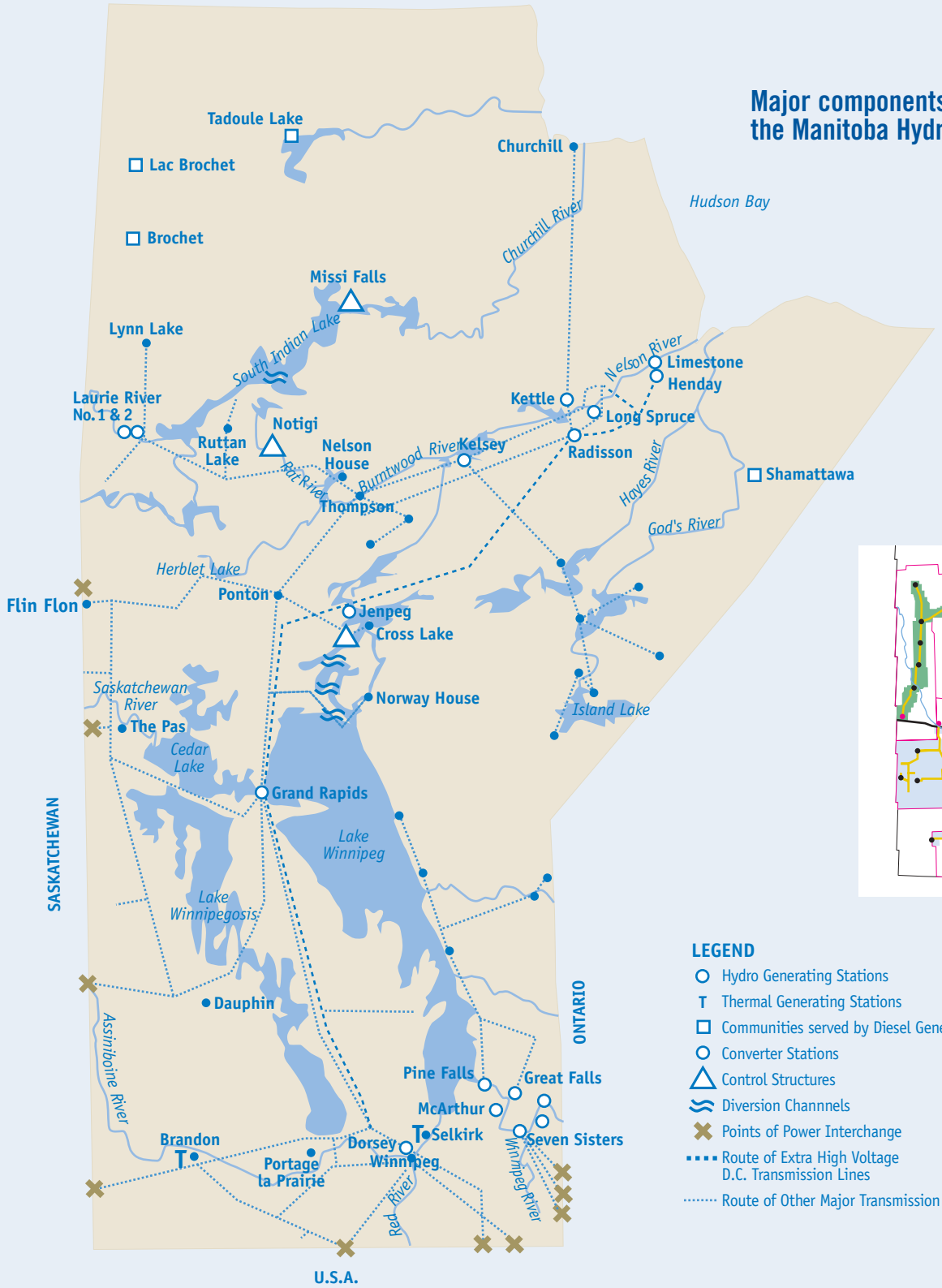
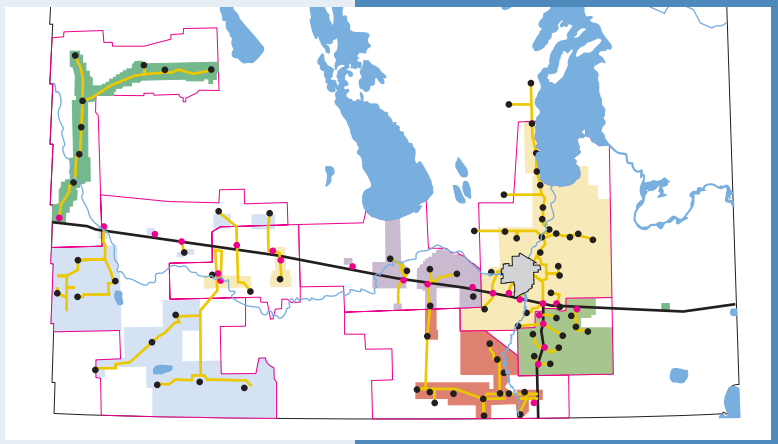
2000 Sustainable Development Report

Manitoba Hydro
POWER SMART

Major components of the Manitoba Hydro system





Southern Manitoba;
Areas served by Natural Gas

LEGEND

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

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cover photo:
Manitoba Hydro supports the Grand Rapids fish hatchery to raise walleye, whitefish and sturgeon.

Inset photos, left to right:
A member of the Grand Rapids First Nation checks hoop nets at the Grand Rapids walleye enhancement project.

Fish troughs inside the fish hatchery.

Fingerlings at the hatchery.

For more on the collaboration between the hatchery and Manitoba Hydro, please see page 15.

Highlights

Aboriginal Partnership: The Tataskweyak Cree Nation and Manitoba Hydro took a historic step in 2000, signing an agreement in principle that establishes the framework for a partnership to develop the Gull Generating Station. Please see page 7.

Millennium Forest: The millennium was marked with the planting of over 700 trees at The Millennium Children's Forest Grove. Please see page 11.

Kudos on Climate Change Plan: A major environmental think tank, the Pembina Institute, has graded Manitoba Hydro's plan to manage greenhouse gases as the best among major Canadian electrical utilities. Please see page 19.

Stations Make Environmental Grade: Six generating stations have had their environmental management systems registered under the ISO 14001 program. Please see page 22.

Rates Remain Stable: Manitoba industrial customers had their ninth straight year without an increase in electrical rates, and for residential customers the count grew to four years. Please see page 27.

New Turbine at Brandon: Plans were announced for a new gas combustion turbine generating station, with environmental approvals expected to be completed and construction started in 2001. The plant will be in service in 2002. Please see page 29.

More Energy Savings: Manitoba Hydro's Power Smart programs continued to accrue environmental benefits and financial savings for Manitobans. Please see page 33.

Message from
The President and CEO

Manitoba Hydro is proud of its success in providing exceptional service to its customers. We are also proud that, in fulfilling our mandate of delivering reliable efficient energy to Manitobans, we do so in a manner that is environmentally and socially responsible.

Our sustainable development report is an annual undertaking so that the people of Manitoba can be informed about our efforts to integrate the three pillars of sustainable development - economic, environmental and social considerations - into our everyday activities. In 2000, for example, Manitoba Hydro:

- continued to offer its customers the lowest average electricity rates in North America;
- was recognized by a leading environmental think tank for having the best plan for managing greenhouse gases among major Canadian electrical utilities; and
- achieved a major milestone in our relationship with aboriginal people with the signing of an agreement in principle with the Tataskweyak Cree Nation that establishes the framework for a business partnership to develop the hydroelectric potential at Gull Rapids.

All of these activities are guided by a common vision, "to be recognized as the best utility in North America with respect to safety, rates, reliability, and customer satisfaction, and to be considerate of all people with whom we have contact."

As you read the pages that follow, it is my hope that you will gain a greater sense of how we strive to achieve that vision in all of our operations.

R.B. Brennan, F.C.A.
President and Chief Executive Officer

1.

The Community

Manitoba Hydro has taken a historic step in its relationship with a northern Manitoba Cree Nation, signing an agreement that establishes the framework for a partnership to develop a new hydroelectric generating station.

According to the non-binding agreement in principle signed in 2000, the Tataskweyak Cree Nation could acquire up to 25 percent of the 620-megawatt Gull (or "Keeyask" in the Cree language) Project on the lower Nelson River. The agreement in principle provides the framework for the parties to negotiate a binding agreement covering varied aspects of the project. In addition to working out the details of a business partnership, Manitoba Hydro will work with the Cree Nation on approaches to training, employment, business and contracting opportunities. Environmental and community impacts are also getting considerable attention, with Tataskweyak Cree Nation undertaking studies to understand these issues from an aboriginal perspective in a process called OWL (overview of water and land).

Photo Left: Chief Duke Beardy and Premier Gary Doer at the signing of the Gull Project Agreement in Principle. (Inset: Chairman Vic Schroeder and President/CEO Bob Brennan)

Since signing the agreement in principle, discussions have also been initiated with three other First Nations—Fox Lake, War Lake and York Factory—which are also close to Gull Rapids where the project would be developed. The four First Nations are investigating ways to cooperate with Manitoba Hydro on the project, including the business partnership.

The Gull Project is one of three currently being considered by Manitoba Hydro. The others are the 200-megawatt Wuskwatim Project and the 100-megawatt Notigi Project, both in the resource management area of the

Nisichawayasihk Cree Nation. Negotiations with Nisichawayasihk were close to concluding an agreement in principle as 2000 came to a close. As with the Gull Project, Manitoba Hydro is prepared to offer the local Cree Nation an opportunity to invest in the Wuskwatim and Notigi Projects through a business partnership.

Manitoba Hydro has been in discussions for several years with Nisichawayasihk and Tataskweyak about the potential developments. While engineering, economic and environmental studies are continuing, neither Manitoba Hydro nor the Cree Nations have made a firm final commitment to proceed with the projects. The earliest construction would begin on the Wuskwatim or Notigi Projects would be late 2003, and a couple of years later for the Gull Project.

In addition to seeking Cree Nation partnerships, Manitoba Hydro also made another fundamental decision about its approach to the new projects: All three will be planned and designed to minimize flooding. In arriving at this decision, Manitoba Hydro rejected Wuskwatim and Gull options which would have produced more power and profits but would have caused much more flooding, generally considered the most significant environmental impact associated with hydroelectric developments. The Notigi generating station would cause no further flooding; Wuskwatim, one-half square kilometre; and Gull, approximately 42 square kilometres. This decision is consistent with Corporate approaches to sustainable development and aboriginal respect for the environment. (For more on Manitoba Hydro's plans for future generation and transmission developments, please see Pages 27-31.)

Since 1990, Manitoba Hydro has signed a series of agreements with 15 communities to resolve issues arising from the three projects constructed in northern Manitoba in the 1960s and 1970s, as well as Winnipeg River developments in the first half of the century. The most recent agreement was in 2000 with the Kischikamee Treaty Council, representing people impacted by the Churchill River Diversion. Discussions are ongoing with several other communities, including War Lake, Fox Lake, Mathias Colomb and Marcel Colomb First Nations, and Granville Lake who do not as yet have agreements with Manitoba Hydro.

The Pimicikamak Cree Nation and Manitoba Hydro are continuing to operate under the terms of the Northern Flood Agreement signed in 1977. Manitoba Hydro is contributing to activities such as winter trails, portages and navigational aids, trapping and fishing programs, and the maintenance of an arena built by the company. A weir constructed in 1992 has stabilized water levels on Cross Lake closer to their pre-development levels. However, Pimicikamak's relationship with Manitoba Hydro and two other Northern Flood Agreement signatories, the Governments of Canada and Manitoba, remains strained with each party having very different perspectives on the agreement.

Those differences were largely resolved with the four other Northern Flood Agreement communities when each signed its respective comprehensive implementation agreement, starting with Tataskweyak in 1992, followed by York Factory First Nation in 1995, Nisichawayasihk in 1996 and Norway House Cree Nation in 1997.

Community Settlements

Lake Winnipeg Regulation and Churchill River Diversion

- Kischikamee, 2000
- LGD of Churchill, 1997
- Norway House, 1997
- Nelson House, 1996
- York Landing, 1995
- Split Lake, 1992
- South Indian Lake, 1992
- Wabowden, 1991

Grand Rapids Generation Station

- Pine Bluff, 1996
- Cormorant, 1991
- Opaskwayak, 1991
- Grand Rapids, 1991
- Moose Lake, 1990
- Chemawawin, 1990

Winnipeg River Developments

- Sagkeeng, 1997

The comprehensive implementation agreements set out specific obligations and rights for each of the four signatories, and these clearer roles and responsibilities have resulted in more positive and constructive relationships.

For example, under its comprehensive implementation agreement the Tataskweyak Cree Nation received 34,100 acres to create two new reserves and 2,800 acres of additional land that it now owns. In addition, Tataskweyak with its 2,600 members also received $47 million to be paid out over a specified period of time. The Cree Nation controls these funds through a trust established for this purpose. Trust funds from the implementation agreement are used to enhance the community's housing infrastructure, assist the elderly, maintain traditional fishing and trapping pursuits with a special emphasis on the community's youth, and support other community activities. The following are highlights from 2000:

- Two instructors taught 20 young people how to build a log building, the result of which was a new 66 x 42 foot youth centre;
- Equity from the trust was used to secure loans to construct 15 new 4-bedroom homes completed in 2000 and for 10 new 1-bedroom homes;
- Homemakers assisted over 20 elders in their own homes and seniors' residence;
- Fishermen were paid compensation, and their grubstakes, ice harvest, and the purchase of nets, buoys and equipment were subsidized;
- The fish plant operations and maintenance were subsidized;
- Trappers received assistance to purchase new humane traps to replace their existing equipment, as well as for their transportation costs, building material for new cabins, communications and emergency equipment, and grubstakes; and
- Young people were taught survival and trapping techniques, traditional medicinal plant gathering, various uses for different parts of a moose, and how to construct a smokehouse.

Among its other endeavours, the trust supported a winter carnival, a summer festival, auxiliary police constables and dispatchers, and the Cree Nation's own environmental monitoring agency.

Now, with the signing of the Agreement in Principle for the Gull Project, Tataskweyak and Manitoba Hydro have set the stage to move their relationship to a new level of cooperation and partnership.

The Nisichawayasihk Cree Nation and Manitoba Hydro took a big step in their relationship when we were invited by the Cree Nation to share is a special ceremony at Wuskwatim Lake during the July 23 summer solstice.

Wuskwatim Lake was an appropriate location for the event: it was a traditional gathering site of the Cree Nation and could be the site of a future hydroelectric project developed in a partnership between Nisichawayasihk and Manitoba Hydro. Along with recognizing past and future projects, the ceremony celebrated the new relationship based on cooperation and mutual respect between the parties. The day began at the Wuskwatim Lake campsite and ended with a traditional feast, with the highlight being a spiritual service at the Dancing Circle, a Cree sacred site.

Chairman Vic Schroeder, Chief Jerry Primrose, President/CEO Bob Brennan and Vice President Al Snyder at the Wuskwatim Site Ceremony

Funds for community environmental projects

For the past several years non-profit community organizations have been able to look to Manitoba Hydro for support through the Environmental Partnership Fund and the Forest Enhancement Program. The Environmental Partnership Fund was begun in 1993 to assist environmental projects undertaken by not-for-profit organizations, and the Forest Enhancement Program was launched in 1995 to fund tree planting, forest education, and innovative research projects.

In late 1999 a major new initiative, the Keewatinohk Sipia Partnership Fund, was added. Meaning "Northern Rivers" Partnership Fund in the Cree language, the fund will help northern residents who share the use of waterways with Manitoba Hydro. The fund's priorities are projects that enhance the safety, comfort and convenience for traditional or commercial activities on regulated northern waterways. Since the fund was initiated commitments have been made to contribute equipment to the South Indian Lake Commercial Fishermen's Association and the Northwest Co-operative Fisheries (with members in Nelson House, Brochet, South Indian Lake, Pukatawagan, Lynn Lake and

Granville Lake). The Tataskweyak Cree Nation and Fox Lake First Nation received support to test driftwood to determine if it could be used in pulp and paper production.

In 2000 the Environmental Partnership Fund distributed $55,000 to 22 community projects, among them: the Green Kids who perform plays with environmental messages in Manitoba schools, the Manitoba Envirothon (an environmental program and competition for high school students), the Great Plains Interpretative Centre, and the Thompson Museum Aboriginal Heritage Project.

The Forest Enhancement Program provided $385,000 to over 100 community organizations, a major increase to assist Manitoba communities establishing millennium year commemorative projects. Among those receiving support were: Brokenhead River Recreation Commission, Chemawawin First Nation Reforestation Project, City of Thompson Parks Project, Transcona Millennium Park, St. Pierre War Veterans Park, Rosie Meyre Neshemek Trail in The Pas, and St. George Community Club.

In 2000 the Forest Enhancement Program also celebrated the millennium year with a special project, The Millennium Children's Forest Grove. More than 700 trees, some donated by Manitoba nurseries, were planted by 80 volunteers from Manitoba Hydro and Centra Gas, along with their families, at a 100 acre site on the outskirts of Winnipeg. The entrance to the grove features a dedication sign and commemorative cairn celebrating the birth of a Manitoba Hydro staff family's millennium baby. The site will also incorporate environmental education opportunities and will eventually become a park for travelers and Manitobans alike.

Boy Scouts assist Mark Slivinski, father of the Manitoba Hydro Staff Millennium Baby, to plant a tree in the Millennium Children's Forest Grove

Other highlights

The following are other highlights of Manitoba Hydro's community involvement in 2000:

- The Assembly of Manitoba Chiefs Secretariat and Manitoba Hydro agreed to a memorandum of understanding intended to increase the number of First Nation people in the Manitoba Hydro work force. Under the memorandum of understanding the secretariat, company and four other organizations will look at ways to train, recruit, employ and retain more First Nation people in our workforce.
- Manitoba Hydro introduces northern aboriginal residents to career opportunities through our Aboriginal Pre-placement Training Program. Participants spend time in each of the three generation trades during the 10 month program, and at the conclusion can select the trade in which they would like to apprentice. Six of 10 who entered the program in 1999 graduated in 2000.
- The limestone caves in Manitoba's Narcisse region are a haven for red sided garter snakes. Unfortunately, the little snakes must cross a highway on their annual migration, resulting in tens of thousands being killed by vehicles. In 2000 Manitoba Hydro and Centra Gas, with several employees volunteering their time and skills, installed four culverts under the highway to provide a safer route for thousands of snakes.
- The Manitoba Hydro website has been updated with extensive information on a variety of topics, including special sections for students, safety, environment, employment opportunities, and customer services. One section provides links so that Manitoba Hydro and Centra Gas customers can work with our energy specialists to identify ways of cutting energy use and costs in their own homes. Check us out at www.hydro.mb.ca.
- The Canadian Electricity Association through its Environmental Commitment and Responsibility Program annually surveys its members on a number of environmental issues, including public reporting and responding to external inputs on environmental performance.

Manitoba Hydro website

On a corporate basis, along with normal communication channels, the public has opportunities for corporate input through an annual series of town hall meetings. Public consultations are also a major component of planning and licensing new transmission and generation projects. As well, mechanisms for public input and accountability are associated with Manitoba Hydro's status as a Crown corporation.

Garter snakes are guided to culverts providing safe passage underneath a provincial highway

2.

The Environment

Sturgeon are survivors from another age—a prehistoric age. The sturgeon in rivers and lakes today are much the same as fossils from the Upper Cretaceous period of 100 million years ago. Their outer armour of bony plates, skeletons made of cartilage, and a shark-like tail are vestiges of earlier times. They can live 150 years and grow to more than 140 kilograms. They also take much longer than other fish to reach sexual maturity, 15 or more years for males and 25 or more for females, and even then, the males may not spawn every year and the female as infrequently as every six years. This, along with harvest and habitat pressures from man, has caused their populations to dwindle.

Sturgeon have proven difficult to rear in fish hatcheries. Until now attempts to fertilize eggs and raise fingerlings at the Grand Rapids fish hatchery have been largely fruitless. But in 2000 Manitoba Conservation in a cooperative program with Manitoba Hydro was able to hatch sturgeon and rear them to the fingerling stage before stocking them in the Nelson River.

Left: Fish eggs are carefully monitored and nurtured at the Grand Rapids Fish Hatchery

The results were heartening as we entered into a new agreement with Manitoba Conservation to support the fish hatchery at Grand Rapids. As an electrical utility that gets 95% of its energy from water power, Manitoba Hydro devotes a lot of energy back into those very same waters – in the form ecological monitoring and management programs, many of them (as in the case of the hatchery) in cooperation with other agencies and local resource users. The new five-year agreement with Manitoba Conservation marks our third consecutive five-year commitment to the fish hatchery. Under the agreement Manitoba Conservative field staff and local fishermen collect the sturgeon, whitefish and walleye eggs and transport them to the hatchery where the eggs are hatched and the fry are nurtured. Once an appropriate number of fish are returned to the "mother" river from which the eggs were obtained, the remainder are designated to the Nelson River, Saskatchewan River, Cross Lake and Grand Rapids areas.

The whitefish are designated for Cross Lake, where the local Cree Nation and Manitoba Hydro have been working for many years to re-establish the whitefish population. In 1991, Manitoba Hydro and the Pimicikamak Cree Nation planned and constructed a fixed-level rock weir at the outlet of Cross Lake. The weir was to mitigate fluctuating water levels on Cross Lake and other nearby lakes and to restore to the extent possible conditions similar to those existing prior to Lake Winnipeg Regulation.

To monitor the response of fish populations to the weir, Manitoba Hydro and the Pimicikamak Cree Nation initiated a long-term study in 1992. The study documents annual changes to lake whitefish, a key domestic and commercial fish species, as well as other important species such as walleye (pickerel), northern pike (jackfish), and tullibee. Initially, the study focused on Cross Lake but was later expanded to include Pipestone Lake. To date, the study has shown that the distribution of lake whitefish in Cross Lake has improved but that the catches of key species have fluctuated considerably through the life of the monitoring program. Due to this, the stocking program is continuing and the monitoring program has been extended to provide a longer-term database for both Cross Lake and Pipestone Lake. Since 1992 more than 140 million lake whitefish fry and 30 million eggs have been stocked into the lake. A total of 30 million lake whitefish fry were released into Cross Lake in 2000.

The walleye from the hatchery have a short trip before being stocked in the channel downstream from the Grand Rapids generating station spillway, where the Grand Rapids Fishermen's Co-op, Grand Rapids First Nation and Manitoba Hydro have been working cooperatively on the Grand Rapids Walleye Spawning Enhancement Project since 1997. The program is attempting to establish a viable, self-sustaining walleye spawning run in the spillway channel that would contribute to local domestic and recreational fishing needs in the future. To achieve this objective, the six-year program has focused on three primary components:

- Enhancement of walleye spawning habitat in the spillway channel through channel modifications and intermittent spillway releases;
- Stocking to increase the local walleye spawning population; and
- Monitoring survival and return rates of stocked walleye, and assessing the recovery of the walleye population over time.

Design of the habitat enhancement structures for the spillway channel focused on the need to concentrate flows and provide suitable pool-riffle sequences for spawning. Construction of the enhancement features was initiated

Measuring water velocities on Larval drift trap transect in the Grand Rapids spawning enhancement channel

in 1997 and completed in 1998, and included: a fish barrier upstream from the channel mouth to prevent fish from being stranded in upstream pools when water flows were halted; containment dykes and deflector groins to control and contain the flow of water in the lower reach of the spillway channel; and four pool/riffle spawning structures just upstream of the channel mouth.

With the cooperation of Manitoba Conservation, stocking was initiated in the first year of the program and, to 2000, 35.8 million walleye larvae and 18.7 million walleye eggs have been introduced into the spillway channel. Stocking has also focused on incubating eggs in the spillway channel to increase the probability that fish will return to the channel to spawn in the future. Eggs are now placed in an in-stream incubator where they remain in a well-oxygenated environment until they hatch.

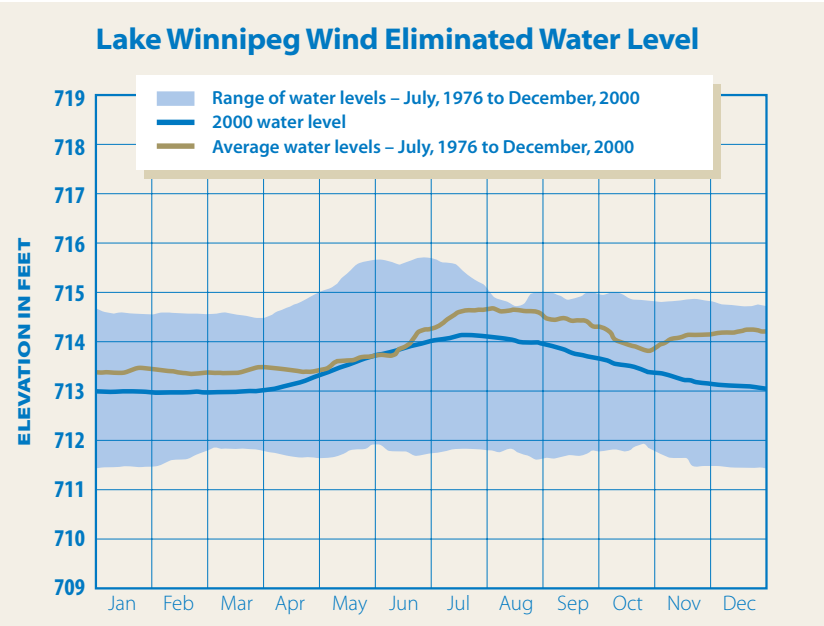
Since stocked walleye are not expected to return to the spillway channel until they mature at age four, positive results from the stocking program are not expected until 2001 at the earliest. It is hoped that, once walleye begin to spawn in the channel, a self-sustaining population will become established that will contribute to the local domestic and recreational fishery in years to come.

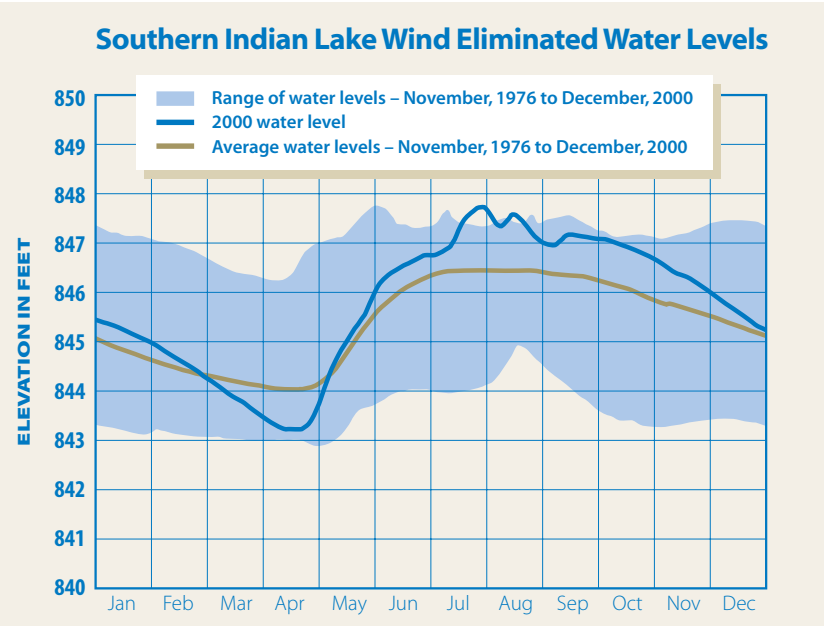
The Grand Rapids Generating Station controls water outflows from Cedar Lake, one of the three lakes serving as the largest reservoirs in the Manitoba Hydro system. The others are Southern Indian Lake, regulated by the the Notigi Control Structure on the Burntwood River and the Missi Control Structure on the Churchill River, and Lake Winnipeg, regulated by the Jenpeg Generating Station on the west channel of the Nelson River. Outflows from Lake Winnipeg passing through the east channel of the Nelson River are unregulated. Reservoirs are essential for operating hydroelectric systems.

Below average water levels were experienced on Cedar Lake throughout most of 2000. Low flows on the Saskatchewan River were caused by significantly lower than normal precipitation over much of the drainage basin. As a result, outflows from Grand Rapids were below average.

From January to April, average flow conditions were experienced on the upper Churchill River. As a result Southern Indian Lake levels remained near the long-term average. In late April, as flows on the upper Churchill River rose well above average, Southern Indian Lake levels also began to rise. Diversion flows at Notigi were held at the maximum allowable for the duration of the year. Missi flows were increased in the summer months in response to two major summer rainstorms.

Above average water levels were experienced on Lake Winnipeg to start the year. As inflows returned to normal, Lake Winnipeg water levels returned to average in early summer. Late summer and fall precipitation was well





above average over the Lake Winnipeg drainage basin causing marked increases to inflows late in the year. Lake levels rose in response to the higher inflows.

Also in 2000, the Lake Winnipeg Shoreline Erosion Advisory Group found that Manitoba Hydro's methodology for determining wind-eliminated lake levels provides a reasonably accurate description of the mean lake level conditions. The advisory group had been established by the provincial government in 1998 to review specific issues related to the erosion of Lake Winnipeg shorelines. The advisory group consisted of mayors and reeves of south basin municipalities, property owners, First Nation representatives, and individuals with engineering expertise.

Manitoba Hydro also has a number of initiatives to address navigational and shoreline access issues related to floating woody debris along waterways that it regulates. With the support of Manitoba Hydro, local communities determine main travel routes and priority sites for debris management activities. Some of these activities include boat patrols and debris removal. Boat patrols mark safe travel routes and remove floating debris that poses a navigational hazard. Debris removal crews gather and dispose of loose debris that has accumulated at the shoreline. Residents of local communities are hired to manage and perform the work. To date, work has been performed by members of Chemawawin Cree Nation, Southern Indian Lake Commercial Fishermen's Association, Pimicikamak Cree Nation, Nisichawayasihk Cree Nation, Tataskweyak Cree Nation, Fox Lake First Nation, Norway House First Nation, York Factory First Nation, and residents of Thicket Portage and Wabowden.

Think Tank recognizes greenhouse gas plan

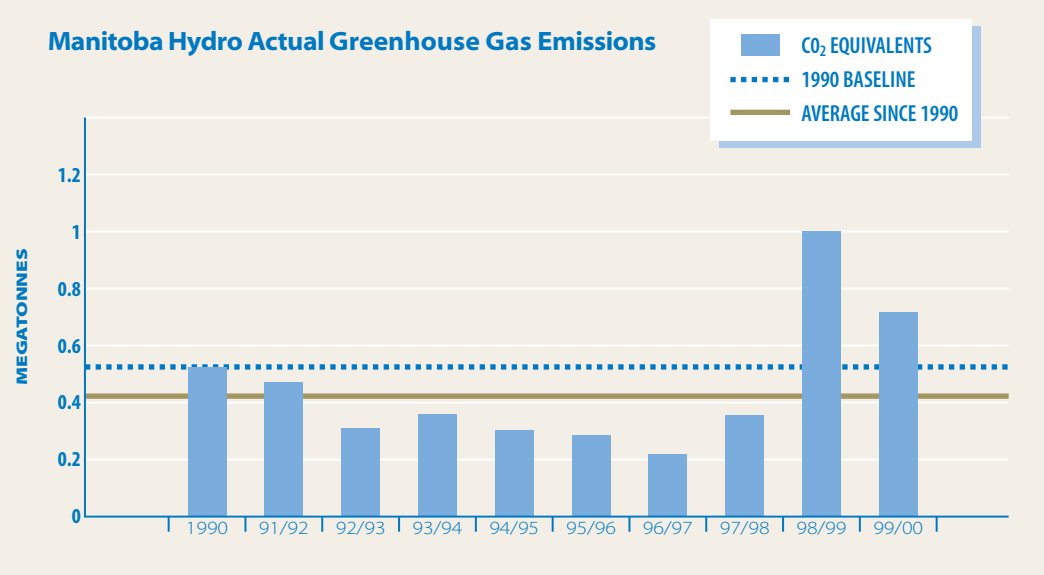
Most scientists agree the earth is getting warmer at least in part due to human activities. The growing volume of gases such as carbon dioxide and methane in the planet's atmosphere is acting like a greenhouse, keeping in the natural solar energy received by the sun. The Kyoto Protocol negotiated in 1997 recognized the need for the international community to take action to reduce the production of these so-called greenhouse gases.

Although the Kyoto Protocol has not been ratified, Manitoba Hydro has responded by developing its own strategy to reduce the greenhouse gases it produces, and in 2000 our efforts were recognized by one of Canada's leading environmental think tanks. The Pembina Institute named Manitoba Hydro as the leader among major Canadian electrical utilities for its performance in the fight against climate change. The Pembina Institute considered four criteria in gauging the utilities' performances: climate protection performance, greenhouse gas emission reduction actions, public reporting, and corporate policy framework. Utilities were graded on 1997 and early 1998 activities and the results were announced in 2000. To the beginning of 1998, Manitoba Hydro's greenhouse gas emissions were down considerably from 1990. Because our two coal-fired thermal plants have been operated more than usual to support system security and produce power for export customers over the past fiscal year, emissions have increased but the average annual reduction over the past decade is still about 14%. We remain

committed to our 1998 pledge to reduce greenhouse gas emissions between 1991 and 2012 by an average of 6% below 1990 levels. Manitoba Hydro will achieve this commitment by:

- Increasing our reliance on water-generated hydroelectricity, which produces virtually no greenhouse gases. Since 1990 the Limestone Generating Station has come into service, and efforts are underway to plan for additional hydroelectric stations (please see Page 7);
- Decreasing our coal and diesel-fueled generation. Four thermal generators burning coal at Brandon have been taken out of service, the Selkirk generating station is to be converted to gas which produces fewer air emissions, and 9 of 13 diesel generators have been removed from service as remote communities have been connected to the provincial transmission grid;
- Continuing to promote energy efficiency programs for our customers. For more information on our Power Smart programs, please see Chapter 4 (page 33); and
- Purchasing offset credits if necessary.

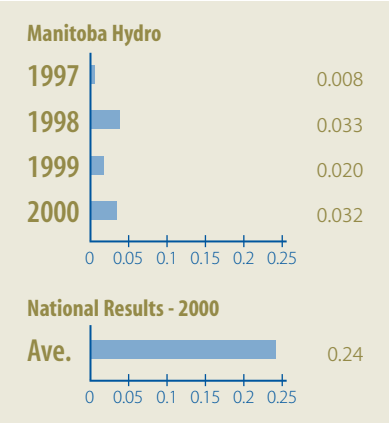
In addition to providing Manitobans with renewable hydroelectricity, we also export significant amounts of energy to other provinces and the United States. In 2000, for example, we shipped 11.3 more gigawatt hours of electricity to our export customers than we purchased from them. By purchasing hydroelectricity instead of burning



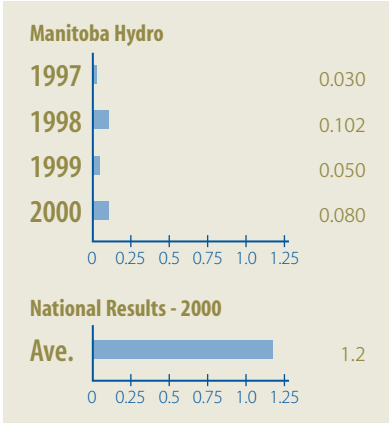
additional coal at their thermal generating stations, which are their main source of electricity, they avoided dumping an additional 11 million tonnes of greenhouse gases into the global atmosphere.

Our employees have also been encouraged to take personal action to reduce greenhouse gases. Through a series of Action By Canadians (ABC) workshops, employees were informed about the links between climate change, greenhouse gases, and energy use. The workshops provided practical advice and suggested everyday activities individuals can take, like fixing leaking faucets, installing a setback thermostat, and installing low flow showerheads.

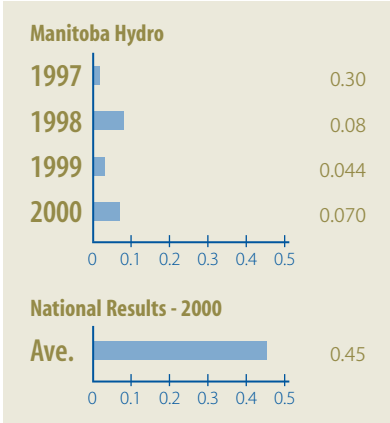
Carbon Dioxide Emissions
kg/kWh of System Generation



Sulfur Dioxide Emissions
g/kWh of System Generation

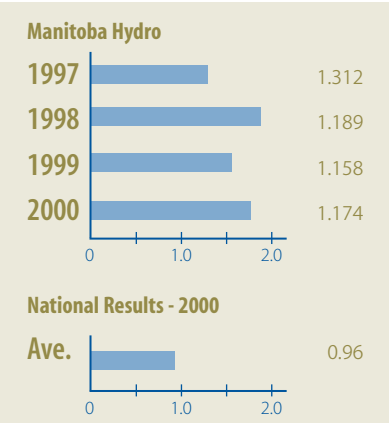


Nitrogen Oxides Emissions
g/kWh of System Generation

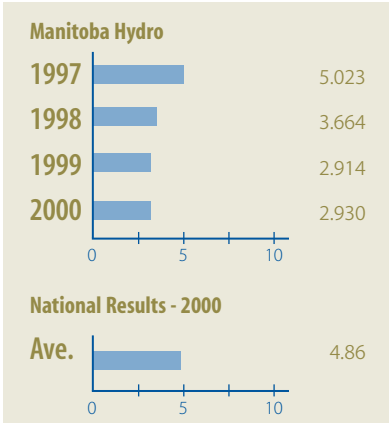


Thermal stations that operate continuously will generally produce fewer air emissions per unit of energy than will stations that are operated on a less frequent basis, but utilities that rely on thermal generation for their base system load will generally produce more total emissions than utilities such as Manitoba Hydro that rely on other forms of generation such as hydropower for their main source of energy. Air emissions will also fluctuate in relation to the characteristics of the fossil fuels, technologies used to capture certain emissions such as nitrogen oxide and particulates, and of course yearly fluctuations in electricity demand.

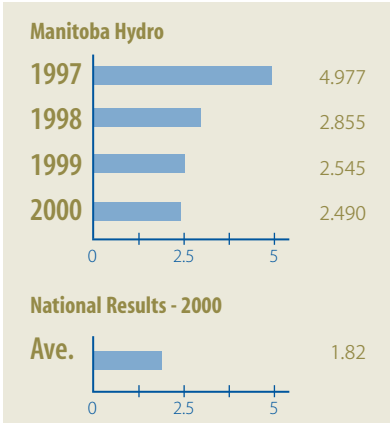
Kg/kWh of Fossil Fuel Generation



Grams/kWh of Fossil Fuel Generation



Grams/kWh of Fossil Fuel Generation



Stations certified under ISO 14001

Environmental management systems implemented at six Manitoba Hydro generating stations have been certified to meet the International Standard, ISO 14001. The certification culminated three years of effort, going back to 1997 when the Canadian Electricity Association launched its national Environmental Commitment and Responsibility Program. Under this program, participating electrical utilities were required to implement an environmental management system in their corporate and generation sectors by the end of 1999 and in their transmission and distribution sectors by 2002. An environmental management system provides a framework for a company to identify its environmental impacts, set goals to manage them, implement plans to meet these objectives, and then evaluate its performance.

Manitoba Hydro, like several other Canadian utilities, has decided that not only will it implement an environmental system consistent with international guidelines, but it will also take the extra step of having its environmental management systems certified by independent auditors under the International Standardization Organization's environmental program. In 2000 the environmental management systems were certified for the Long Spruce Generating Station, Brandon Generating Station, and the four generating stations on the Winnipeg River.

Indicators measure environmental performance

A second component of the Environmental Commitment and Responsibility Program was a series of indicators to measure the industry's progress in managing its environmental affairs. Comparisons of Manitoba Hydro and national results are included in this sustainable development report. Spills of hazardous materials are among these environmental indicators. In 2000 Manitoba Hydro had 40 spills reportable under federal and provincial regulations and five classified as priority under the Canadian Electricity Association guidelines. The five priority spills were:

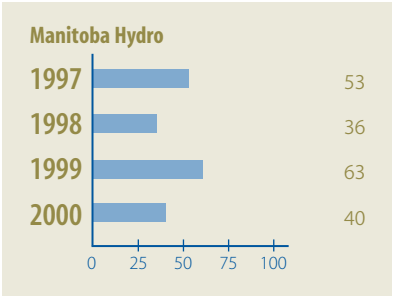
- An estimated 175 litres from a servomotor at the Great Falls Generating Station on the Winnipeg River. A downstream inspection showed no evidence of oil. The servomotor has since been adjusted and inspected twice weekly. A spill containment system will be installed.
- An estimated two litres of lubricating oil were released into the Grand Rapids Generation Station on the Saskatchewan River when a sump filter was being cleaned. Absorbent materials were placed on the water to recover any oil, and a visual inspection and water samples found no evidence of oil. The sump filter cleaning procedure has been revised.

- An estimated 140 litres of governor oil escaped from a slow leak in a flange gasket over a 70 day period at the Great Falls Generating Station. Approximately 25% of the oil was recovered in the station. Repairs were made to the flange, the repairs were monitored, and an oil containment system is being installed at the station.
- Approximately 2725 litres of governor oil escaped when a head cover pump failed at the Grand Rapids Generating Station. All of the material was contained in the station's oil containment system.
- An estimated 900 litres of diesel fuel escaped when a buried fuel transfer line failed at the Tadoule diesel generating station. The contaminated soil was removed to a lined and dyked area where it will be "land farmed." The pipe has been replaced and re-tested, and the excavated area has been backfilled with clean material.

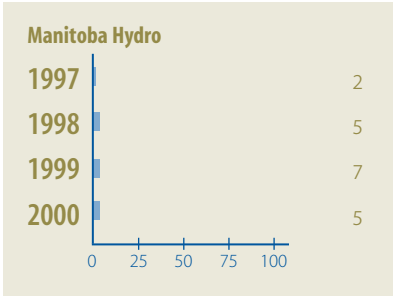
In 2000 Manitoba Hydro continued its long-range plan to manage its contaminated sites, many of which were impacted years ago before current environmental awareness and standards were established.

In 2000, one of these sites became a high priority, when a section of the 10th Street office parking lot in Brandon collapsed when an old concrete bunker failed. The bunker had once been used to collect fly ash when the site was a coal fired generating station which had been retired decades before.

Reportable Spills



Priority Spills



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, or 10 or more kilograms of ozone depleting substances.

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.

The bunker was one of four that was under the parking lot. In addition to structural debris remaining from when the station was demolished investigators also found bunker-C oil (which fueled the station's last years) that had been left in into the concrete chambers.

The site was completely decontaminated with the debris and fuel oil removed, clean compacted fill placed in the bunkers, and the parking lot rebuilt during the summer of 2000.

In contrast to the surprise findings at the Brandon site, the condition of another site with residual contaminants on Sutherland Avenue in Winnipeg was expected. The site was the location of a plant that manufactured coal gas from 1873 to 1958. Coal gas produced at the site was delivered to customers through underground piping for home cooking and lighting before natural gas was available in the city. The site was identified as a potential contaminated site by its current occupant, Centra Gas, and by Manitoba Hydro during a due diligence assessment that the Corporation conducted before acquiring the gas utility.

When the coal gas plant was demolished and the site redeveloped between 1959 and 1969, clean fill was brought in to landscape the area. But some coal tar (a commercial by-product of the coal gas process) as well as other process materials such as coal, coke, ash, sulphur, and iron oxides, were left on the site. Current programs are underway to define the location and quantities of these materials on the site.

Other soil remediation projects in 2000 included cleanup operations at former diesel generating stations at Garden Hill, Red Sucker Lake, God's River, Oxford House, Poplar River, and Pikwitonei.

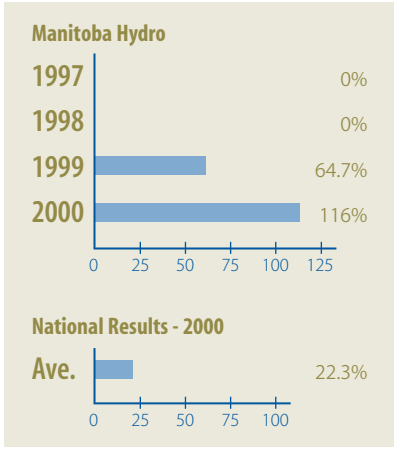
Cleanup usually involves three steps. Contaminated soils are excavated and removed from the site; they are replaced with clean fill; and a land farm site is developed where contaminated soils are fertilized and tilled until contamination drops low enough to allow restricted use of the material.

Local businesses and people usually get most of the work on these projects. All of the work at God's River and Oxford House was handled by local people; the contractors at Pikwitonei were aboriginal; and Garden Hill, Red Sucker Lake, and Poplar River were joint ventures.

We are also taking steps to eliminate potentially hazardous materials such as PCBs in our operations. Capacitors at our three high voltage converter stations contain the entire amount of high level PCB material in service, and this equipment is located in secure yards at manned stations. In 2000 we shipped 14 tonnes of high level PCB material and 14 tonnes of low level PCB material for destruction at an Alberta hazardous waste management facility, and we processed another 950,000 litres of transformer oil using our PCBX technology. This technology reduces PCB contamination to less than 2 parts per million. An estimated 1230 tonnes of low-level PCB transformer oil remains in service.

In the Brandon area, the construction industry was able to utilize more ash residue than was produced in 2000 at our Brandon and Selkirk thermal generating stations combined. The stations have been been storing coal ash in

Utilization of Solid Combustion By-product (Ash)

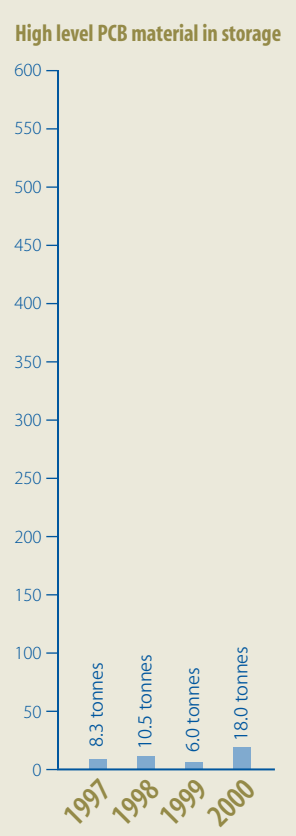


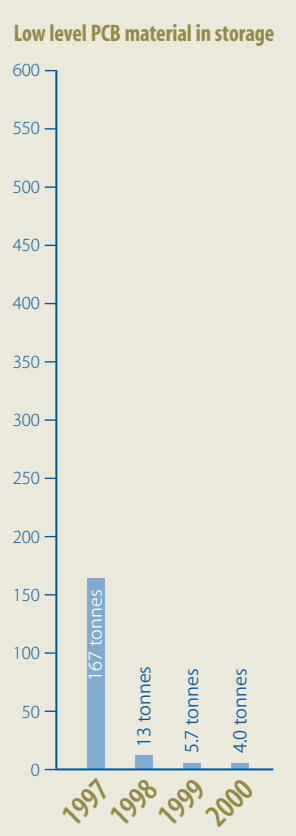
Burning any kind of fuel creates residues of various kinds. Some of these residues, such as fly ash from burning coal, can be captured in solid form and productively re-used.

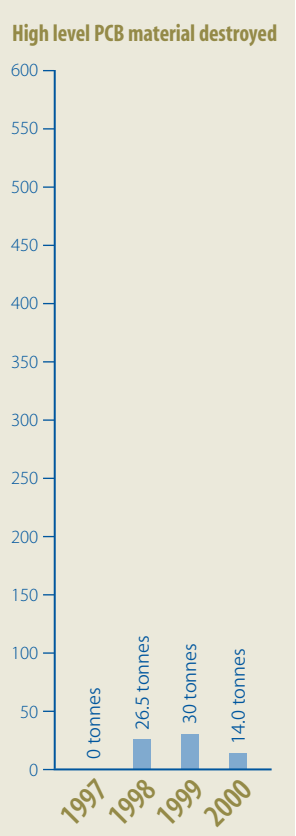
specially-constructed lagoons for the past 40 years, and only in 1998 was environmental testing on the ash concluded and regulatory approval received to use this ash for specially-designated purposes such as a concrete additive, backfill for road bases, and landfill covers. As a result, we may utilize larger volumes of ash than we produced in a year because stored ash is also available. In 2000 we produced 20,116 tonnes of ash and utilized 23,340 tonnes.

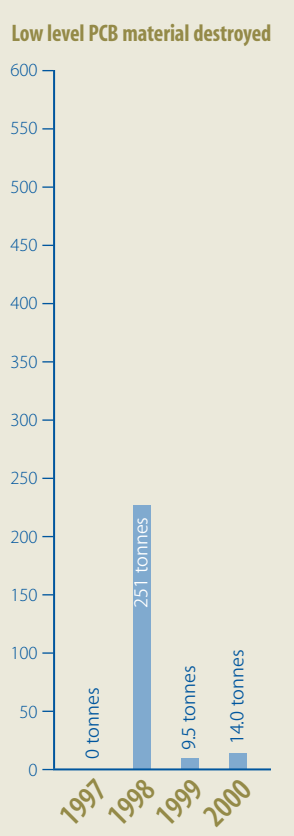
Consistent with regulatory and Canadian Electricity Association protocols, Manitoba Hydro tracks the amount of PCB material in use and in storage in its system. PCBs were once used in electrical equipment because of their cooling, insulating and non-flammable properties, but they have not been produced since 1985. Manitoba Hydro is systematically testing, decontaminating and phasing out equipment with PCBs. Material with PCBs is stored in licensed facilities and delivered to approved facilities for destruction.

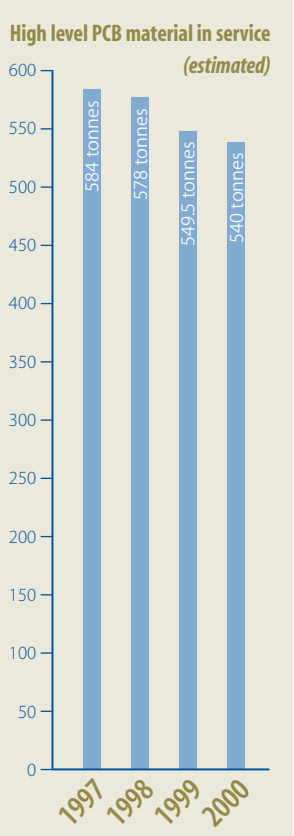
PCB Management











3.

Economic Management

American consumers continued to look to Manitoba for reliable renewable electricity in 2000, purchasing over one-third of Manitoba Hydro's total energy production. Manitoba Hydro responded by continuing to plan for new generation facilities to meet our customers' future needs and using revenues from current export sales to freeze the electrical rates paid by our Manitoba customers.

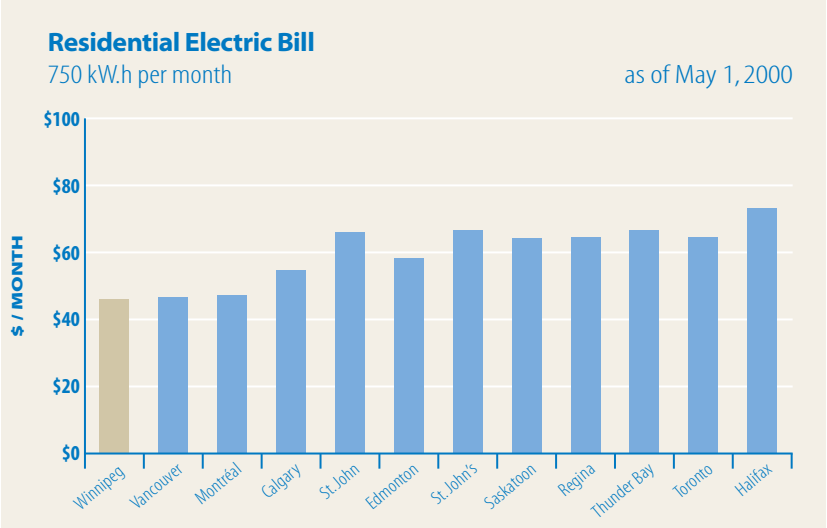
Regulatory changes in the U.S. market, coupled with a burgeoning economy and a lack of new generation and transmission, have meant steadily increasing opportunities for Manitoba Hydro. Where we had just seven export customers in 1996, we now have over 35. Prices have been influenced by this changing market place, with average prices we receive for short term contracts increasing 10% between 1999 and 2000. Short term contracts generally pay less than long-term "firm" contracts, although the gap has been shrinking in recent years and on occasion, is even reversed. In 2000, Northern States Power selected Manitoba Hydro as a successful bidder to supply 500 megawatts of firm power until 2015. The deal, which is still subject to final regulatory review and negotiations, will essentially extend an existing 12-year 500 megawatt contract that expires in 2005. Northern States Power, a subsidiary of Xcel Energy serving major parts of Minnesota including the Minneapolis-St. Paul metropolitan region, is Manitoba Hydro's largest single customer.

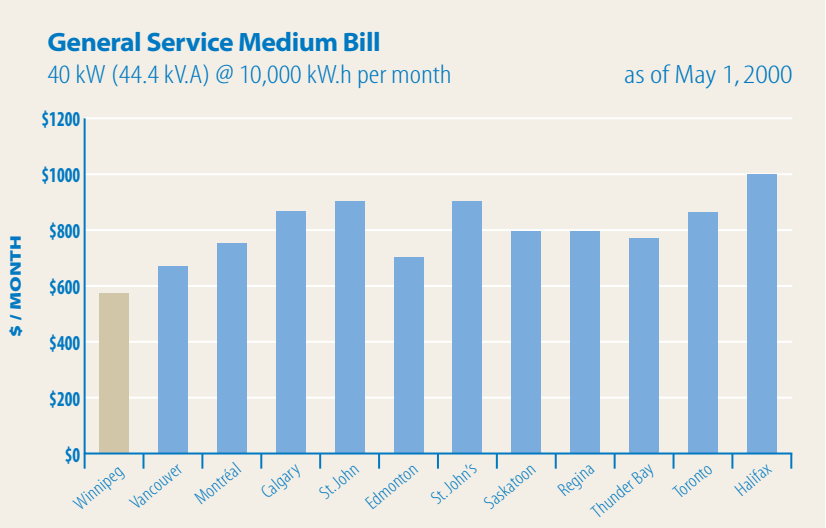
Photo Left: Artist's computer-generated drawing of the new Brandon gas combustion turbine projects, scheduled to be in service in 2002.

The revenues earned from export sales help Manitoba Hydro keep rates low for Manitobans. Manitoba industrial customers have not had a rate increase in nine years; for residential customers, it has been four years. In fact, customers outside Winnipeg will have their rates slightly decreased in 2001, when a Manitoba Government policy is implemented to equalize all residential rates in the province.

Manitoba Hydro is working on plans for new generation projects so Manitobans can continue to benefit from energy exports:

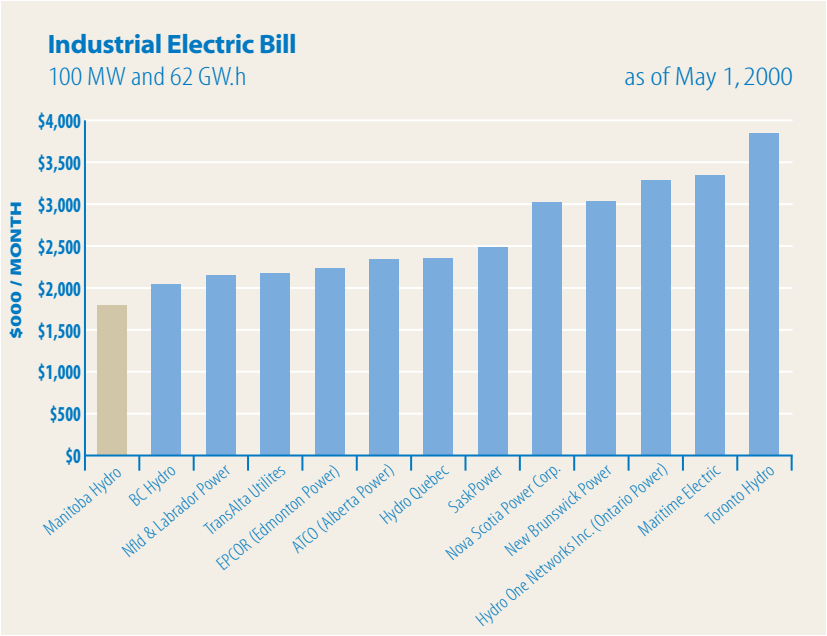
- In 2000, plans were announced for a new gas combustion turbine generating station in Brandon. The 260 megawatt project is scheduled to be in service in 2002.
- Plans have also been announced to convert the 139 megawatt Selkirk generating station from coal to gas and to keep it in operation for another 20 years.
- Negotiations are underway with neighbouring Cree Nations for three potential hydroelectric projects in northern Manitoba, the 100 megawatt Notigi Project, the 200 megawatt Wuskwatim Project, and the 620 megawatt Gull Project. The earliest any of these would be in service is 2009. (For more on these projects, please see Chapter 1.)





The Brandon combustion turbine will enable Manitoba Hydro to market another 260 megawatts of capacity as "firm" power. Export contracts for firm power are generally of longer duration and pay a higher price than short-term opportunity sales. Firm power is energy that Hydro guarantees it will deliver. Electricity generated from coal and gas at thermal generating stations is considered firm power, since there is certainty that it will be available when required; while based on the water flow record, about two-thirds of the capacity of our hydroelectric stations is considered to be completely reliable. The new Brandon gas combustion turbines will be able to "back stop" our hydroelectric system with another 260 megawatts of firm power. Normally we will be able to produce that energy from our hydroelectric stations, which are inexpensive to operate, but if necessary the Brandon plant will be able to burn gas to produce that same amount of electricity. If the gas combustion turbine is not required for firm power sales at any particular moment, it may be used to produce energy for the short-term opportunity market.

In addition to increasing the value of our export energy and generating power during periods of drought, the Brandon combustion turbine will increase the reliability of the electrical system in southern Manitoba. It will provide power when problems are encountered with other generation and transmission facilities, satisfy short-term peak demands for power, and provide greater flexibility in the operation of the entire system. We expect to operate it at about 10% of its full capability over its projected 40-year life.



Generation and Revenue Sales

The above figures represent only electrical values (not gas), and revenues have been restated from previous Sustainable Development Reports based on annual report figures which include items previously excluded, i.e. accounting adjustments, loss repayment, spinning revenues. (Note that MAPP transmission credits which increase extraprovincial revenues on the financial statements are approx $3-4 million annually and previously not included).

Top Left: The generators at Selkirk will be converted from coal to gas in 2002

Top Right: Construction of the natural gas transmission pipeline to Arborg, Teulon, Warren, and Riverton

It will be located adjacent to the existing 97 megawatt coal-fired generating station in Brandon. Construction is to begin in 2001 and the plant should be in service in 2002.

Before construction can begin, environmental approval will be required from provincial regulators. An environmental impact assessment was completed this year and a regulatory decision is expected in 2001. Based on studies to date Manitoba Hydro is anticipating a favourable outcome. (Note: At the time of writing this report, regulatory approval had been received and constructed started.) The gas-fired units, although more expensive to operate, provide significant environmental advantage over coal-fired units, and additional technology will control the two major air emissions, nitrogen oxides and carbon monoxide. A water injection system will reduce nitrogen oxides levels and a high-efficiency combustor will cut carbon monoxide, particulate material and volatile organic compounds. As well, gas combustion turbines produce far fewer greenhouse gases than would an equivalent-sized coal-fired station, and Manitoba Hydro is maintaining its commitment to keep average net greenhouse gas emissions 6% below 1990 levels over the period from 1991 to 2012. This commitment, which is stronger than Canada's targets in the Kyoto Accord on Climate Change, has been judged as the best among Canadian electrical utilities.

The Selkirk generating station is expected to convert from coal to gas in 2002. With its environmental licence expiring in 2005, the future of the plant had been under review. The decision (announced in January 2001) to convert to gas,

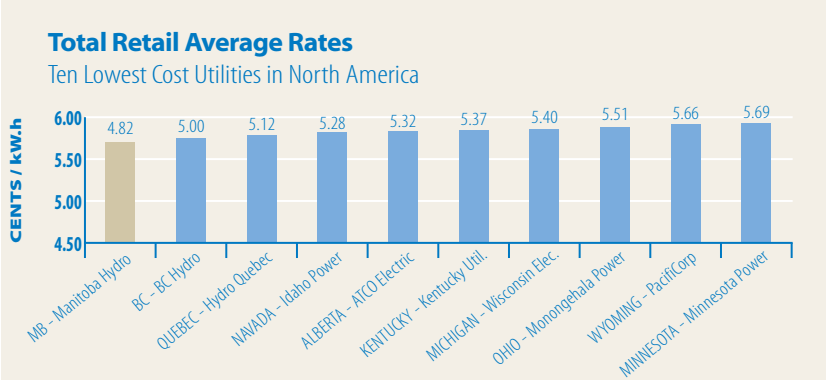
along with a second stage of environmental upgrades, should extend the useful life of the plant to about 2020. An environmental assessment and regulatory approvals will be required before the conversion and subsequent improvements can occur. (The 2001 Sustainable Development Report will contain more information on these plans.)

In 2000 the Selkirk station operations were reduced following expressions of concern by nearby residents about emissions. While environmental studies were initiated to investigate those concerns, Manitoba Hydro decided to operate the station only during periods when it was needed to support Manitoba's provincial electrical system. The plant's environmental licence was revised by government regulators with conditions generally consistent with the company's voluntary restrictions.

In early December the Selkirk station began operating on a minimum standby operation to ensure the security of Manitoba's electricity supply in the case of other unanticipated system disruptions. The standby operation mode was required when a North Dakota transmission line was damaged. Since we rely on our connections with other utilities to import as well as export energy, the loss of the line disrupted regional transmission security arrangements and resulted in the loss of our ability to import American power in the case of a Manitoba emergency.

A new 230 kV transmission line from Glenboro to Rugby, North Dakota, announced in 2000 will add to the interconnections with our American neighbours. Along with the addition of the Brandon gas turbine and the recently completed transmission line between the Dorsey Converter Station (near Winnipeg) and Brandon, the Glenboro-Rugby line will provide significant benefits for improving the reliability of Western Manitoba's electrical system.

Electrical transmission lines weren't the only lines receiving attention in 2000. A 200-kilometre natural gas transmission and distribution line was constructed to the communities of Arborg, Teulon, Warren and Riverton. With natural gas as part of the communities' basic infrastructure, there is greater potential to attract new business and industry and to enhance the competitiveness of existing businesses. Operating costs are also expected to decrease for public buildings such as schools and hospitals.



4.

Energy Management

Power Smart benefits all of our customers—residential, commercial, and industrial—by encouraging them to use energy more efficiently. Since 1991, Manitoba Hydro has offered Power Smart programs ranging from rebates on automatic timers that control block heaters, to incentives for converting street and farmyard lights to high efficiency sodium. To date, Power Smart programs have accumulated demand savings of 136 MW, and in 2000 alone, customers saved an estimated $17.4 million ontheir energy bills.

There are benefits that go beyond energy and financial savings. Home comfort is at the top of the list for residential customers, while commercial and industrial customers benefit from greater productivity, improved processes, and lower maintenance costs. The energy saved can be sold to export customers who otherwise would burn fossil fuels that contribute to climate change, and revenues from these sales reduce rates charged to our Manitoba customers.

Left: Milk production can be increased by 5-16 percent with improved Power Smart lighting

Dairy cows see the light

When Hydro's agricultural engineers learned that longer, stronger lighting in dairy barns could boost milk production by 5-16 per cent, they asked the Corporation to broaden the scope of its Commercial Lighting Program to make the benefits of the program accessible to more dairy operators .

The result was that several producers in the province have received incentives to upgrade the lighting in their dairy barns to T8 fluorescents, metal halide, and other types of energy efficient lighting.

Agricultural experts estimate that even a conservative increase of just over 6 per cent in milk production, from upgrading an inadequate lighting level to an adequate one, would improve annual income for Manitoba's dairy industry by more than $3 million a year.

A spin-off of improved lighting in dairy barns is a better working environment for staff.

Spin-offs of power quality studies

Sags, swells, harmonics, transients, and other power quality events can cause a range of problems in industrial settings, from reduced product quality and component failure to damaged equipment and plant shutdowns.

Manitoba Hydro's power quality experts excel in specialized monitoring techniques, analysis, and the determination of problem sources needed to optimize the performance of electrical systems for energy savings and reduced downtime.

Among other projects in 2000, Hydro's power quality staff conducted a survey at Inland Cement in Winnipeg. The survey concluded that a properly sized power factor correction system, positioned for optimum effect in relation to plant voltages, would reap annual savings of $14,500.

The final report included recommendations to ensure continued successful operation and optimum savings of the power factor correction system if variable frequency drives or other large nonlinear loads were added in the future.

Power quality services are part of our Performance Optimization Program, which provides industrial and commercial firms with technical and financial support toward the study and implementation of performance optimization projects that focus on eliminating waste and inefficiency.

Trouble free winter starts

Parking lot controllers are devices that sense outside temperatures and automatically adjust power at car plugs to ensure trouble-free starts while saving energy.

Manitoba Hydro offers incentives to commercial customers to install the controllers, an improvement over timer-only systems that cycle outlets "on" and "off" on a 10- or 15-minute cycle—regardless of outside temperatures.

The new controllers can easily cut energy bills in half and still supply more than enough power for trouble-free starts. In 2000, with the help of their parking lot controllers, commercial customers, from universities to apartment complexes, cut their electricity bills by an estimated $160,000, for energy savings of 5.2 million kilowatt-hours.

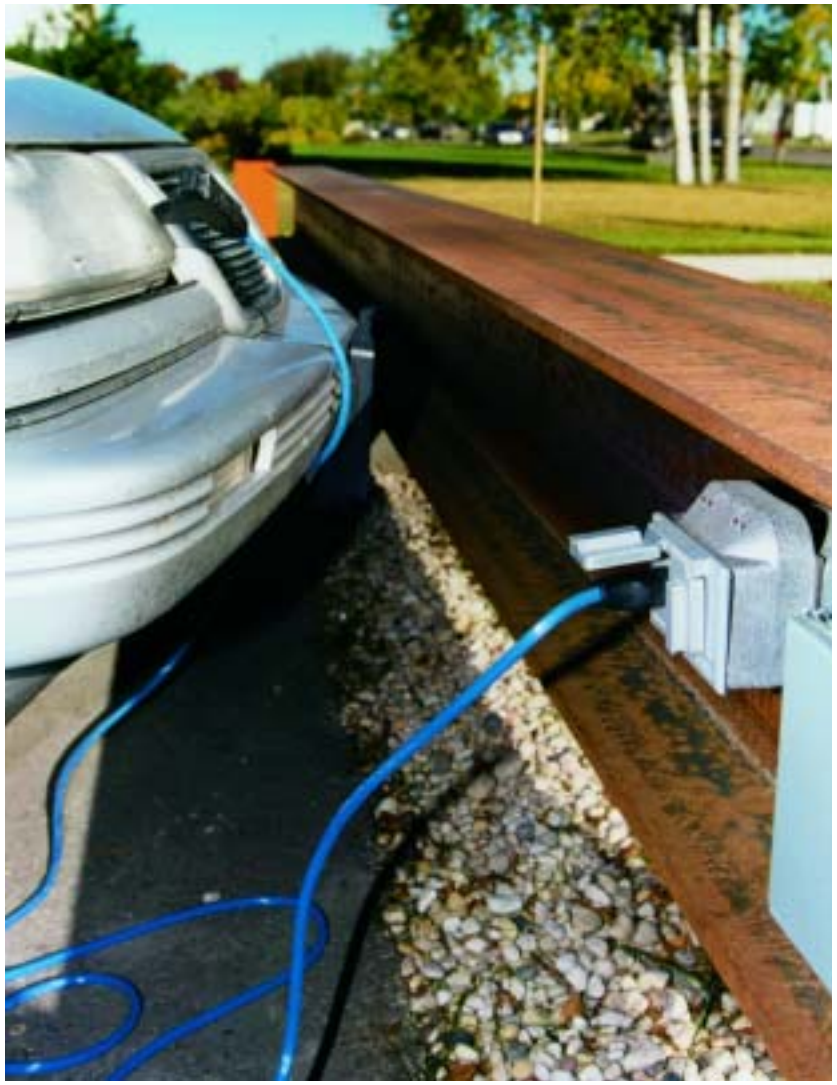
Making more nickel for less

In 2000, Inco Limited Manitoba Division, in Thompson, installed an energy management system that is set to save the company $1.5 million a year on its annual electricity bill of $30 million, or more than 2 million kilowatt-hours.

The system takes the electrical pulse of the operation, helping Inco make more nickel for less by identifying opportunities for reducing energy costs, improving power quality, and keeping production running smoothly.

Known as an energy management system, it is a specialized service now offered under our Industrial Retrofit Program.

The new system proved so successful that Inco added an upgrade to enable remote monitoring and control of the company's water treatment plant, for additional energy savings as well as improved monitoring and maintenance planning.



Parking lot controllers ensure trouble free starts while reducing energy use

Percent savings on energy bills for other customers in the commercial and industrial sector who install an energy management system are expected to be just as dramatic as Inco's.

Brandon brightens learning environment

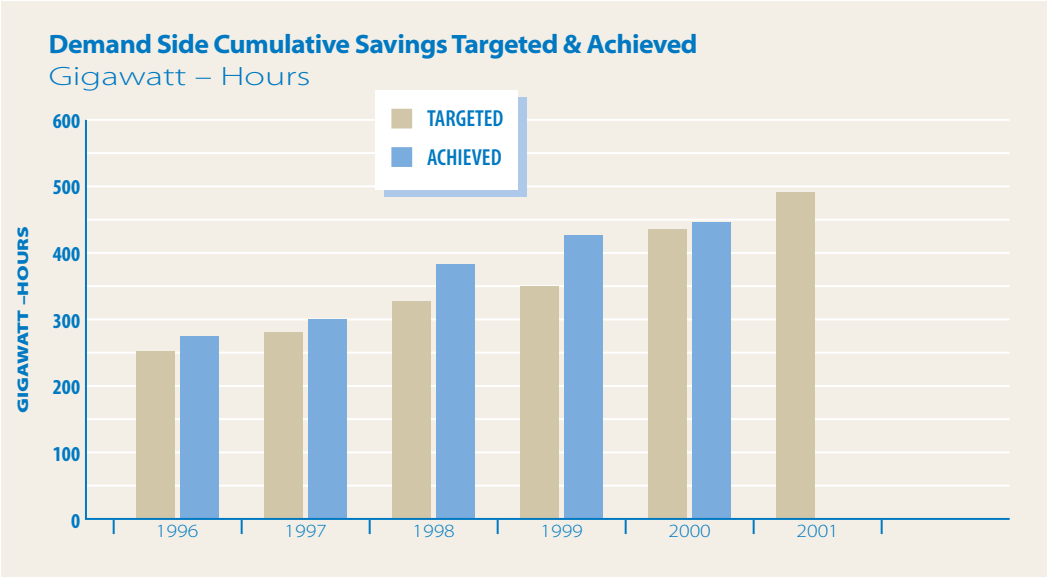
In April 2000, the Brandon School Division started retrofitting its schools with Power Smart lighting under a division-wide project designed to brighten outlooks and slash lighting bills.

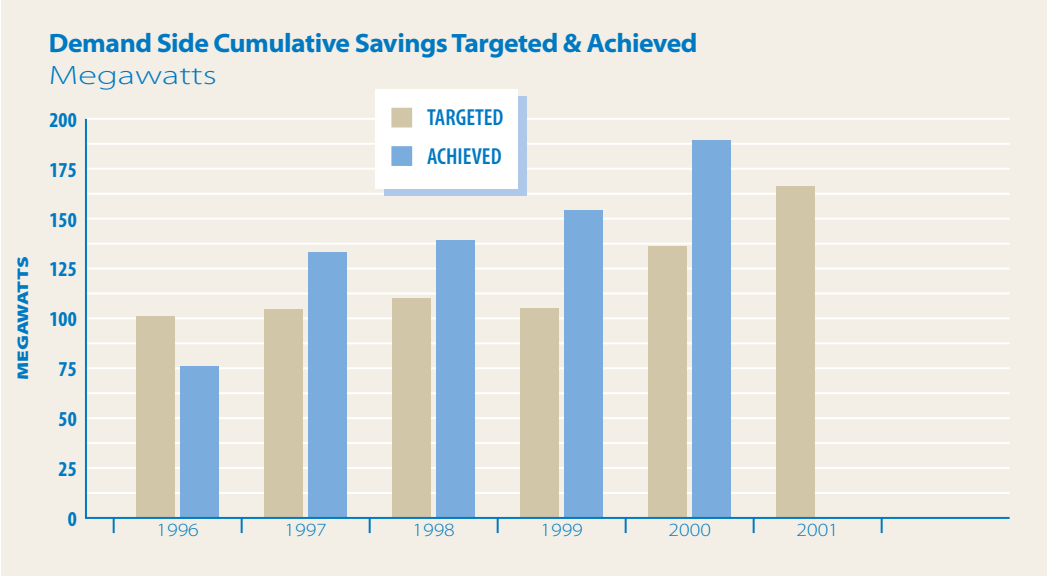
Old style suspended "egg crate" fluorescent fixtures and other old lighting systems were replaced with Power Smart fluorescents that make classrooms brighter and colours look more natural.

The project is one of many lighting retrofits completed under our Commercial Lighting Program which encourages customers to install cost-effective, energy efficient lighting systems.

During the last year, commercial customers who have taken advantage of the program have improved their outlook while saving an estimated $4.5 million on their lighting bills

Twenty of 23 schools in the division, plus the administration office and maintenance/transportation facility, will be retrofitted, involving nearly one million square feet of floor space.





The overall project will brighten the learning environment for more than 7500 students and 600 teachers. Staff and students at retrofitted schools report that they appreciate the lighting improvements.

The retrofit is expected to cost $1.25 million. Because of its efficiency, the new lighting will save $70 000 a year-enough to shave nearly 16 per cent off the division's annual electricity bill of $444 000. Savings will be applied to the cost of the project. The division is expected to save 2.8 million kilowatt-hours per year.

Prairie Forest Products saves with new VSD compressor

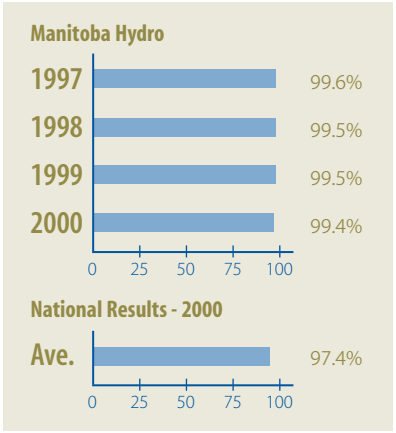
Prairie Forest Products in Neepawa, manufacturers of fence panels and treated wood products, recently replaced five small conventional air compressors with a larger single unit controlled by a built-in variable speed drive for extremely efficient control.

The VSD-controlled compressor, thought to be the first of its kind in the province, is complemented by additional refinements to the company's compressed air system, for energy savings of nearly $12 000 a year as well as reduced maintenance and downtime. Total electrical savings have been verified at 312,000 kilowatt-hours.

The company uses compressed air to drive nail guns, pneumatic cylinders and other air loads critical to production. Even with five compressors to do the job, the plant's compressed air system often suffered pressure drops that interfered with production, particularly serious during times when the operation needed to run seven days a week, 24 hours a day.

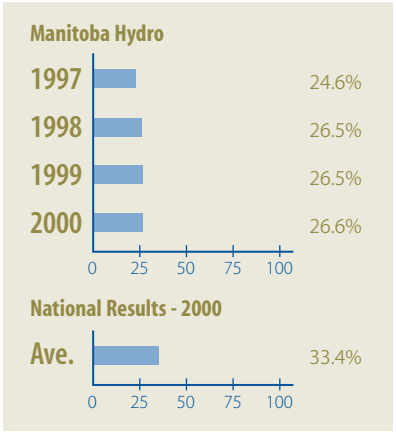
The variable speed drive on the compressor works much like the variable speed drive on a hand drill. It draws power in roughly direct proportion to the load, with energy consumption dropping to near zero at no-load. In

Internal Energy Efficiency for Generation



Generation efficiency measures the percentage of electricity that leaves the generating station after their internal needs have been met. Energy conversion efficiency of fossil generation measures how much of the energy created by burning fossil fuels is converted into electricity. Efficiency is increased when stations are operated continuously for base load and is decreased when generating stations are used on a stand by basis. For example, Manitoba Hydro relies on water flowing through its hydroelectric stations for its base load and burns coal at its two thermal generating stations to support our hydroelectric operations. Although this reduces operating efficiencies at the thermal stations, it results in overall benefits by reducing operating costs and air emissions.

Conversion Efficiency of Fossil Fuel Generation



contrast, conventional compressors are less efficient because at no-load they consume between 13 and 85 per cent of their full-load consumption, depending on the manufacturer and operating mode.

Power Smart helps clear the air at Loewen Windows

Workers at Loewen Windows in Steinbach will be able to breathe easier following a planned Power Smart upgrade of the plant's dust removal system.

The system was not expected to be able to keep up with dust from the manufacture of wood-frame windows and solid wood doors following a planned 40 per cent expansion of the plant, which supplies more than 6000 windows and doors every week for worldwide markets.

The upgrade saw replacement of eight 20-year-old fans with energy-efficient models, relocation of another two fans to better suck out dust, and replacement of two old roof-top baghouses with a new one. Baghouses collect dust in the equivalent of mammoth vacuum cleaner bags. Proper working of the baghouses is critical since the filtered air they release is ducted back into the plant to lower heating costs in winter.

The $325 000 upgrade will pay for itself in 8.8 years given demand savings of 164 kW a year, energy savings of 770 000 kWh a year, and a Power Smart incentive under Manitoba Hydro's Performance Optimization Program. The program provides commercial and industrial customers with financial and technical support to optimize the performance of fans, pumps, compressors, and other electric motor driven systems.

In addition to saving energy and protecting worker health, the upgrade will reduce maintenance and clean-up time, increase the life expectancy of equipment, and streamline production that might otherwise be slowed by build-ups of dust and chips.

Operations at Loewen Windows were enhanced with Power Smart programs in 2000

Partnership with Louisiana-Pacific pays off in energy savings

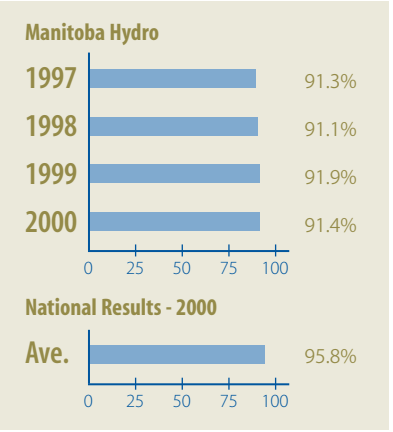
Since 1996, when Lousiana-Pacific began full-scale production at its oriented strand board plant in Minitonas, staff at the plant and Manitoba Hydro's energy experts have worked together in a partnership that lowers electricity bills and boosts productivity.

L-P's plant turns aspen and poplar into oriented strand board, a reconstituted structural panel used as sheathing material and a plywood substitute. It runs 24 hours a day, 7 days a week, in a production-driven process where downtime carries a penalty of up to $200 a minute. With the help of Manitoba Hydro, Louisiana-Pacific now saves more than $250 000 a year on its electricity bills as a result of demand savings of more than 2 MVA a month.

Savings have accrued from the introduction of energy efficient motors, switching of supply lines to eliminate problems with lighting strikes, and installing power factor correction equipment.

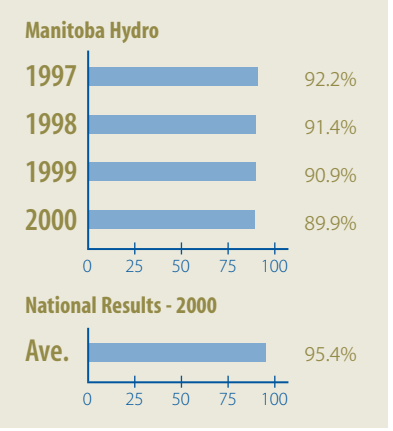
In 2000, Manitoba Hydro supervised the installation of an energy management system that gives operators the information they need to temporarily shed non-critical loads, for major savings on electricity bills. The new system also monitors fossil fuel use, comparing it with ambient temperatures and production levels to optimize consumption and help ensure that air emissions from the plant meet environmental regulations.

Internal Energy Efficiency for Transmission



Transmission and distribution efficiency measures how much power gets to customers after it leaves the generating stations. Energy is lost in the form of heat as the electricity moves along transmission and distribution system. Losses are in direct proportion to the length of the lines and in reverse proportion to the voltage of the line. Manitoba Hydro significantly improves the efficiency of its system by operating on direct current to transmit energy from its northern generating stations to its southern customers.

Internal Energy Efficiency for Distribution



Our Sustainable Development Principles

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.

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 nonrenewable 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, and customer satisfaction, and to be considerate of all people with whom we have contact.

Our Mission

To provide for the continuance of a supply of power adequate for the needs of the province, and to engage in and to promote economy and efficiency in the development, generation, transmission, distribution, supply, and end-use of power and, in addition:

A. to provide and market products, services, and expertise related to the development, generation, transmission, distribution, supply, and end-use of power, within and outside the province, and

B. to market and supply power to persons outside the province on terms and conditions acceptable to the board.

Manitoba Hydro's Goals

- Improve safety in the work environment
- Provide customers with:
  - lowest domestic electricity rates
  - high system reliability, and
  - exceptional value
- Maintain high profitability and reduce debt
- Expand share of export power market
- Have highly skilled effective innovative employees
- Be a leader in protecting the environment
- Be an outstanding corporate citizen
- Support industrial 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, focussed on the needs and wants of internal and external customers.

THE MANITOBA HYDRO-ELECTRIC BOARD

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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.

Production Notes:

Manitoba Hydro's Sustainable Development Report is printed on Domtar Sandpiper, an acid-free, chlorine-free, recycled paper with 100% post-consumer fiber.
The printing inks are vegetable oil based inks.

Please recycle where facilities exist.

Manitoba Hydro