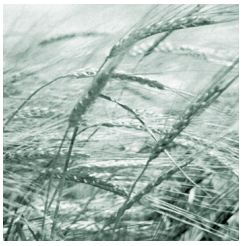
Kyoto and Beyond

Meeting and Exceeding Our Kyoto Targets



Manitoba

Kyoto and Beyond – Meeting and Exceeding Our Kyoto Targets

Climate change is a challenge for citizens worldwide. Manitoba is committed to helping achieve the targets of the Kyoto accord so that Canadians, as a nation, can make a solid contribution to greenhouse gas (GHG) reduction for the benefit of all the world's citizens.

Manitoba plans to do more than its share to help Canada meet its target. Our province will go beyond the six per cent reduction that Canada as a whole must achieve. In fact, with the federal government as a partner, we believe we can achieve reductions of up to 18 per cent below 1990 levels by 2010, and reductions of up to 23 per cent by 2012.

Manitoba's approach will use our natural advantages to help Canada meet its Kyoto commitment by 2012.

The Manitoba Plan for Canada

Manitoba launched the Manitoba Climate Change Task Force, chaired by former Foreign Affairs Minister Lloyd Axworthy, in the spring of 2001. The task force held public hearings throughout the province and submitted recommendations based on their findings in the fall of that year. The Manitoba government formally accepted the recommendations, including the ratification of Kyoto, in September 2001.

The task force recognized that Manitoba will face unique challenges as a result of climate change, including drought, flooding, the loss of winter roads and the loss of the southern edge of our boreal forest. Climate change will also have economic, health, social and cultural effects – not just on Manitoba citizens, but citizens around the world.

At the same time, the task force recognized that Manitoba's unique economic advantages could help reduce greenhouse gas emissions for the country as a whole while providing jobs and investment here in Manitoba. About 97 per cent of our electrical energy already comes from clean and renewable hydroelectricity, and we have the ability to diversify our energy sources by expanding the use of wind and geo-thermal power. We have vast agricultural lands and forests that can store carbon and produce alternative fuels such as ethanol. We have opportunities for new research and development in hydrogen and bio-fuels, which could be particularly useful for public transit. These economic opportunities have also been recognized in federal-provincial studies on GHG reduction.

Even before the task force hearings, Manitoba had begun to act on climate change issues. Investments in energy efficiency, alternative fuels and climate change research and development have given us a head start in meeting Kyoto targets. The conversion of the Selkirk generating station from coal to gas alone has resulted in a reduction of **0.2 Mt** per year of GHGs.

With continued emphasis on clean and renewable energy sources, capturing emissions from landfill sites, carbon storage and diversified and alternative agricultural practices, we believe we can meet our Kyoto targets by 2010 in a way that strengthens our economy and benefits our citizens. With strategic federal investments in these initiatives across Canada, Manitoba and other provinces can help Canada meet its Kyoto target by 2012.

Manitoba's Contribution Exceeds Kyoto Target by 2010

Manitoba's Net Contribution to Canada's Kyoto Commitments

By 2010, Manitoba's net contribution could equal a GHG reduction of up to 18 per cent from 1990 levels – significantly more than the six per cent obligation faced by the nation as a whole. These achievements will be possible when the right conditions and market price signals are put in place to make renewable energy sources more economically attractive than fossil fuels.

- Renewable Electricity – Increased exports to the U.S. and elsewhere in Canada – based predominately on hydroelectricity but also energy conservation and wind generation – could provide reductions of about **4.25 Mt** per year by 2010.[1]

  For example:

  - The Wuskwatim Hydro Generation Project on the Nelson River is expected to cut GHG emissions by **1.1 Mt** per year and create up to 7,700 person-years of employment. The facility could be in service by 2009. The Nisichawayasihk Cree Nation is a partner with Manitoba Hydro on this project.

- Selkirk Conversion – Manitoba Hydro has switched the source of fuel at its Selkirk generating station from coal to natural gas. This initiative alone will cut emissions by **0.2 Mt** per year.

- Ethanol – The Manitoba government has announced its intention to require the blending of ethanol at 10 per cent in all gasoline sold in the province. This initiative alone will reduce emissions by over **0.135 Mt** per year and create up to 900 direct and indirect jobs in Manitoba.

- Methane Capture – Methane from rotting organic matter in landfills is a major source of greenhouse gas emissions. Winnipeg's Brady Road landfill is Canada's largest and most cost-effective remaining site for capturing methane. Capturing the bio-gas emitted from Manitoba landfill sites could reduce emissions by **0.4 Mt** per year. The gas could be used to create 6.7 MW of electricity.

- Industry Targeted Measures – A series of targeted measures with agriculture and other sectors, cost-shared with the federal government, could offer emission reductions and sequestration or sinks credits of about **4.5 Mt** per year.

[1] These reductions are based on the displacement of coal and gas generation in export markets. These estimates assume Canada receives the Clean Energy Export Credit for exports to the U.S. and that Manitoba negotiates a 50 per cent share of the emission reduction credits resulting from exports to other provinces.

Manitoba's Contribution Exceeds Kyoto Target by 2012

Manitoba's Net Contribution to Canada's Kyoto Commitments

By 2012, Manitoba's net contribution could equal a GHG reduction of up to 23 per cent from 1990 levels, provided the right conditions are in place.

- Renewable Electricity – Increased exports to the U.S. and elsewhere in Canada – based predominately on hydroelectricity but also energy conservation and wind generation – could provide about **5.55 Mt** of reductions per year by 2012.

  For example:

  - The Gull Hydro Generation Project on the Nelson River is expected to cut emissions by **3.3 Mt** per year and create up to 18,300 person-years of employment (direct and indirect). This 623 MW facility could be in service by 2012. Manitoba Hydro and four Cree First Nations are working towards partnering on this project.

  - Manitoba Hydro's Power Smart conservation programs alone (not taking into account changes in building codes) are expected to save 237 MW and 988 Gw.h by 2011/12. These savings will result in reductions of about **0.75 Mt** per year in the year 2011/12. This initiative creates more than 150 jobs in Manitoba each year. These energy savings are included in Manitoba Hydro's projected exports.

- Ethanol – The market for ethanol is expected to continue to grow in both the U.S. and Canada. Manitoba's cost of production will be among the cheapest in North America. Manitoba production is expected to reach at least 400 million litres by 2012, cutting emissions by **0.39 Mt** per year.

- Ground Source Heat Pumps (GSHP) – Manitoba, with little promotion, has 14 per cent of Canada's ground source heat pump installations. GSHP have been identified by Natural Resources Canada as the most cost-effective way to heat and cool buildings. Manitoba Hydro has launched a program to finance the purchase and installation of the equipment. The owner of an average-sized house can save $400 to $1,400 per year, depending on current fuel source. Doubling the number of installations in Manitoba by 2012 will save **0.02 Mt** of GHGs per year.

Federal Government Adopting the Manitoba Approach

Manitoba believes the federal approach should include three core elements:

- Hydro – Federal studies have shown that developing Canada's hydroelectric capacity is the single most cost-effective way of using existing technology to reduce GHGs in Canada.

  Notional estimates show, for example, that if the federal government supported an east-west power grid, more than **20 Mt** of GHGs per year would be displaced, creating as many as 175,000 person-years of employment in construction alone. The project could also create significant economic development opportunities for Canada's First Nations.

- Ethanol – Mandating the use of ethanol across Canada and providing incentives at levels similar to those available in the U.S. would cut emissions by **3.8 Mt** per year and create 5,000 jobs.

- Energy Efficiency – In January 2000 Manitoba Hydro launched enhancements to its Power Smart program to help Manitoba families and industry save energy. If Manitoba Hydro's Power Smart programs and benefits were emulated across Canada, GHGs would be cut by roughly **15 Mt** per year and up to 5,000 jobs would be created.

These are only three of many initiatives the federal government could sponsor across Canada to create jobs while helping the environment.