Manitoba

## *Climate Change in Manitoba*

There is broad scientific consensus on the reality of climate change. It is happening, and it has serious implications–for our health, our economy, and our future.

Human activities, including the heavy use of fossil fuels for heating, transportation and electricity, release greenhouse gases that are accumulating and causing global warming. Average global temperatures are rising–the 20th century was the warmest the world has seen in 1,000 years, and the 1980s and 1990s were the warmest decades on record. As a northern country, Canada will feel the impacts of climate change more than most countries.

Most climate change projections for the Prairies show increased temperatures under global warming. Recent models suggest that summer temperatures in Manitoba could increase by 3 to 4°C, and winter temperatures by 5 to 8°C. Such changes would be the largest and most rapid of the last 10,000 years and would have profound effects on our lives and the ecosystems that support us.

### Water

Increased spring volumes could also lead to higher levels of pollution, if land is flooded and manure and other storage facilities, such as municipal lagoons, are breached. If the spring water flows rapidly through to Hudson Bay, groundwater may not be recharged enough to fully replenish aquifers. Water quality in Manitoba might be in jeopardy because of the warmer temperatures and lower volumes of rivers and lakes in the summer. As the volume of surface water decreases, pollution levels increase. Increased summer temperatures, together with reduced precipitation and higher evaporation, might reduce the amount of water available for Manitoba's hydroelectric production.

### Agriculture

More frost-free days will mean a longer growing season and a greater range of crops available to producers. However, Manitoba farmers can expect to see declines in summer precipitation of 10 to 20 percent, creating a greater need for irrigation. As well, climate change could lead to increased heat stress on animals and plants. Warmer winters could reduce the amount of winter kill of fall-seeded crops, but could also reduce the winter kill of some weeds and insects, and lead to the introduction of new pests.

### Weather patterns

Extreme events, such as thunderstorms, tornadoes, hailstorms, heat waves and droughts, may become more frequent on the Prairies due to climate change. Warmer winters may increase the potential for more intense winter storms, and more frequent rain. In the summer, flooding may increase with heavy rains.

### Forests

Manitoba's overall forest area is predicted to decrease as drier soil conditions in the south make forests more susceptible to wildfires and pests, and lack of suitable soil makes it difficult for southern species to grow in the north. As the climate changes, there will be fewer mature trees, and it will take longer for trees in the boreal forest to reach a harvestable age. Not only will this reduce the habitat of endangered species like the woodland caribou and grey fox, but it will also present challenges to the forest industry.

### Polar bears on thin ice

In western Hudson Bay, ice break up is occurring two weeks earlier, on average, than it did 20 years ago. This shortens the time available for polar bears to fatten up on their main food source, ringed seals, before going on shore where they fast. As a result, adult bears have been getting lighter and females, who fast until weaning their cubs the next spring, have been having fewer cubs.

### Life in the north

Climate change will affect the traditional economies of Aboriginal peoples, including their ability to hunt and fish. Warmer air temperatures will thaw permafrost, creating unstable ground conditions and putting building foundations, roadways, railways, and pipelines at risk. Challenges are already being faced by communities dependent on winter roads for food, fuel and essential supplies.

## *Taking Action*

Given the potentially serious and long-term nature of the risks associated with these impacts, the only prudent course is to take action now to reduce the emissions that contribute to climate change. Analysis shows that the impact on Canadian jobs and economic growth associated with reducing greenhouse gas reductions can be kept modest and manageable relative to the strong growth expected over the next decade.

To give a sense of the possible order of magnitude of the impacts on industry, the estimated economic impact of implementing steps one and two in the Climate Change Plan for Canada to meet Canada's Kyoto commitments ranges from -0.4 percent to -1.6 percent of Canada's gross domestic product, dependent on various assumptions.

This is a modest impact relative to the strong economic growth expected over this period. Analysis shows job growth of 1.08 to almost 1.26 million jobs by 2010, compared to just over 1.32 million in a business as usual scenario. That means a delay in job creation of about 62,000 jobs across Canada in the year 2010. By comparison, the Canadian economy is currently creating new jobs at a rate of about 46,000 per month.

Estimates indicate that with the implementation of actions to reduce greenhouse gas emissions, Manitoba's provincial gross domestic product in the year 2010 would grow to a level that would be about 0.24 percent less than in a business as usual scenario. Growth in new jobs would slow by approximately 0.1 percent, or a delay in job creation over the next eight years of about 900 new jobs.

To put this into context, Manitoba's economy created approximately 5,500 jobs over the past year.

These economic forecasts do not reflect the significant environmental and health benefits to be gained by addressing climate change. Taking action will provide broader benefits including cleaner air, reduced health costs and other environmental and social benefits for Canadians.

The impact on personal disposable income by 2010 would be approximately 0.11 percent less than business as usual. Relative to what they would otherwise be, electricity prices could drop by approximately 0.03 cents/KWh. Gasoline prices are expected to remain at their business as usual level in 2010.

An illustrative example of production increases for major industrial emitters in the province as a result of measures to reduce greenhouse gases (national averages) is as follows:

- **conventional oil** would rise by 3 cents per barrel, or by 0.09 percent
- **natural gas** would rise by 0.5 cents/million cubic feet, or 0.14 percent

- **electricity** – coal would rise by 0.14 cents per KWH, or by 1.94 percent
- **electricity** – gas would rise by 0.04 cents per KWH or 0.60 percent
- **pulp and paper** would rise by 0.06 percent, about 59 cents per tonne

Canada's approach to reducing greenhouse gas emissions is designed to minimize costs and maximize opportunities for Canadian technology. It envisions an economy that is based on cleaner sources of energy, using leading edge technologies. The Plan proposes strategic investments in innovative climate change proposals and the creation of a Partnership Fund that will cost-share well as municipalities, Aboriginal communities and the private sector.

By drawing on Canadian innovation, and by ensuring that different sectors of the economy, regions and consumers play a role in taking action on climate change, the impact is more manageable for all. Working together, Canada can position itself as a strong competitor as the world moves to a new, less carbon-intensive economy.

Manitoba-based companies and communities are already showing leadership in meeting the challenges of climate change[1]:

- At its plant in Carberry, Manitoba, Midwest Food Products Inc. took a hard look at energy use. As a result, the electrical system was upgraded and other energy efficiency improvements were made. Energy costs were reduced by more than $900,000 in 1999 and $400,000 in 2000, and carbon dioxide emissions were reduced by about 10,000 tonnes per year.
- Simmons Canada Inc. has launched energy-efficiency initiatives at its plants in Winnipeg, Manitoba and Brampton, Ontario. Upgrades to the lighting and heating systems at the Winnipeg plant and upgrades to Brampton's tempering ovens helped the company achieve a 12.45-percent reduction in natural gas use and a 7.28-percent decrease in electrical consumption.
- Maple Leaf Consumer Food has recently installed heat-recovery and vent-condensing systems at its Winnipeg, Manitoba plant, saving the company more than $32,000 each year on fuel, water and boiler chemicals.
- Since 1995, an energy management team at Hudson Bay Mining and Smelting Company Ltd. has been responsible for achieving sustainable savings of about $1 million per year at its Flin Flon, Manitoba operations. The savings are the result of various process improvements and a more efficient use of energy as recommended by a team of employees from all areas of surface and underground operations.

[1] Examples are taken from the public record.

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