicle Advisory Group was formed to advance electric vehicle sales in support of the NEG-ECP Alternative Fuel 2020 target.



Agriculture

Figure 5 demonstrates that emissions from agriculture, which are primarily from livestock management, have been declining slightly since 2006 and reached 0.4 Mt in 2012, which is attributed to improved livestock management practices.

Figure 5: Agriculture



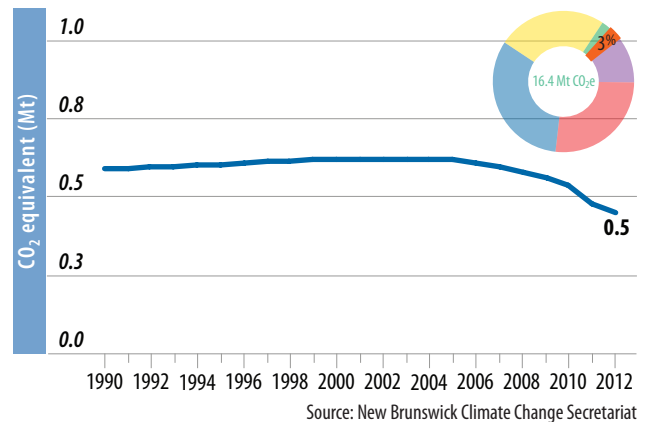
Snapshot of progress during 2013–2014

- Three agricultural producers were funded through the Canada-New Brunswick Growing Forward Agreement to implement energy efficiency upgrades identified in their on-farm energy audits.
- There was an increase in local agri-food products: sales and consumption of local products, including improving local markets and the Buy Local campaign. This reduces the food miles and transportation associated with the movement of food.
- Several research projects were funded through the Enabling Agricultural Research and Innovation Component of the Canada-New Brunswick Growing Forward Agreement. Projects included evaluation of biomass potential of three crop varieties and reduced petroleum usage in the burning of blueberry fields.
- Environmental farm plans and beneficial management practices continued to be implemented, including those aimed at mitigating and adapting to climate change.

Waste management

Figure 6 demonstrates that emissions from regional landfills have been declining since 2005 and reached 0.45 Mt in 2012, which is attributed to landfill gas management. An increasing number of New Brunswick's landfills are capturing methane gas, created through the decomposition of the organic waste, and are either burning it or generating electricity, further reducing GHG emissions.

Figure 6: Waste management



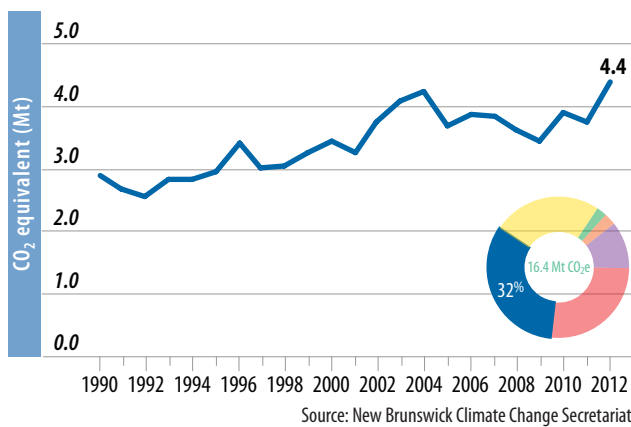
Snapshot of progress during 2013–2014

- Used oil and glycol Extended Producer Responsibility (EPR) programs were fully operational in New Brunswick.
- An Atlantic Waste Packaging and Paper Stewardship Program framework and implementation plan was prepared, based on the commitment of the governments of New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland and Labrador to work together on the first step of an initiative to consider existing Atlantic Canada programs for packaging and waste paper and work toward implementing Extended Producer Responsibility (EPR).

Industry

Figure 7 shows the estimated GHG emissions from industry (including industrial process emissions) in New Brunswick from 1990 to 2012. Emissions from large industrial facilities declined since peaking in 2004 but rose again in 2012 to 4.4 Mt. Higher energy costs and available efficiency programs have induced industry to implement energy efficiency and fuel switching measures, improving the carbon intensity of production while allowing continued growth in the industrial sector.

Figure 7: Industry



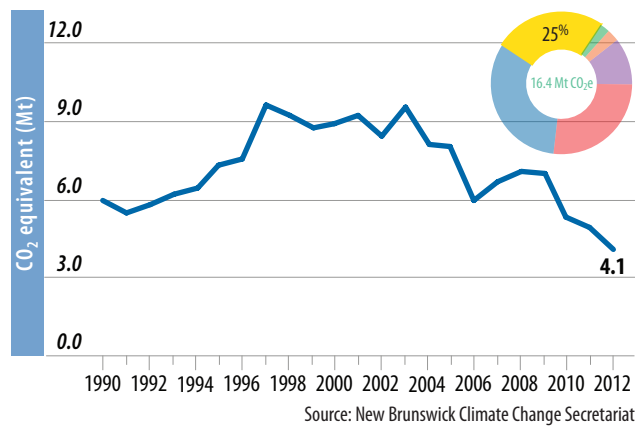
Snapshot of progress during 2013–2014

- Reductions in annual emissions of 194,500 tonnes of CO₂e have been achieved by participants in the Industrial Sector Energy Efficiency programs.
- The Large Industry energy efficiency program assisted with 39 projects in large industrial facilities.
- The Small and Medium Industry energy efficiency program assisted 22 facilities.

Electricity generation

Figure 8 depicts electricity generation emissions from 1990 to 2012. In 2012, electricity generation emissions were 4.1 Mt. Emissions have been declining since 2001 due to renewable energy sources such as wind and biomass as well as the closure of fossil-fueled power plants at Grand Lake and the Dalhousie. Further reductions are expected through NB Power’s reduce and shift demand (RASD) programs.

Figure 8: Electricity generation



Snapshot of progress during 2013–2014

- In 2012, NB Power entered into a 10-year partnership with Siemens Canada to integrate Smart Grid technology into the electrical system and build Canada’s first fully integrated “energy internet,” which will enable communications between customers and their homes, power plants and distribution systems.
- Completed the *Electricity Efficiency Plan* as part of the *New Brunswick Energy Blueprint* and launched *Save Twice* program, part of the plan’s implementation. Since this program was launched in November 2013, New Brunswickers reduced their electricity energy consumption by about 2,670 mWh.



Innovation and economic development

Encouraging research and innovation in low-carbon technologies and processes and taking advantage of economic opportunities offered by the emerging low-carbon economy.

Snapshot of progress during 2013–2014

- In 2014, the provincial government contributed more than \$1.2 million to 34 projects that involved environmental approaches, energy conservation or productivity. This investment, when combined with other sources, resulted in more than \$4.3 million in total investment.
- A new economic development model, under development, will have greater flexibility in supporting innovative solutions to environmental issues.
- With investments totalling \$60 million over five years, the New Brunswick Innovation Foundation was able to launch several new funding programs such as the New Brunswick Innovation Research Chair Program, the New Brunswick Graduate Scholarship Program and the Innovation Voucher Fund.

Sequestering carbon

Encouraging the development of land-use management plans and practices that enhance carbon storage.

Snapshot of progress during 2013–2014

- The Department of Natural Resources worked with the National Forest Sinks Committee to develop a carbon flow model that will determine the Crown carbon footprint and provided the Sinks Committee Carbon Team with New Brunswick's wood supply models to develop a good carbon model for New Brunswick, which will allow scenario analyses and exploration of options.
- The total Protected Natural Areas land base on Crown land increased to 271,878 ha in 2014.
- It is estimated that in 2012, New Brunswick's sequestered GHG totalled one Mt.

Enhanced resilience to climate change

Significant advancements toward a greater resilience to climate change have already been made. Several communities have conducted vulnerability assessment studies to address flooding, erosion, groundwater protection and sea level rise. Emergency and environmental preparedness, as well as resiliency planning has increased due to tools, guidance and better forecast measures.

Data and research into climate change impacts

Building further knowledge about climate change and its impacts, through data collection, monitoring and research.

Snapshot of progress during 2013–2014

- Field work and cooperation regarding enhanced detection of declining forest health and insect and disease is occurring. An early intervention strategy has been established to mitigate the severity of a spruce budworm attack on forests by ensuring early detection of potential threats.
- Updated sea-level rise and storm surge projections for coastal New Brunswick were developed, based on the most recent data from the Intergovernmental Panel on Climate Change (IPCC). These values are a key component of climate change adaptation planning for coastal communities and infrastructure owners.
- The province released *New Brunswick's Flood Risk Reduction Strategy* in May 2014. Objective 1 is Accurate Flood Hazard Identification: An improved ability to identify locations where future floods are likely to occur, so that proactive steps can be taken both provincially and locally, to avoid additional exposure to flooding and to mitigate existing flood risk. This will include incorporating future climate considerations in flood hazard mapping efforts.
- New Brunswick continued its collaboration with the other Atlantic provinces on the topic of climate change adaptation by participating in the second phase of the Regional Adaptation Collaborative (RAC). The purpose of RAC II is to increase adaptation awareness and capacity at the regional level and to build on the momentum and awareness generated by RAC I.

Planning for smart growth

Promoting smart growth principles in community planning to support the development of sustainable, healthy, low-carbon communities.

Snapshot of progress during 2013–2014

- Worked with communities and developers and provided information and training sessions to numerous partners and stakeholders in collaboration with the Canada Mortgage and Housing Corp. Efficiency New Brunswick, and the Association of Municipal Administrators of New Brunswick to encourage the implementation of sustainable community design (SCD) at the local level.
- Presented workshops on *Place and Health: Shaping the Built Environment of New Brunswick and Prince Edward Island* exploring how to use design to build healthier environments that fit with the impacts of a changing climate change.
- Promoted the concept of integrated planning in relation to climate change for projects, reviews, and working groups.
- In conjunction with the Association of Municipal Administrators, continued to administer a project funded by the New Brunswick Environmental Trust Fund, which promotes the use of the conservation design concepts in the development of subdivisions.

Risk and opportunity assessments

Assessments to identify, quantify and localize the risks and opportunities presented by a changing climate.

Snapshot of progress during 2013–2014

- An integrated regional emergency plan was finalized. It conforms to the provincial standard and supports the government initiative to improve regional emergency response capacity.
- Municipal flood mapping predictions and warning were enhanced using Service New Brunswick's (SNB's) GeoNB mapping service, which provides improved situational awareness and flood alerts during River Watch.
- Used the GeoNB platform, which incorporates past events as a reference to create flood maps in vulnerable areas.
- The provincial government has funded numerous projects under the Environmental Trust Fund to examine vulnerabilities to climate change. This included five communities in Charlotte County; work in the Acadian Peninsula region; an examination of the vulnerability of the transportation system in New Brunswick; and examining green infrastructure solutions to address potential climate change impacts.

Mainstreaming adaptation

Ensuring that adaptation to climate change is incorporated into every-day decisions.

Snapshot of progress during 2013–2014

- A training event was held in Moncton in February 2014 for climate change adaptation practitioners to provide them with the necessary tools to facilitate discussions and ultimately adaptation planning in New Brunswick communities.
- Presentations were delivered at workshops, conferences, community events and information sessions to raise awareness about climate change adaptation and introduce audiences to the tools and information available to help them increase their community's resiliency.



Government leading by example

The provincial government is committed to showing leadership in reducing GHG emissions from public sector operations. The *Green Building Policy* and the *Green Vehicle Policy* are examples of the province's commitments to lead by example.

Snapshot of progress during 2013–2014

Low carbon procurement:

- Established a working committee of Strategic Procurement staff to help develop and implement Green Procurement.
- Developed and communicated the corporate Green Meetings Guideline.
- Enhanced tracking and reporting of procurement with a green or environmental component. A facilities committee has made progress for the “inclusion and consideration of the *Climate Action Plan*” when implementing new sourcing strategies.

Inter-jurisdictional partnerships:

- Climate change was included on the agenda of the 2014 Council of the Federation annual meeting.

Partnerships and outreach

Partnerships and Outreach collaboration has been essential for addressing climate change adaptation and emission reduction. Many communities, industries, businesses, non-profit organizations and individuals have contributed to climate change efforts.

Snapshot of progress during 2013–2014

- By the end of the 2013–2014 school year, the Gaia Project (a registered charity) reached 16 per cent of total New Brunswick students, since founding in 2009. Its 2013–2014 curriculum-based projects included: elementary school projects— scientific method through doing whole-school waste audits; middle school projects— focused on energy and water audits; and high school projects. This encompassed 56 projects reaching 1,000 youth: 38 per cent were delivered in francophone school districts, 62 per cent in anglophone school districts, 59 per cent were high school projects, 11 per cent were middle school, and 30 per cent were elementary.
- 2013–2014 The Gaia Project Mobile Energy Centre reached and delivered programming to:
 - 17 school visits (two days per visit), reaching 1,300 students;
 - 35 per cent in francophone schools, 65 per cent in anglophone schools; and
 - 18 per cent in rural area schools, 82 per cent in small population centres.

Measuring and reporting progress

Knowing the province's energy consumption and emissions is important to allow continued tracking of progress in GHG emissions and for further emission reductions.

Snapshot of progress during 2013–2014

Since 2014, the provincial government has used Long Range Energy Alternatives Planning (LEAP) modelling software to track and predict potential GHG emissions based on current trends as well as the implementation of the *Climate Change Action Plan*.

Moving forward

The New Brunswick Climate Change Secretariat coordinates the ongoing activities of the Interdepartmental Committee on Climate Change (consisting of most government departments and agencies) and the provincial government's commitments with respect to the *Climate Change Action Plan*. This work goes well beyond the walls of government, extending to many communities, industries, businesses and non-government organizations and individuals who have contributed to New Brunswick's climate change efforts. It is these partnerships between government departments and non-government organizations that are essential to the success of the plan.

To learn more about New Brunswick's progress:
www.gnb.ca/climatechange



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ISBN 978-1-4605-1183-1 (PDF: English)
ISBN 978-1-4605-1184-8 (PDF : Française)

10507 | 2015.12