

***TomorrowNow—
Manitoba's Green Plan:
Toward a New Provincial Climate
Change and Green Economy Plan***

Consultations Background Paper

***Manitoba Peatlands:
Reducing emissions, enhancing our resilience to
climate change and building a green economy***

December 2014

TomorrowNow—Manitoba’s Green Plan

Preface

In 2012 the Government of Manitoba released *TomorrowNow—Manitoba’s Green Plan*, which includes commitments to update its climate change plan and create the first green economy action plan for Manitoba. As an initial step in this process, the province has asked the International Institute for Sustainable Development (IISD) to host a series of consultation sessions with key stakeholders on climate change and the green economy. Each meeting will focus on a specific sector and will seek an open dialogue on Manitoba’s new climate change and green economy action plan.

Where Do We Stand?

Climate change threatens our social, economic and environmental systems on a global scale. Governments at every level are seeking to increase climate resilience, lower vulnerability to the impacts of climate change, reduce greenhouse gas emissions, implement adaptive actions and participate in the newly emerging green economy. Manitoba is no exception to these efforts.

In 2008 the Government of Manitoba released its Beyond Kyoto climate change action plan (Government of Manitoba, 2008), which listed over 60 actions to effectively reduce greenhouse gas (GHG) emissions across Manitoba’s economy and put in place initial actions to adapt to climate change. Although most of these actions were successfully implemented, Manitoba was unable to achieve the desired target level of GHG reductions. Figure 1 illustrates Manitoba’s emissions from 1990 to 2012.

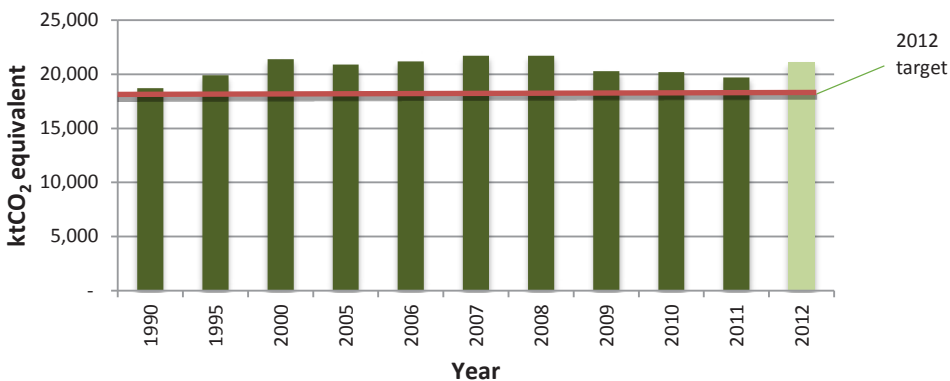


FIGURE 1: TOTAL PROVINCIAL EMISSION (IN KILOTONNES OF CO₂ EQUIVALENT) FROM 1990 TO 2012

Source: Environment Canada (2014); Manitoba Conservation and Water Stewardship (2014a).

The provincial government released *Manitoba's Report on Climate Change for 2012* (Manitoba Conservation and Water Stewardship, 2014a) as the final report on performance under the Climate Change and Emissions Reductions Act (CCERA). This report noted that emissions at the end of 2012 were 500 kilotonnes (kt) lower than emissions levels in the year 2000, but failed to meet the 2012 target goal of 6 per cent below 1990 levels. The majority of GHG reductions were attributed to the energy sector through the ethanol mandate (410 kt), implementation of regulations limiting the use of Manitoba Hydro's single remaining coal-fired facility (343 kt) and Manitoba Hydro's Power Smart programs (140 kt). The report also noted that in 2012 Manitoba Hydro, through electricity exports, had contributed to 6,300 kt of GHG emissions reductions in jurisdictions outside Manitoba.

Manitoba is continuing its efforts to reduce GHG emissions, pursue green economic development and adapt to climate change. Public participation is integral to the policy development process, ensuring that future policies and programs will motivate action to reduce emissions and compel us to take proactive steps to adapt. Moreover, it allows for the policy development process to be built from the bottom up¹ for an inclusive policy development process and a climate change and green economy framework that all Manitobans have a hand in creating.

Manitoba's Emissions by Sector

Manitoba has unique characteristics that drive emissions, adaptation needs and green economic opportunities. These characteristics shape the way that Manitobans respond to climate change and pursue resilient, low-carbon economic development.

Manitoba's **energy mix** presents opportunities as well as some challenges. Manitoba is blessed with abundant, stable, clean energy resources. The province has achieved a standard of approximately 98 per cent of locally generated electricity from clean, renewable sources with significant export capacity. This abundance allows Manitoba to adopt a flexible approach to the integration of new sources of energy to provide a backstop, such as geothermal, wind and biomass.

Manitoba provides a significant service to GHG mitigation in North America through clean energy exports that allow customers to switch from GHG-intensive fuels (such as coal) to hydroelectricity. While hydroelectricity exports cannot be counted against provincial GHG targets, they are a significant contribution to emissions reductions in other jurisdictions, as they displace coal and natural gas-fired electricity.

The province's single largest source of GHGs is the transportation sector, generating 38 per cent of total emissions in 2012. The **agriculture sector** is the second largest contributing sector to provincial GHG emissions (see Figure 2), due to its importance to the provincial economy as well as the relatively low carbon intensity of both the energy and

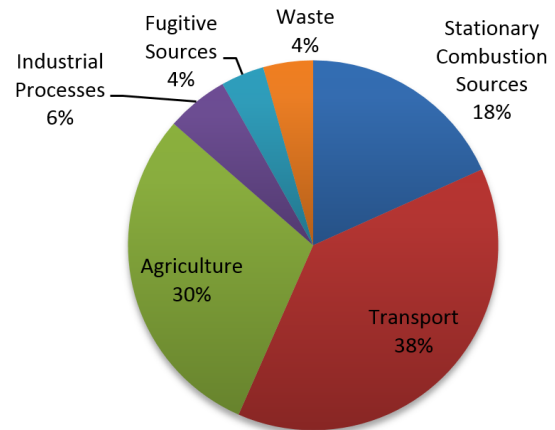


FIGURE 2: MANITOBA 2012 GHG EMISSIONS BY SECTOR
Source: Environment Canada (2014).

¹ Through a "bottom-up" approach, stakeholders' views and policy suggestions feed into the decision-making process for the Government of Manitoba, including priorities to be pursued under each plan.

industry sectors in Manitoba. The size of the agriculture sector relative to the provincial GHG portfolio is unique: in only two other provinces does agriculture represent over 10 per cent of provincial emissions, and even there it does not approach 20 per cent. As a breakdown, the agriculture sector emissions include agriculture soils, enteric fermentation and manure management, each of which contributed 63 per cent, 25 per cent and 10 per cent respectively to the overall emissions in the sector in 2012 (Environment Canada, 2014).



Canada contains one third of the world's peatlands and 40 per cent of global terrestrial carbon (Ducks Unlimited, 2014). Approximately 34 percent of Manitoba consists of peatlands, which provide water resource management, biodiversity conservation and Aboriginal resource use—all necessary environmental goods and services for Manitoba. Peats provide fibre, fuel, food and medical applications and possess a high carbon storage value, natural flood prevention mechanism, natural water treatment and erosion control, making them instrumental for the province in its efforts to mitigate and adapt to climate change effects. Conversely, however, disturbance of peatlands can increase Manitoba's GHG emissions. These disturbances can be man-induced, such as through peat harvesting and agriculture or through climate hazards such as fires and flooding (Manitoba Conservation and Water Stewardship, 2014b). Emissions for peatlands are calculated under the Land Use, Land-Use Change and Forestry (LULUCF) federal registry. Based on available data, IISD calculated that if all current and potential peat leases were in full production, emissions released from harvesting would constitute 3 per cent of Manitoba's GHG emissions or 0.62 million tonnes of carbon dioxide equivalent per year² (IISD, 2013). However, the actual number of leases under active harvesting is much lower, and as a result GHG emissions from the sector are also much lower. An exact figure of the annual emissions from the sector has not yet been determined.

Studies conducted in the late 20th century and early 2000s in Canada, Finland and the United States demonstrated that runoff from peat extraction contributes significantly to the release of GHGs into the atmosphere and pollutants into nearby waterways.³ These challenges are currently being addressed through research on new technologies and techniques, such as the acrotelm transplant method, which is proving to reduce GHG emissions released during extraction and speed up the re-establishment of peat accumulation for its restoration (IISD, 2013).

Manitoba's built environment, energy infrastructure and agriculture sectors are not only emissions sources—they are also vulnerable to the impacts of climate change. Extreme climate events threaten residential and commercial buildings, affecting the well-being of individuals and communities. These concerns also apply to the energy infrastructure, where extreme events such as ice storms and floods affect not only the ability to mitigate emissions, but also energy transmission to local residents and business. Agriculture is highly influenced by climatic events and the sector has been adversely affected by a number of extreme events in recent years, including the 2011 flood, which cost the province an estimated CAD\$1.2 billion (Manitoba Infrastructure and Transportation, 2013). The financial cost of extreme events is growing across Canada, with insured losses caused primarily by extreme weather events amounting to CAD\$1.6 billion in 2011 and CAD\$3.2 billion in 2013 (Insurance Bureau of Canada, 2012; Calamai, 2014).

² This calculation is based on the cumulative effect analysis, which analyzes interaction between each harvesting activity and environmental components and other activities (past, current and future).

³ In its report, IISD drew information from the following studies: Kløve (2000), Moore (1987), Gale & Adams (1984), Surette et al. (2002) and St-Hilaire et al. (2004, 2006).

Developing the Next Climate Change Plan: What Have Other Jurisdictions Done?

The development of Manitoba’s next climate change strategy will take into account how other jurisdictions are proceeding on climate change policy development, and what influences external policies will have on Manitoba. The table below illustrates some of these policies.

TABLE 1. CLIMATE CHANGE POLICIES IMPLEMENTED IN OTHER JURISDICTIONS

JURISDICTION	ACTIONS	YEAR IMPLEMENTED
Federal Government	Regulations for both heavy-duty and light-duty vehicle tailpipe emissions	2012
	Coal-fired electricity sector regulations	2012
	Negotiations with oil and gas and other industrial sectors	Ongoing
Quebec	New climate change action plan and adaptation strategy	2012–2020
	Launched emissions trading to be linked with California	2014
	First auction of its cap-and-trade system	2013
British Columbia	Review of Revenue-Neutral Carbon Tax completed; tax retained at \$30 per tonne	2013
Nova Scotia	Finalized federal equivalency agreement for electricity sector GHG regulations	2012
Ontario	Released a climate change progress report and a report from the environmental commissioner	2013
	Emissions mitigation discussion paper	2013
	Phase out of coal-fired power	Completed in 2014
Newfoundland & Labrador and Nova Scotia	Finalized hydroelectric link	2012
Alberta	Policy review of the Specified Gas Emitter Regulation	Expected completion 2014

In past years, provinces had taken it upon themselves to act unilaterally or in partnership with other provinces and U.S. states to address GHG emissions, while federal policy remained either in development or stalled. The advent of federal GHG regulations raises the potential for conflict over jurisdictional control of emissions policy, which can have a major influence over provincial economies. As a result, equivalency agreements are an option that would allow provincial approaches to GHG mitigation to take precedence over federal sector regulations. The most prominent early example of this was the equivalency agreement reached between the federal government and Nova Scotia that installed provincial regulations in place of proposed federal regulations for electricity (Nova Scotia Department of Energy, 2012).

Table 2 provides brief examples of climate change actions being taken in jurisdictions within and outside of Canada for peatland development.

TABLE 2. POLICIES AND ACTIONS REGARDING THE PEAT SECTOR IN OTHER JURISDICTIONS

JURISDICTION	ACTIONS
Canada	The peat industry in Canada supported the creation of a new standard based on the Scientific Certification System, which resulted in the VeriFlora Responsibly Managed Peatland certification. The VeriFlora certification is given to industry producers that include environmental protection, social commitment and product quality in their practices (Quebec Peat Moss Producers Association, 2014; VeriFlora, 2014).
Canada	Ducks Unlimited and the Canadian Sphagnum Peat Moss Association signed a Memorandum of Understanding (MOU) in February 2014. The focus is on Boreal peatlands and the new partnership aims to increase knowledge sharing on responsible peatland management and raise awareness on their value. The MOU seeks to strengthen and support sustainable resource-based industry practices (Ducks Unlimited, 2014).
Indonesia	During the United Nations Climate Summit in September 2014, palm oil producers (including Asian Agri, Cargill, Golden Agri-Resources) pledged to industry-leading sustainable practices that include proactive government engagement on policy reform and a principle of not planting on high-carbon stock or peatlands. This pledge is known as the Indonesian Palm Oil Pledge. Although it is a pledge, it is a step in the right direction from the private sector to preserve high-carbon sinks, including peatlands (United States Department of State, 2014).
Germany	The Decision Support System (DSS) is a decision support tool devised in Germany to help farmers and planners in sustainable decision making on land-use management with the goal of preserving peat. The DSS proposes new land-use options for peatlands currently used for agricultural purposes and those that are untouched (Schulze et al., 2013).
Germany and Canada	A partnership between the Canadian and German peat industries, University of Laval, University of Hannover and German non-governmental organizations is engaged in examining sphagnum farming on post-harvesting sites in Lower Saxony to find a feasible use for post-harvest and unharvested peatlands.
Costa Rica	Payment for Ecosystem Services is a key, internationally recognized program for Costa Rica’s sustainable development. Administered through the National Forestry Financing Fund (FONAFIFO), the Government of Costa Rica pays landowners for the amount of land and forest they conserve, rehabilitate and/or regenerate, and the environmental services that these conserved lands provide.

Building Blocks for Manitoba’s Climate Change and Green Economy Plans

The Government of Manitoba recognizes that a concerted effort is required to meet Manitoba’s responsibility to adapt to climate change and mitigate GHG emissions. Manitoba has committed to actions on climate change in a number of strategy documents, including *Tomorrow Now: Manitoba’s Green Plan* and *Focused on What Matters Most: Manitoba’s Clean Energy Strategy* (Manitoba Innovation, Energy and Mines, 2012), as well as following up on the recommendations in the Auditor General’s 2010 *Performance Audit on Managing Climate Change* (Manitoba Office of the Auditor General, 2010).

Manitoba’s next plan will also require a consideration of the types of principles that are important for addressing climate change policy in Manitoba. These principles are expected to evolve and could include elements such as:

- Achieve GHG emissions targets in a cost-effective way that considers competitiveness
- Simplicity, policy coherence, transparency and administrative efficiency
- Treat sectors and facilities equitably
- Account for early action by industry leaders
- Use accurate and verified emissions data to support policy development
- Promote development and deployment of clean technologies
- Align with emission reduction programs in other jurisdictions (linking)
- Integrate with other provincial environmental policies where possible

These principles are open to input, and their discussion will be part of the consultation process for the new climate change plan and green economy plan. Manitobans are encouraged to share their views regarding which principles should be embedded in climate change action in the province.

Integrating Adaptation and Mitigation

The next climate change plan will integrate both adaptation and mitigation strategies, with an increased focus on adaptation. It will be important for the coming plan to consider the adaptation impacts of mitigation actions (and vice versa), as well as identify areas where co-benefits can be achieved and negative side effects avoided regarding mitigation or adaptation actions. The consultation process with stakeholders will seek input on how best to integrate a more balanced approach for adaptation and mitigation.

For adaptation, capacity building in key areas can assist Manitobans in undertaking meaningful, informed action with regards to adaptation to climate change. Some examples of areas where capacity may be lacking include those related to climate data and risk mitigation—both of which are important for the assessment of vulnerabilities and potential impacts.

Green Economy and Green Jobs

The development of a green economy action plan is one of the core pillars for the achievement of *TomorrowNow's* goal of protecting the environment while ensuring a prosperous and environmentally conscious economy. The vision is of a resilient, low-carbon economy that respects environmental sustainability and supports social well-being. Sector-specific consultations are an important element in shaping Manitoba's green economy and green jobs by identifying opportunities and actions that feed into sector-specific comparative advantages within a sustainable development pathway.

The Role of the Peat Sector in the New Climate Change Plan and Green Economy Action Plans

Peatlands in Manitoba play an essential role in climate change and the green economy, and therefore in the development of their associated plan under *TomorrowNow*. Peatland development is significant to Manitoba, as it creates jobs, provides natural water resource management and biodiversity conservation, and is an important Aboriginal resource use. At the

same time, its development contributes to Manitoba's LULUCF emissions. Peatlands are also highly vulnerable to extreme weather events and climate variability, which can increase GHG emissions due to the high storage of GHG in peat, and the potential for release of these emissions due to peat loss or drying. This can negatively affect livelihoods and the provincial economy. Compared to other sectors, peatlands exhibit the link between needing to respond to climate change impacts through the ability to sequester carbon while supporting economic development in Manitoba.

The province has already taken steps to reduce GHGs and increase resilience to climate variability and change in its peatlands. Recent actions and commitments under *TomorrowNow* include the creation of the Peatlands Stewardship Strategy (PSS). The first step in the design of the PSS was the Save Lake Winnipeg Act in 2011, which created a two-year moratorium on issuing new peat quarry leases. In addition, in two knowledge-sharing workshops in 2010, actors in the peatland sector shared their views and expertise, and learned from other industries as well as from Aboriginal communities. In 2013 the moratorium was extended for another two years and the Environment Act was passed. Currently under development, the PSS seeks to "balance peatland use with the need to conserve peatlands so they can provide important ecosystem goods and services for future generations" (Manitoba Conservation and Water Stewardship, 2014b, p. 8). Climate change mitigation and adaptation, along with biodiversity conservation and land rehabilitation, are part of the core elements of the PSS's coordinated approach to its responsible stewardship of peatlands.

Gearing up to its release, Manitoba Conservation and Water Stewardship has already taken action towards responsible stewardship, including banning peat harvesting in parks in 2013, carrying out a Crown-Aboriginal consultation on peat Environment Licence Act applications, as well as public engagement including non-governmental organizations, Aboriginal communities and industry looking at national and international peatland management strategies to better understand the current state of peatland knowledge.

Questionnaire

The questions below will feed into peatland development-specific needs and opportunities in the new climate change plan as well as Manitoba's first green economy action plan. Written or verbal responses are welcomed. Written responses may be sent to tomorrownow@iisd.ca.

Action Plan Goals and Strategy

1. What are the current sector approaches and good practices in Manitoba, and elsewhere in Canada to address climate change that can to be built upon and enhanced over time?
2. What are the broad and specific barriers you see to the achievement of stronger resilience within peatland management and development in Manitoba?
3. What are some opportunities in Manitoba to achieve deeper emissions reductions and create capacities to deal with extreme weather events with respect to peatlands?

Science, Information and Capacity Building

4. What types of information, capacity and tools are required by Manitobans to identify the actions they need to take in preparation for climate change? What mechanisms could be used to enable access to this knowledge?
5. How can we provide better access to Manitoba-specific climate information, and the potential socioeconomic and ecological impacts of these projected changes?
6. What are the metrics to assess progress on actions taken to build resilience and manage greenhouse gas emissions?

Encouraging Action Among Manitobans

7. In terms of actions responding to climate change adaptation and GHG mitigation, what are the responsibilities of citizens, the government and private sector/industry when responding to climate change adaptation and mitigation?

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