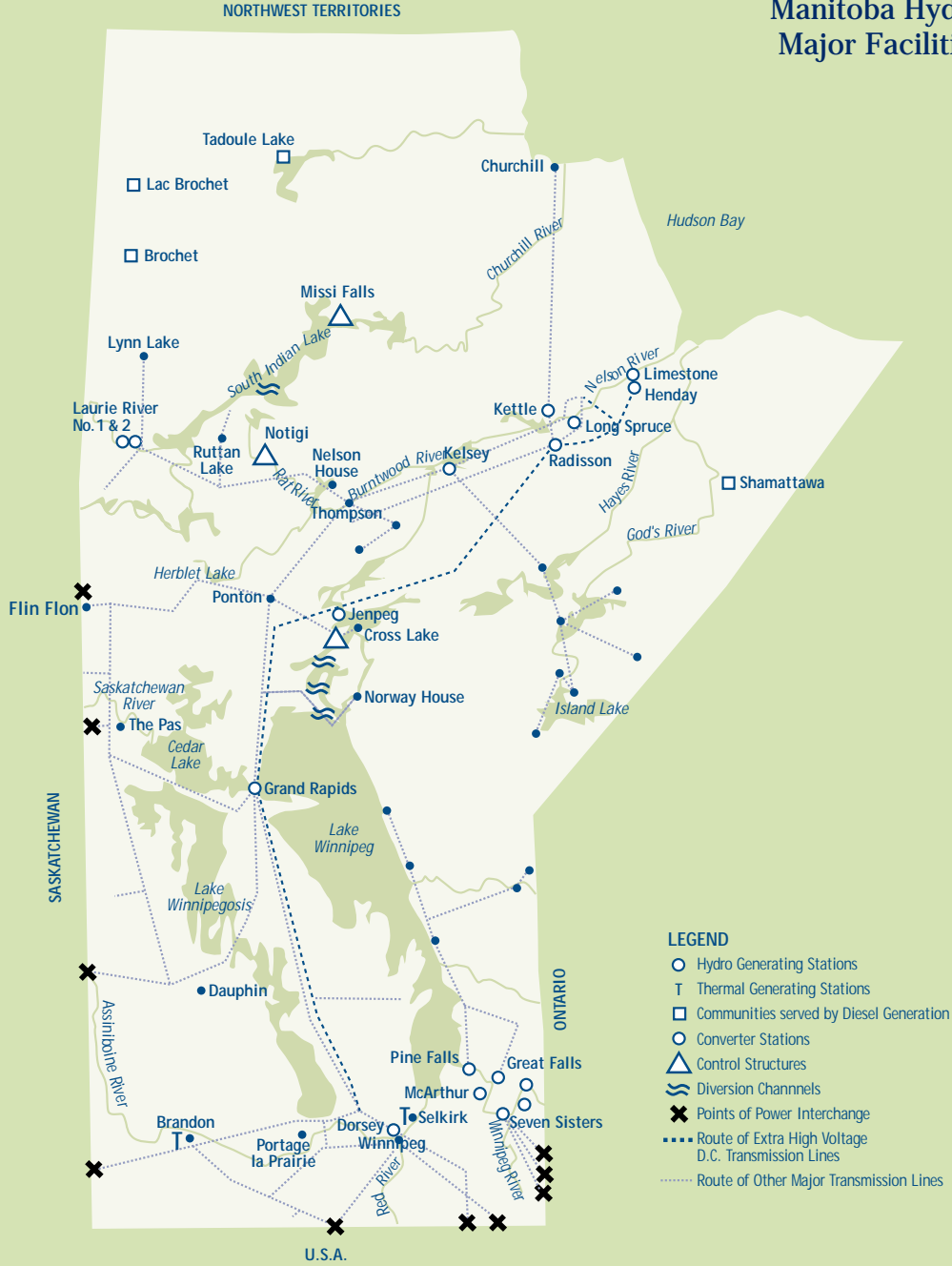


# Sustainable Development Report 2001/02



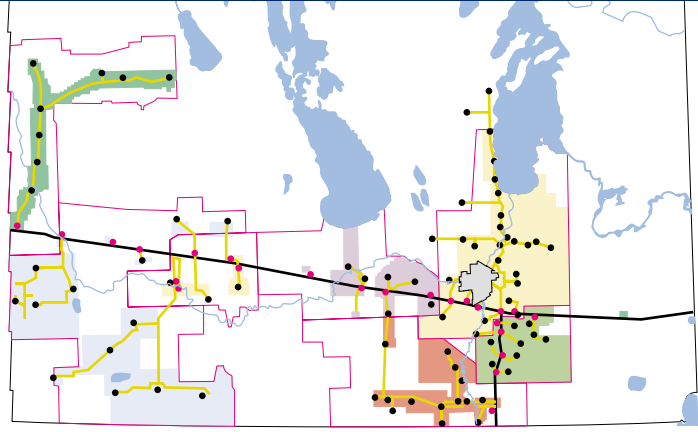
 Manitoba  
Hydro

# Manitoba Hydro Major Facilities



- LEGEND**
- Hydro Generating Stations
  - T Thermal Generating Stations
  - Communities served by Diesel Generation
  - Converter Stations
  - △ Control Structures
  - ~ Diversion Channels
  - X Points of Power Interchange
  - Route of Extra High Voltage D.C. Transmission Lines
  - Route of Other Major Transmission Lines

# Southern Manitoba; Areas served by Natural Gas



# Message from The President

“...the ‘environment’ is where we all live; and ‘development’ is what we all do in attempting to improve our lot within that abode.” -Gro Harlem Brundtland, World Commission on Environment and Development, 1987



When the World Commission on Environment and Development coined the term “sustainable development,” they were defining a process. Manitoba Hydro’s success in its commitment to sustainable development will be judged in the long term. We measure our progress regularly to ensure we are headed in the right direction, and through this report we share those results with you.

For Manitoba Hydro, 2001 was a very successful year with all three major pillars of sustainable development: economic and financial responsibility; environmental responsibility; and social and community responsibility.

As you read through this Sustainable Development Report, you will find that we achieved a net income of \$214 million and a new record of \$588 million in revenue from export sales. Our Manitoba ratepayers continued to pay the lowest average electricity rates in North America, and residential rates were equalized across the province. New generation projects were

under construction in Brandon and Selkirk, and over 11,000 homeowners signed up to save money and energy under the Home Comfort and Energy Savings Program.

You will also learn that Manitoba Hydro was a leader on the environmental front. While we produced 7% of the total electricity generated in Canada, we contributed only 0.5% of the greenhouse gases produced by the Canadian electricity industry. That also holds true for another major air emission, nitrogen oxides, and when it comes to sulphur dioxides, we were down to 0.2%. A year ago, we were judged by the Pembina Institute to have the strongest commitment to reducing greenhouse gases of any major Canadian electrical utility, and our commitment still holds strong today—even while we pursue new generation projects.

Manitoba Hydro also continued its strong commitment to social and community goals. For example, for the second time in two years, we signed an agreement in principle to work

together as partners with a northern Cree Nation to develop a low impact hydroelectric project. When we reached our target for employing aboriginal people in northern Manitoba ahead of schedule, we promptly set a higher target. As always, our first commitment to our employees and the public remained their safety.

Once again I want to extend my sincere appreciation to all Manitoba Hydro employees for their commitment to fulfilling the goals of this great company. The achievements reported in the following pages are made possible only by their efforts and energy. I also want to thank the Chairman of the Manitoba Hydro-Electric Board, Vic Schroeder, and the members of the Board, for their support and guidance in our on-going process of sustainable development.

R.B. Brennan, FCA  
President and Chief Executive Officer



# Highlights

## Gas-fired Thermal

Manitoba Hydro moved decisively to add gas-fired thermal generators to our energy mix with two major projects in 2001, a new 280 megawatt project at our Brandon station and the conversion of our 132 megawatt Selkirk station from coal to gas, which is a cleaner energy source.

Please see page 8.

## Conservation Savings

Once again Manitoba Hydro's conservation programs resulted in significant energy and financial savings for our Manitoba customers; of particular note, 11,000 homeowners participated in the Home Comfort and Energy Savings Program.

Please see page 10.

## Sales Up, Rates Low

For the sixth consecutive year, Manitoba Hydro increased its revenue from export sales with sales up by 23% to \$588 million. These export sales helped Manitoba Hydro to maintain the lowest domestic rates in North America.

Please see page 15.

## Walleye Respond

A project intended to encourage walleye spawning in the Grand Rapids spillway was rewarded when over 25 mature walleye found their way back to the channel in 2001.

Please see page 22.

## Production Far Ahead of Emissions

Manitoba Hydro contributed 7% of the electricity produced by the Canadian electricity industry in 2001, but only 0.5% of the greenhouse gases and nitrogen oxides and 0.2% of the sulphur dioxide.

Please see page 24.

## Environmental Systems Certified

All Manitoba Hydro generating stations have now had their environmental management systems registered under ISO 14001.

Please see page 31.

## Partnership with Northern Cree

For the second time in two years Manitoba Hydro has reached an agreement in principle with a northern Cree Nation to work together as partners to develop a hydroelectric generating station.

Please see page 34.

## Safety First

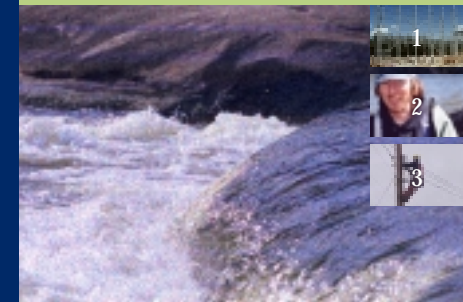
The safety and well being of employees and the public takes precedence over all other Corporate objectives, with a commitment to ensuring work processes and actions conform to the highest standards.

Please see page 36.

## Target for Aboriginal Employees Reached

Manitoba Hydro has achieved its target for aboriginal employees in our northern workforce—so we've increased the target by another eight percent to 33% by 2005.

Please see page 38.



- 1 Construction of the Brandon gas combustion turbine
- 2 Grand Rapids walleye spawning project
- 3 Safety goals remain as the top priority

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# Energy and Economy

1





**M**anitoba Hydro plays a major role in the provincial economy, delivering over half<sup>1</sup> of the energy that Manitobans require in their homes and businesses. We are proud of our legacy of service and value, and continue to set goals to provide our customers with exceptional value while improving our financial strength, increasing our gas customer base (where economical), and increasing our export power revenues. The following are highlights during 2001/02 in achieving those goals:

- We initiated a program that, with regulatory approval, will keep the Selkirk generating station operating until 2020 while improving its environmental performance;
- We expanded our roster of export customers looking to Manitoba Hydro for reliable, competitive energy to 54, an increase from 40 the previous year.
- Once again, our Manitoba customers paid the lowest overall domestic rates in North America; and
- We made an offer to purchase Winnipeg Hydro, servicing the central area of the city and the only other electric utility in the province.

1. Manitoba Hydro distributed 16,958 gigawatt hours of energy to Manitoba customers in 2001/02, and Centra Gas delivered 72.2 billion cubic feet of natural gas. This equals 139,000 terajoules of energy, or 57.7 of Manitoba's total energy consumption of 240,000 terajoules in 2001. Refined petroleum products are the largest single source of energy for Manitobans.



## New Gas Combustion Projects Add Reliability and Export Value

**M**anitoba is a hydro province: Over 95% of our electrical energy comes from hydroelectric generation.

But in 2001, we moved decisively to add gas-fired thermal to our energy mix with two major projects:

- At Brandon, work progressed on the construction of two gas generators with a total of 280 megawatts.
- At Selkirk, work began on a project to convert the 132 megawatt station from coal to gas, one of the cleanest forms of thermally generated energy.

Both projects are expected to be in service in 2002.



In converting the Selkirk station from coal to gas, Manitoba Hydro made a commitment to continue the station's operations until 2020. The Selkirk station's current environmental licence will be reviewed by regulators in 2005, at which time an application will be made for a renewal. The \$30 million conversion to natural gas will be followed by a further \$29 million in environmental upgrades to coincide with the environmental licence renewal. While the natural gas conversion required only an amendment to the existing licence, the 2005 licence renewal will require a full-scale environmental assessment and review.

The Selkirk station's current licence was issued in 1993 and was amended in 2000, following concerns about possible impacts from the station's emissions. At that time, Manitoba Hydro asked Conservation Manitoba to undertake an investigation of the station with a special emphasis on residents' concerns about plants and animals. Since then, three major studies have essentially exonerated the station from concerns that it had a significant impact on the local environment; a fourth study will continue until the fall of 2003. The three completed studies indicate the station is not responsible for the residents' problems. A soil assessment found that "soils in the study area pose no environmental or human health risk". A second study found that metals in lichens in the nearby Birds Hill area are not substantially higher than in the pristine Whiteshell Provincial Park. A third study concluded, "In summary, the results of the human health and ecological risk analysis determined that there were no measura-



ble, adverse impacts on the human, wildlife, vegetation and soil communities from the operation of the Selkirk Generating Station over the period 1993-2000”.

Natural gas is one of the cleanest forms of thermally generated power. The switch from coal to natural gas will significantly reduce emissions of carbon dioxide, contributing to Manitoba Hydro's position among Canadian utilities as a leader in greenhouse gas management. (For more on our greenhouse gas management program, please see Page 24) The conversion will also significantly reduce emissions of nitrogen oxides and will virtually eliminate emissions of mercury and other metals, sulphur dioxide and particulate matter. It will also eliminate the need for any ash lagoon and the coal pile that occasionally had been the source of dust.

In addition to installing new low nitrogen oxide burners, the project includes a new 55 kilometer gas pipeline. The pipeline, which also required an environmental assessment and approval, was planned as much as possible to avoid residences, farmsteads, heritage sites and wildlife habitat. At two river crossings, directional drilling was used to minimize environmental disturbances.

Meanwhile, the Brandon gas turbine project moved forward in 2001, on target for its 2002 in-service date. The new gas turbines – described as huge jet engines in a heavy industrial framework – are housed in a new building adjacent to the existing Brandon Thermal Generating Station. The coal-fuelled 105 megawatt unit at the existing station underwent extensive environmental upgrades in the mid 1990s, and additional improvements have been made with the new gas turbine project. They include an upgrade to the water treatment plant, a raw water intake fish screen, and a carbon dioxide injection system installed for pH control of ash lagoon effluent.

The Brandon and Selkirk Generating Stations play an important backup role to our hydroelectric stations, supporting our systems reliability during droughts, ice storms, transmission outages and high loads. They can also backup exports from hydroelectric plants to customers outside the province, a guarantee that adds value when making sales in the export markets. Our ability to deliver out-of-province sales has helped keep our rates in Manitoba among the lowest in North America.

There is no value in producing electricity if we can't deliver it to the people who need it. In 2001/02 several significant improvements were planned and completed in our transmission system. These projects included the following:

- New transmission lines were completed between Jenpeg and Norway House, supporting community growth including construction of a new school; between Thompson and Paint Lake; and from Dorsey (our DC-AC converter station west of Winnipeg) to St. Vital to support customer growth on the south side of the city.
- Agreement was reached with the Shamattawa First Nation for a new diesel generating station, expected to be completed in 2003.
- Approval was received under the Manitoba Environment Act and the National Energy Board for a new line between Glenboro, Manitoba, and Rugby, North Dakota. This line will increase the capacity to import and export electricity and will add to the reliability of supply in the western part of the province.
- A partnership between Partner Technologies of Regina, Saskatchewan, and Manitoba Hydro invented a new pad mount transformer suitable for serving small distribution loads at about one third the cost of building a new distribution station. A patent is being sought and marketing opportunities are being identified.

# Conservation Programs Contribute Big Savings to Customers and Company

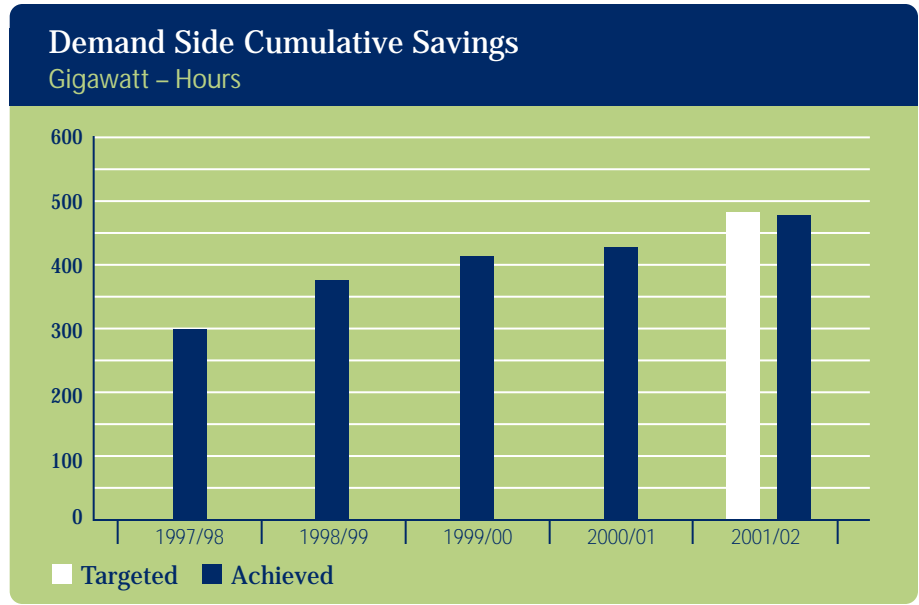
Manitoba Hydro's Home Comfort and Energy Savings Program helped 11,000 homeowners across the province save energy and add to the comfort of their homes by encouraging them to make sustainable energy-efficient renovations.

Launched in March 2001, the program's genesis was in the midst of soaring gas prices. Under the program, homeowners were offered a range of Power Smart renovations that would pay for themselves by reducing energy bills by as much as 30%.

Homeowners could take out a Power Smart Residential Loan of up to \$5,000 and repay it on their energy bill. Most of the 5,400 homeowners who took out \$18.3 million in loans installed energy efficient windows, topped up insulation and upgraded furnaces.

The program also offered in-home assessments that determined the best projects to tackle, the cost of the projects, and the savings that would be realized. The assessments were complemented by a series of eight booklets with detailed drawings showing homeowners exactly what they needed to do and how to do it.

The success of the Home Comfort and Energy Savings Program was attributable in large part to Manitoba Hydro's extensive experience in designing and delivering energy conservation programs. Over the past decade, our demand-side management programs have been among the most aggressive in



North America, resulting in savings of 179 megawatts of capacity and 488 gigawatt hours of energy per year. Over the next decade we expect to continue to achieve similar results. The savings in 2001/02 alone were 12 megawatts and 52 gigawatt hours<sup>2</sup> for energy efficiency programs, such as the Commercial Lighting Program and the Performance Optimization Program. As well, the Curtailable Rates Program achieved savings of 75 megawatts in 2001/02, a 20% increase over the previous year, as more customers joined the program.

Demand side management uses energy conservation initiatives to reduce customer energy requirements. As our Manitoba customers use less energy, we have more to sell on the export market and, in the long term, we may be able to defer the need for new generating stations.

We also look to improve the efficiency of our own system by modifying or replacing existing equipment, mostly in our generating stations. Since 1990 we have increased our capacity by 52 megawatts and our dependable energy by 375 gigawatt hours.

As we look ahead – our energy plans go 20 years and more into the future to make sure we are able to meet Manitoba's electrical energy needs – conservation programs will continue to play a major role in our mix of energy options. Over the next decade, we are targeting another 350 megawatts of demand side and 230 megawatts of supply side savings.

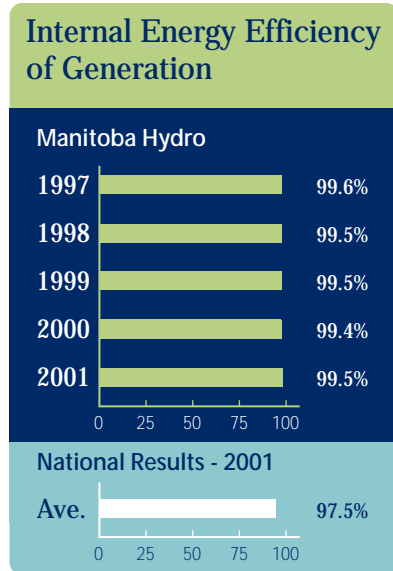
There may well be another new technology in our energy portfolio in the next few years. In the coming year, we will be

2. Energy conservation is measured in both megawatts of capacity and in gigawatt hours of energy. Megawatts measure the capacity of the system, similar to the way horsepower measures the power of a car's engine. Gigawatt hours refer to the actual amount of electricity produced, e.g. 100 MW over 10 hours equals 00 MW hours of energy.

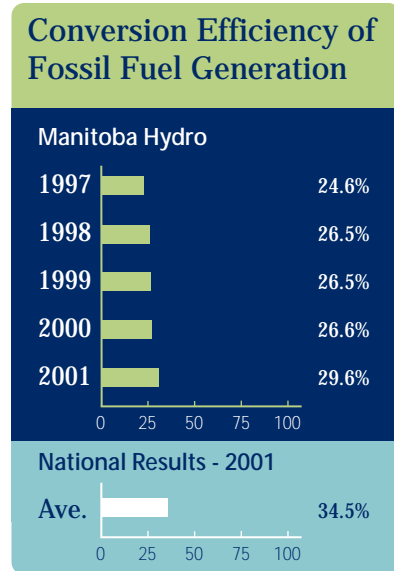


investigating the potential for wind power development in Manitoba. Wind, while having some environmentally desirable characteristics, is an intermittent energy. But wind energy may team well with our hydroelectric system with its ability to store water in reservoirs to be released when needed to produce electricity. Several wind-energy studies are planned for 2002/03.

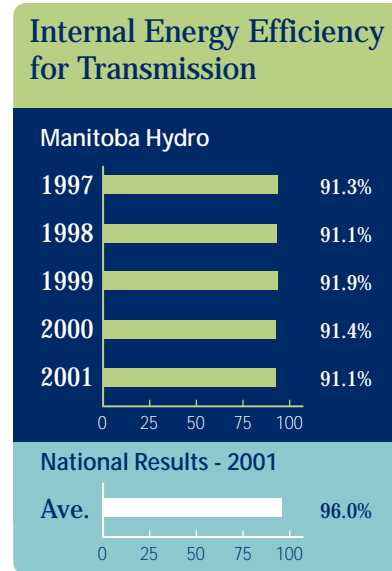




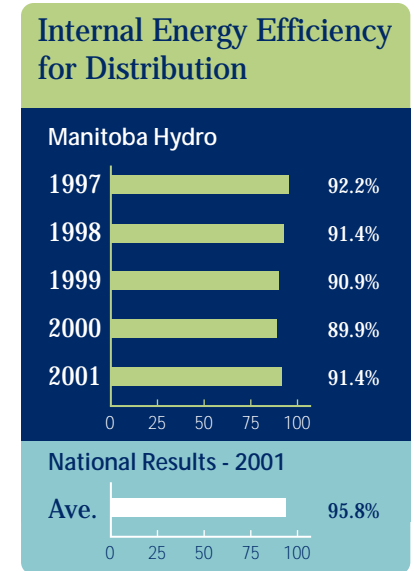
Generation efficiency measures the percentage of electricity that leaves the generating station after internal needs have been met. Statistics based on a calendar year are collected on annually by the Canadian Electricity Association's Environmental Commitment and Responsibility Program.



Energy conversion efficiency of fossil generation measures the amount of energy released in burning fossil fuels (such as coal and natural gas) that is converted into electricity. Efficiency is increased when fossil fuel stations are operated continuously for base load and is decreased when used less frequently for system support and peaking purposes. For example, Manitoba Hydro relies on its hydroelectric (water powered) operations for our base load and burns fossil fuels at our two thermal stations when necessary. This reduces fossil fuel efficiencies, but it results in overall benefits by reducing operating costs and total air emissions. For more on air emissions, please see Page 24.



Transmission and distribution efficiency measures the amount of energy that gets to customers after it leaves the generating stations. "Losses" are a factor of distance, wire size, and the age of the electrical equipment. Energy is lost in the form of heat as the electricity moves along the transmission and distribution wires. Losses are in direct proportion to the length of the wires and in inverse proportion to the line voltage. For example, a lengthy rural system will be less efficient than an urban system in delivering energy to customers. Manitoba Hydro significantly improves the efficiency of our system by transmitting much of the power from our northern generating stations to our southern markets (a distance of about 900 kilometers) via direct current rather than alternating current.



## Customers Given Help To Lower Energy Costs

**M**anitoba Hydro works with its customers to lower their energy consumption. In 2001, for example, Manitoba Hydro introduced EnerTrend, an on-line energy profiler to help its major business customers find ways of keeping their energy bills down.

EnerTrend uses the Internet to provide industrial, commercial, and institutional customers with profiles of their energy consumption, helping them better understand their usage patterns. The information empowers facility operators to manage their energy usage and find ways to reduce their energy bills, making them more competitive in their industries.

EnerTrend subscribers simply log on to the Internet to view a variety of graphs and reports that help them manage their demand peaks, identify wasteful consumption and operational problems, and track the effectiveness of their energy management initiatives. Customers in all areas of the province, ranging from mid-sized commercial buildings to some of the province's largest industrial customers, are making effective use of this service.

The following are more examples of our energy collaboration with our customers.

### **Praise for Heat Pump System:**

Calvary Baptist Church in Killarney recently increased the size of its sanctuary by 150 per cent. Yet its heating bills are roughly the same as before, and the church has also added air conditioning.

The church increased its sanctuary by another 3000 square feet, bringing the total to just over 5000 square feet. Then the old



electric baseboards were removed and two heat pumps installed. The heat pumps use a forced air system to keep the church warm in winter and cool in summer.

Heating and cooling bills are now roughly \$3400 a year, compared with about \$3000 a year just to heat the building in the past, even though they now have over twice the area.

The system was installed with the help of a financial incentive under Manitoba Hydro's Commercial Construction Program. The program offers information and financial assistance to Hydro's commercial, industrial, and agricultural customers to install electrical energy saving measures in new construction and renovation projects.

The heat pump system is complemented by two additional measures, energy efficient windows and an air barrier system.

#### **Sales Shine at Shelmerdine's:**

At Shelmerdine's nursery and garden centre, just outside Winnipeg, lighting retrofits have helped increase sales by putting stock in the right light.

T8 fluorescents in the gift shop and pulse-start metal halide lighting in a new greenhouse now save the nursery and garden centre \$740 a year in electricity, compared with less efficient lighting.

The material cost of pulse start and T8 fixtures came to about \$6600. With the help of an incentive from Manitoba Hydro, the project will pay for itself in less than 8 years, not taking into account the benefit of increased sales.

Annual kilowatt-hour savings are 10,690, with a reduction in demand of 4.2 kilowatts.

#### **Super 8 Motel Builds with Power Smart:**

The Super 8 Motel in Neepawa was built with extra energy efficiency touches that appeal to guests, while saving on heating and cooling costs.



The two-storey, 34-room motel features energy efficient triple pane windows that alone save \$1300 a year over conventional double-glazed windows with aluminum spacers.

Other measures include high standards of insulation for year-round comfort and energy savings, and T8 fluorescents, compact fluorescents, and light emitting diodes in exit signs.

Since Power Smart measures were built into the motel rather than as a retrofit, comfort and energy savings started the moment the owners opened the doors.



## More Export Sales To More Export Customers

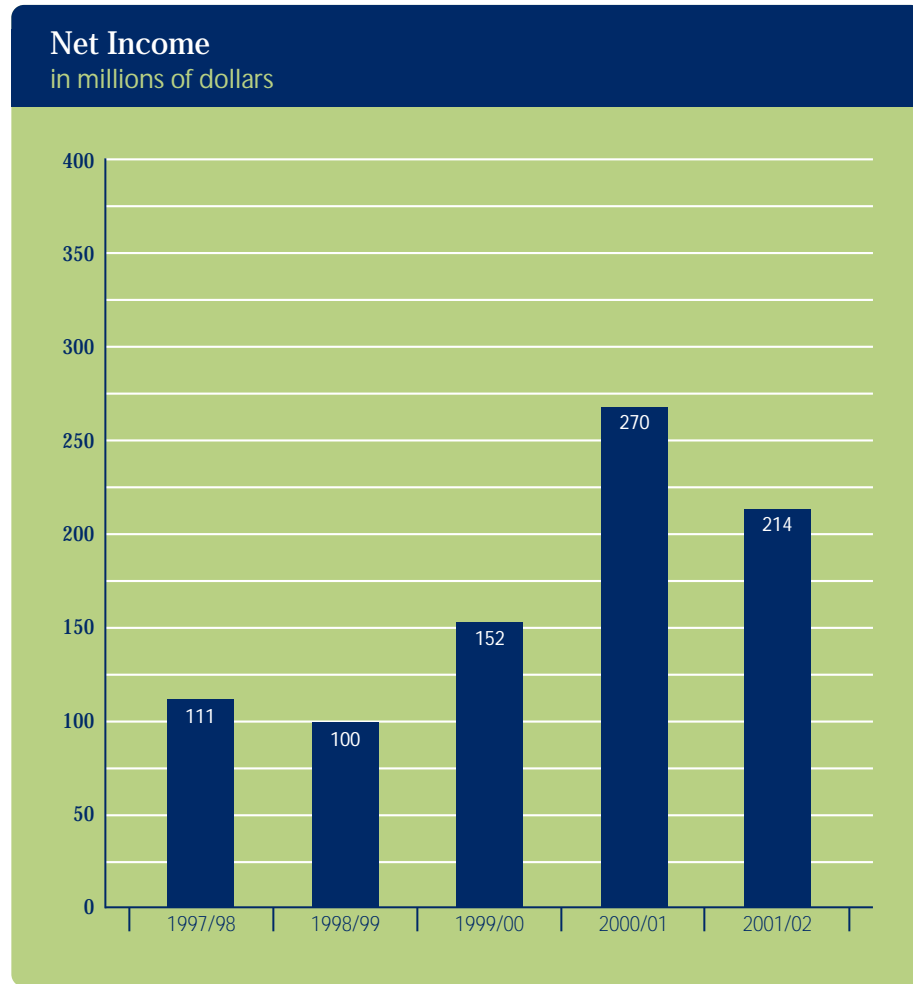
For the sixth consecutive year, Manitoba Hydro increased its revenue from export sales. Our new record in 2001/02 was \$588 million, a 23% increase from the previous year.

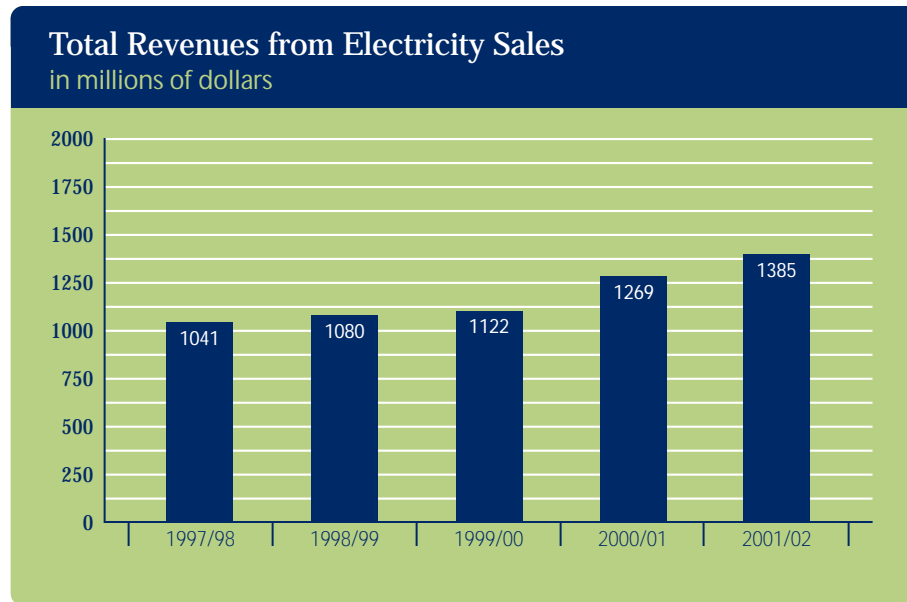
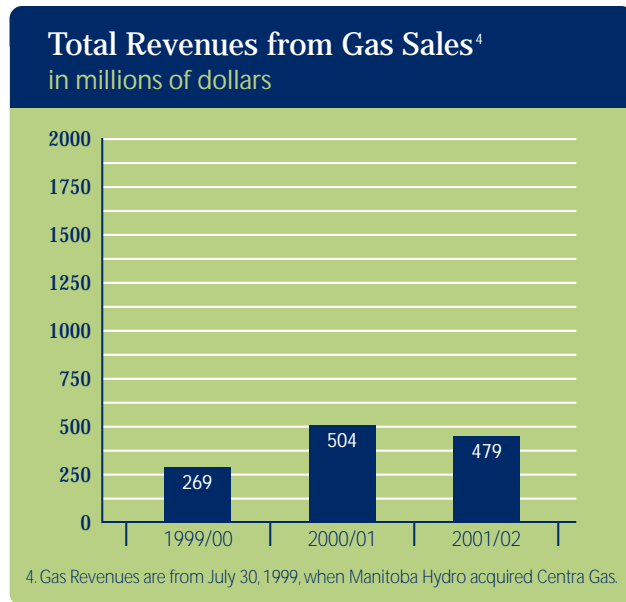
As a result, our total revenues were the highest on record, at \$1.864 billion; and our total net income was the second highest on record, at \$214 million. This helped to improve our debt:equity ratio to 77:23 and kept us on target to achieve 75:25 by 2005.

Manitobans used approximately 60% of the energy produced by Manitoba Hydro in 2001.

The rest was sold to customers in the United States, Ontario, Saskatchewan and, for the first time, Alberta; and the value of those exports jumped by 40% from the previous year. While exports to Canadian customers remained constant, a significant 25% increase in American energy prices combined with a 5% increase in volume to produce the excellent export revenues. High natural gas prices in the fall of 2000 had dramatic and lingering effects on electricity prices well into the summer of 2001 as customers bought forward to fulfill their summer energy requirements.

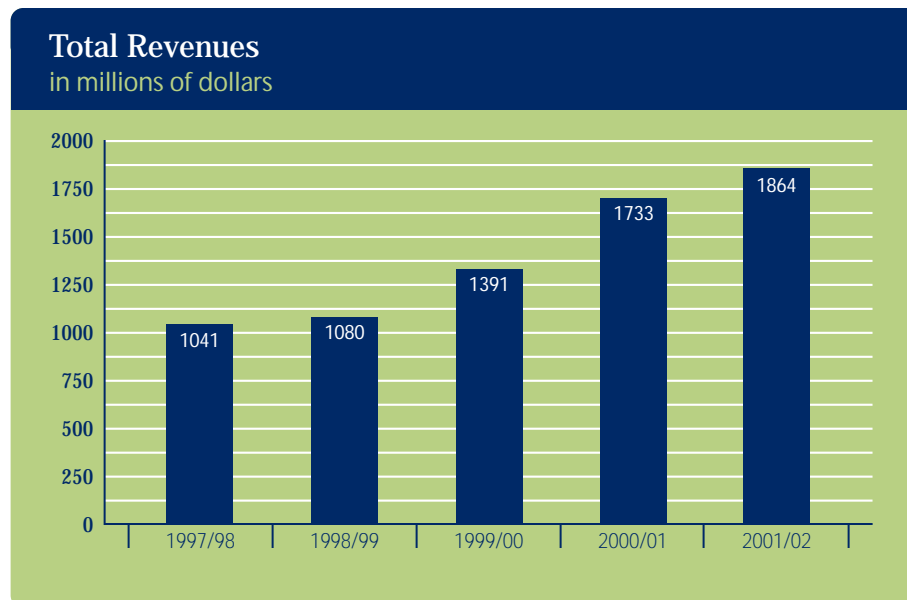
By the end of 2001/02, we had over 50 extra provincial customers compared to about 40 at the same time the previous year. Among them was the Alberta Power Pool. Manitoba Hydro gained access to wholesale customers in Saskatchewan and Alberta when SaskPower opened its transmission system to other energy generators. To take advantage of the competitive Alberta market and in





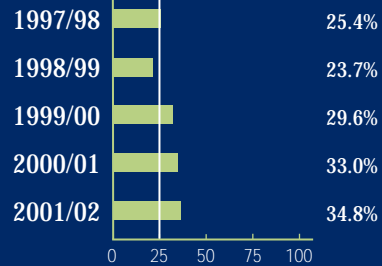
anticipation of an opening of the Ontario market, Manitoba Hydro established a separate Canadian markets desk.

Since approximately 95% of our electricity is generated at hydroelectric stations that rely on water flows for their fuel, our generation production is closely related to river conditions. In 2001/02, over 32,000 gigawatt hours of electricity were generated at our 12 hydroelectric generating stations and two Winnipeg Hydro stations whose operations are integrated into our system management; and 500 gigawatt hours of electricity were generated at our two thermal stations. We also imported 1,500 gigawatt hours of electricity.



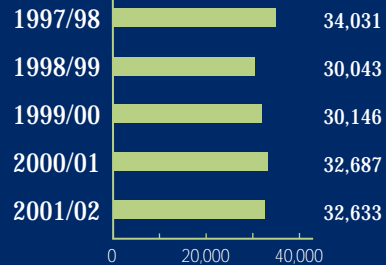
### Net Exports as a Percent of Total Electric Revenue

Target: 25% by 2007 and 40% by 2012



### Total Generation Integrated System

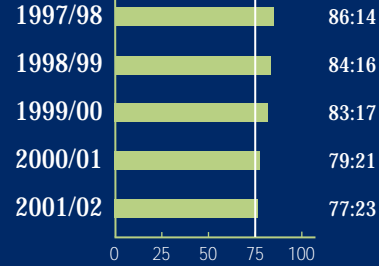
Gigawatt - Hours<sup>3</sup>



3. One gigawatt hour equals one million kilowatt hours.

### Debt:Equity Ratio

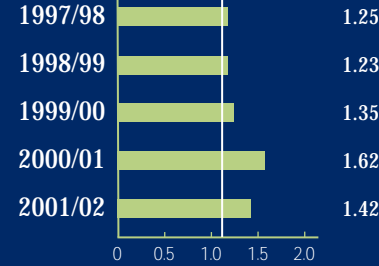
Target: 75:25 by 2005



Debt to equity ratio indicates the relative percent of assets financed through debt rather than equity. The debt to equity ratio indicates our ability to issue new debt in order to fund major capital projects and to withstand financial risks, such as a major accident at our facilities or a drought that reduces our ability to generate hydro electricity. Our target is 75:25 ratio by 2005/06. In the past year we continued to move toward that goal.

### Interest Coverage Ratio

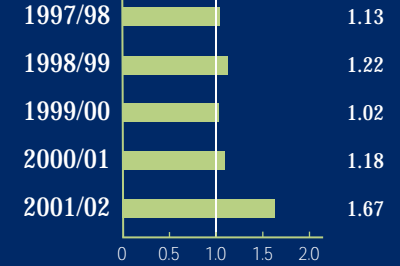
Target: >1.20



Interest coverage ratio indicates the extent to which our net income is sufficient to pay gross interest on our debt. Our target is a ratio of 1:20. At 1:42, we achieved our target in the past year, although lower net earnings and increased financing expenses caused a decline from the year before.

### Capital Financing Ratio

(Target: >1.0)



The capital financing ratio indicates the extent to which our operating activities are able to fund capital construction expenditures and the level of growth in net debt. Our target is to fund all capital construction requirements from internal sources (except for the addition of major new generation and transmission facilities, such as the new gas generation facility being constructed in Brandon). In 2001/02, we were able to achieve our target, with the ratio increasing to 1.67 as a result of a \$220 million increase in internally generated funds more than offsetting a \$49 million increase in capital expenditures.



## Low Rates, Reliable Service

When it comes to rates, we have two straight forward objectives:

- Manitoba Hydro's target is to provide our Manitoba customers with the lowest rates in North America.
- Centra Gas' target is to provide customers with among the lowest rates in North America.

According to the Edison Electric Institute, we were able to achieve our electricity target in 2001/02.

The Edison Electric Institute's Survey of Typical Bills and Average Rates is the most comprehensive survey of electricity rates in North America. Survey participants include some of the low-cost Canadian electric utilities and approximately 185 investor-owned utilities that serve about three-quarters of all customers in the United States.

Our rates for residential customers have not increased since 1997 and rates to large industrial customers have remained unchanged since 1992. In November 2001, provincial government legislation equalized rates for all Manitobans, no matter where they live. Previously, rates had been divided into three zones according to service density. Now everyone will pay the lowest rate, saving customers \$14.4 million annually.

We have been able to provide our Manitoba customers with these low rates by keeping a sharp eye on our costs and earning significant revenues from our export sales.

The gas rate comparison is from a SaskEnergy survey of gas rates for residential customers in British Columbia, Alberta, Saskatchewan, Manitoba, Ontario and Quebec. In 2001/02, Manitoba Hydro's gas rates were in the middle of the pack.

There are three components to the price of natural gas: i.) the cost

of transporting natural gas from its source (normally Alberta) to Manitoba, which is regulated by the National Energy Board; Centra Gas' costs for distributing the natural gas to customers in Manitoba, which is regulated by the Public Utilities Board; and the market price for the gas itself, which is the most volatile component of the costs.

Centra Gas has not increased its distribution cost to customers for the past four years.

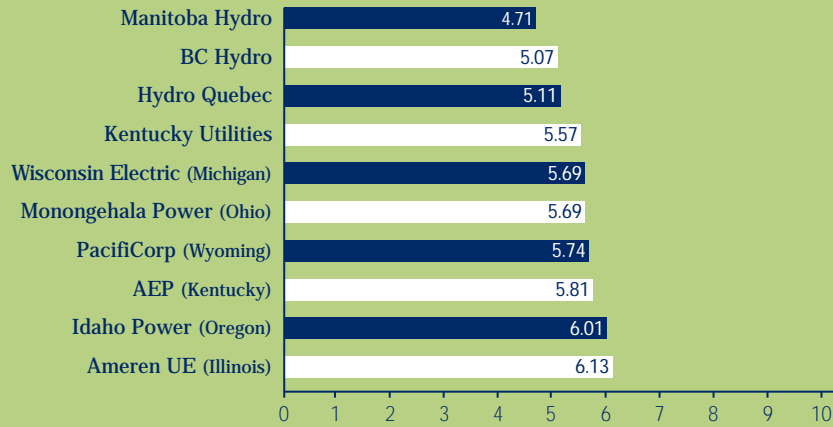
Natural gas prices on the commodities markets showed a welcomed trend in 2001/02. After unprecedented increases in the previous year, prices decreased in 2001/02 and these were passed onto customers in three consecutive quarters: 15.9% in August 2001, 5.7% in November, and 2% in February 2002

In order to recover the full cost of gas that accumulated during the winter of 2000/2001, a new rate component was implemented on customers' bill beginning in August 2001 for a 24 month period. This additional charge is the difference between the actual cost of gas purchased by Centra and the amount charged to customers between November 2000 and April 2001. The Public Utilities Board has now ruled that Centra will charge customers the full cost of gas, rather than mitigating price volatility as it did previously.

Of course, there's more to service than low rates. We also emphasize the reliability of our service, and try to limit the duration of an average customer outage to less than 92 minutes per year and the frequency of outages to less than 1.3 per year. Those targets were achieved in 2001/02. Outages are usually caused by trees contacting lines, severe weather events, and mechanical problems. Interruptions were down in 2001, as an extremely stable weather pattern was enjoyed by both our crews and our customers.

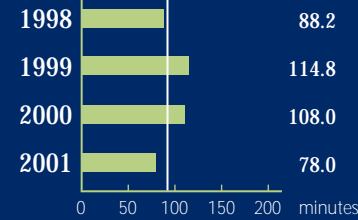


### Ten Lowest Cost Electricity Utilities in North America Cents/kW.h



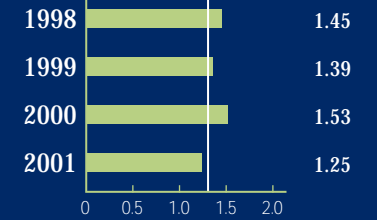
### Average Customer Outage Duration Manitoba Hydro Electric Operations

Target: < 92 minutes



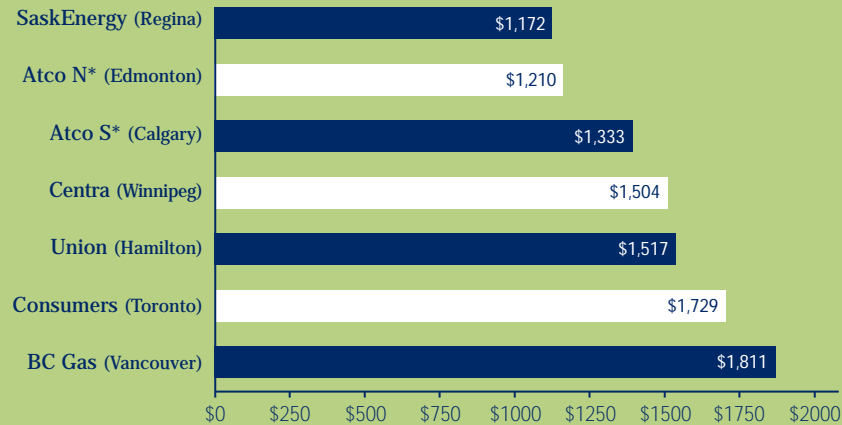
### Average Customer Outage Frequency Manitoba Hydro Electric Operations

Target: < 1.3 per year



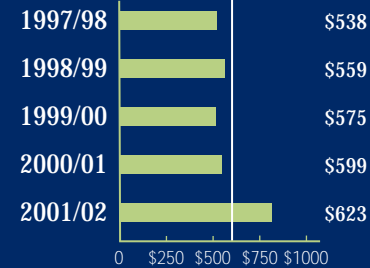
### Annual Retail Gas Rates

Residential: 3550 Cubic Meters per Year



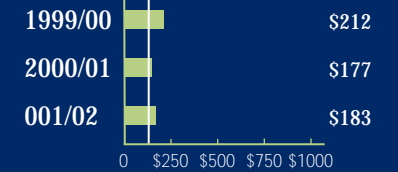
### Operations, Maintenance and Administration Costs Per Customer: Manitoba Hydro Electric Operations

Target: < \$600/customer



### Operations, Maintenance and Administration Costs Per Customer: Centra Gas Operations

Target: < \$175/customer



\*Atco rates exclude a \$600 provincial rebate

Environment

2





**M**anitoba Hydro has over 5,000 megawatts of generating capacity, over 90,000 kilometers of transmission and distribution lines, and another 5,700 kilometers of natural gas pipeline. With that type of environmental footprint, it's no wonder we work environmental stewardship into our operations, day in and day out. We are always striving to achieve our environmental goal: To be proactive in protecting the environment and be a recognized leader in doing so.

In 2001, a number of projects illustrated our commitment to environmental stewardship.

- To ensure our environmental responsibilities are managed in a systematic manner, we are implementing environmental management systems in all of our facilities. In 2001, two more generating stations had their environmental management systems certified by the International Standardization Organization (ISO), bringing all of our generating and converter stations under the ISO umbrella.
- We continue to be a national leader in the energy sector with our efforts to reduce greenhouse gases and other air emissions.
- When an accident resulted in the largest spill of transmission oil in the company's history, there was minimal environmental impact largely because of a precautionary spill containment system installed several years earlier.
- There were encouraging signs at a project to restore a spawning population in the Grand Rapids spillway when mature walleye returned in the spring of 2001.





## Walleye Return to Spawn in Grand Rapids Enhancement Project

**T**wenty-seven walleye were captured in the spillway channel of the Grand Rapids generating station in 2001.

That's 27 more walleye than would have been found in the channel five years earlier, when Manitoba Hydro began an experimental project to establish a walleye spawning population in the channel.

The Grand Rapids Walleye Enhancement Project began in 1997 with the co-operation of the Grand Rapids Fishermen's Co-op and the Grand Rapids First Nation and with assistance from Manitoba Conservation. The objective is to establish a self-sustaining walleye spawning run in the spillway channel to contribute to the local domestic and recreational fishery in the future.

The program focuses on three primary components:

- Improving walleye spawning habitat in the Grand Rapids spillway channel, including water releases from mid-April to mid-June each year;
- Stocking to increase the local walleye spawning population; and
- Monitoring to determine survival and return rates of stocked walleye and to assess changes in the lower Saskatchewan River walleye population over time.

By 1998 the habitat had been improved to encourage and assist the walleye to spawn in the channel that, prior to the development of the generating station, had been part of the Saskatchewan River. The habitat improvements included containment and deflector

dikes to control and contain flows; four riffle and pool structures; and a dam, located half way up the channel, to prevent fish from moving into the upstream reaches and becoming stranded after the spills stopped in June.

Stocking has focused on introducing fertilized eggs into the spillway channel to increase the chances that stocked walleye will return to the channel to spawn in the future. In 2001, 600,000 walleye eggs were incubated in hatchery jars in the spillway channel and hatched with a success rate of over 98%. An additional 3.0 million walleye larvae, reared in the Grand Rapids hatchery, were also stocked into the channel. Since 1997, a total of 29 million walleye larvae and 19 million walleye eggs have been stocked into the spillway channel.

Monitoring showed that walleye did not utilize the enhanced spillway channel during the first three years of the project. This was not surprising, as stocked walleye were not expected to return to the spillway channel until they matured at four years of age. Walleye were first captured in the channel in 2000. In addition to capturing the 27 mature walleye in 2001, the scientists subsequently found larval walleye in the channel, indicating that at least some of the mature walleye had spawned.

Scientists working on the project anticipate that with suitable climatic conditions, more walleye will use the channel in coming years.

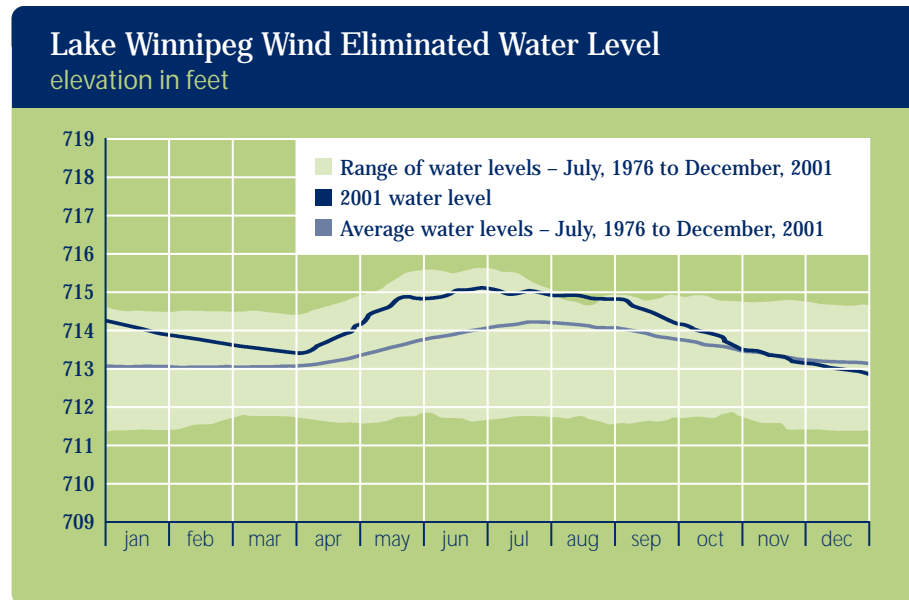
The project, originally slated to run six years, will be re-evaluated in 2002.

# Cedar Lake Levels Stabilized During Drought

Reservoirs are essential for operating hydroelectric systems. Three lakes—Cedar Lake, Southern Indian Lake and Lake Winnipeg—serve as the largest reservoirs in the Manitoba Hydro system. The Grand Rapids Generating Station on the Saskatchewan River regulates Cedar Lake outflows; the Notigi Control Structure on the Burntwood River, along with the Missi Control Structure on the Churchill River, regulates Southern Indian Lake outflows; and outflows from Lake Winnipeg passing through the west channel of the Nelson River are regulated by the Jenpeg Generating Station and control structure, while outflows from Lake Winnipeg passing through the east channel of the Nelson River are unregulated.

Throughout 2001, the Saskatchewan River drainage basin experienced very dry conditions. In the summer months, flows in the Saskatchewan River neared record lows, and precipitation was 50% of average over most of the southern prairies. As a result, Manitoba Hydro maintained outflows from Grand Rapids to levels well below average for most of the year, helping levels on Cedar Lake to remain stable and to rise slowly to near average by the end of the year.

Southern Indian Lake experienced normal water level conditions. Near normal annual precipitation resulted in average flows on the upper Churchill River. Flows from Southern Indian Lake through Notigi Control Structure were close to average all year. A sudden increase in local inflow from a late May storm was balanced with operations at Missi Falls.



Above average water levels were experienced on Lake Winnipeg to start the year. Heavy spring rains and runoff resulted in high inflows in late spring. As a result, water levels on the lake remained above average throughout the year. Outflows from the lake were also well above average through most of the year. As inflows returned to normal late in the year, the water level returned to average.

# Emissions down from Electricity Generation

When it comes to management of greenhouse gas emissions, Manitoba Hydro has an enviable reputation to live up to: Our greenhouse gas management plan, with a targeted average annual reduction of 6%<sup>5</sup>, has been judged<sup>6</sup> as the most aggressive among major electrical utilities in Canada.

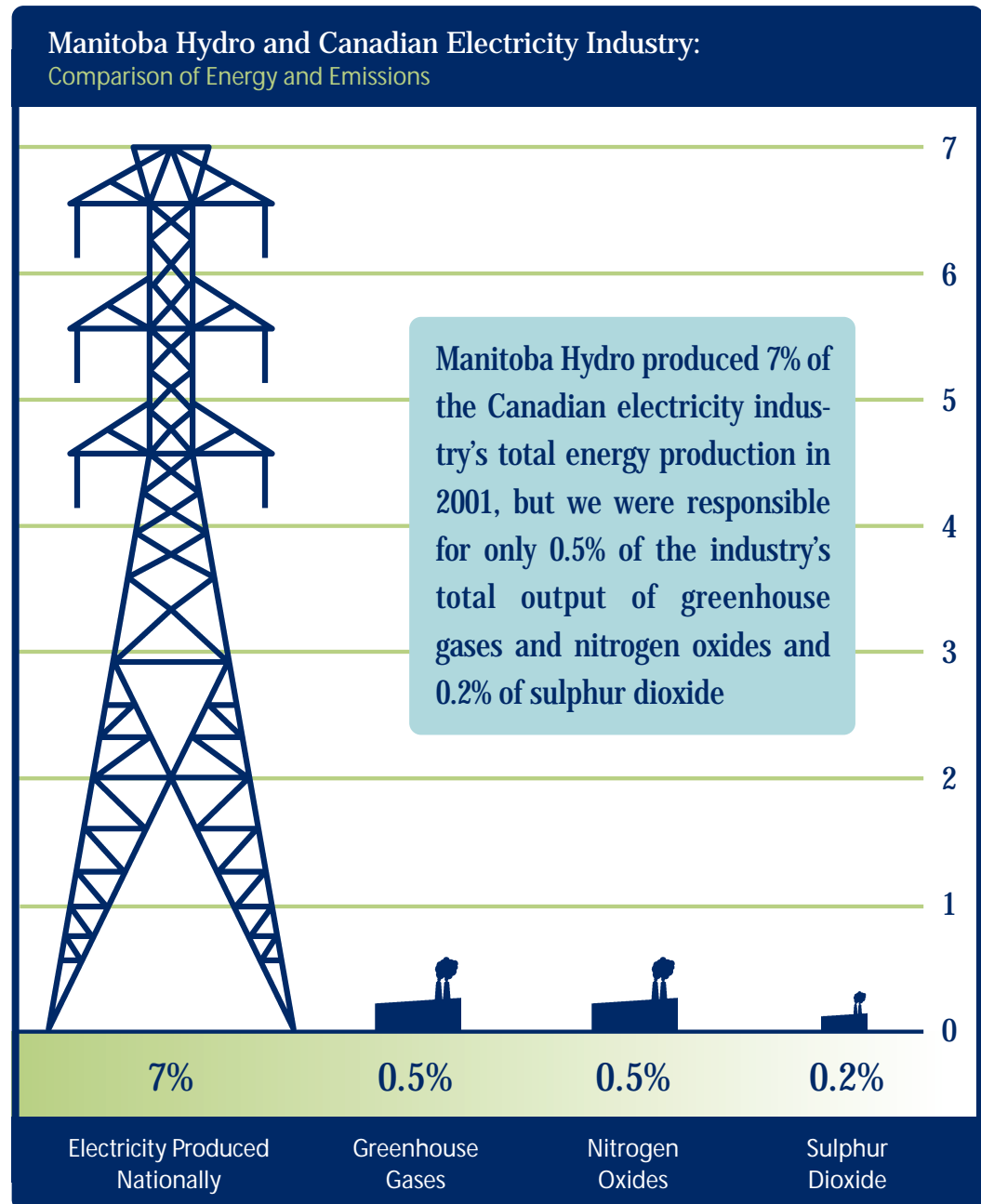
Our record on two other major emissions associated with electricity production, sulphur dioxide and nitrogen oxides, is also impressive. While producing 7% of all electricity in Canada in 2001, we were responsible for less than 0.5% of the greenhouse gases, less than 0.5% of the nitrogen oxides, and less than 0.2% of the sulphur dioxide produced by the industry in this country.

The key to our performance is our hydroelectric resources. We produce almost all of our electricity at hydroelectric generating stations that convert the energy in our fast flowing rivers into electricity.

While hydroelectric generating stations produce clean renewable energy, thermal generating stations produce air emissions as they burn fossil fuels such as coal and natural gas. Thermal stations that operate continuously will generally produce fewer air emissions per unit of energy than will stations operated less frequently, but utilities that rely on thermal generation for their base system

5. Under the Kyoto Accord, Canada is committing to reduce its greenhouse gases by an average of 6% between 2008 and 2012, compared to the baseline year of 1990. By pledging a 6% average annual reduction between 1990 and 2012, Manitoba Hydro's commitment goes beyond the national target.

6. This assessment was made in 2000 by the Pembina Institute, an independent environmental think tank.



will produce more total emissions than utilities such as Manitoba Hydro. Air emissions will also fluctuate in relation to the characteristics of the fossil fuels, technologies used to capture certain emissions such as particulates and nitrogen oxide, and of course yearly fluctuations in electricity demand.

In 2001, our total greenhouse gas emissions were the equivalent of 569.7 kilotonnes<sup>7</sup>, a reduction of over 50% from the previous year. Along with the major drop in carbon dioxide emissions, sulphur dioxide and nitrogen oxides were down from a year earlier for several reasons:

- The Brandon station thermal generating was used significantly more than the Selkirk station. Since the Brandon unit is more efficient than the Selkirk units, there were fewer emissions.
- The average sulphur content of the coal used in 2001 was lower than in the previous year.
- The energy content of the coal in 2001 was higher than during the previous year. Therefore, less coal was needed to produce the same amount of energy as in the previous year.

Despite the drop in carbon dioxide emissions in 2001, our average annual reduction is now 3% since 1990. In the coming years, in order to achieve our 6% target, we will continue to reduce emissions at our existing stations, we may obtain emission credits, and we may undertake other emission reduction projects. One example could be a methane gas collection project for heat production, which is being studied in conjunction with the City of Winnipeg and Province of Manitoba.

At the same time that we are committed to reducing greenhouse gas emissions, we are expanding our electricity production.

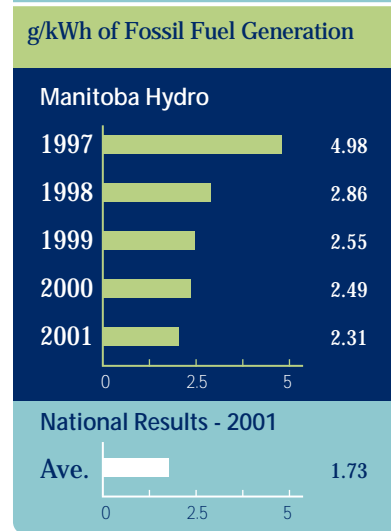
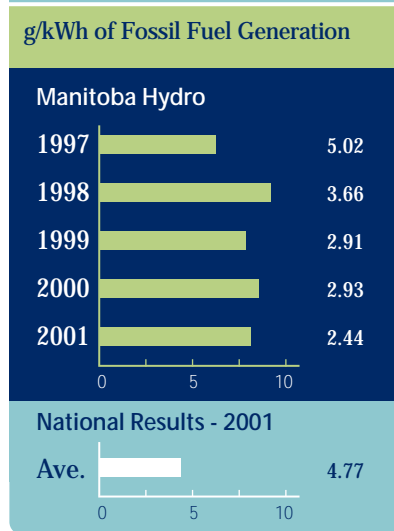
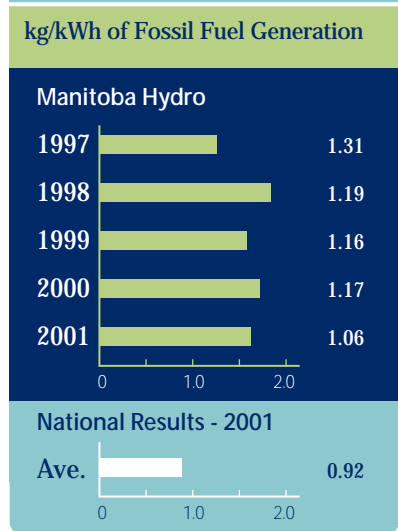
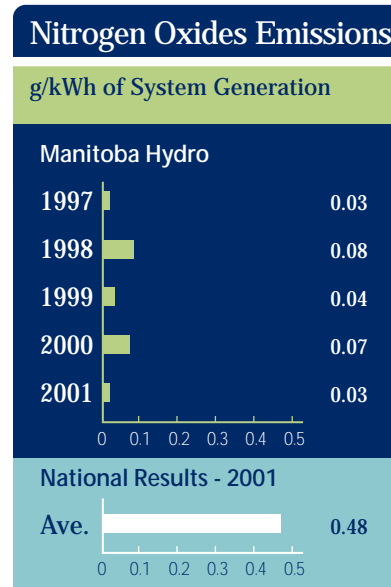
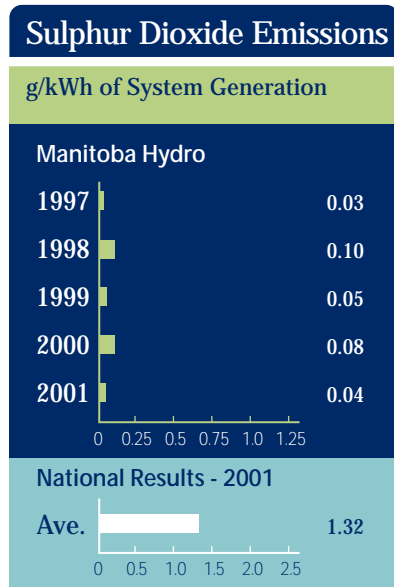
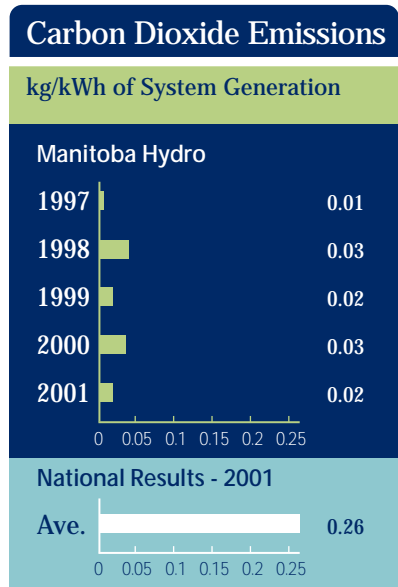
The 1300 megawatt Limestone generating station was completed in 1992, significantly expanding our production. New gas turbines, which burn considerably cleaner than coal, are being constructed at Brandon, and at least two new hydroelectric stations are being planned for northern Manitoba.

Initially, production of the new hydroelectric plants will be exported to other provinces and American states where most electricity is produced in thermal stations. In 2001/02, for example, our net exports<sup>8</sup> totaled 10,800 gigawatts. By eliminating the need to burn fossil fuels to produce that electricity, we prevented 11.5 megatonnes of greenhouse gases from being released into the atmosphere.

7. All measurements are in carbon dioxide equivalents.

8. Manitoba Hydro exported 11,700 gigawatt hours of electricity and imported 970 gigawatt hours, for net exports of 10,800 gigawatt hours.





# Precautions Prove Their Value When Spill Occurs

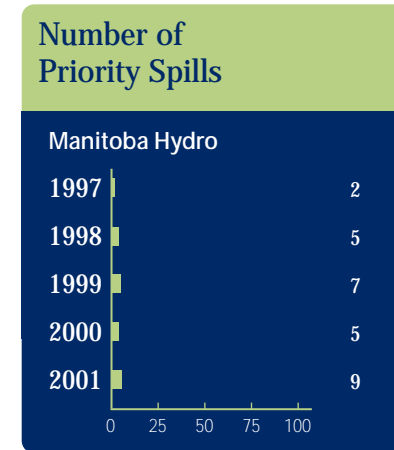
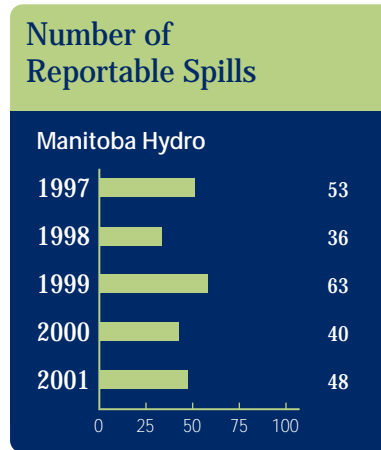
**N**obody likes accidents to happen. But we have to be prepared when they do.

In 2001, Manitoba Hydro suffered one of its largest spill accidents ever when a large transformer exploded, releasing an estimated 95,000 litres of insulating oil. Fortunately, no one was seriously injured, and the PCB-free insulating oil was captured in a containment pit and adjacent cable trays. The containment system had been installed as a precaution in case an accident such as this ever happened.

Absorbent materials, matting and booms were also used to recover some of the oil, and additional precautions were taken to make sure no oil escaped off site. Most of the oil was recovered for recycling and disposal.

In total in 2001, Manitoba Hydro handled 9 priority spills and 48 reportable spills. All 9 priority spills involved insulating oil or other petroleum products.

Priority spills are those that involve petroleum products or PCB contaminated substances in which the spill volume is greater than 500 litres, the spilled substances enters a waterbody, or media reported the event. Reportable spills are those that must be reported to regulatory officials; that is, they exceed 68 litres of insulating oil or other petroleum materials, 45 parts per million of PCBs, 10 or more kilograms of ozone depleting substances, or more than 5 litres of waste oil.



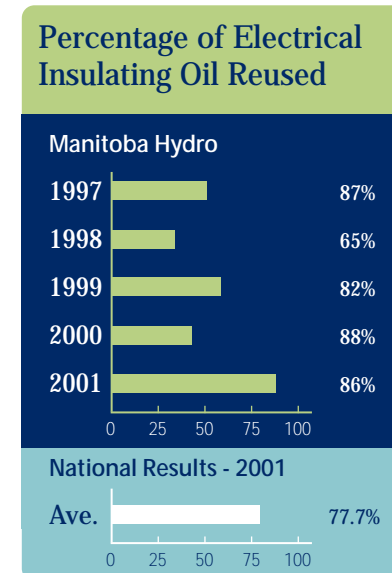
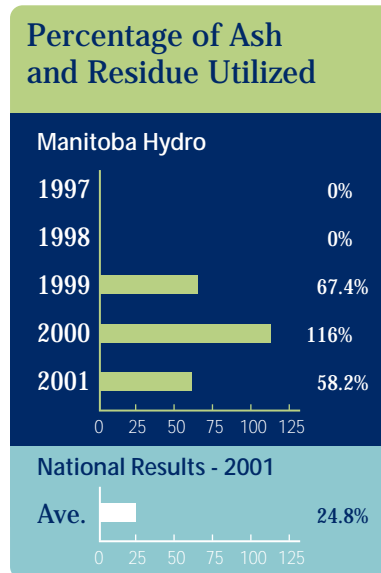
# Ash and Oil Reused and Recycled

When coal is burned in a thermal generating station, residues such as fly ash are produced. Manitoba Hydro has stored these by-products in specially constructed lagoons at our Brandon and Selkirk generating stations. In 1998 environmental testing on the ash was concluded and regulatory approval was received to use the ash for designated purposes such as backfill for road bases and landfill cover.

Since that time, some Brandon-area contractors have used ash in their projects, although the amounts vary annually in part due to the amount of road construction activity. On at least one occasion, more ash was used than was actually produced in that year. But because ash has accumulated in the lagoons over the years, there is more than enough ash to meet local demand. During 2001, contractors used less ash than in the previous year.

Manitoba Hydro produced only about half the amount of ash as it had in previous years, since operations at the Selkirk generating station were significantly reduced. The station was being converted from coal-fired to gas-fired generation during 2001.

Although Manitoba Hydro does not charge for the ash, to date there has been no market for ash from Selkirk.



# Saving a Utility Pole Also Saves a Tree

An electrical utility needs transmission lines strung on utility poles to get energy to its customers. At Manitoba Hydro, we're reducing the number of trees that need to be cut for our poles.

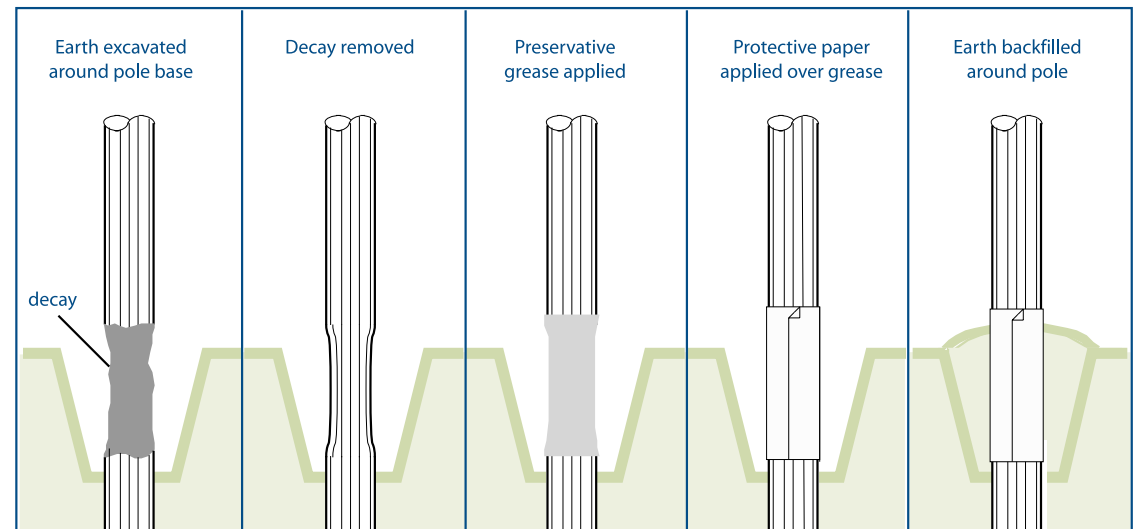
Each year we extend the life of roughly 20,000 power poles by an additional 15 years of service.

The program, which started in 1981, has given longer life to more than 300,000 power distribution poles, roughly half the number of distribution poles in the system. It has not only saved millions of dollars but also reduced the number of trees that have to be harvested to make new poles.

To extend the life of poles, crews excavate around the base of the pole, scrape off any decayed wood, inspect for decay and carpenter ants inside the pole, apply an environmentally friendly preservative paste, cover the paste with a protective wrapping, and then backfill the pole. The application can be repeated, making it possible to extend a pole's service life by 80 years or more.

Manitoba Hydro also sponsors the Forest Enhancement Program, established in 1995 with a \$3.5 million budget to be allocated over a 10-year period. The program recognizes the loss of forest cover that results from construction of Manitoba Hydro's transmission lines, generating stations, and substations.

To date more than 300 projects have received funds for tree planting programs, forest education, and innovative research, demonstration and development projects. In 2001/02 over 60 projects received almost \$300,000 to plant trees in a variety of locations, such as playgrounds, baseball diamonds, golf courses, schools, parks, hospitals, seniors' homes, museums, cemeteries, walking paths, old landfill sites, riverbanks, and shelter belts, spanning the province from Churchill to Emerson and from Flin Flon to Star Lake.





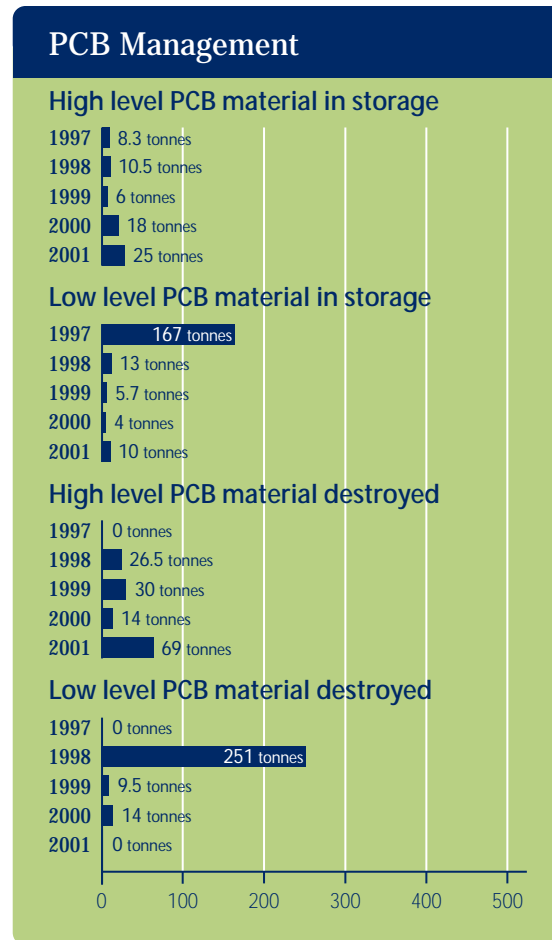
# PCB Materials Being Phased Out

PCBs were once used in electrical equipment because of their cooling, insulating and non-flammable properties. Due to health and environmental concerns, production and use of PCBs in new equipment ceased in 1977.

Manitoba Hydro began a program of PCB removal more than 20 years ago with the acquisition of PCBX equipment. This equipment removes PCBs from insulating oil. Millions of litres of oil have been processed by this equipment at the Waverley Service Centre.

Manitoba Hydro will continue efforts to remove PCBs from the electrical system. These efforts include the continued operation of the PCBX equipment, the phased change out of capacitors at HVDC Stations, and testing of all oil-filled distribution equipment.

Consistent with regulatory and Canadian Electricity Association protocols, Manitoba Hydro tracks the amount of PCB material in use and in storage in its system.



## Environmental Management Systems Certified at All Generation and Converter Stations

All of Manitoba Hydro's generating stations have now had their environmental management systems registered under ISO 14001.

The final two stations to receive their registrations were the Selkirk and Brandon thermal generating stations. They received the good news in 2001, following several years of preparation and an independent registration audit.

Manitoba Hydro's initiative to develop environmental management systems consistent with ISO 14001 criteria began in 1998. That was the year when the Canadian Electricity Association launched its Environmental Commitment and Responsibility Program. One component of the ECR program is a requirement that all utilities belonging to the association implement environmental management systems.

Since then, environmental management systems have been developed and implemented for all of our generating and converter stations. With this task in hand, a similar approach is being taken for our transmission, distribution and customer service functions. These are expected to be in place in 2002.

At the same time, we are working on an umbrella system for the entire corporation. While our existing environmental management systems address issues at individual facilities, the umbrella environmental system will bring together environmental issues that are company wide.

Community

3





**M**anitoba Hydro is very much a part of the community in which we work and live. We are striving to be an outstanding corporate citizen; to continuously improve safety in the work environment; to have highly skilled, effective, innovative employees and a diverse workforce that reflects the demographics of Manitoba; and to be a leader in strengthening relationships with aboriginal people. The following are highlights from 2001/02:

- We achieved another major milestone with a northern Cree Nation with the signing of an agreement in principle that provides the partnership framework to develop the Wuskwatim generation project.
- Our accident frequency rate dropped to one accident per 200,000 hours work, but sadly, one automobile accident resulted in a fatality.
- Memorandums of understanding were signed with two major aboriginal organizations to increase participation of aboriginal people in our workforce.
- As part of our efforts to employ more aboriginal people, we were trying to have aboriginal people to account for 25% of our northern workforce by 2005. We achieved that target three years early, prompting us to increase the target to 33%.
- Children from the Pimicikimak Cree Nation were on hand as sturgeon fingerlings were released in the upper Nelson River. The sturgeon rearing program sponsored by Manitoba Hydro at the Grand Rapids Fish Hatchery was the most successful since it started in 1994.





## Power Partnerships with Northern Cree Nations

For the second time in two years, Manitoba Hydro and a northern Manitoba Cree Nation have reached an agreement in principle to work together as partners to develop a hydroelectric generating station.

The latest agreement was signed with the Nisichawayasihk Cree Nation. The agreement in principle covers two potential developments, at Wuskwatim and Notigi, although Nisichawayasihk and Manitoba Hydro are now concentrating their efforts on the 200 megawatt project at Wuskwatim. The Wuskwatim could be in service as early as 2009, while the earliest in-service date for Notigi is 2014.

Before signing the agreement, the Nisichawayasihk Cree Nation conducted a ratification vote in which 65 percent of its total membership favoured the agreement in principle. At Nelson House, home to over half of the Cree Nation's membership and the community closest to the project, support for the agreement was over 80%.

The agreement with Nisichawayasihk Cree Nation is similar to one signed in 2000 with Tataskweyak Cree Nation for the Gull (or "Keeyask" in the Cree language) project. Since signing that agreement in principle, Manitoba Hydro and Tataskweyak have expanded their discussions to include three other Cree Nations in the vicinity of Gull Rapids: War Lake, Fox Lake and York Landing. (The 2000 Sustainable Development Report includes more information about the agreement with Tataskweyak.)

While the two agreements in principle contain commitments reflective of each Cree Nation's interests, they are similar in many



of the topics they cover. Each agreement sets out approaches to ensuring the local Cree Nations near the projects realize training, employment and business opportunities at the developments. Other critical issues, such as environmental assessments, are also included in the agreements.

The agreements also establish the framework for the Cree Nations and Manitoba Hydro to become full partners with a

significant ownership position in the projects. The agreement in principle with Nisichawayasihk, for example, gives the Cree Nation an option to acquire up to 25% of the Wuskwatim project, and Manitoba Hydro has subsequently expanded this to a 33% stake.

The agreements in principle mark important milestones in planning the projects, but a great deal of work remains to be completed before any decisions are made to proceed with construction. Engineering designs are being drawn up for the Wuskwatim project. Economic and financial data are being regularly updated and analyzed. Consultation with residents of the area, already an important component of project planning, will be expanded as plans progress.

A full environmental assessment will also be required. The formal regulatory process was triggered in 2001 when applications were filed for environmental licences for the Wuskwatim generating station and the associated transmission facilities. The generation project will be subject to review under both federal and provincial environmental regimes in processes that could take close to two years to complete, and the transmission facilities will be thoroughly reviewed under provincial legislation.

Environmental studies have actually been going on for many years. Wuskwatim Lake is part of the Rat-Burntwood water system, originally developed as part of Manitoba Hydro's Churchill River Diversion in the 1970's, and some monitoring programs along the route have been going on almost since the diversion was completed. In 1999, Nisichawayasihk and Manitoba Hydro selected a team of environmental specialists to lead the environmental assessment for the Wuskwatim project. Since then, the environmental team has worked closely with local elders, fishermen, trappers and other resource users to undertake the studies required for the environmental assessment. The findings from these studies will be compiled into an environmental impact statement that will be the focus of public hearings expected to occur in 2003 before final decisions are made on environmental licences for the Wuskwatim project.

The most critical environmental commitment may have already been made for the Wuskwatim project. Rather than a 350 megawatt station that would have caused approximately 140 square kilometers of flooding, Nisichawayasihk and Manitoba Hydro have selected a 200 megawatt project that will flood less than one-half square kilometer.

## Safety: Our First Priority

The safety and well-being of employees and the public take precedence over all other Corporate objectives. At Manitoba Hydro work processes and actions must conform to the highest standards and must be practiced continuously so that our operations are injury-free to the greatest extent possible.

Unfortunately, an employee was fatally injured in an automobile accident in 2001, and another employee died of an asbestos-related disease resulting from exposure in the 1960s and 1970s. The severity of all other accidents improved significantly, with only 670 lost days compared to 1270 the previous year.

In 2001 a behaviour based safety work process was launched to further decrease the frequency of accidents. It uses peer-to-peer safety observation that gives staff a greater overall awareness of safety on the job and chance to take some responsibility for the safety of their peers.

The process puts in place systematic, positive reinforcement of safe-work behaviours specific to a work location. The behaviours were identified as causing accidents in the past, based on analysis of accident histories.

Among other highlights, a program was launched to ensure all staff exposed to flame or arc hazards receive flame resistant clothing, a safety rulebook was revised, and a mental health program was delivered to employees across the Corporation.

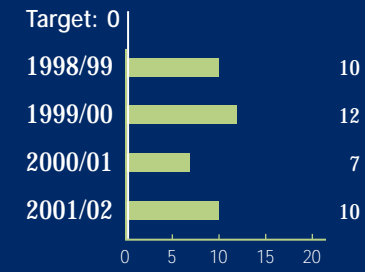
The number of contacts with the public is also tracked. Public contacts with our electrical system are accidents involving the



public and our electrical facilities, such as wiring and poles. They range from vehicles striking poles to contractors digging up energized lines. Public contacts with our gas system are accidents involving the public and the Centra Gas natural gas system, such as gas lines and meters. A majority of these result from people not calling in advance for clearance before undertaking construction work. A number of programs are used to inform and encourage the public to take proper precautions near electric and natural gas facilities.

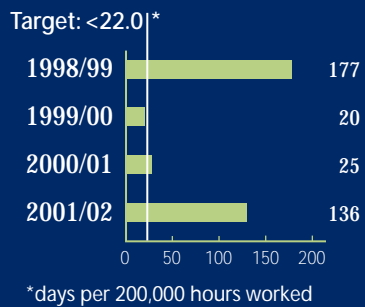
Our target is to have no fatalities, a target which has been achieved with both our electrical and natural gas systems. In 2001/02 there were 243 public contacts with our electrical system, an increase from 209 a year before; and with our gas system, there were 142 public contacts, a slight increase from 142 the year before.

### High Risk Accidents



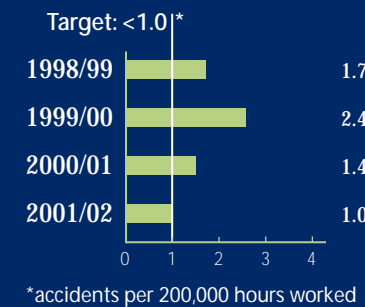
High risk accidents include all reported injuries (not necessarily resulting in lost time) due to electrical contact, falls from heights greater than 3.0 meters, and vehicle accidents. High risk accidents have significant probability of a fatality or permanent injury and represent a grave concern for the safety of our employees and public.

### Accident Severity Rate



The severity rate indicates the number of days of work lost due to accidents for every 200,000 hours worked. A traffic fatality was the most significant accident in 2001/02. On a positive note, other lost time accidents were far less severe than previous years. Historical safety results are for electric operations only. Gas operations were integrated into the results beginning in 1999/00.

### Accident Frequency Rate



The accident frequency rate indicates the number of accidents for every 200,000 hours worked. The target was 15% less than the target for the previous year. Historical safety results are for electric operations only. Gas operations were integrated into the results beginning in 2001/02.



## Equity in Our Workforce

**M**anitoba Hydro has partnered with major aboriginal organizations to improve participation of aboriginal people in our workforce. The Assembly of Manitoba Chiefs and the Northern Association of Community Councils each signed memorandums of understanding with Manitoba Hydro in 2001 recognizing the benefits of employing, encouraging and retaining aboriginal people in our work force.

As a result of the memorandums, employment working groups have been established with both organizations to help Manitoba Hydro identify ways to attract and retain aboriginal employees.

These partnerships are the latest in a series of progressive programs to achieve our employment equity goals. Manitoba Hydro has identified four historically disadvantaged groups—women, aboriginal people, persons with disabilities, and members of visible minorities—and established employment targets and special initiatives to ameliorate conditions for past disadvantages. The targets match each group's representation within the Manitoba population, and these targets are generally higher than their labour force participation rates.

In the past year, the equity group represented by women increased by 2.6%. This was entirely due to hiring practices. The corporate workforce demographics for women are about half of the provincial labour force. As we worked to increase the representation of women in the company, a particular focus will be placed on management and professional occupations.

The recording of persons with a disability also increased. This was due to more people declaring their equity status since the

previous self-declaration survey in 1995. The corporate workforce demographic is slightly better than half of the provincial labour force.

The representation of members of visible minority groups remained constant at 3%, which is less than half of the provincial labour force. As with all equity groups, specific endeavours and interventions are in the planning stage to increase this group's participation in our workforce by 2005.

Two targets have been established for the number of aboriginal people employed at Manitoba Hydro, one for our total corporate workforce and another for our workforce in northern Manitoba. This past year, we achieved our original target of 25% by 2005 in the North, and this has now been revised upward to 33%.

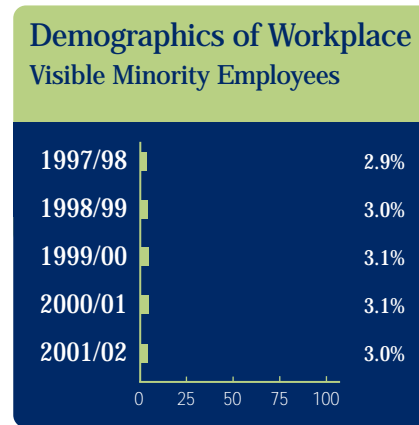
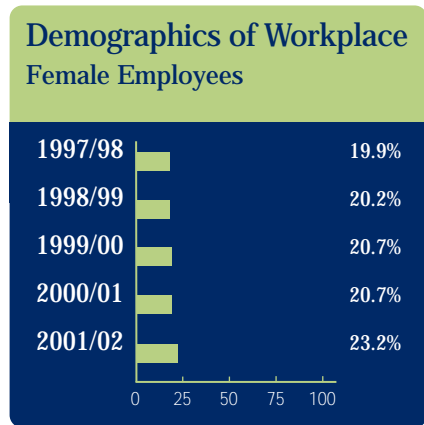
The aboriginal employment initiatives are designed to address systemic employment issues such as cultural differences, stereotypes, education, distance from home communities and the associated isolation in the workplace, and the need for information about career opportunities. Along with the memorandums with the Assembly of Manitoba Chiefs and the Northern Association of Community Councils, other initiatives in 2001 included the following:

- A video, "Cool Jobs," highlighting technical and trade career paths at Manitoba Hydro, was produced in association with the Aboriginal Peoples Television Network.
- Manitoba Hydro is working with a number of other organizations educating and training aboriginal people.
- After evaluating our scholarship and bursary awards, an additional \$120,000 was allocated to encourage aboriginal youth to pursue

their education and careers at Manitoba Hydro. Many of the awards emphasize high school prerequisites for trades training, and many awards come with the opportunity for summer or full-time employment at our company. Mentors are also on hand

during the summer to provide advice and counseling to aboriginal students.

- In addition to site-specific training at some of our facilities, a cultural awareness training program was conducted at Red Willow Lodge.



## More highlights

- Almost 2000 customers purchasing carbon monoxide detectors took advantage of a \$10 rebate program provided by Manitoba Hydro in partnership with several retailers. During the year just over 1700 people called with carbon monoxide concerns, less than half the number who called the previous year.
- A new Aboriginal Education Funding Program was established for aboriginal students entering the Electrical Engineering Faculty at the University of Manitoba. Our total Aboriginal Awards, Scholarships and Bursaries program now amounts to \$120,000, including two scholarships each worth \$30,000.
- The Manitoba Historic Resources Branch and Manitoba Hydro entered into another five-year agreement to continue archeological work along the Churchill River Diversion. Conducted in conjunction with local communities, we have been funding archeological research in the South Indian Lake and Nelson House area since the 1970s.
- Manitoba Hydro is the regional sponsor of the National Aboriginal Achievement Awards. Winners of a creativity contest for young aboriginal people attended the national awards as our guests.
- As part of the 50th anniversary of the Manitoba Hydro-Electric Board, the corporation worked with the village of Powerview on the Winnipeg River to establish a 50th Anniversary Park. It is located downstream of the Pine Falls Generating Station, which came into service in 1952.
- Manitoba Hydro operates several programs supporting community-based projects. The most recent of these, the Keewatinohk Sipi Partnership Fund, was created just two years ago. Meaning "northern rivers," the fund helps people who share northern waterways with Manitoba Hydro to continue their traditional and commercial practices. The fund's priorities are projects that enhance the safety, comfort and convenience for traditional or commercial activities in northern regulated waterways. In 2001, commitments were made to support to the Cormorant Fishermen, Churchill River Fishermen, Churchill River Restoration Committee, Moose Lake Draft Horse Association (to restore previously flooded feed lands at a new location), Moose Lake Fishermen, Northwest Co-operative Fisheries, Opaskweyak Cree Nation Fishermen, South Indian Lake Fishermen, and Russell/Glasspole Fishermen. The commitments totaled \$160,000.
- Canada's Climate Change Voluntary Challenge and Registry Program awarded Manitoba Hydro the Gold Champion Level Reporter designation for the third year in a row. The award recognizes the highest level of achievement in the national program's reporting system. Centra Gas was also recognized with a Silver Champion Level Reporter award. The Voluntary Challenge and Registry Program encourages business and government to take action voluntarily to limit and reduce greenhouse gas emissions, including a commitment to regular public reporting.
- Manitoba Hydro and the Manitoba Electrical Museum Inc. opened the doors to the new Manitoba Electrical Museum and Education Centre. The centre is in an appropriate building, the former Harrow Terminal



Station adjacent to the corporation's head office. Renovated as a Power Smart building, it houses a vast collection of electrical artifacts collected by retired employees and other electrical industry employees. Throughout its historical portrayal of electrical development in the province, the museum incorporates an educational component as well as addressing energy conservation and safety. Heritage Winnipeg honoured the museum for its efforts in refurbishing and reusing the terminal station.

- The Conference Board of Canada and Human Resources Development Canada presented us with the National Vision Award for best practices in employment equity in Canada. The award recognized our initiatives to increase the number of aboriginal people employed at Manitoba Hydro and efforts to ensure successful long-term careers.
- In the summer of 2001, residents of a Winnipeg neighbourhood became concerned when a fence was installed around a Manitoba Hydro substation. While the fence was required for public safety, the concrete structure's appearance was stark and unpleasant. Residents were quick to share their displeasure with us. After consulting with the residents and a landscape firm, an artist was hired to paint murals on the 2.5 high meter fence. There are five separate scenes, each depicting a particular era of local history. The first mural is set in the late 1700s and consists of a prairie wilderness scene. The second, set in 1812, shows the uneasiness of the local people as settlers arrived. The third scene portrays the Battle of Seven Oaks, which took place close to the substation site, and the fourth illustrated how the land was apportioned to settlers. The



final scene, to be completed in 2002, will show the unloading of the Countess of Dufferin steam engine.

- Our continuing support for the Island of Lights in Portage la Prairie and the Festival of Lights Parade in Winnipeg helped garner top prize recognition for these two cities in a national competition. The National Winter Lights competition acknowledged both cities in their respective population categories.



# Our Sustainable Development Principles

## 1 Stewardship of the economy and the environment

Manitoba Hydro will recognize its responsibility as a caretaker of the economy and the environment for the benefit of present and future generations of Manitobans. Meet the electricity needs of present and future Manitobans in a manner that ensures the long-term integrity and productivity of our economy, our environment, our natural resources and safeguards our human health.

## 2 Shared responsibility

Manitoba Hydro will ensure that Manitoba Hydro's employees, contractors, and agents are aware of our sustainable development policies and guiding principles and encourage them to act accordingly.

Encourage the Corporation's employees to share their knowledge of the concepts and practical application of sustainable development.

## 3 Integration of environmental and economic decisions

Manitoba Hydro will treat technical, economic and environmental factors on the same basis in all corporate decisions, from initial planning to construction to operations to decommissioning and disposal. To the extent practical, include environmental costs in economic and financial analysis.

## 4 Economic enhancement

Manitoba Hydro will enhance the productive capability and quality of Manitoba's economy and the well-being of Manitobans by providing reliable electrical services at competitive rates.

## 5 Efficient use of resources

Manitoba Hydro will encourage the development and application of programs and pricing mechanisms for efficient and economic use of electricity by our customers. As well, efficient and economic use of energy and materials will be encouraged throughout all our operations.

## 6 Prevention and remedy

Manitoba Hydro will to the extent practical, anticipate and prevent adverse environmental and economic effects that may be caused by Corporate policies, programs, projects and decisions rather than reacting to and remedying such effects after they have occurred.

Purchase, where practical, environmentally sound products taking into account the lifecycle of the products.

Address adverse environmental effects of Corporate activities that cannot be prevented by:

- first, endeavouring, wherever feasible, to restore the environment to pre-development conditions or developing other beneficial uses through rehabilitation and reclamation
- second, striving to replace the loss with substitutes that would enhance the environment and/or associated resource uses while offsetting the type of damage experienced
- third, making monetary payments for compensable damages on a fair, equitable and timely basis.

## Our Sustainable Development Principles (continued)

### 7 Conservation

Manitoba Hydro will to the extent practical, plan, design, build, operate, maintain and decommission Corporate facilities in a manner that protects essential ecological processes and biological diversity.

Give preference, where practical, to projects and operating decisions that use renewable resources or that extend the life of supplies of non-renewable resources.

### 8 Waste minimization

Manitoba Hydro will manage all wastes arising from Corporate activities by:

- first, endeavouring to eliminate or reduce the amount generated
- second, striving to fully utilise reuse and recycling opportunities
- third, disposing of remaining waste in an environmentally sound manner.

### 9 Access to adequate information

Manitoba Hydro will share relevant information on a timely basis with employees, interested people and governments to promote a greater understanding of Manitoba Hydro's current and planned business activities and to identify impacts associated with the Corporation's plans and operations.

### 10 Public participation

Manitoba Hydro will provide opportunities for input by potentially affected and interested parties when evaluating development and program alternatives and before deciding on a final course of action.

### 11 Understanding and respect

Manitoba Hydro will strive to understand and respect differing social and economic views, values, traditions and aspirations when deciding upon or taking action.

Give preference to those alternatives which best fulfill Corporate objectives while minimizing infringement on the ability, rights, and interests of others to pursue their aspirations

### 12 Scientific and technological innovation

Manitoba Hydro will research, develop, test and implement technologies, practices and institutions that will make electrical supply and services more efficient, economic and environmentally sound.

### 13 Global responsibility

Manitoba Hydro will recognize there are no political and jurisdictional boundaries to our environment, and that there is ecological interdependence among provinces and nations.

Consider environmental effects that occur outside of Manitoba when planning and deciding on new developments and major modifications to facilities and to methods of operation.

## Our Vision

To be recognized as the best utility in North America with respect to safety, rates, reliability, customer satisfaction and environmental management, and to be considerate of all people with whom we have contact.

## Our Mission

To provide for the continuance of a supply of energy adequate for the needs of the province and to promote economy and efficiency in the development, generation, transmission, distribution, supply, and end-use of energy. Provide and market energy and related products and services, within and outside the province.

# Manitoba Hydro's Goals

Continuously improve safety in the work environment.

Provide customers with exceptional value (rates, service, public safety, reliability, and power quality).

Be a leader in strengthening relationships with Aboriginal peoples.

Improve Corporate financial strength.

Increase gas customer gas (where economic).

Increase export power net revenues.

Have highly skilled, effective, innovative employees and a diverse workforce that reflects the demographics of Manitoba.

Be proactive in protecting the environment and a recognized leader in doing so.

Be an outstanding corporate citizen

Support agencies responsible for business development in Manitoba

# Operating Principles

Work together for the success of the organization as a whole, recognizing that all our activities are interrelated.

Establish long-term, cooperative relationships with all employees, customers, suppliers, and other stakeholders, aimed at achieving our shared Vision.

Create a working environment which removes barriers to effective performance and which fosters mutual respect, trust, and open communication.

Provide opportunities for all employees to develop their full potential, recognizing people's inherent desire to do their best.

Measure outcomes, develop an understanding of the causes of variation from planned performance, and take appropriate action.

Practise continuous improvements through ongoing coaching, learning, and innovation, focused on the needs and wants of internal and external customers.



# The Manitoba Hydro-Electric Board



## Corporate Head Office

820 Taylor Avenue  
Winnipeg, Manitoba  
Canada

## Mailing Address

Manitoba Hydro  
PO Box 815 - STN Main  
Winnipeg, Manitoba  
R3C 2P4

## Corporate Internet Site

[www.hydro.mb.ca](http://www.hydro.mb.ca)

**Telephone** (204) 474-3311

**Facsimile** (204) 475-0069

## Environmental Management Policy

Manitoba Hydro is committed to protecting the environment. In full recognition of the fact that Corporate facilities and activities affect the environment, Manitoba Hydro integrates environmentally responsible practices into its business, thereby:

- preventing or minimizing any adverse impacts, including pollution, on the environment, and enhancing positive impacts,
- meeting or surpassing regulatory requirements and other commitments,
- considering the interests and utilizing the knowledge of our customers, employees, communities, and stakeholders who may be affected by our actions,
- reviewing our environmental objectives and targets annually to ensure improvement in our environmental performance,
- continually improving our Environmental Management System,
- documenting and reporting our activities and environmental performance.