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**CONSOLIDATED OPERATIONS**

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*CONSOLIDATED INTEGRATED FINANCIAL FORECAST (IFF03-1)*

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**KEY FINANCIAL RESULTS  
CONSOLIDATED OPERATIONS**  
(Dollars in Millions)

		IFF03-1 FORECAST		
	ACTUAL <u>2002/03</u>	<u>2003/04</u>	<u>2004/05</u>	<u>2005/06</u>
AVERAGE RATE INCREASE				
-ELECTRIC*	0	0	3.0%	2.5%
-GAS (non-commodity)**	0	0.4%	0	2.0%
NET INCOME	\$71	(359)	37	38
INTEREST COVERAGE	1.14	0.32	1.07	1.06
CAPITAL EXPENDITURES	\$484	\$502	\$605	\$645
CAPITAL COVERAGE RATIO	1.10	n/a	0.74	0.82
DEBT TO EQUITY RATIO	80:20	86:14	86:14	86:14

\* Large industrial electric customers have not had a rate increase since April 1992; Residential and small commercial electric customers have not had a rate increase since April 1997. The forecast integrates the revenue impact of the Public Utilities Board (PUB) ruling 154/03 issued October 31, 2003, which reduced rates to the large industrial and small commercial customer classes by 2% and 1% respectively effective April 1, 2003.

\*\* The percentage general rate increases projected for gas customers will change as adjustments are made to rates for the gas commodity.

## 1.0 OVERVIEW

### 1.1 INTRODUCTION

The Consolidated Integrated Financial Forecast (IFF03-1) projects Manitoba Hydro's aggregated financial results over the period 2003/04 to 2013/14. This report also includes the segmented forecasts prepared for the electricity and natural gas operations. Former Winnipeg Hydro functions are now integrated into MH's operations and reflected in the electricity forecast.

### 1.2 HIGHLIGHTS

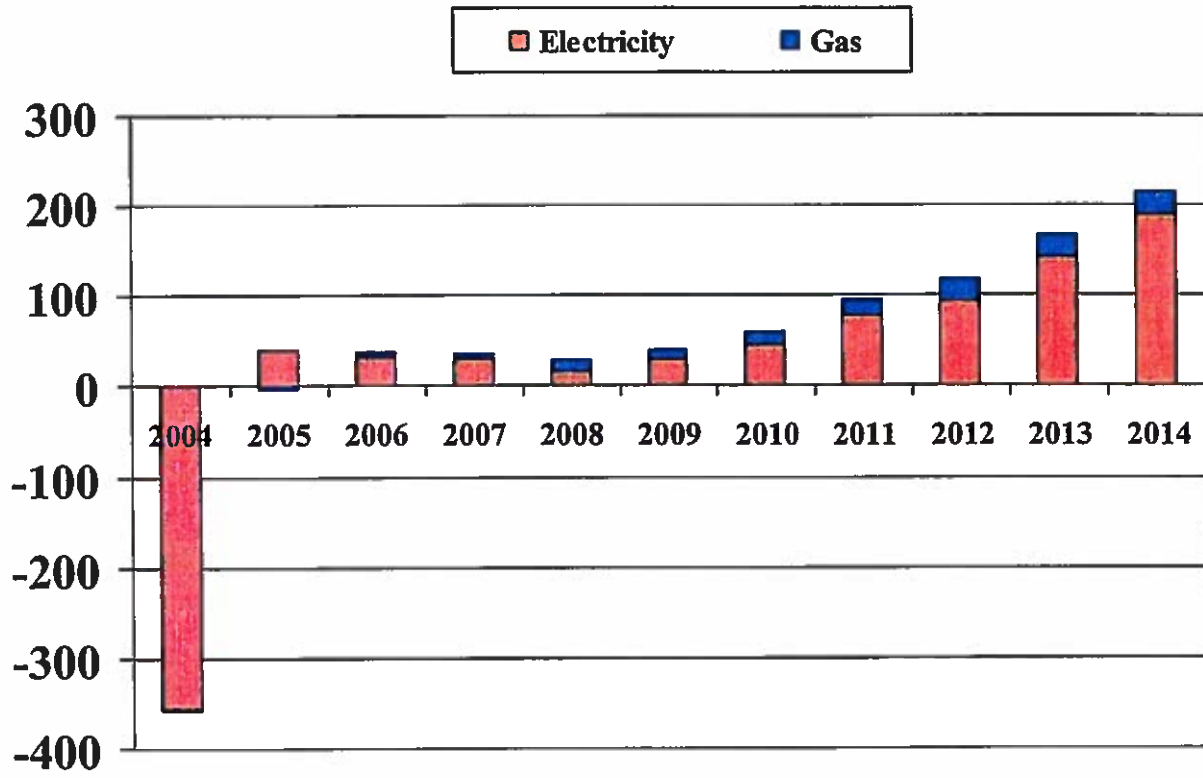
- **Electricity rates:** An average 3% rate increase is proposed for electricity customers for 2004/05, and an average 2.5% increase for 2005/06, recognizing the need to cover some of the growth in the Corporation's costs since the last general rate increase in 1997, and the impact of Public Utilities Board (PUB) Order 154/03. Last year's forecast, IFF02-1, had assumed rate increases of 2% in each of these two years. For the remainder of IFF03-1, rate increases are assumed to remain modest at 2.5% per year.
- **Gas rates:** For 2003/04 a 0.4% general (ie. non-commodity) rate increase for gas operations was approved by the PUB in Order 118/03. For purposes of the forecast, it is assumed that there will be a general rate increase of 2.0% in 2005/06, and a further 1% general rate increase in 2007/08 and again in 2009/10. This rate scenario would enable the recovery of related costs, the build up of a reasonable level of retained earnings, and the attainment of healthy interest and capital coverage ratios.
- **Consolidated net income** is negative in 2003/04 for the first time since 1993, with current drought conditions projected to result in a \$359 million loss. Over the period 2003/04 to 2012/13, net income is \$791 million (74%) less than the previous forecast, IFF02-1, with \$473 million of the decline occurring within the first 3 years. The reduction is primarily due to significantly lower net export revenue until new generation comes into service in 2010.

CONSOLIDATED INTEGRATED FINANCIAL FORECAST (IFF03-1)

- **New Generation.** The Wuskwatim generating station is assumed to begin operations in 2010, subject to regulatory approval in 2004. It is projected that the Nisichawayasihk Cree Nation (NCN) will have a 33% partnership interest in the generating station, and that Manitoba Hydro, in addition to owning a 67% partnership interest, will construct, operate and maintain the project. IFF03-1 also includes, for the first time, the addition of 250 MW of wind power to new electricity supply.
- **The proposed Capital Expenditure Forecast, CEF03-1,** totalling \$6.1 billion for the forecast period, is \$1.56 billion or 38% higher than the previous year's CEF02-1 (for the 2003/04 to 2012/13 period). Capital expenditures related to the advanced Wuskwatim project, wind power, and power planning studies for the future potential Keeyask (Gull) and Conawapa generating stations comprise \$1.3 billion of the increase. The balance reflects the addition of thirteen other new projects, including needed upgrades, and estimate revisions to existing initiatives.
- **Financial targets:** Manitoba Hydro's approved financial targets are:
  - Debt:Equity ratio of 75:25 by 2011/12
  - Minimum interest coverage ratio of 1.10 — *change*
  - Capital coverage ratio of 1 (capital construction expenditures, except for major new generation and transmission, to be financed by internally generated funds)

Due to the drought conditions which have affected hydraulic generation since 2002, MH's progress towards its financial targets has been severely impeded. Between 2004/05 and 2009/10, interest coverage ranges from 1.05 to 1.09, while the debt ratio, having risen to 86% in 2003/04 as a result of the drought, recovers to 81% by 2013/14. Capital coverage, excluding capital expenditures relating to major generation and related transmission remains below 1.0 until 2010.

## COMPOSITION OF NET INCOME



## **2.0 ACQUISITIONS AND SUBSIDIARIES**

### **2.1 WINNIPEG HYDRO**

Since the acquisition of Winnipeg Hydro on September 3, 2002, the operations of the former City-owned utility have been merged into those of Manitoba Hydro's electric utility operations, increasing total electricity customers to about 500,000. Forecast electricity production from Winnipeg Hydro's two generating stations at Pointe du Bois and Slave Falls is being factored into overall resource planning and capital expenditure decisions for the combined utility.

Payment to the City of Winnipeg for the 2002 purchase is through a series of annual instalments of \$25 million for 5 years, \$20 million for 4 years and then \$16 million in perpetuity.

### **2.2 CENTRA GAS**

In the four years since the acquisition of Centra Gas in 1999, the departments and divisions of the two utilities have been combined, wherever beneficial to do so. This integration of functions was carried out in order to realize synergy savings and to serve customers as a one-stop energy company.

### **2.3 OTHER SUBSIDIARIES**

Manitoba Hydro's other subsidiaries are small in size and are primarily engaged in research or marketing activities. The net revenues of those related to electricity operations are included in the category of "other revenue".

## 3.0 ASSUMPTIONS

### 3.1 ECONOMIC VARIABLES

Projected rates for key economic indicators are listed below with the previous economic outlook forecast in brackets. These and other economic variables are forecast on an integrated basis, and are utilized consistently across the Corporation in project evaluations, planning and forecasting.

	Manitoba Consumer Price Index (CPI)	M.H. New Long Term Debt Rate*	\$U.S./\$Cdn Exchange Rate
2003/04	2.2% (2.0%)	6.75% (7.30%)	1.41 (1.54)
2004/05	2.0% (2.0%)	7.00% (7.45%)	1.38 (1.50)
2005/06	2.0% (2.0%)	7.35% (7.45%)	1.38 (1.48)
2006/07	2.0% (2.0%)	7.35% (7.45%)	1.37 (1.46)

\*including 0.95% provincial guarantee fee + borrowing spread

Short term interest rates are substantially below long-term rates for the first two years of the forecast. The Canadian short-term interest rate, inclusive of guarantee fee, is forecast to average 4.05% in 2003/04 and 4.45% in 2004/05, rising to 5.20% thereafter. U.S. short-term interest rates are even lower, currently at 1.95% for 2003/04, 3.45% in 2004/05 and 5% in subsequent years. The floating rate portion of Manitoba Hydro's total debt is projected to be about 21% by March 31, 2004, well within target guidelines for floating rate debt.

The U.S. exchange rate forecast utilized in IFF03-1 is based on projections available in late summer, and indicates a significant improvement in the Canadian dollar for the first few years of the forecast relative to IFF02-1. By the end of the forecast period, 2013/14, the exchange rate is projected to level out at 1.35, similar to IFF02-1. The near-term appreciation in the Canadian dollar is due in large part to the widening of the Canadian-U.S. short term interest rate differential, and to the U.S. dollar's decline relative



to other major currencies as a result of the U.S.'s growing fiscal and trade deficits.

The projected U.S. dollar exchange rate is used in all economic analyses where electricity imports and/or exports are being affected. In the financial projections the U.S. dollar exchange rate used to translate certain export revenues may differ from market rates due to hedging undertaken through the Corporation's Exposure Management Program.

### **3.2 U.S. EXCHANGE EXPOSURE MANAGEMENT**

Manitoba Hydro's Exposure Management Program effectively hedges U.S. cashflows related to export sales, imported power and thermal fuel purchases, with cashflows related to U.S. debt and investments. The forecast assumes that a conservative estimate of projected US export revenues in combination with US sinking fund income and withdrawals will fully provide for the maturities of US-denominated debt issues. US cash flows hedged in this manner are translated, for accounting purposes, at the historical book value exchange rates of the US debt. Remaining US dollar inflows and outflows are valued at the market exchange rate prevailing as of the date of the individual transactions. The exchange rate prevailing at year end is used for the balance sheet presentation of US dollar denominated debt and investment instruments.

### **3.3 ELECTRICITY DEMAND AND SUPPLY**

#### **3.3.1 Manitoba Load Forecast**

The System Load Forecast projects energy and capacity requirements for electricity in Manitoba (including former Winnipeg Hydro load) over the next twenty years. The ten-year weather-adjusted forecast is for 1.3% average annual growth in firm energy, unchanged from IFF02-1. Projected growth in peak load requirements is 0.8% per year, also unchanged from the previous forecast. By 2013/14, firm energy is up 712 GWh from IFF02-1, while firm peak is 126 MW higher than in last year's forecast. These higher numbers are achieved in spite of the unchanged overall growth forecast due to the increased load experienced in 2003

forming a higher base. Higher than expected growth in the Manitoba Residential Standard, General Service Mass market, Potential Large Industrial Load and Winnipeg Residential categories was responsible for this 2003 result. Notably, residential average use per customer was up 400 kW.h., further amplifying the impact of a growth of 1611 customers in the Residential Standard category. Much of the growth in average residential load is attributed to the increased proliferation and use of personal computers in the home. Continued year-over-year growth is projected in the chemical, oil/petroleum and food/beverage sectors where the low price of electricity and relatively stable Manitoba economy are the greatest drivers for increased consumption.

Electricity is expected to be the energy option of choice in areas where natural gas is not available and to compete with gas for heating of apartment blocks where the ease of individual metering is a benefit to the property owner. Much of the electric space heating load growth is expected in First Nations communities that are no longer on diesel service.

### **3.3.2 Extraprovincial Sales and Production Costs**

Extraprovincial revenues and associated costs are dramatically affected in the early years of the forecast by the drought which has reduced hydraulic generation. Until the rains of September, 2003, there was below-normal precipitation in the Nelson-Churchill drainage basin for most of the months since mid-2002. The forecast assumes a return to normal precipitation in 2004/05, but with reduced reservoir levels.

The Northern States Power 500 MW Extension System Participation firm sale from 2005 to 2015 was approved by both the National Energy Board and the Minnesota Public Utilities Commission (subject to resolution of an outstanding appeal). This sale agreement will result in an energy flow of 2.1 billion MWh per year and is anticipated to produce \$1.5 billion in revenue over the life of the contract.

The drought has led not only to a decline in opportunity export sales but also to a large increase in the use of imported power and thermal generation. Higher costs for fuel and power purchases constitute \$377 million of the \$503 million decline in net export revenue which is projected to occur in 2003/04 relative to IFF02-1.

*CONSOLIDATED INTEGRATED FINANCIAL FORECAST (IFF03-1)*

Over the period to 2012/13, total forecast export revenues are down \$119 million from IFF02-1, while fuel and power purchases are \$567 million higher. The latter also includes the new purchase of wind power which was negotiated in 2003.

Other factors affecting the change in extraprovincial revenues, net of production costs include:

Factors which increase net extraprovincial revenue:

- Increased export volume due to new supply from wind, Kelsey rerunning and the advanced in-service of the Wuskwatim generating station.
- The addition of environmental premiums to export prices

Factors which decrease net extraprovincial revenue:

- Higher Manitoba load reducing energy available for export;
- Higher cost of imports and thermal energy due to environmental premiums
- Lower U.S. exchange rate (offset to a large degree by hedged debt costs.)

### **3.3.3. Demand Side Management**

Demand Side Management (DSM) is an alternative means of meeting customer energy needs to that of building new sources of supply. Options such as commercial lighting and residential retrofit programs provide cost-effective methods to reduce power supply requirements and minimise the total cost of energy service to customers. The current DSM strategy remains similar to the previous year, and is designed to capture all economic opportunities available to the Corporation to achieve energy savings. The target for electricity operations is the achievement of completed and planned reductions in capacity and energy consumption, respectively, of 356 MW and 1,272 GWh by 2011/12.

### 3.3.4. Electricity Supply

Manitoba Hydro currently has fourteen hydraulic generating stations (including Pointe du Bois & Slave Falls, previously owned by Winnipeg Hydro), thermal generating plants at Selkirk and Brandon, and three HVDC converter stations, collectively capable of delivering over 5,400 MW of electricity. Electrical power is transmitted across Manitoba and to provincial borders via an extensive network of some 18,500 km of transmission lines.

For purposes of this forecast, the following plan is assumed with regard to the maintenance, enhancement or retirement of major sources of generation and HVDC transmission:

#### IFF03-1 Power Resource Plan

<b>Supply-Side Enhancement:</b>		
Kelsey Rerunning	75 MW/ 0 GWh	2011/12
HVdc Bipole III Line	86 MW/437 GWh	2010/11
Pointe du Bois License Review	77 MW/320 GWh	2011/12
Selkirk #1-2 License Review	132 MW/1030 GWh	2005/06-2019/20
Brandon #5 License Review	105 MW/800 GWh	2006/07-2018/19
<b>Demand-Side Management</b>		
	356 MW/1272 GWh	2011/12
<b>New Generation:</b>		
Wind Generation (first power)	250 MW	2005/06
Wuskwatim (first power)	200 MW	2010/11
Keeyask (Gull) (first power)	620 MW	2022/23

Manitoba Hydro is actively investigating the feasibility of also advancing the Keeyask (Gull) and/or Conawapa generating stations to take advantage of export market opportunities. The analysis includes consideration of economic, financial, environmental and socio-economic costs and benefits. The Corporation is working closely with Tataskweyak Cree Nation (TCN) and other aboriginal communities in the resource area with regard to their potential participation in the Keeyask (Gull) project.

### 3.3.5 Wuskwatim Partnership

Manitoba Hydro is currently undergoing the "Need for and Alternative to" and environmental impact review with the Manitoba Clean Environment Commission (CEC) for the proposed Wuskwatim project. The forecast assumes that the licensing decisions and appropriate Corporate and governmental approvals have been issued by July, 2004. Manitoba Hydro has reached a sufficient understanding with the Nisichawayasihk Cree Nation (NCN) to proceed with Wuskwatim development and is progressing towards closing the final agreement which would see Manitoba Hydro and NCN as joint owners of the Wuskwatim G.S. IFF03-1 assumes that NCN will acquire a 33% partnership interest in the Wuskwatim generating station. Manitoba Hydro will purchase the output from the partnership, and will construct, maintain and operate Wuskwatim at cost. Manitoba Hydro's projected financial statements consolidate the partnership results, utilizing the non-controlling interest method of accounting for purposes of recording NCN's share of net income.

## 3.4 NATURAL GAS DEMAND AND SUPPLY

### 3.4.1 Manitoba Demand for Natural Gas

The Corporation sells primary gas to Manitobans in a competitive market which also includes a small number of brokers and marketers, and is the gas distribution utility for everyone in Manitoba except for a small number of communities. Currently approximately 86% of customers representing 68% of volumes purchase their primary gas requirements from Centra. The Corporation's annual customer growth for natural gas throughout the forecast is estimated at approximately 1,350 customers per year, compared to last year's forecast of 2,350 customers annually. The lower growth rate results from a slow down in the number of rural residential expansion sign ups, reflective of demographic changes in rural Manitoba, and a reduction to the growth rate for Commercial SGS customers based on actual trends experienced since 2000. Across most sectors, growth in the number of customers is somewhat offset by a decline in average use due to improving end-use efficiencies.

No specific commitments for significant rural expansion projects are assumed in the forecast. Rural expansion opportunities continue to be reviewed on an individual project basis and until such time that a project has reached the stage where it is likely to proceed, it remains excluded from the forecast.

The forecast incorporates the transportation and supplementary gas requirements, not only for Centra's customers but also for those consumers who purchase their primary gas from brokers and marketers. Total deliveries include the occasional requirements of Manitoba Hydro's two gas fired combustion turbines in Brandon totalling 225MW of generating capacity, and the 132MW Selkirk generating station.

### **3.4.2 Natural Gas Supply**

As no gas is produced in Manitoba, all of the gas delivered by Centra must be purchased elsewhere, with contracts from Western Canada at the Alberta border comprising the majority of total gas supplies. Centra sells the gas commodity without markup and uses a rate management methodology to mitigate the impact on customers of fluctuations in the market price of gas. The forecast for purchased gas prices used in IFF03-1 is based on the August 1, 2003 forward strip. The stabilizing impact of derivatives in place for the next twelve months is also reflected in the forecast.

### **3.5 COST OF OPERATIONS FORECAST**

The operating forecast includes the necessary expenditures to provide quality customer service and for the safe and reliable operation and maintenance of the generation, transmission and gas and electric distribution systems.

The method utilized for the allocation of costs to electricity or gas is based on full absorption accounting. Operational work is charged out on the basis of time spent on gas or electricity functions, using hourly rates which recover direct costs and corporate overhead. Costs for work performed on capital projects are identified and calculated in the same manner. Interest and depreciation costs associated with shared assets are allocated proportionately to the gas and electric operations to avoid cross-subsidization.

### **3.6 CAPITAL EXPENDITURE FORECAST**

This capital forecast represents an updating of the programs and projects previously approved in last year's Capital Expenditure Forecast, CEF02-1, supplemented by the addition of sixteen new projects and estimate revisions/refinements to the balance of the existing initiatives.

The proposed Capital Expenditure Forecast CEF03-1 for the forecast period to 2013/14 is a total of \$6.1 billion. Over the first 10 years of the forecast, this is \$1.56 billion higher than in CEF02-1. Capital expenditures related to the construction of the Wuskwatim Generating Station and Wind Generation comprise \$899 and \$103 million respectively of the increase, with the balance of increase due to new/revised projects.

A significant portion of the near term capital focus is directed towards: the commencement of the Wuskwatim Generating Station and Wind Generation projects; continued activities related to generation planning and licensing studies to protect the ability to proceed expeditiously on future plant; completion of the Interlake & Nelson River Fibre Optic Communication System accompanied by the replacement of several microwave communication systems in southern and central Manitoba to ensure reliable service and accessibility for the present and foreseeable future; completion

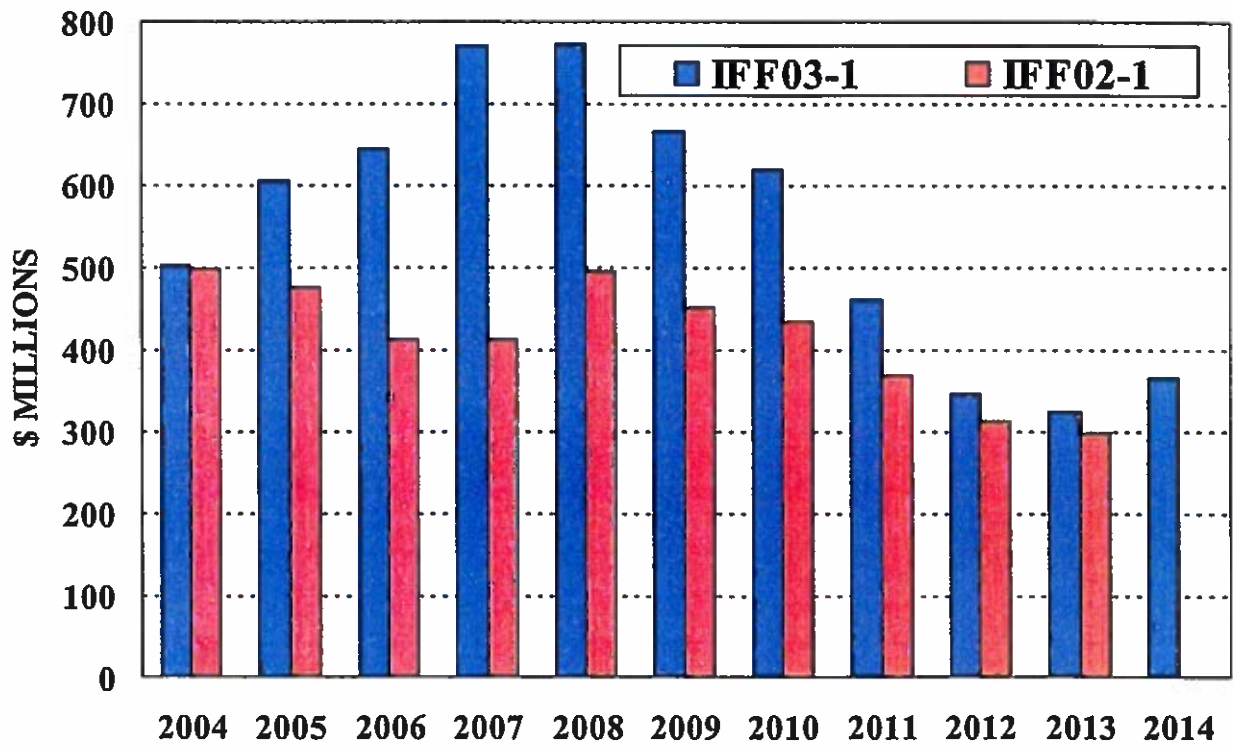
of the Bipole 1 Mercury Arc Valve change-out to new thyristor valves for improved reliability; renewal of Selkirk's operating license post fuel switching; development of a new Head Office facility and initial stages of the Kelsey Station Re-Runnering Project which will provide additional generating capacity and increase efficiency.

The sixteen new projects are: Wuskwatim Generation to take advantage of export opportunities; Wind Generation as a means of implementing cost-effective new generation; Conawapa Licensing to take advantage of potential export opportunities to Ontario; HVdc Transformer Replacement Program to replace five converter transformers at Dorsey, Radisson and Heday; HVdc AC Filter PCB Capacitor Replacement to replace 10827 PCB-contaminated capacitors at all three converter stations; Dorsey 230 kV Relay Building Upgrade to harden and protect the building; Dorsey EE Sync Condenser Glycol Cooler Upgrade to replace coolers and fans on six synch condensers; Brandon Unit 5 rehabilitation to ensure unit capability; Selkirk G.S. rehabilitation to ensure unit 1 and 2 capability; New High Voltage Laboratory to meet industry standards and; FP&P Halon Systems Phase-Out Program to eliminate all Halon fire protection systems; Rover Substation Replace 4kV Switchgear to reduce fault levels to safe limits; Portage South 230-66kV Transformer Addition to provide station firm capacity; Harrow Station Bank 3 Installation to improve feeder capacity in SW Winnipeg; Stony Mountain New Station to replace the existing Stony Mountain and Rockwood Stations; and lastly Integration of System Control Centres to transfer grid control of former Winnipeg Hydro stations to the System Control Centre (SCC).

The existing initiatives requiring estimate revisions reflect revised scope, tendered pricing, or work re-scheduling. Significant changes include: increased trenching, rock cutting and added logistics for the installation of the fibre optic cable for the Interlake & Nelson River Communication project; additional work activity on licensing and negotiations with respect to Gull Generation; expanded project scope for Kelsey GS Re-Runnering to provide higher output / efficiency; increased costs for the Herblet – The Pas Transmission project which has been advanced to accommodate a Wuskwatim 2010 ISD.



**PROJECTED CAPITAL EXPENDITURES**  
**Consolidated Operations**



# CONSOLIDATED CAPITAL EXPENDITURE FORECAST (CEF03-1)

(IN MILLIONS OF DOLLARS)

FOR THE YEARS 2003/04 TO 2013/14

PROJECT	11 Year											Total	
	TOTAL	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013		2014
<b>ELECTRIC</b>													
NEW GENERATION & TRANSMISSION													
NEW GENERATION													
Brandon Combustion Turbine	187	-2											-2
Wuskwalim Generation	992	36	51	102	169	187	190	155	46	-2			934
Gull Generating Station Licensing	236	31	32	41	53								157
Wind Generation	104	1	2	10	50	40							103
Conawapa Studies & Licensing	192	8	26	45	55	42							176
TRANSMISSION FOR GENERATION													
Bipole 3 Converter Station Licensing													
Henday-Riel /-500Kv Line	361	2	14	14	14	79	79	99	57				358
Riel 230/500Kv Station	96		7	12	24	30	21						94
Northern Ac Transmission System Requirements	30	11	17										28
NEW GENERATION / MAJOR TRANS. TOTAL		66	148	225	366	378	290	254	103	-2			1,848
POWER SUPPLY													
HVDC FACILITIES													
HVdc Bipole Reliability Enhancements	58												62
Bipole 1 Thyristor Valve Upgrade Project	69	40	22										2
Converter Transformer Bushing Replacement	5	1	1										
Dorsey Bipole 1 Sync Condenser Breaker Replmt	7												1
Bipole 1 Dc Filter Capacitor Replacement	4	1											
Bipole 1 Valve Hall Wall Bushing Replacement	11												2
Bipole 1&2 Electrode Line Monitoring	2			1	1								2
HVdc Switchgear Upgrade	2	2											
HVdc Auxiliary Power Supply	2												8
Dorsey Synchronous Condenser Refurbishment	8		2	2	2	1	1						6
Bipole 1 Chiller Replacement	6	4	1	1									3
Dorsey ASEA Sync Condenser Cooler Upgrade	3		1	1	1								8
HVdc Syst Transformer And Reactor FP&P	8	2	3	3									3
HVdc Bipole 1 Roof Replacement	3	1	1	1									23
HVdc Transformer Replacement Program	24	8	10	5									43
HVdc Ac Filter PCB Capacitor Replacement	44		7	12	14	10							6
Dorsey 230 Kv Relay Building Upgrade	6		3	3									3
Dorsey EE Sync Condenser Glycol Cooler Upgrade	4		1	1	1								
HYDRAULIC REHABILITATION													
Great Falls G.S. Rehabilitation	28	6	3	2									11
Pine Falls G.S. Rehabilitation	22	1	1	2	8	7							19
Laurie River Plant 1 And 2 Rehabilitation	4			1					1	1	1		4
Grand Rapids G.S. Rehabilitation	74	7	2										9
Jenpeg G.S. Unit Overhauls (Units 1 - 6)	34			4		4		4		5		5	22
Power Supply Dam Safety Upgrades	11	2	2	2	2	2							10
Winnipeg River Control System	13	1	1	1									3
Winnipeg River Riverbank Protection Program	8	1	1	1	1								4
Kettle G.S. Improvements & Upgrades	66		1							7	6	4	18
Kelsey G.S. Improvements & Upgrades	121	5	10	16	16	16	15	17	16	8			119
Power Supply Hydraulic Controls	6	1	1	2	2	1							7
Jenpeg Staff house Sewage Treatment	2	2											2
Jenpeg G.S. Kiskitto Control Structure Dyke Repair	4	2											2
Point Du Bois Gs Improvements & Upgrades	422		2	6	41	53	55	29	29	29	30	30	304

# CONSOLIDATED CAPITAL EXPENDITURE FORECAST (CEF03-1)

(IN MILLIONS OF DOLLARS)

FOR THE YEARS 2003/04 TO 2013/14

PROJECT												11 Year	
	TOTAL	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
<b>THERMAL REHABILITATION</b>													
Brandon G.S. Unit 5 License Review	10		1	8									9
Selkirk G.S. Fuel Switching Project	29	-2	3										1
Selkirk G.S. License Review	34	1	30	3									34
Brandon Unit 5 Rehabilitation	2	1	1										2
Selkirk G.S. Rehabilitation	5		3	2									5
<b>OTHER</b>													
200Mw Ontario Hydro Sale - Sync Cond Conversion	9	3	1										4
Site Remediation Of Contaminated Corp. Facilities	16	2	2	2	2	1	1	1	1				12
Oil Containment	8	3	2	1									6
Fire Protection Projects	2	2											2
Generation Town site Infrastructure	17			2	1								3
New High Voltage Laboratory	3			2									2
FP&P Halon Systems Phase-Out Program	47				11	11	12	7	6				47
Planning Study Costs		5	3	1	1	1	1	1	1	2	23	38	77
Domestic Item - PS Electric		17	18	18	18	18	19	19	20	20	20	20	207
<b>POWER SUPPLY TOTAL</b>		124	138	106	122	127	104	78	74	72	81	98	1,124
<b>TRANSMISSION &amp; DISTRIBUTION</b>													
<b>RECONNECTIONS</b>													
Glenboro-Rugby 230Kv T/L	31	1											1
<b>TRANSMISSION</b>													
Herblet Lake - The Pas Rails Island 230Kv Trans. Winnipeg To Brandon Trans. System Improvements	57			1	5	15	18	17	1				57
Ridgeway 230-66Kv Transformer Addition	9					1	4	3					8
Dorsey-Rosser 230Kv Transmision Improvement	2												14
Dorsey - Laverendrye - St. Vital 230Kv Trans.	28										6	8	24
Rosser-Silver 230Kv Transmission	30	2	8	14									20
Neepawa 230-66Kv Transmission Improvements	21							1	9	10			3
Rosser - McPhillips 115Kv Trans. Improvements	3	3											6
Richer South 230-66Kv Transformer Addition	5		1	1	2	2							8
Pine Falls - Bloodvein 115Kv Transmision	32						1	3	7	17	4		32
St. Vital - Steinbach 230Kv Transmission	25			1	1	1	4	5	14				28
Ridgeway-Selkirk 230Kv Transmission	27		1	3	4	4	5	10					27
Souris - Pembina Valley 230Kv Transmission	34				1	1	2	2	12	17			35
Winnipeg Area Transmission Refurbishment	8	1	1										2
Dorsey-US Border D602F 500Kv AC T/L Insul. Repl.	7												7
Dorsey 230Kv Bus Enhancements	18	5	2										12
Flin Flon Area Transmission Improvements Phs. 2	13	2	8	2									10
Pine Falls-Great Falls 115-66Kv Supply	10	6							2	2			10
<b>SUBTRANSMISSION</b>													
Rutan-South Indian Lake 66Kv Line	14	3	1										4
Central Supply Pikwitonei & Thicket Portage	5												5
Birdie South-Rosburn 66Kv Line	5												5
St. Boniface-Plessis Rd 115-25Kv Station	18												18
St. Boniface-Plessis Rd Bk2 Addition	2												2
Rosser - Oak Point 115-24Kv Station	22						2	2	13	5			22
Rosser - Oak Point 115-24Kv Station Bank Addn.	10							1	6	3			10
Brandon Crocus Plains - Bank Addition	9				1	5	3						9

# CONSOLIDATED CAPITAL EXPENDITURE FORECAST (CEF03-1)

(IN MILLIONS OF DOLLARS)

FOR THE YEARS 2003/04 TO 2013/14

PROJECT	11 Year											Total	
	TOTAL	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013		2014
Ft Garry Perimeter Stn 66-12Kv Bank Repl	5				1	3	1						5
Rover Sub Station Replace 4Kv Switchgear	6		4	1									5
Portage South 230-66Kv Transformer Addition	8		5	2									7
<b>DISTRIBUTION</b>													
Virden Area Distribution Changes	17	1	1	2									4
Defective Rinj Cable Replacement	9	1	1	1	2								5
Brereton Lake Station Area	9	5	1	1	1								8
Shamattawa New Diesel Gs & Tank Farm	16	2		2	1								5
Harrow Station Bank 3 Installation	3		2	1									3
Stony Mountain New Station	3			1		1							2
<b>COMMUNICATIONS</b>													
Communications	158	40	16	24	23	10	1						114
<b>OTHER</b>													
MapInfo Implementation	31	1											1
Integration Of System Control Centres	4	1	2	1									4
Site Remediation	11	1	3	1									5
Oil Containment	8	1	1	1	1	1	1						6
Domestic Item - T&D Electric		72	81	83	85	87	89	91	93	94	94	98	867
<b>TRANSMISSION &amp; DISTRIBUTION TOTAL</b>		147	142	142	127	133	135	153	149	143	108	127	1,506
<b>CUSTOMER SERVICE &amp; MARKETING</b>													
Demand Side Management		15	22	19	17	14	13	12	12	8	7	8	147
Automatic Meter Reading	31		3	3	3	3	3	3	3	3	3	3	30
Distribution PCB Testing & Transformer Repl.	18	4	4	4	3								15
Winnipeg Distribution Infrastructure Requirements	7	2	2	2									6
Domestic Item - CS&M Electric		55	56	57	59	60	61	63	64	65	65	67	672
<b>CUSTOMER SERVICE &amp; MARKETING TOTAL</b>		76	88	86	82	78	78	78	79	76	75	79	873
<b>FINANCE &amp; ADMINISTRATION</b>													
Corporate Building Program		6	6	8	8	8	8	8	8	8	8	8	84
New Head Office	75	7	31	19	18								75
Customer Information System	21	5	3	13									21
Human Resource Management System	15	6	2										8
Enterprise GIS Project	13	4	5	2									11
Domestic Item - F&A Electric		19	21	23	25	25	26	26	27	27	27	28	274
<b>FINANCE &amp; ADMINISTRATION TOTAL</b>		47	69	64	51	33	34	34	35	35	35	36	473
<b>ELECTRIC TOTAL</b>		481	583	622	748	748	641	598	440	324	299	340	5,824
<b>GAS</b>													
<b>TRANSMISSION &amp; DISTRIBUTION</b>													
Selkirk Gas Supply Line Project	-2												
Brandon Gas Supply Line Project	0												
Southloop Capacity Upgrade	2	2											2
Gas Riser Rehabilitation Project	14	2	2	2	2	2							10
Domestics- T&D Gas		13	14	14	15	15	17	17	18	18	18	19	178
<b>CUSTOMER SERVICE &amp; MARKETING</b>													
AMR	15		3	3	3	3	3						15
Domestics- CS&M Gas		3	3	3	3	4	4	4	4	4	4	4	40
<b>GAS TOTAL</b>		21	22	23	23	24	24	21	22	22	23	23	248
<b>CONSOLIDATED TOTAL</b>		502	605	645	771	771	665	620	462	348	322	363	6,072

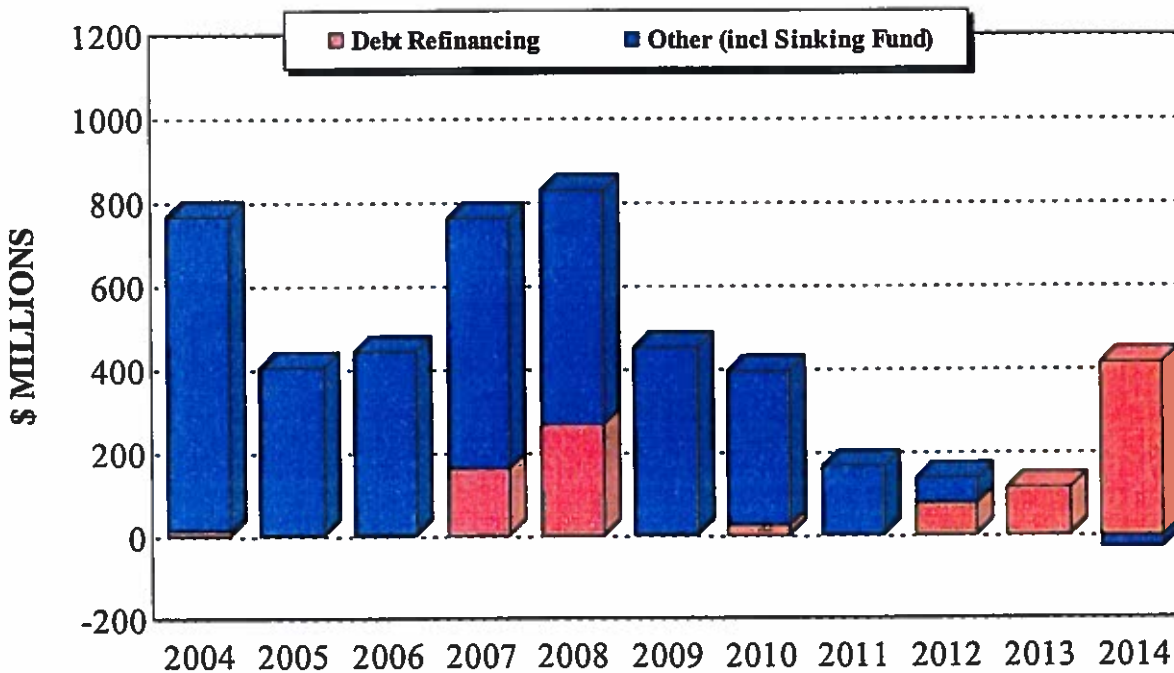
### 3.7 BORROWING REQUIREMENTS

Borrowing requirements are significantly higher in IFF03 relative to last year's forecast. Items increasing borrowing requirements in IFF03-1 include:

- lower net export revenues and significantly higher fuel and power purchase costs resulting from the current low water flow conditions
- increased capital expenditures, including those relating to the advancement of Wuskwatim

Manitoba Hydro's forecast borrowing requirements are portrayed in the following graph:

**PROJECTED BORROWING REQUIREMENTS**  
Consolidated Operations



## 4.0 FINANCIAL RATIOS

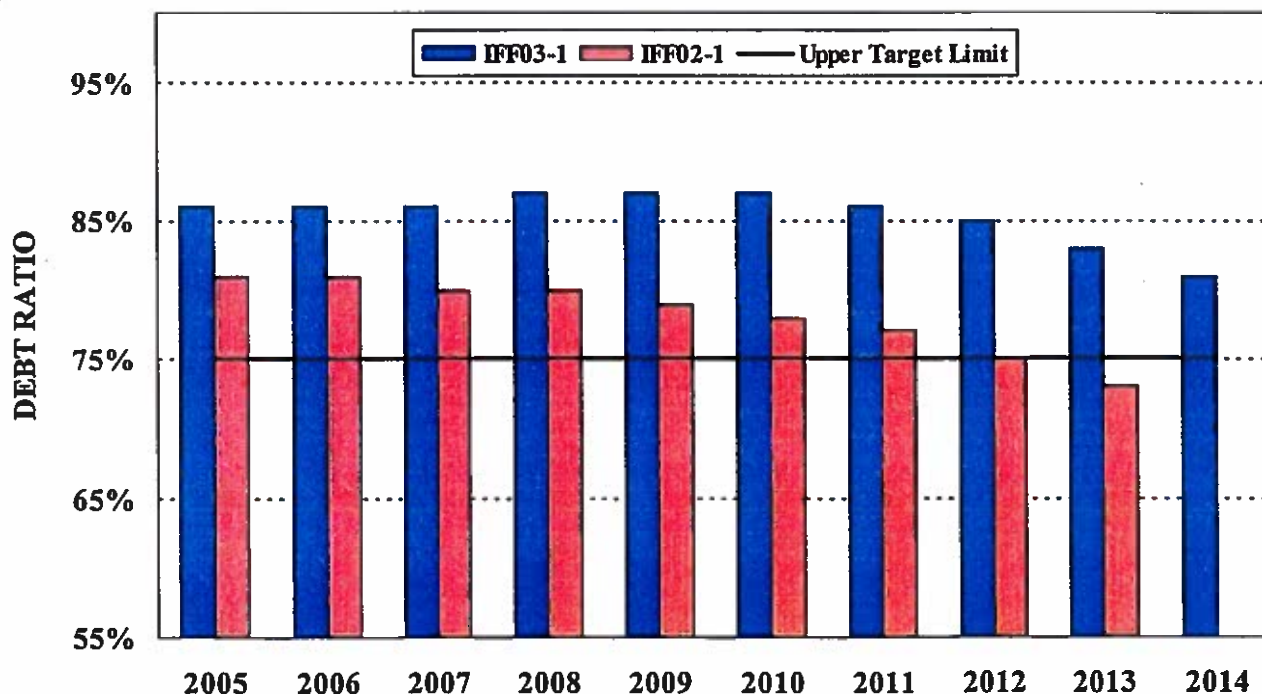
The following graphs depict the impact of the revised forecast, IFF03-1, on Manitoba Hydro's financial targets:

- to achieve a debt equity ratio of 75:25 by 2011/12;
- to attain a minimum interest coverage of 1.10 each year;
- to attain minimum capital coverage of 1.0 each year

In each case, attainment of the target is substantially delayed due to the carryover effects of the current drought.

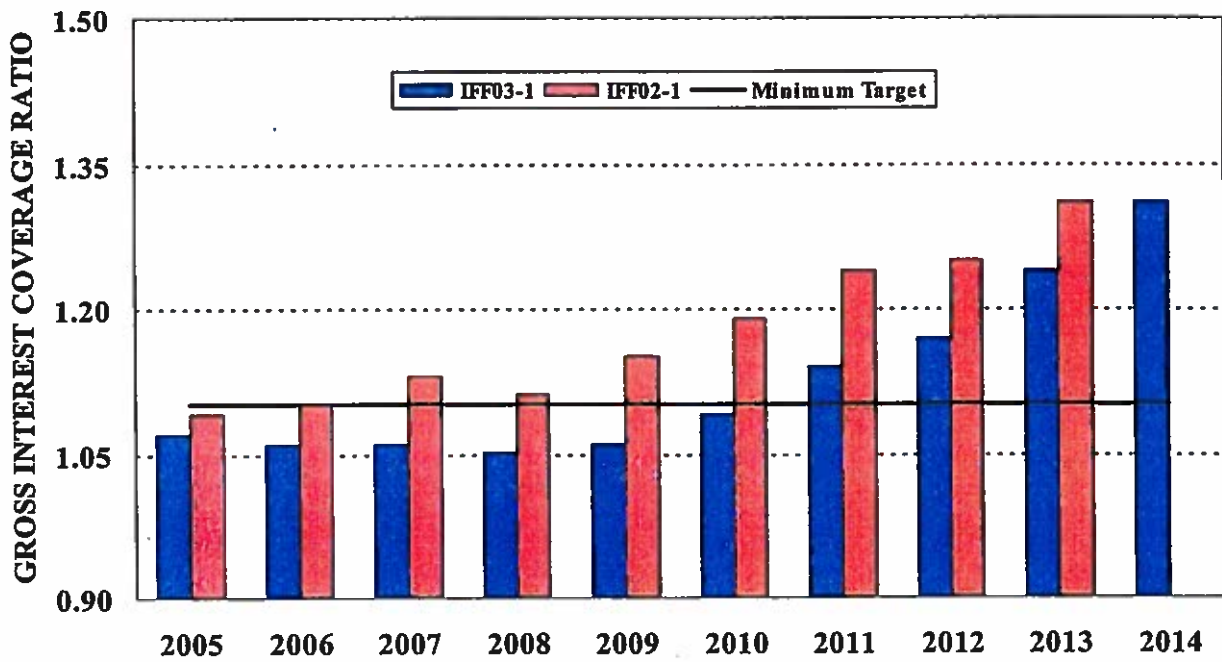
### 4.1 DEBT/EQUITY RATIO

**PROJECTED DEBT RATIO**  
Consolidated operations



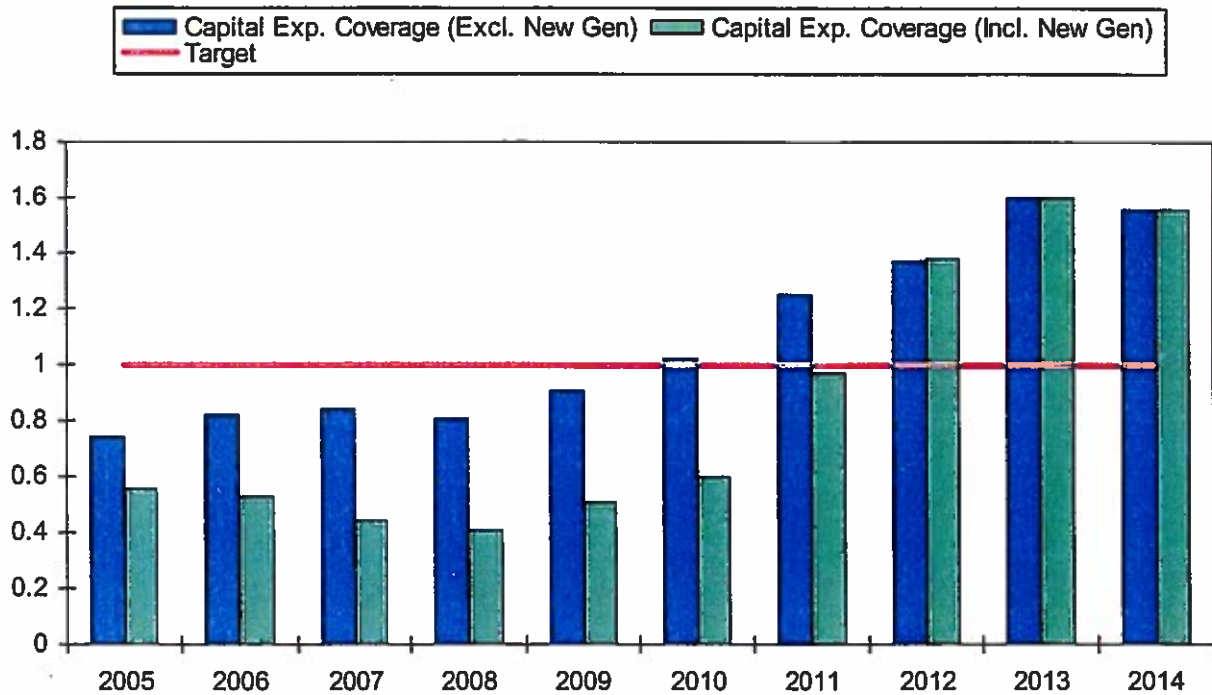
## 4.2 INTEREST COVERAGE RATIO

### PROJECTED INTEREST COVERAGE Consolidated Operations



### 4.3 FUND CAPITAL EXPENDITURES

#### PROJECTED CAPITAL COVERAGE Consolidated Operations



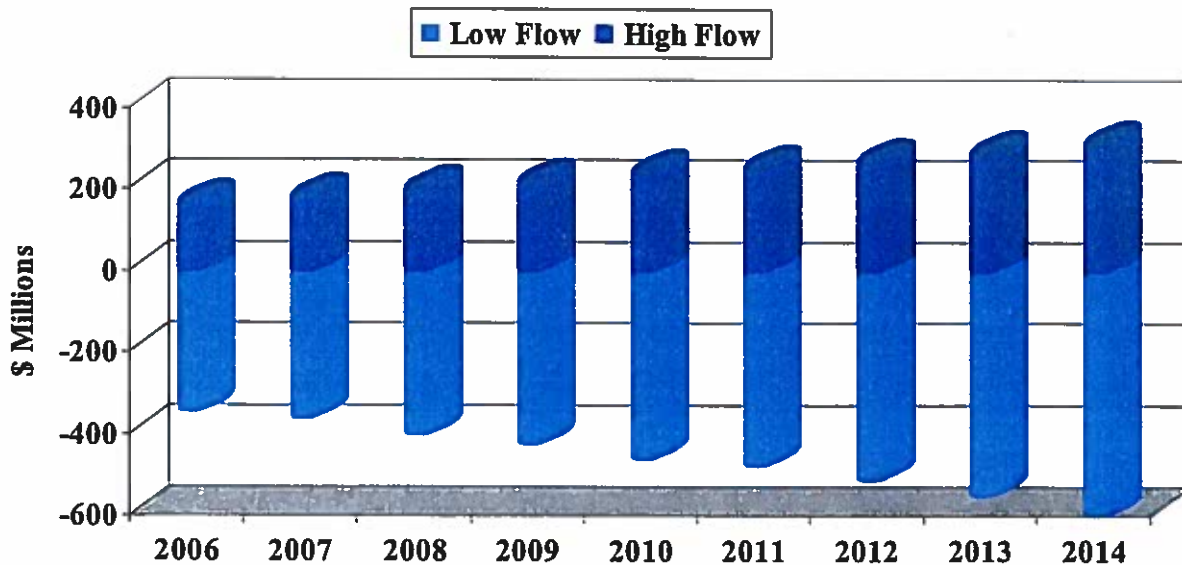


## 5.0 RISK

With export sales contributing more than a third of electricity revenues, Manitoba Hydro's largest predictable financial risk remains that of drought. While the timing of droughts is unknown, history suggests that they will occur on average every 8-10 years. Low water flows have a disproportionately much larger impact on net revenue than high water flows because of the high cost of running thermal generation for base load and price/volume reactions to variations in supply (see graph below). It has been estimated that a repeat of the worst drought on record would cost the Corporation at least \$1.1 billion for the loss of energy volumes and potentially much more if combined with market price increases for imports and thermal energy. Financing these losses over a period of time would add to the overall cost.

### VARIABILITY OF NET EXPORT REVENUE DUE TO WATER CONDITIONS

Deviation From Base Forecast



The Corporation is also exposed to market conditions for export sales, and to economic factors affecting load growth, the cost of doing business and the financing of operations. Regulatory uncertainty (for example in regard to

FERC's proposed new rules), ongoing vulnerability to generation and transmission failures, and the many factors affecting new plant development must also be considered. Sensitivity analysis is undertaken to the degree these risks can be reasonably quantified.

Management of risk is an integral part of line departments' day-to-day operations. In addition, Manitoba Hydro has established a Corporate Risk function to ensure that appropriate processes are in place to identify, assess, manage and communicate the Corporation's principal risks.

From a financial perspective, Manitoba Hydro's best risk projection is adequate levels of equity and interest coverage. These provide a buffer to absorb adverse events so that compensating rate increases can be smoothed out over a period of time.

The following table indicates the impact on financial targets or alternatively, annual rate increases of changes in a number of key variables, including a continuation of the current drought into 2004/05. It should be noted that the incremental impacts are in comparison to the base rate scenario contained in this forecast, and do not reflect the significantly higher rate increases that would be required to achieve the Corporation's financial target of a 75/25 debt equity ratio by 2011/12 and/or interest coverage of at least 1.10 and capital coverage of at least 1.0 in every year.

**RISK SCENARIOS – INCREMENTAL EFFECTS ON DEBT RATIO OR RATE INCREASES**

	2006	2008	2010	2014	Additional Annual Rate Increase
IFF03-1 Electric	86%	87%	87%	82%	-
Worsening of Drought in 2004/05	+9%	+9%	+10%	+17% 13%	+1.8%
+1% Interest Rates	-	-	+1%	+3%	+0.3%
+1% Escalation Rates	-	-	+1%	+2%	+0.3%
+\$100 Million Capital Expenditures*	-	+1%	+3%	+7%	+1.1%
-\$100 Million Capital Expenditures*	(1%)	(1%)	(3%)	(8%)	(1.1)%
\$CDN dollar up \$0.05 US	(1%)	(2%) 0%	-	+1%	+0.1%

\* Capital expenditure changes do not include any assessment of feasibility or the inclusion of impacts on revenues, directly or through changes in reliability, safety or customer service

*Changes per MM-F-3(b)*

## 6.0 PROJECTED FINANCIAL STATEMENTS

### CONSOLIDATED PROJECTED OPERATING STATEMENT (IFF03-1) (In Millions of Dollars)

For year ending March 31:	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>REVENUES:</b>											
General Consumers Revenue	901	917	923	931	939	946	953	960	968	976	985
Electricity at approved rates	-	28	51	77	103	130	158	187	217	249	282
General electricity rate increases*	501	503	507	511	518	517	520	523	528	529	533
Gas at approved rates	-	10	10	10	16	16	21	21	27	27	27
General gas rate increases*	-	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)
Additional Gas Costs	1	11	-	-	-	-	-	-	-	-	-
Other gas revenue	394	451	430	435	448	480	491	583	621	653	660
Extraprovincial	12	9	10	10	9	9	8	11	11	11	10
Other	1,809	1,908	1,920	1,963	2,020	2,087	2,141	2,274	2,361	2,434	2,486
<b>EXPENSES:</b>											
Finance expense	505	536	561	571	597	612	612	668	696	690	684
Operating and administrative	356	360	363	370	377	387	396	408	416	424	433
Depreciation and amortization	294	308	318	329	344	356	362	381	394	402	410
Water rentals and assessments	79	104	99	98	98	99	98	102	104	104	104
Fuel and power purchased	480	106	91	101	112	127	141	143	150	160	169
Capital and other taxes	72	75	76	80	83	85	87	89	89	89	90
Cost of gas sold	382	382	374	377	380	381	383	385	389	390	392
	2,168	1,871	1,882	1,926	1,991	2,047	2,080	2,176	2,238	2,259	2,262
Noncontrolling interest	-	-	-	-	-	-	-	(2)	(5)	(7)	(9)
<b>NET INCOME</b>	(358)	37	38	37	29	40	61	96	118	168	215
* Additional General Consumers Revenue											
General electricity rate increases (Percent)		3.0%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
General gas rate increases (Percent)			2.0%		1.0%		1.0%				
<b>Financial Ratios</b>											
Debt Ratio	86%	86%	86%	86%	87%	87%	87%	86%	85%	83%	81%
Interest Coverage	0.32	1.07	1.06	1.06	1.05	1.06	1.09	1.14	1.17	1.24	1.31
Capital Coverage	(0.23)	0.74	0.82	0.84	0.81	0.91	1.02	1.25	1.37	1.61	1.58
Capital Coverage (incl maj gen & trans)	(0.19)	0.56	0.53	0.44	0.41	0.51	0.60	0.97	1.38	1.61	1.56

**CONSOLIDATED PROJECTED BALANCE SHEET (IFF03-1)**  
(In Millions of Dollars)

For year ending March 31:

**ASSETS:**

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Plant In Service	10,482	10,879	11,297	11,777	12,352	12,758	13,229	14,805	15,163	15,428	15,759
Accumulated Depreciation	(3,284)	(3,568)	(3,865)	(4,176)	(4,497)	(4,834)	(5,176)	(5,540)	(5,917)	(6,299)	(6,695)
Net Plant In Service	7,198	7,311	7,432	7,601	7,855	7,924	8,053	9,265	9,246	9,129	9,064
Construction In Progress	376	565	782	1,082	1,305	1,595	1,775	693	717	791	832
Current & Other Assets	2,517	2,400	2,445	2,575	2,699	2,536	2,206	2,359	2,562	2,796	2,558
Goodwill	108	108	108	108	108	108	108	108	108	108	108
	10,199	10,384	10,767	11,366	11,967	12,163	12,142	12,425	12,633	12,824	12,562

**LIABILITIES:**

Long Term Debt	7,338	7,458	7,853	8,069	8,730	8,834	9,233	9,136	9,276	8,604	8,971
Current & Other Liabilities	1,756	1,784	1,737	2,085	1,997	2,051	1,573	1,857	1,809	2,505	1,663
Contributions in Aid of Construction	300	300	297	295	294	292	290	289	287	286	284
Retained Earnings	805	842	880	917	946	986	1,046	1,143	1,261	1,429	1,644
	10,199	10,384	10,767	11,366	11,967	12,163	12,142	12,425	12,633	12,824	12,562

Debt Ratio

86%    86%    86%    86%    87%    87%    87%    86%    85%    83%    81%

**CONSOLIDATED PROJECTED FINANCING REQUIREMENTS STATEMENT (IFF03-1)**  
(In Millions of Dollars)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>For year ending March 31:</b>											
<b>FUNDS FROM OPERATIONS</b>											
Net Income	(359)	37	38	37	29	40	61	96	118	168	215
Provision for Depreciation	294	308	318	329	344	356	362	381	394	402	410
Other	(15)	3	(14)	(27)	(53)	(56)	(52)	(30)	(35)	(51)	(53)
	(80)	348	342	339	320	340	371	447	477	519	572
<b>APPLICATION OF FUNDS</b>											
Capital Expenditures	502	605	645	770	772	665	619	462	346	322	363
Refinancing of Long Term Debt	13	3	3	160	265	2	23	-	77	113	415
Sinking Fund Deposit	72	84	72	73	69	80	78	125	137	140	111
Other	101	61	63	97	44	46	48	27	59	61	70
	688	753	783	1,100	1,150	793	768	614	618	636	959
<b>FINANCING REQUIREMENTS</b>											
	768	405	441	761	830	453	397	167	141	117	387

**CONSOLIDATED OPERATIONS  
COMPARISON OF IFF03-1 TO IFF02-1  
INCREASE (DECREASE)  
(Millions of Dollars)**

	2004	CUMULATIVE 2004-2006	CUMULATIVE 2004-2013
<b><u>REVENUES</u></b>			
General Consumers at Approved Rates	74	213	693
Higher domestic load forecast for electricity, partially offset by revenue reduction due to PUB Order 154/03. Higher primary and non primary gas prices.			
Projected Rate Increases	(8)	5	296
2003/04 Gas rate increase integrated into GCR at approved rates. Lower projected cumulative gas rate increases for non-commodity costs. 3.0% electricity rate increase forecast in 2004/05, 2.5% in subsequent years (vs. 2.0% in 2004/05 and onwards in IFF02)			
Extra-provincial	(126)	(215)	(119)
Lower export volumes in near-term due to drought. Increased domestic load forecast. Lower US exchange rate. Higher volumes upon completion of Wuskwatim. Changes in market prices.			
Other	9	23	37
Increased Joint Use contribution in Electric, Late payment penalty higher due to higher sales revenues in Gas. Also includes Gas rate riders of \$1M and \$11M (2004 & 2005 respectively) reflecting changes in gas costs and higher than previously forecasted capacity management revenues.			
<b>Total Revenue</b>	<b>(51)</b>	<b>26</b>	<b>907</b>

**CONSOLIDATED OPERATIONS (cont'd)**  
**COMPARISON OF IFF03-1 TO IFF02-1**  
**INCREASE (DECREASE)**  
(Millions of Dollars)

<b><u>EXPENSES</u></b>	<b>2004</b>	<b>CUMULATIVE 2004-2006</b>	<b>CUMULATIVE 2004-2013</b>
Finance Expense	(47)	(81)	400
Early years: Lower \$US exchange rate and lower short-term interest rates on floating rate long-term debt issues. Later years: Interest costs driven up by higher debt levels due to lower projected income levels and higher capital expenditures for major projects including Wuskwatim.			
Depreciation	3	11	102
Higher capital additions including Wuskwatim and wind generation. Refinement of methodology for fully depreciated items.			
Cost of Operations	7	24	108
Pension expense up \$12M per year, additional bad debt expense of \$1M per year in customer service. Offset partially by reclassification of payroll tax to Tax Expense. Later year increases due to operating costs for Wind and Wuskwatim new generation			
Water Rentals	(27)	(30)	(40)
Current drought conditions. Reclassification of MAPP and MISO fees.			
Tax Expense	10	33	144
Payroll tax transferred from Cost of Operations. Higher capital tax due to higher debt levels.			
Fuel & Power Purchased	377	399	567
Increased imports to meet firm export commitments during low water flow conditions. Purchases of third party wind generation. Higher natural gas prices for thermal generation.			
Cost of Gas Sold	56	143	417
Higher market prices.			
Total Expenses	379	499	1,698
Change in Net Income	(430)	(473)	(791)



# **ELECTRIC OPERATIONS**

**KEY FINANCIAL RESULTS  
ELECTRICITY OPERATIONS**  
(Dollars in Millions)

	<b>ACTUAL 2002/03</b>	<b>IFF03-1 FORECAST</b>		
		<b>2003/04</b>	<b>2004/05</b>	<b>2005/06</b>
<b>AVERAGE RATE INCREASE*</b>	<b>0</b>	<b>0</b>	<b>3.0%</b>	<b>2.5%</b>
<b>NET INCOME</b>	<b>\$73</b>	<b>\$(355)</b>	<b>\$40</b>	<b>\$31</b>
<b>INTEREST COVERAGE</b>	<b>1.17</b>	<b>0.29</b>	<b>1.08</b>	<b>1.05</b>
<b>CAPITAL EXPENDITURES</b>	<b>\$463</b>	<b>\$481</b>	<b>\$583</b>	<b>\$622</b>
<b>CAPITAL COVERAGE RATIO</b>	<b>0.95</b>	<b>n/a</b>	<b>0.54</b>	<b>0.50</b>
<b>DEBT TO EQUITY RATIO</b>	<b>80:20</b>	<b>85:15</b>	<b>85:15</b>	<b>86:14</b>

- \* Large industrial electric customers have not had a rate increase since April 1992; Residential and small commercial electric customers have not had a rate increase since April 1997. The forecast integrates the revenue impact of the Public Utilities Board (PUB) ruling 154/03 issued October 31, 2003, which reduced rates to the large industrial and small commercial customer classes by 2% and 1% respectively effective April 1, 2003.

**ELECTRIC OPERATIONS (IFF03-1)**  
**PROJECTED OPERATING STATEMENT**  
(In Millions of Dollars)

For year ending March 31:

**REVENUES:**

General Consumers Revenue at approved rates additional  
 Extraprovincial  
 Other

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
General Consumers Revenue at approved rates additional	901	917	923	931	939	946	953	960	968	976	985
Extraprovincial	0	28	51	77	103	130	158	187	217	249	282
Other	394	451	430	435	448	480	491	583	621	653	660
	9	7	7	7	7	7	7	8	8	8	8
	1,304	1,403	1,411	1,450	1,497	1,563	1,609	1,738	1,814	1,886	1,935

9.3%

**EXPENSES:**

Finance Expense  
 Depreciation  
 Cost of Operations  
 Water Rentals  
 Tax Expense  
 Fuel & Power Purchased

Finance Expense	472	505	529	539	566	580	581	638	667	663	638
Depreciation	274	288	298	309	323	336	342	361	374	382	390
Cost of Operations	304	307	309	315	321	330	337	348	355	362	370
Water Rentals	79	104	99	98	98	99	99	102	104	104	104
Tax Expense	50	53	54	58	60	62	64	65	65	65	65
Fuel & Power Purchased	480	106	91	101	112	127	141	143	150	160	169
	1,659	1,363	1,380	1,420	1,480	1,534	1,564	1,657	1,715	1,736	1,736

1.1%  
2.1%

Noncontrolling Interest  
**NET INCOME**

Noncontrolling Interest	0	0	0	0	0	0	0	(2)	(5)	(7)	(9)
<b>NET INCOME</b>	(355)	40	31	30	17	29	45	79	94	143	190

\*Additional General Consumers Revenue

Revenue  
 Percent Increase  
 Cumulative Percent Increase

Revenue	28	51	77	77	103	130	158	187	217	249	282
Percent Increase	3.0%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Cumulative Percent Increase	3.0%	5.6%	8.2%	10.9%	13.7%	16.5%	19.4%	22.4%	25.5%	28.6%	28.6%

1.482  
6.11

**Financial Ratios**  
 Debt/Equity  
 Interest Coverage  
 Capital Coverage

Debt/Equity	85:15	85:15	86:14	86:14	87:13	87:13	87:13	86:14	85:15	84:16	82:18
Interest Coverage	0.29	1.08	1.05	1.05	1.03	1.04	1.06	1.11	1.13	1.20	1.27
Capital Coverage	-0.21	0.54	0.50	0.41	0.38	0.48	0.56	0.93	1.33	1.59	1.53

**ELECTRIC OPERATIONS (IFF03-1)  
PROJECTED BALANCE SHEET**  
(In Millions of Dollars)

For year ending March 31:

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>ASSETS:</b>											
Plant in Service	10,062	10,443	10,843	11,303	11,859	12,246	12,704	14,263	14,806	14,857	15,168
Accumulated Depreciation	(3,245)	(3,520)	(3,805)	(4,103)	(4,414)	(4,739)	(5,074)	(5,428)	(5,793)	(6,167)	(6,549)
Net Plant in Service	6,817	6,923	7,038	7,200	7,445	7,507	7,631	8,837	8,813	8,690	8,619
Construction In Progress	374	563	782	1,082	1,305	1,595	1,775	693	717	791	832
Current & Other Assets	2,823	2,711	2,758	2,893	3,022	2,861	2,535	2,680	2,895	3,131	2,895
	10,014	10,197	10,578	11,175	11,772	11,963	11,941	12,220	12,425	12,612	12,346
<b>LIABILITIES:</b>											
Long Term Debt	7,331	7,452	7,848	8,065	8,727	8,832	9,232	9,136	9,276	8,604	8,971
Current & Other Liabilities	1,656	1,679	1,636	1,988	1,908	1,967	1,503	1,801	1,774	2,492	1,671
Contributions in Aid of Construction	268	267	264	262	260	258	256	254	252	250	248
Retained Earnings	759	799	830	860	877	906	950	1,029	1,123	1,266	1,456
	10,014	10,197	10,578	11,175	11,772	11,963	11,941	12,220	12,425	12,612	12,346
Debt:Equity	85:15	85:15	86:14	86:14	87:13	87:13	87:13	86:14	85:15	84:16	82:18

2670  
fine

good to hold bill

68 million of 2005

fine  
fine  
fine

**ELECTRIC OPERATIONS (IFF03-1)**  
**PROJECTED FINANCING REQUIREMENTS STATEMENT**  
(In Millions of Dollars)

For year ending March 31:	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>FUNDS FROM OPERATIONS</b>											
Net Income	(355)	40	31	30	17	29	45	79	94	143	190
Provision for Depreciation	274	288	298	308	323	336	342	361	374	382	390
Other	(20)	(14)	(18)	(31)	(56)	(58)	(55)	(32)	(37)	(51)	(54)
	(101)	314	311	308	284	307	332	408	431	474	526
<b>APPLICATION OF FUNDS</b>											
Capital Expenditures	481	583	622	747	748	641	598	440	324	299	340
Refinancing of LTD	10	-	-	103	303	-	-	-	77	50	415
Sinking Fund Deposit	72	84	72	73	69	80	78	125	137	140	111
Other	95	54	58	92	39	42	43	23	54	58	66
	658	721	752	1,015	1,159	763	719	588	591	547	932
<b>FINANCING REQUIREMENTS</b>	759	407	441	707	875	456	387	180	160	73	406

**ELECTRICITY OPERATIONS  
COMPARISON OF MH03-1 TO MH02-1  
INCREASE (DECREASE)  
(Millions of Dollars)**

	2004	CUMULATIVE 2004-2006	CUMULATIVE 2004-2013
<b><u>REVENUES</u></b>			
General Consumers at Approved Rates	21	82	277
Higher domestic load forecast, partially offset by revenue reduction due to PUB Order 154/03.			
Projected Rate Increases	0	25	317
3.0% electricity rate increase forecast in 2004/05, 2.5% in subsequent years (vs. 2.0% in 2004/05 and onwards in IFF02)			
Extraprovincial	(126)	(215)	(119)
Lower export volumes in near-term due to drought. Increased domestic load forecast. Lower US exchange rate. Higher volumes upon completion of Wuskwatim. Changes in market prices.			
Other	3	5	15
Other revenue up slightly due to improved Joint Use forecast.			
<b>Total Revenue</b>	<b>(102)</b>	<b>(103)</b>	<b>490</b>

**ELECTRICITY OPERATIONS  
COMPARISON OF IFF03-1 TO IFF02-1 (cont'd)  
INCREASE (DECREASE)  
(Millions of Dollars)**

<b>EXPENSES</b>	<b>2004</b>	<b>CUMULATIVE 2004-2006</b>	<b>CUMULATIVE 2004-2013</b>
Finance Expense	(41)	(56)	494
Early years: Lower \$US exchange rate and lower short-term interest rates on floating rate long-term debt issues. Later years: Interest costs driven up by higher debt levels due to lower projected income levels and higher capital expenditures for major projects including Wuskwatim.			
Depreciation	4	14	119
Higher capital additions including Wuskwatim and wind generation. Refinement of methodology for fully depreciated items.			
Cost of Operations	1	6	44
Pension expense up \$12M per year, additional bad debt expense of \$1M per year in customer service. Offset by reclassification of payroll tax to Tax Expense and anticipated integration synergies of \$6M (formerly recognized in Gas cost of operations). Later year increases due to operating costs for Wind and Wuskwatim new generation.			
Water Rentals	(27)	(30)	(40)
Current drought conditions. Wuskwatim in-service advanced to 2010.			
Tax Expense	7	25	126
Payroll tax transferred from Cost of Operations. Higher capital tax due to higher debt levels.			
Fuel & Power Purchased	377	399	567
Increased imports to meet firm export commitments during low water flow conditions. Purchases of third party wind generation. Higher natural gas prices for thermal generation.			
Total Expenses	321	358	1,310
<b>Change in Net Income</b>	<b>(423)</b>	<b>(461)</b>	<b>(820)</b>

# **GAS OPERATIONS**



**KEY FINANCIAL RESULTS  
GAS OPERATIONS**  
(Dollars in Millions)

	<b>ACTUAL 2002/03</b>	<b>IFF03-1 FORECAST</b>		
		<b>2003/04</b>	<b>2004/05</b>	<b>2005/06</b>
<b>AVERAGE RATE INCREASE*</b>	0	0.4%	0	2.0%
<b>NET INCOME **</b>	\$ (2)	\$ (4)	\$ (3)	\$ 7
<b>INTEREST COVERAGE</b>	0.90	0.83	0.87	1.33
<b>CAPITAL EXPENDITURES</b>	\$ 23	\$ 21	\$ 22	\$ 23
<b>CAPITAL COVERAGE RATIO</b>		0.96	1.03	1.37

\* The percentage general rate increases projected for gas customers will change as adjustments are made to rates for the gas commodity.

\*\* After corporate allocations for Centra acquisition costs.

**GAS OPERATIONS (IFF03-1)  
PROJECTED OPERATING STATEMENT**  
(In Millions of Dollars)

For year ending March 31:

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>REVENUES:</b>											
General Consumers Revenue	501	503	507	511	516	517	520	523	528	529	533
At Approved Rates			10	10	16	16	21	21	27	27	27
Additional Revenue Requirement*		(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)	(11)
Additional Gas Costs		11									
Rate Riders	502	503	506	510	521	522	530	533	544	545	549
<b>Cost of Sales</b>											
Weighted Average Costs of Gas	381	371	374	377	380	381	383	385	389	390	392
Deferred Gas Costs	120	121	132	133	141	141	147	148	155	155	157
Gross Margin	3	2	3	3	2	2	2	3	3	3	2
Other Revenue	123	123	135	136	143	143	149	151	158	158	159
<b>EXPENSES:</b>											
Finance Expense	18	16	17	17	16	17	16	15	14	12	11
Depreciation & Amortization	20	20	20	20	21	20	20	20	20	20	20
Cost of Operations	52	53	54	55	56	57	59	60	61	62	63
Capital & Other Taxes	22	22	22	22	23	23	23	24	24	24	25
	112	111	113	114	116	117	118	119	119	118	119
<b>Net Income (Loss) Before Transfer to MH</b>	11	12	22	22	27	26	31	32	39	40	40
Transfer to MH	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)	(15)
<b>Net Income (Loss) After Transfer to MH</b>	(4)	(3)	7	7	12	11	16	17	24	25	25
<b>Additional Revenue Requirement</b>			10	10	16	16	21	21	27	27	27
Revenue		2.0%	2.0%	2.0%	1.0%	1.0%	1.0%	1.0%	1.00%	1.00%	1.00%
Percentage Increase		2.0%	2.0%	2.0%	3.02%	3.02%	4.05%	4.05%	5.09%	5.09%	5.09%
Cumulative Percentage Increase											
<b>Financial Ratios</b>											
Interest Coverage	0.63	0.67	1.33	1.33	1.60	1.53	1.63	1.99	2.40	2.62	2.66
Capital Coverage	0.24	1.03	1.37	1.34	1.51	1.42	1.64	1.80	2.04	2.01	2.00

6.3%

no Δ  
-21%

175

**GAS OPERATIONS (IFF03-1)  
PROJECTED BALANCE SHEET**  
(In Millions of Dollars)

For year ending March 31:

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>ASSETS:</b>											
Plant In Service	514	530	548	568	587	606	619	636	651	665	685
Accumulated Depreciation	173	181	192	204	214	226	233	244	253	260	273
<b>Net Plant In Service</b>	341	349	356	364	373	380	386	392	398	405	412
Construction In Progress Current and Other Assets	2	2	0	0	0	0	0	0	0	0	0
Accounts Receivable - PGVA	253	248	246	241	236	234	230	228	226	224	222
	596	599	602	605	609	614	616	620	624	629	634
<b>LIABILITIES:</b>											
Long Term Debt	251	248	245	188	226	224	201	201	201	138	138
Due to Parent	24	22	22	76	31	27	37	24	5	49	29
Current & Other Liabilities	97	108	108	108	107	108	108	107	107	106	107
Contributions In Aid of Construction	57	57	56	55	55	54	53	53	52	52	51
Owner's Equity Represented by Debt	121	121	121	121	121	121	121	121	121	121	121
Retained Earnings	46	43	50	57	69	80	96	114	138	163	188
	596	599	602	605	609	614	616	620	624	629	634

21/10  
fine  
fine

**GAS OPERATIONS (IFF03-1)  
PROJECTED FINANCING REQUIREMENTS STATEMENT**  
(In Millions of Dollars)

For year ending March 31:	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>FUNDS FROM OPERATIONS:</b>											
Net Income	(4)	(3)	7	7	12	11	16	17	24	25	25
Depreciation & Amortization	20	20	20	20	21	20	20	20	20	20	20
Rate Riders	1	11									
Other (net)	4	6	4	4	3	2	3	2	2	2	0
<b>Total Cash From Operations</b>	<b>21</b>	<b>34</b>	<b>31</b>	<b>31</b>	<b>36</b>	<b>33</b>	<b>39</b>	<b>39</b>	<b>46</b>	<b>45</b>	<b>46</b>
<b>APPLICATION/(SOURCE) OF FUNDS</b>											
Capital Expenditures	21	22	23	23	24	24	21	22	22	23	23
LTD Repayments / (Issues)	3	3	3	57	(38)	2	23	0	0	63	0
Other	6	7	5	5	5	4	5	4	5	3	4
<b>Total Use of Funds</b>	<b>30</b>	<b>32</b>	<b>31</b>	<b>85</b>	<b>(9)</b>	<b>30</b>	<b>49</b>	<b>26</b>	<b>27</b>	<b>89</b>	<b>27</b>
<b>FINANCING REQUIREMENTS</b>	<b>9</b>	<b>(2)</b>	<b>-</b>	<b>54</b>	<b>(45)</b>	<b>(3)</b>	<b>10</b>	<b>(13)</b>	<b>(19)</b>	<b>44</b>	<b>(19)</b>

**NATURAL GAS OPERATIONS  
COMPARISON OF CGM03-1 TO CGM02-1  
INCREASE (DECREASE)  
(Millions of Dollars)**

	2004	CUMULATIVE 2004-2006	CUMULATIVE 2004-2013
<b><u>REVENUES</u></b>			
General Consumers at Approved Rates	53	131	416
Higher primary and non primary gas prices.			
Rate Riders	5	16	16
Rate rider increases are the result of changes in gas costs, increased collections due to colder than normal weather and higher than forecasted capacity management revenues.			
Projected Rate Increases	(8)	(20)	(21)
2003/04 rate increase integrated into GCR at approved rates. Lower projected cumulative general rate increases for non-commodity costs.			
Other	1	2	6
Late payment penalty revenue higher due to higher sales volume.			
<b>Total Revenue</b>	<b>51</b>	<b>129</b>	<b>417</b>

**NATURAL GAS OPERATIONS**  
**COMPARISON OF CGM03-1 TO CGM02-1 (cont'd)**  
**INCREASE (DECREASE)**  
(Millions of Dollars)

<b><u>EXPENSES</u></b>	<b>2004</b>	<b>CUMULATIVE 2004-2006</b>	<b>CUMULATIVE 2004-2013</b>
Finance Expense	(21)	(70)	(244)
Acquisition financing costs transferred to electric forecast; lower debt level required due to higher future cash flows.			
Depreciation	(1)	(3)	(17)
Depreciation items related to acquisition costs are reflected in electric forecast.			
Cost of Operations	6	18	64
Majority of synergies transferred to electric operations; payroll taxes transferred to Tax Expense.			
Tax Expense	3	8	18
Payroll taxes transferred from Cost of Operations; One time tax payment treated as a deferral account which attracts carrying costs at the approved overall rate of return			
Cost of Gas Sold	56	143	417
Higher primary and non primary gas rates.			
Transfer to MH	15	45	150
Contributions from gas towards acquisition costs.			
Total Expenses	58	141	388
Change in Net Income	(7)	(12)	29

1  
2  
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5

**MANITOBA HYDRO**  
**APRIL 1, 2004 AND APRIL 1, 2005 RATE INCREASE APPLICATION**  
**ENERGY SUPPLY**

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6  
7

**7.1 OVERVIEW OF ENERGY SUPPLY**

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Manitoba Hydro's hydraulic generating stations utilize water flowing into Manitoba from Alberta, Saskatchewan, northwestern Ontario, Minnesota, North Dakota, South Dakota and Montana. Water flows into the Winnipeg River do have particular significance as that water flows through not only all of the plants on that river, but ultimately the big Nelson River plants. The broad geographical area of Manitoba's watersheds provides a degree of diversity in precipitation to reduce the frequency and impact of droughts on the Manitoba Hydro system. Even with this diversity, there is a one-in-ten chance of drought in any one year. To ensure that these periodic droughts won't result in energy shortages, the generation system is planned to meet committed firm loads under a repeat of the lowest system water supplies (from records dating back to 1912) using hydro plants, thermal generation and imports. In addition actual system operations follow specific criteria to assure that the Manitoba load will be met without undue risk.

21  
22

**7.2 POWER RESOURCE PLANNING CRITERIA**

23  
24  
25

In planning a reliable supply of electric power for Manitobans, Manitoba Hydro has established the following criteria:

26  
27

**Capacity Criterion**

28  
29  
30  
31

The capacity criterion for the Manitoba Hydro system requires that planned generation capacity (MW) must not be less than forecast firm annual peak demand plus a reserve requirement of 12% of forecast firm loads.

32  
33  
34  
35  
36

Reserves are intended to protect against capacity shortfalls resulting from three types of contingencies: breakdown of generating equipment, increases in peak load due to extreme weather, and deviation from the peak load forecast due to higher than projected provincial economic growth in the short term.

1 Reserve margins of 12% are adequate in Manitoba Hydro's predominantly hydraulic  
2 system because of the relatively low outage rates of hydro generating units combined  
3 with relatively small size of units. For comparison, reserve margins on thermal systems  
4 are typically in the 15% to 30 % range.  
5

### 6 Dependable Energy Criterion 7

8 Manitoba Hydro has adopted an energy supply planning criterion which recognizes the  
9 limitation of hydraulic generation during drought conditions. The energy criterion  
10 requires that the Manitoba System shall be capable of a dependable supply of energy to  
11 meet forecast firm load demand. Specifically, there must be sufficient firm energy  
12 sources to meet firm energy demand in the event of a repeat of the lowest historic river  
13 flow conditions.  
14

15 The dependable supply includes energy from hydro electric and thermal stations, firm  
16 energy imports from out-of-province, as well as contracted non-firm imports from the  
17 reserves of neighbouring utilities. Contracted non-firm imports for meeting firm load  
18 should not exceed 10% of firm energy requirement. Non-firm imports are not included in  
19 the 10% limit if they consist of an energy guarantee to Manitoba Hydro during low flow  
20 years and they are associated with a firm export sale of an equal or greater magnitude.  
21

## 22 **7.3 WATER CONDITIONS** 23

24 Hydraulic generation over the last six years was at or above average until the summer of  
25 2002. Low rainfall after July was followed by a winter with little snow cover. Although  
26 the spring and summer of 2003 had sufficient rainfall to grow crops in most parts of  
27 southern Manitoba, there were insufficient amounts to result in significant runoff. Overall  
28 water supplies across the Churchill / Nelson River basin are at lows that on average  
29 would only be experienced once in every 50 years. Going into the winter of 2003/04  
30 reservoirs were at or near historic lows. Manitoba Hydro has been importing energy  
31 consistently since the spring of 2003 and expects to incur unprecedented power purchase  
32 costs as a result.  
33

34 The historical water supply as a percentage of average is shown in Figure 7.3.3. Overall  
35 hydraulic supplies for 2003/04 are forecast to be similar to the 1988/1989 period, the  
36 second driest on record since 1912. In addition, energy in storage in reservoirs affecting  
Manitoba Hydro is as shown in Figure 7.3.4. Hydraulic reserves remain well below

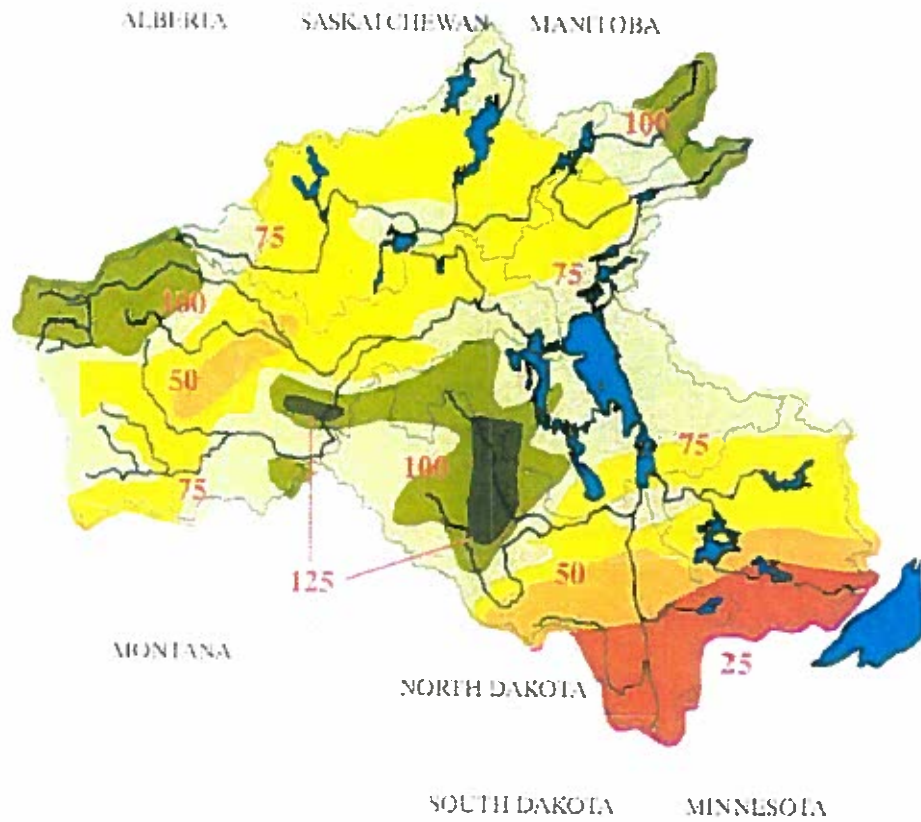


1 average and remain below the previous minimum set since regulation of Lake Winnipeg  
2 and Churchill River Diversion began in 1976. Releases from Manitoba Hydro reservoirs  
3 are being minimized to protect storage reserves for next year.  
4

5 Hydroelectric generation for 2003/04 is forecast to be 20,791 GWh down 7,809 GWh  
6 from the long term mean as shown in Figure 7.3.5. The reduced hydro generation will be  
7 replaced with increased thermal generation and power purchases at additional cost. The  
8 forecast of net interchange revenue (net cost) for 2003/04 is (\$158) million, down  
9 \$398 million from the 2002/03 actual results. If the drought conditions persist throughout  
10 2004 then a similar result in net interchange revenue can be expected in 2004/05. Net  
11 interchange revenues above are defined as export revenues minus generation costs which  
12 include import, thermal and water rental costs.  
13

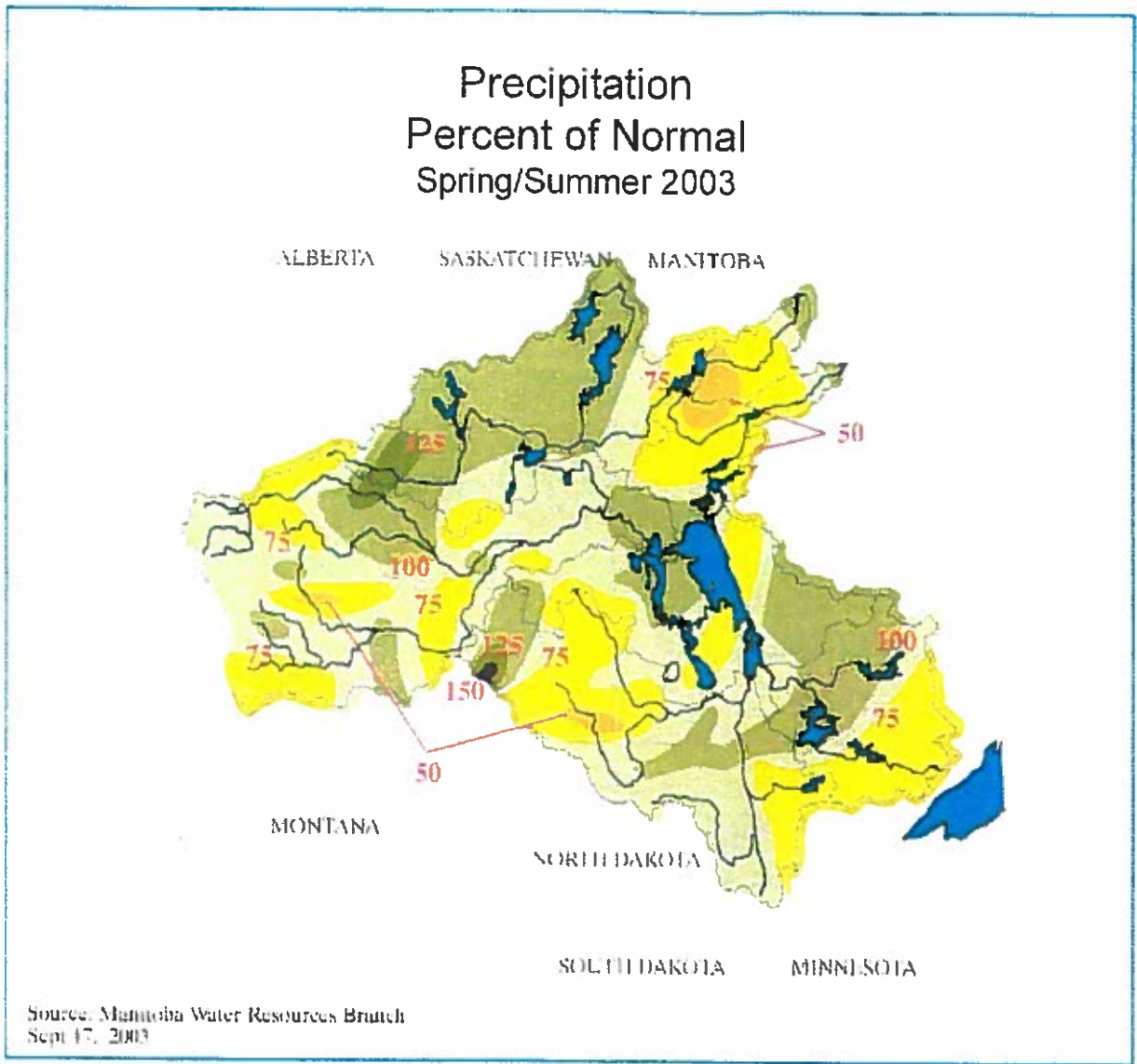
14 It is estimated that a repeat of the worst drought on record would cost the Corporation at  
15 least \$1.1 billion for the loss of energy volumes and potentially much more if combined  
16 with market price increases for imports and thermal energy. Financing these losses over  
17 a period of time would add to the overall cost. The current below-normal water supply  
18 has weakened Manitoba Hydro's financial structure and slowed its progress toward  
19 achievement of financial targets.  
20

# Precipitation Percent of Normal Winter 2002/03



Source: Manitoba Water Resources Branch  
March 26, 2003

**Figure 7.3.1**



**Figure 7.3.2**

## Historic Water Supply

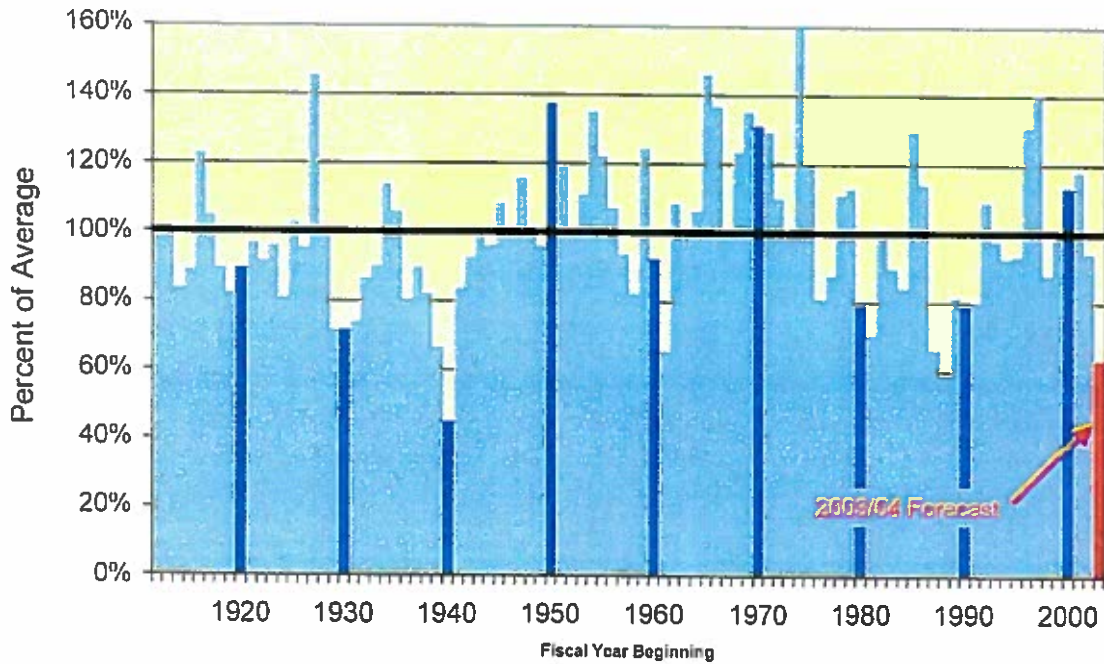


Figure 7.3.3

## Nelson-Churchill Drainage Basin Manitoba Energy in Reservoir Storage

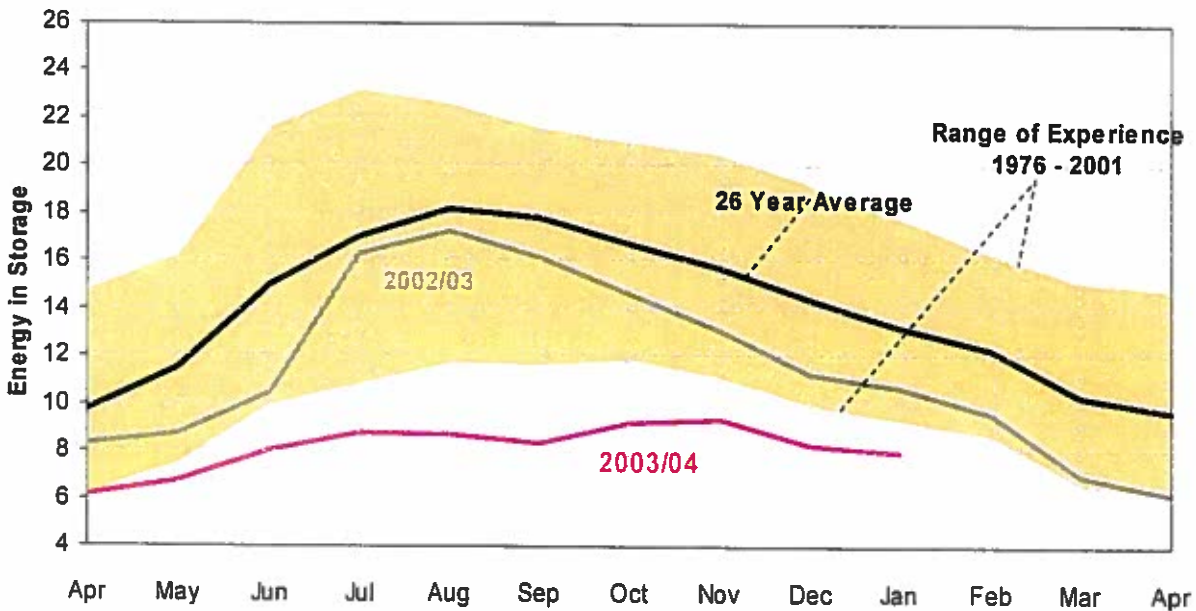


Figure 7.3.4

## Total Hydraulic Generation

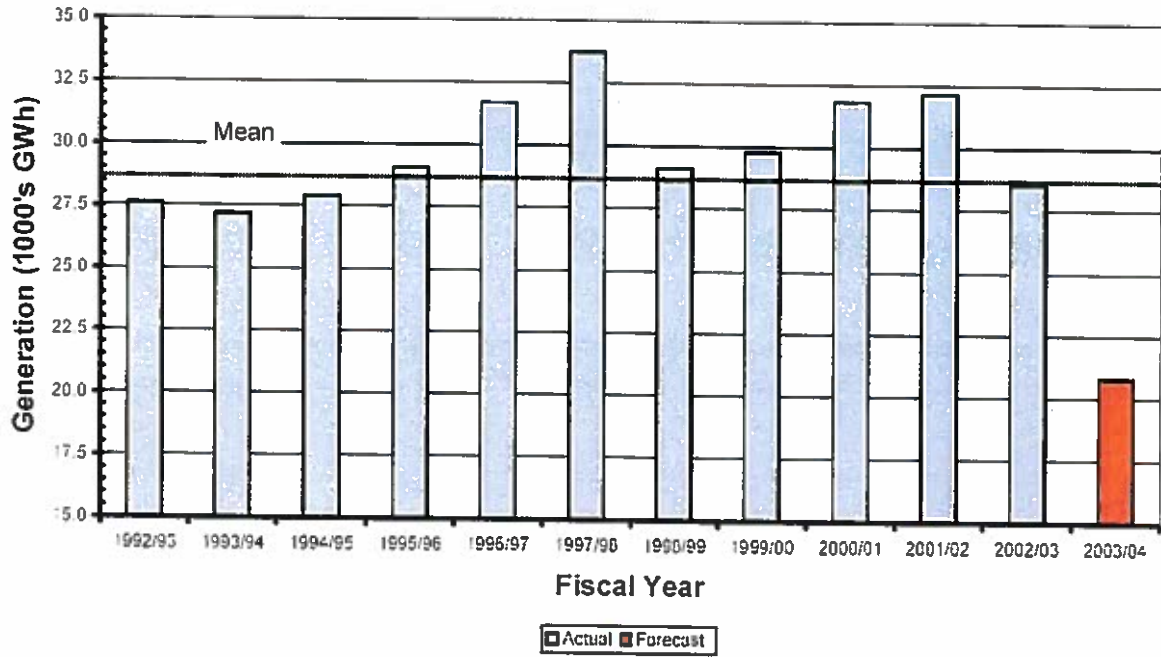


Figure 7.3.5

# Manitoba Hydro-Electric Board 53rd Annual Report



For The Year Ended March 31, 2004





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## COVER

### The Many Faces of our Customers:

Manitoba Hydro's relationship with its many customers is one borne with the mandate to provide all its customers with exceptional value in rates, service, public safety, reliability, and power quality. Our customers come from many different walks of life and come with different energy needs. This annual report is a tribute to our customers and their relationship with their utility.



**LETTER OF TRANSMITTAL**

July 30, 2004

The Honourable Tim Sale  
Minister Charged with the Administration of The Manitoba Hydro Act  
Legislative Building  
Winnipeg, Manitoba R3C 0V8

Dear Minister:

I have the honour of presenting the 53rd Annual Report of  
The Manitoba Hydro-Electric Board together with the financial statements for  
the fiscal year ended March 31, 2004.

Respectfully submitted,

A handwritten signature in white ink, appearing to read "Victor H. Schroeder". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Victor H. Schroeder, QC  
Chairman, The Manitoba Hydro-Electric Board

## CORPORATE PROFILE

- ▶ Manitoba Hydro is a provincial Crown Corporation providing electric energy to 505 883 customers throughout Manitoba and natural gas service to 253 631 customers in various communities in southern Manitoba. We also export electricity to over 50 electric utilities and marketers in the mid-western U.S., Ontario and Saskatchewan.
- ▶ We offer our customers a wide range of energy services, either directly or through our subsidiaries. Manitoba Hydro is also known worldwide for its expertise in high voltage direct current transmission.
- ▶ We deliver natural gas throughout the southern portion of the province to nearly 100 communities using approximately 8 200 kilometres of pipelines. On average, we deliver about 2.1 billion cubic metres of natural gas through our system.
- ▶ Nearly all of our electricity is generated from self-renewing waterpower. On average, about 30 billion kilowatt hours of electricity are generated annually, with 98 per cent produced from 14 hydroelectric generating stations on the Nelson, Winnipeg, Saskatchewan, and Laurie rivers. About two per cent of the province's energy needs are produced from two thermal generating stations and four remote diesel generating stations.
- ▶ Our capital assets in service at original cost exceed \$10 billion, making us one of the largest energy utilities in Canada. The governance of the Corporation is through The Manitoba Hydro-Electric Board, whose members are appointed by the Lieutenant-Governor in Council.

**VISION** To be the best utility in North America with respect to safety, rates, reliability, customer satisfaction and environmental management, and to always be considerate of the needs of customers, employees, and stakeholders.

**MISSION** To provide for the continuance of a supply of energy to meet the needs of the province and to promote economy and efficiency in the development, generation, transmission, distribution, supply, and end-of-use of energy.

- 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 working relationships with Aboriginal Peoples.
  - ▶ Improve corporate financial strength.
  - ▶ Maximize 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 the leading utility in promoting sustainable energy supply and service.
  - ▶ Be an outstanding corporate citizen.
  - ▶ Proactively support agencies responsible for business development in Manitoba.
  - ▶ Be a leader in implementing cost-effective energy conservation and alternate energy programs.

## HIGHLIGHTS

▶ Manitoba Hydro deals with its second worst drought since the 1940s having to manage its water resources under challenging conditions. Net importing of electricity is required for the first time since 1989.

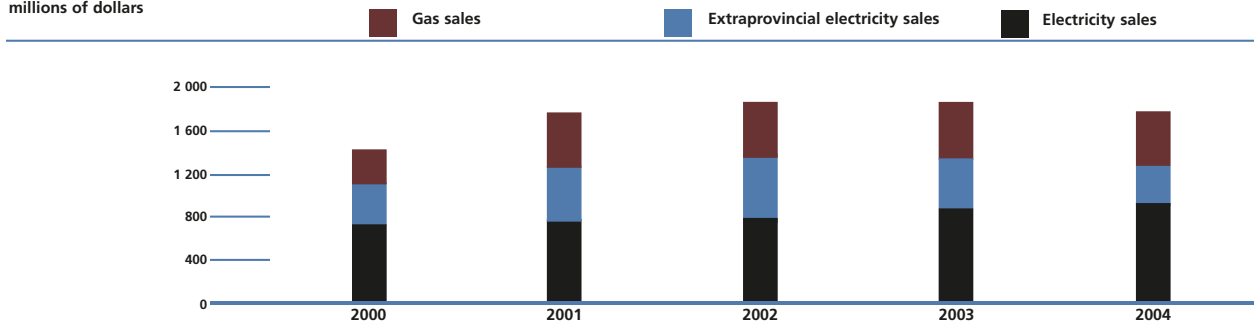
▶ The historically low water conditions and persisting drought conditions result in significant financial losses for the Corporation.

▶ New historical peaks for electricity and natural gas use occur on the same day.

▶ Electricity rates unchanged or lowered for the seventh consecutive year for residential customers and the 12th year for industrial electricity customers in 2003-04.

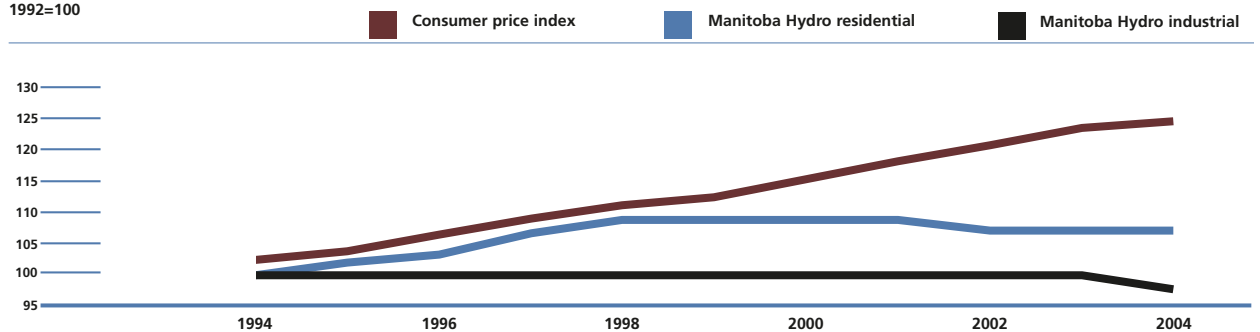
### TOTAL REVENUE

millions of dollars



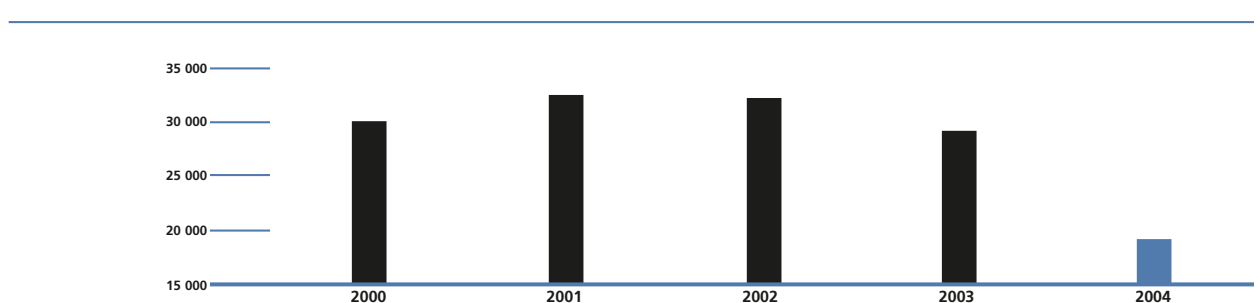
### ANNUAL RATE INCREASES VS MANITOBA CONSUMER PRICE INDEX

1992=100



### TOTAL GENERATION

000 000 kWh



## HIGHLIGHTS

▶ Manitoba Hydro and Nisichawayasihk Cree Nation participate in an environmental review of the Wuskwatim Generating Station and its associated transmission line projects before Manitoba's Clean Environment Commission.

▶ The Power Smart Home Comfort and Energy Savings Program delivers an unprecedented \$43 million in convenient financing for energy efficiency improvements. The cost effectiveness and high participation of the Power Smart line of programs leads to the launch of a new home program and further enhancements to existing programs.

▶ Manitoba is the national leader in the installation of geothermal heat pumps, primarily through the Power Smart Earth Power Program.

<b>CONSOLIDATED FINANCIAL RESULTS</b>	<b>2003-04</b>	2002-03	Change
		<i>millions of dollars</i>	
<b>Electric Operations</b>			
Manitoba revenue	936	891	45
Extraprovincial revenue	351	463	(112)
Expenses	1 715	1 281	434
Net (loss) income	(428)	73	(501)
<b>Natural Gas Operations</b>			
Revenue	494	515	(21)
Cost of gas sold	375	392	(17)
Expenses	112	110	2
Net income before Corporate allocations	7	13	(6)
Corporate allocations	15	15	-
Net loss	(8)	(2)	(6)
<b>Consolidated net (loss) income</b>	<b>(436)</b>	<b>71</b>	<b>(507)</b>
<b>Retained earnings</b>	<b>734</b>	<b>1 170</b>	<b>(436)</b>
<b>OPERATING STATISTICS</b>	<b>2003-04</b>	2002-03	Change
<b>Electric Operations</b>		<i>billions of kilowatt hours</i>	
Generation	19.3	29.2	(9.9)
Energy sales - Manitoba	19.3	19.3	-
Energy sales - Extraprovincial	7.0	9.7	(2.7)
		<i>thousands of kilowatts</i>	
Manitoba peak load	3 959	3 916	43
<b>Natural Gas Deliveries</b>		<i>millions of cubic metres</i>	
Residential sales	653	714	(61)
Commercial and industrial sales	893	980	(87)
	1 546	1 694	(148)
Transportation service	577	640	(63)
	2 123	2 334	(211)

## CHAIRMAN'S MESSAGE



The past year was a very demanding one for Manitoba Hydro as it managed the difficulties associated with drought.

The low water conditions meant significant losses for the Corporation, following several successful years of net revenues based largely on success in the export market. We expect that the drought cycle will give way to more normal water conditions and that Manitoba Hydro will regain its positive financial performance.

The Board was pleased during the year with the Corporation's involvement in new areas of energy development, including the continuation of Manitoba Hydro's wind monitoring study as well as preparations for small-scale hydrogen production. The Corporation has also partnered with three other Canadian utilities to further investigate developments in the use of biomass to produce electricity.

We also viewed with satisfaction the progress on the potential partnership between Manitoba Hydro and the Nisichawayasihk Cree Nation (NCN) as the Wuskwatim Generating Station moved into the regulatory review phase during the year. The two parties have been working for several years to reach this stage and NCN has been a full participant in the development of the proposal. Under the framework of the partnership, Manitoba Hydro would own at least 67 per cent of the project and NCN would have the option to own up to 33 per cent. The project development agreement, currently under negotiation, will be subject to a ratification vote of the NCN membership and approval by the Manitoba Hydro-Electric Board and the Manitoba Government. It is a remarkable achievement that the two parties, once separated by negative feelings arising out of past hydro development, have been able to jointly develop this proposal that will be of benefit to all concerned and will bring employment and business development opportunities to NCN.

Along with the plans for the new Wuskwatim hydro-electric development on the Burntwood River, the Corporation is also exploring the potential for further hydro development. Manitoba Hydro and Ontario's

Hydro One began a feasibility study during the year to examine potential new generating facilities in Manitoba and a high-voltage transmission line between the two provinces. Any sale agreement arising out of this study would provide clean energy to Ontario to potentially replace electricity currently produced by fossil-fuel generating stations.

The Corporation continued its efforts during the year to enhance its relationship with Aboriginal people in the province and to ensure that our workforce reflects the population we are serving in Manitoba. To that end, the Corporation has emerged as a leader in Canada in Aboriginal employment, with approximately nine per cent of its workforce Aboriginal, with over 30 per cent of its northern employees of Aboriginal ancestry.

The Board has also followed with interest the ongoing efforts of the Corporation to provide information and incentives to improve the efficient use of energy in Manitoba. The Corporation's Power Smart programs have proved popular with residential and commercial customers, providing savings on customer's bills, while allowing Manitoba Hydro to export the electricity that has been saved.

The Corporation is facing an exciting period as it looks to develop additional hydroelectric sites with the full involvement of local communities, in such a way as to have a minimal impact on the environment. The potential development of wind generation resources, along with other alternative energy sources, and the progress on the new downtown office building means that the Corporation has a number of challenges in front of it, challenges it can and will meet with skill and energy.

The Board would like to recognize the efforts of employees in the past year as they dealt with difficult operating circumstances. The year ahead offers more opportunities and challenges which we expect will be met with the same success.

Victor H. Schroeder, QC  
 Chairman  
 The Manitoba Hydro-Electric Board

## PRESIDENT'S MESSAGE



The past year challenged the Corporation to respond to the severe difficulties posed by prolonged drought conditions that affected the normal production from Manitoba Hydro's hydroelectric facilities. While the dry conditions were extremely costly, the Corporation managed the situation so as to ensure a continuous supply of electricity to our customers, both here in Manitoba and in the export market.

Manitoba Hydro sustained a net loss on consolidated operations of \$436 million for the year, the largest loss by far in the Corporation's history. Previously the greatest loss experienced by Manitoba Hydro was in the 1988-89 fiscal year during another drought when the loss reached \$26 million.

Export revenues dropped by \$112 million from the previous year, and imports and thermal generation of electricity increased by \$418 as a result of reduced hydroelectric generation. The Corporation's long term financial plans take into account that drought conditions typically occur every 10 years or so and we plan to have sufficient retained earnings to accommodate the financial impact. It is expected that the drought-induced losses in 2003-04 will be recovered in future years when water conditions improve and exports return to recent levels.

Providing reliable energy services at low rates remains the primary goal for the Corporation. This simple goal, however, requires extensive efforts to plan for future needs, to have highly trained staff to operate the energy systems and ensure a high degree of reliability, and to take steps to maintain reasonable rates for natural gas and electricity service.

To maintain and increase export revenues, the Corporation, along with its First Nation co-proponent, the Nisichawayasihk Cree Nation at Nelson House, applied for regulatory approval for a new hydroelectric generating station. The proposed Wuskwatim Generating Station would produce 200 megawatts of electricity with very modest environmental impacts. At year-end, the project was being reviewed before

the province's Clean Environment Commission. Their report is expected in the late summer.

I continue to be very proud of the progress being made in our relationship with Aboriginal people in the province. We continue to reach agreements to settle outstanding issues from past developments, and indeed, the vast majority of such claims and issues have been settled. We have worked closely for a number of years with several First Nations to plan for the new hydroelectric developments, projects that allow the First Nations to become co-proponents and partners in the ownership of these facilities. In addition, we have been working successfully with Aboriginal groups, the Province of Manitoba and the Government of Canada to develop training programs to ensure that local people can maximize the employment benefits from future hydroelectric developments. We have also encouraged Aboriginal participation in the workplace through targeted trades training and apprenticeship programs as well as bursaries and scholarships.

At year-end we concluded a planned 15-month program with Cross Lake First Nation to deal with our obligations under the Northern Flood Agreement. The \$11.3 million program included, as examples, significant local employment in debris clearing and disposal, as well as safety programs, and domestic fishing and alternative foods support programs that, among other achievements, employed local fishers to supply 100 000 kilograms of fish for local consumption. Discussions continue on programs for the coming year in Cross Lake. There are ongoing discussions to implement the NFA in a fashion that will be acceptable to Cross Lake First Nation, the Province of Manitoba and Manitoba Hydro.

Manitoba Hydro also made significant progress on a very exciting undertaking during the year. In December 2003 we announced the location of our proposed new downtown head office building, an entire city block on the south side of Portage Avenue, bordered by Carlton and Edmonton Streets and Graham Avenue. Architectural firms have been selected to undertake a design for what will be a signature, world-class energy efficient facility, one that we expect will contribute to the continued revitalization of Winnipeg's downtown. A design

## PRESIDENT'S MESSAGE

team has been put together consisting of internal representatives, the design architect, Kuwabara Payne McKenna Blumberg (KPMB) of Toronto and the Manitoba firm of Smith Carter Architects and Engineers Incorporated as the architect of record, as well as other engineering specialists and construction advisors.

The building will be designed and constructed in accordance with sustainable development principles using Power Smart and the C-2000 sustainable building standards as established by Manitoba Hydro and Natural Resources Canada and targeting a minimum 60 per cent saving in energy consumption and a gold level LEED™ (Leadership in Energy and Environmental Design) certification. The new facility will provide greenhouse gas savings and will exemplify Manitoba's commitment to meet our climate change objectives. It will be designed to be adaptable to changing technology and workplace environments to suit Manitoba Hydro's present and future business needs and will provide a healthy and effective contemporary office environment for employees. Manitoba Hydro will continue its practice of openly consulting with community groups and the general public as the plans for this development continue to progress.

The Corporation continues to explore the potential for new and alternative energy sources. A wind monitoring project at seven sites in Manitoba continued with data collected from sensors on 60 metre-high towers. A report analyzing the year's data is expected during the upcoming year and it is expected that this will lead to a wind generation project in the future. Negotiations with a private wind developer, Bison Wind, also continued during the year on agreements to develop 99 MW of wind generation in the St. Leon area. An agreement is expected in the immediate future. In addition, the Corporation continues to be active in exploring and supporting the development of other energy fuels such as biomass, including utilizing hog waste, fuel cells, hydrogen and solar voltaic systems.

The Corporation's Power Smart programs remain popular with residential, commercial and industrial

customers in Manitoba, resulting in reduced energy costs for participants through better efficiency. The Home Comfort and Energy Savings Program allows residential customers to finance efficiency improvements through loans repayable on their energy bills. Over \$43 million in convenient financing has been provided under this program lowering customer heating bills by one million dollars per year. Since 2001, Manitoba Hydro has also partnered with Natural Resources Canada to deliver in-home energy assessments. The Power Smart EnerGuide home audit program got a significant boost during the year with the announcement of a \$70 million rebate program for renovations that improve energy efficiency. Manitoba Hydro also launched an aggressive \$14 million Power Smart New Home program during the year.

The Corporation also offers a number of Power Smart programs to industrial and commercial customers, including energy audits, lighting programs and targeted energy efficiency programs such as those for compressed air systems and manufacturing process systems.

During the year, I was pleased that the Corporation was able to reach new agreements with all five of its collective bargaining units, and that significant progress occurred with respect to the integration of former Winnipeg Hydro employees.

I would like to thank Manitoba Hydro employees for their effort and skill in a year in which they were required to deal not only with the normal challenges but also to manage the difficult circumstances of a drought that seriously hampered our operations.

I want to express my appreciation to the Chairman of the Manitoba Hydro-Electric Board, Vic Schroeder and his colleagues on the Board for their advice and support during the year.



R.B. Brennan, FCA

*President and Chief Executive Officer*





## CUSTOMER SERVICE

### Customer Relationships: Key to our Commitment to Serve

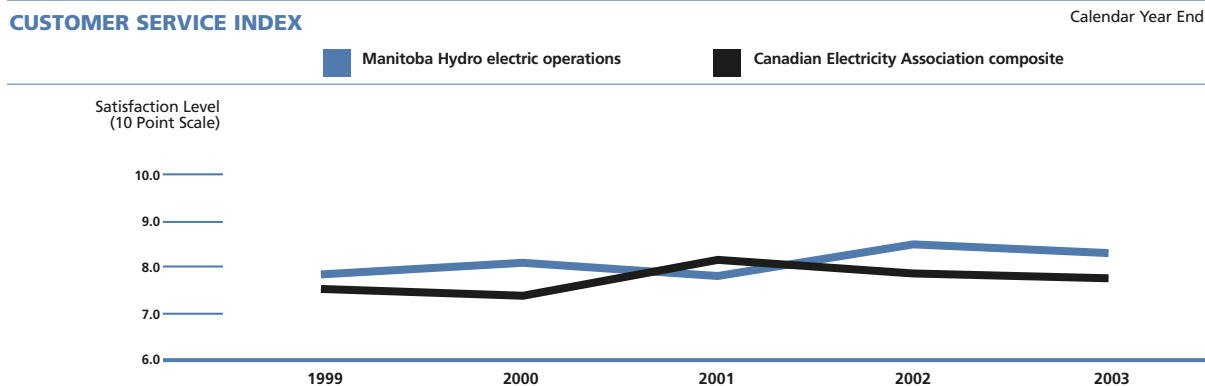
Domestically, Manitoba Hydro's service territory encompasses the entire Province of Manitoba. With 76 offices throughout the region and the dedicated efforts of some 5 395 employees, the Corporation delivers a high level of customer service in meeting the energy needs of all Manitobans. It offers the lowest electricity rates in North America coupled with some of the most innovative and aggressive energy conservation programs. In addition, it delivers a clean, renewable energy product over a highly reliable, long distance transmission system. As the major natural gas distributor in Manitoba, the utility also delivers, on average, 2.1 billion cubic metres of natural gas to nearly 100 communities across southern Manitoba.



Manitoba Hydro natural gas employees enter a Stonewall customer's home to re-light appliances following a massive natural gas supply interruption in the town. At right, employees work to solve the cause of the interruption at the gas pumping station.



## CUSTOMER SERVICE



In October 2003, Manitoba Hydro's Customer Contact Centre received the Service Quality Measurement (SQM) Group Inc. Highest Customer Satisfaction Award for a Call Centre. SQM specializes in benchmarking customer and employee satisfaction with customer contact centres across Canada and the U.S.

The centre received approximately 844 000 customer calls in 2003-04 with the majority of calls regarding billing inquiries and service assistance. With the launch in May 2003 of a new interactive voice response system, over 50 per cent of customers calling into the centre regarding power outages were able to obtain information through the self-service feature of this system. Eighty per cent of customers surveyed remain very satisfied with the overall service received through the contact centre.

Weather and equipment failures often challenge the Corporation's ability to serve the energy needs of its customers. In late January 2004, about 1 200 natural gas customers in the Town of Stonewall lost their gas supply for up to 12 hours after a blocked mechanical strainer in the pipeline interrupted the community's supply. The incident occurred during one of the coldest days of the year, with wind chills recorded at -50 degrees Celsius. The problem resurfaced nine days later, albeit under more moderate weather conditions. The incidents became the testing ground for the recently upgraded Corporate Emergency Response Plan along with the Town's own Emergency Response Plan. Over 80 Hydro personnel, along with the Stonewall Volunteer Fire Department and local heating contractors, went door-to-door to initially secure the system and then later, to re-light gas appliances after Hydro crews installed a by-pass around the blocked section. Both Emergency Response Plans were recognized by the provincial emergency measures organization.

The Public Utilities Board of Manitoba recently approved the utility's application to acquire the assets of the Gladstone-Austin Natural Gas Co-op. Manitoba Hydro now provides natural gas service to 400 customers in the Town of Gladstone, the community of Austin and rural municipalities of Westbourne and North Norfolk.

Manitoba Hydro once again hosted three Public Accountability meetings in the fall of 2003 in Killarney, The Pas and Winnipeg. The meetings are held annually to provide customers with a general corporate update and give customers the opportunity to voice their concerns and opinions.

## CUSTOMER SERVICE

### Export customers bring strength, value

Manitoba Hydro continues to seek out and serve customers in the U.S. and Canada in a very competitive wholesale market. Over the last three years, revenues from exports have averaged approximately 35 per cent of the Corporation's total revenue from electricity sales. These exports represent a significant advantage to Manitoba Hydro's domestic customers by helping to keep electricity rates substantially lower than would otherwise be the case. The most significant export market for Manitoba Hydro continues to be the United States, with export sales accounting for approximately 6 billion kilowatt hours or 85 per cent of total exports in 2003-04.

In addition to the financial benefits of exports, sales of hydro-electricity that are surplus to Manitoba's needs have environmental and reliability benefits. Sales of hydro power produce global environmental benefits by reducing fossil fuel generation and their associated greenhouse gas emissions by neighbouring utilities. Reliability benefits occur during emergencies and droughts, as demonstrated this past year, when Manitoba Hydro used the interconnecting transmission lines to supply power made necessary by prolonged drought conditions on Manitoba rivers.



President and CEO Bob Brennan at the announcement of the purchase of the chosen site of the new downtown utility headquarters with site owner, Albert Cohen.

### Plans proceed for new downtown head office

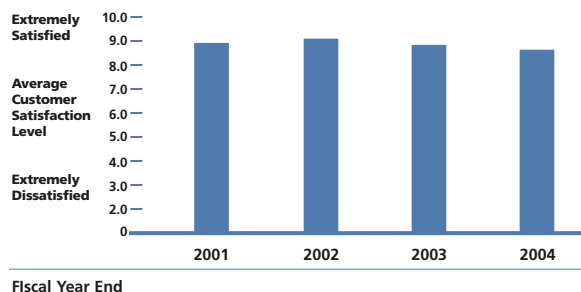
Manitoba Hydro made significant progress in the development of its new downtown signature office building in 2003-04. In December 2003, the location of the new building was announced. The building will be constructed on a city block on the south side of Portage Avenue, bordered by Carlton and Edmonton Streets and Graham Avenue in the heart of Winnipeg's downtown. The location on one of Winnipeg's premier streets offers tremendous potential for the Corporation to meet its sustainability goals by building an energy efficient building while simultaneously enhancing adjacent retail and commercial services and strengthening street level activity. After a detailed review of expressions of interests from renowned architectural firms from around the world, Kuwabara Payne McKenna Blumberg (KPMB) Architects of Toronto, Ontario were selected as Design Architects. KPMB is partnering with the Manitoba firm of Smith Carter Architects and Engineers Incorporated who, as the Architect of Record, will provide local expertise and design and production support. With the selection of firms providing engineering, structural, mechanical, electrical and energy support also completed during the year, the design process was initiated. Site preparation for construction is slated to begin later in 2004.

### New Dauphin facility better serves community

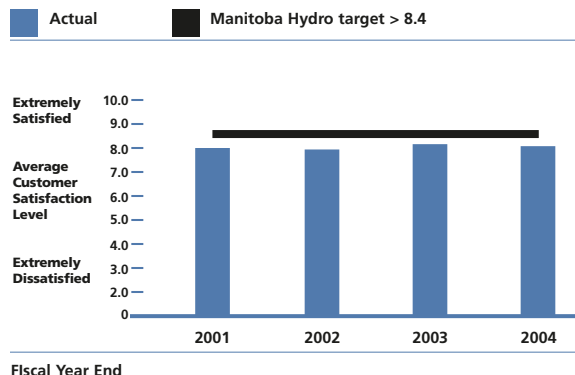
A new customer service facility was constructed in Dauphin to better serve the community and surrounding service territory. The 1 997 - square metre building was engineered and constructed to be 25 per cent more energy efficient than the National Energy Building Code.

## CUSTOMER SERVICE

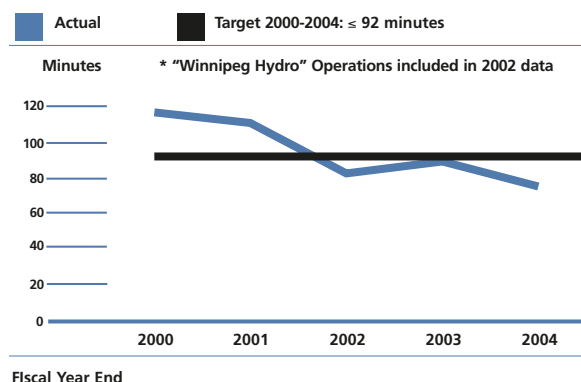
### SATISFACTION WITH SYSTEM RELIABILITY



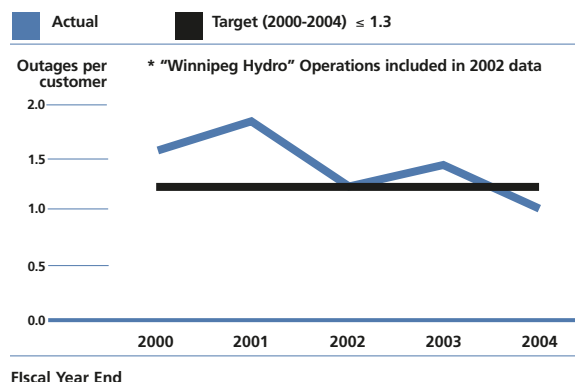
### SATISFACTION WITH OVERALL CUSTOMER SERVICE



### AVERAGE CUSTOMER OUTAGE DURATION



### AVERAGE CUSTOMER OUTAGE FREQUENCY



## Power Smart builds a powerful momentum

Manitoba Hydro's Power Smart\* achievements in the past year have been significant and far-reaching, with an emphasis placed on enhancing the energy conservation programs in all three customer sectors: residential, commercial and industrial. Additionally, Manitoba Hydro has been moving toward broadening its conservation efforts to add natural gas, and in some cases, water and waste, as well as increasing efforts to deliver customized service to various consumer groups.

Since 1991, an estimated 292 MW of demand and annual energy savings of approximately 631 GWh have been saved through Power Smart efforts. This is equivalent to the combined electricity requirements of Steinbach, Dauphin, Morden, Beausejour, Souris and Minnedosa. The demand savings include approximately 163 MW obtained from our Curtailable Rates Program. The Power Smart initiative is expected to achieve total savings of 356 MW and 1 272 GWh per year by 2011-12.

\* Manitoba Hydro is a licensee of the Trademark and Official Mark.

## CUSTOMER SERVICE

### *Tribute to our Customers:* **Residential**

Homeowners such as Renee Palumbo continue to embrace the Power Smart Home Comfort and Energy Savings Program by using it to install energy efficient windows and doors, replace old furnaces and top up insulation. In turn, the program has stimulated economic activity among Manitoba's renovation industries, such as in Polar Windows of Canada, part of a network of over 700 suppliers participating in the program.



## CUSTOMER SERVICE

### ► Power Smart sets its sights on the home market

An aggressive \$14 million Power Smart New Home Program was launched in 2003-04 which is designed to focus on the “whole home” and conservation of electricity, natural gas and water. It is anticipated that the program will reduce electricity consumption by 8 MW and 22 GWh, natural gas consumption by 3.6 million cubic metres, equivalent to 62 000 tonnes of greenhouse gas emissions by 2011.

For the third straight year, Manitoba Hydro’s Home Comfort and Energy Savings Program continued to surpass expectations, and has been well received by Manitobans with over 20 000 participants. Under the program, over \$43 million in convenience financing has been provided. In addition to the significant energy savings achieved for participants, the program has also stimulated economic activity in Manitoba’s renovation industry through a network of over 700 participating suppliers. To encourage even further participation, the interest rate on the Power Smart loans, including geothermal heat pumps, was lowered from 8.5 to 6.5 per cent. To date, Manitobans have saved an estimated 900 kW and 1.8 GWh of electricity and 2.5 million cubic metres of natural gas equivalent to approximately 6 300 tonnes of CO<sup>2</sup> emissions.

Manitoba Hydro has partnered with Natural Resources Canada to deliver residential in-home energy assessments. Since 2001, the Corporation has conducted over 5 300 assessments. The success and momentum of this program is evident through the growth of home evaluations, with 3 000 assessments conducted since October 2003. The momentum is also linked with a federal \$70 million EnerGuide program that provides homeowners, who have had an energy assessment, rebates for renovations that improve energy efficiency. The assessments are performed through 28 trained evaluators located throughout the province. In 2003-04, Manitoba Hydro and Manitoba Conservation initiated a pilot project to incorporate water conservation into the residential home audits.



## CUSTOMER SERVICE

### ► Maximizing Earth Power

Through Manitoba Hydro's Power Smart Earth Power Program, Manitoba is the national leader in the installation of geothermal heat pumps. Even though Manitoba represents less than four per cent of the national population, Manitoba accounted for about 19 per cent of heat pump installations in Canada during 2003. Sales in Manitoba grew from 400 units in 2002 to 513 units in 2003, a 28 per cent increase. At the end of the fiscal year, total heat pump installations in Manitoba were 3 413 units compared to 34 750 units in all of Canada. Since the introduction of the Power Smart Earth Power Program in April 2002, a new Manitoba company based out of Winkler has begun manufacturing geothermal heat pumps.

Manitoba Hydro partnered with the Wheat Belt Community Futures Development Corporation to develop the first geothermal subdivision in Wawanesa, Manitoba. Construction of the first home began in October 2003. Discussions have also begun with various stakeholders on establishing a new Winnipeg geothermal heat pump subdivision.

### ► Energy efficiency plans for First Nations communities

In cooperation with Chiefs and Councils, Manitoba Hydro is embarking on a community energy efficiency action plan for residents in various First Nation communities. Starting with the communities served by diesel generation, the plan will be



Students of First Nations schools in communities served by diesel generation will receive additional information on efficient energy use as part of a pilot community energy efficiency action plan.

piloted in Northlands Denesuline First Nation at Lac Brochet, Shamattawa First Nation, Sayisi Dene First Nation at Tadoule Lake, and Barren Lands First Nation at Brochet. In addition, the Nisichawayasihk Cree Nation at Nelson House and the Mathias Colomb First Nation at Pukatawagan have also expressed interest in participating.

The proposed plan includes conducting workshops in each community to explain measures residents can take to reduce their overall electricity use and costs. The plan will also assist First Nations with training of housing authority personnel to establish local expertise in energy efficient construction, efficient use of energy, and the proper care and maintenance of heating and ventilation systems.

In addition to information already provided on the safe use of electricity, students will receive instruction about the energy efficient use of electricity through direct contact and resource materials provided to the local education authorities.

### ► Energy conservation knowledge shared

Consumer workshops across the province for new home buyers and existing homeowners continued to be offered in 2003-04. The workshops promote energy efficiency and assist customers in reducing their energy bills and improving home comfort. Approximately 600 Manitobans participated in 19 workshops held during 2003-04.

In conjunction with Red River College, the utility has incorporated R-2000 building techniques into the college's building technologies curriculum. This training is being delivered as part of the Architectural/Engineering Technology stream in the Thermal Energy Systems course.

Manitoba Hydro continues to support and partner with the Manitoba Branch of the Climate Change Connection to achieve mutual objectives. Seven workshops in several communities throughout Manitoba were held to promote community-based efforts to support greenhouse gas emission reductions and energy conservation.

## CUSTOMER SERVICE

### Industry gets a boost with energy-saving programs

A 10-year \$28 million redesign of the Power Smart Commercial Lighting Program was launched in 2003-04. The program exceeded its first year energy target of 8.4 GWh ahead of schedule. In its first year of operation the revamped program has helped to initiate over 340 lighting retrofits and exceeded its initial energy saving target by over 90 per cent.

Manitoba Hydro and the City of Winnipeg continue to pursue an aggressive conservation effort in City-owned facilities. Retrofit construction has begun at the Pan Am Pool, Terry Sawchuk Arena, the City's Main Street Shops, Chalmers Community Centre and the Bunn's Creek Park. Efforts target savings related to electricity, fossil fuels and water.

### Municipal Efficiency Project

A new project to help Manitoba municipalities reduce operating and maintenance costs through energy and water efficiency measures is progressing. Developed in partnership with the Association of Manitoba Municipalities, Agriculture Canada, Manitoba Conservation, Manitoba Culture, Heritage and Tourism, and Manitoba Intergovernmental Affairs, the Manitoba Municipal Efficiency Project will audit and provide recommendations for improving system in municipal water distribution and wastewater collection, and energy and water efficiencies in municipal buildings.

Launched in the last fiscal year, Power Smart design standards for new and renovated buildings continue to assist owners and engineering/architectural teams in developing energy efficient commercial/institutional building designs with operating cost savings, lower electricity bills and improved facility comfort. Manitoba Health has recognized the importance of these benefits and has stipulated that all new construction and major renovations meet the standards developed by Manitoba Hydro. Several new projects have already been built as Power Smart facilities, including the Swan Valley Health Centre. In 2003-04, the Public Schools Finance Board also adopted the design standards as the minimum requirement for all new capital projects. Several new school projects are now in the design stage including Falcon Beach, East Selkirk, Winkler, Deloraine, Inwood and St. Vital.

Manitoba Hydro has retrofitted a number of its own buildings utilizing Power Smart measures. The Corporation retrofitted the Dorsey Converter Station's lighting system changing over 2 100 fixtures to more efficient lighting standards. As well, both an air handling system and a well water cooling system were upgraded at the station. This resulted in annual energy savings of more than 1 800 000 kWh and demand savings of 170 kW.

Light emitting diodes holiday lighting, an emerging energy efficient product, was used at the Corporation's Head Office. This product provides efficiency savings of 95 per cent over traditional incandescent light strings.

As one of many energy efficiency partnerships leveraging the Power Smart brand, Manitoba Hydro partnered with Natural Resources Canada to promote Energy Star in Manitoba, encouraging customers to "Be Power Smart - Buy Energy Star Products". Energy Star products, anything from homes to light bulbs, meet strict international established standards in energy efficiency and are part of a dynamic government/industry partnership that offers businesses and consumers energy-efficient solutions.



## CUSTOMER SERVICE

### *Tribute to our Customers:* **Suppliers to our operations**

Manitoba Hydro annually purchases about \$2 million in small to medium size electrical components for our operations. Paul Gouzecky of West Coast Engineering Group of Winnipeg is one of the Corporation's major suppliers of streetlight standards. Each year, Manitoba Hydro obtains goods and services from over 3 000 suppliers in Manitoba and worldwide.



## CUSTOMER SERVICE

### ► Powering industry efficiencies

The equipment maintenance and power factor correction project with Louisiana Pacific's Orientated Strand Board (OSB) plant in Minitonas, Manitoba, was completed in 2003-04. As a result, the company's facility has become one of the most energy efficient OSB plant Louisiana Pacific has in North America of equivalent size. The company is now considering installing a plant-wide energy management system.

Tolko Industries Ltd. has contracted with Manitoba Hydro to design and install a comprehensive Energy Management System. The use of advanced metering and software allows Tolko to monitor every sector of their forest products operation at The Pas as well as ensure that they are using the electrical energy as efficiently as possible.

Manitoba Hydro, working with the major forestry industries in the Swan River Valley, developed an alternate way to provide electricity to the Duck Mountain Interpretive Centre used in the summer months for environmental education purposes. Solar power was identified as being the most cost-effective and efficient in this situation. Manitoba Hydro partnered with local industry to support this innovative project.

Manitoba Hydro's Performance Optimization Program benefited a major aircraft company in Manitoba. Refinements to the Standard Aero's plant compressed air systems resulted in an 86 per cent saving in compressed air operating costs. The project won one of Canada's Energy Efficiency Awards in 2004, earning recognition from Natural Resources Canada as an excellent example of Canadian innovation and achievement in the field of energy efficiency.

Canadian National Railway Company's Symington Yard in Winnipeg and Manitoba Hydro modified the track blower system used by the railway to keep snow off the track switchers by designing a sophisticated software system that has produced remarkable energy savings for the company. Electricity bills have been reduced by half and plans are now proceeding to install more blowers to the system that switches blowers off and on in keeping with the weather data, yard schedules and power consumption factors.

### ► Manitoba: A great place to do business

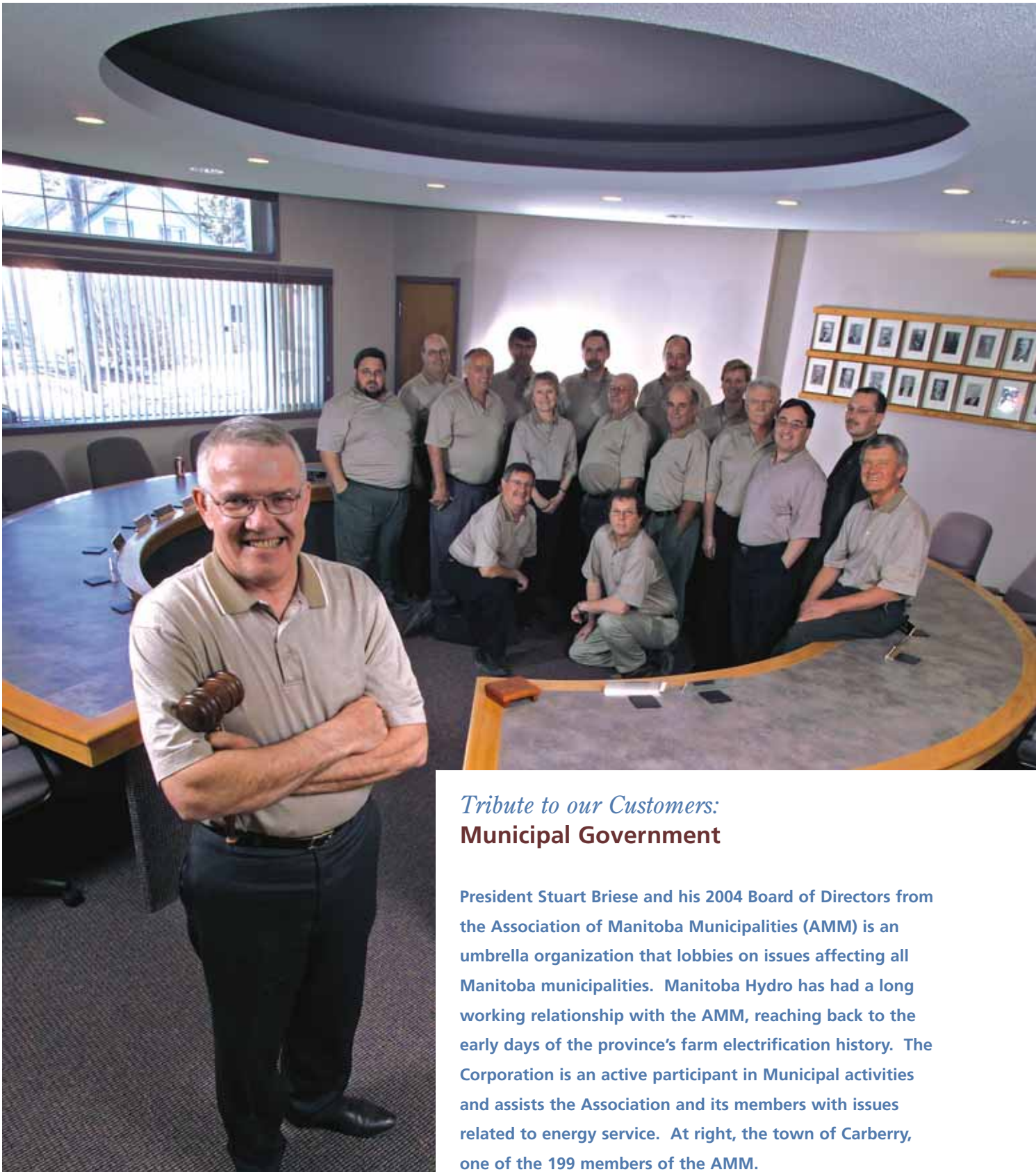
Manitoba Hydro works with various provincial, regional and local agencies in achieving mutual economic development goals. Together, we are able to leverage each other's resources and efforts and achieve more than it would if each were working independently. Work in this area ranges from early-stage marketing of Manitoba as a suitable business location to the detailed follow through required to help get a new customer's facility in Manitoba operational.

During 2003-04, a significant new electricity and natural gas industrial customer began operation. J.R. Simplot Company started operation of its new \$120 million potato processing plant just west of Portage la Prairie.

Manitoba Hydro has also worked actively during 2003-04 to support the growth of a local ethanol industry. This has included working with many local communities interested in attracting an ethanol production facility to their communities, as well as working with the companies that are examining the feasibility of building ethanol production facilities in Manitoba.



## CUSTOMER SERVICE



### *Tribute to our Customers:* **Municipal Government**

President Stuart Briese and his 2004 Board of Directors from the Association of Manitoba Municipalities (AMM) is an umbrella organization that lobbies on issues affecting all Manitoba municipalities. Manitoba Hydro has had a long working relationship with the AMM, reaching back to the early days of the province's farm electrification history. The Corporation is an active participant in Municipal activities and assists the Association and its members with issues related to energy service. At right, the town of Carberry, one of the 199 members of the AMM.

## CUSTOMER SERVICE

### ► Energy Rates

Following a public hearing process that occurred in 2002, the Public Utilities Board ordered Manitoba Hydro to implement electricity rate decreases of 2 per cent on average for large industrial customers and 1 per cent on average to small commercial customers. These decreases were retroactive to April 1, 2003, and were implemented on January 1, 2004. A one-time retroactive credit was applied to March 2004 bills.

For the first time in seven years for residential and small commercial customers and the first for industrial customers in 12 years, the Corporation applied to the Public Utilities Board for increases in electricity rates averaging 3 per cent, effective April 1, 2004 and 2.5 per cent effective April 1, 2005. The significant impacts caused by the historically low water levels and persisting drought conditions throughout Manitoba precipitated the modest rate increase. The proposed rate increase will also help to offset the normal cost increases incurred in operating the utility as well as the anticipated higher costs in the future to maintain the utility's infrastructure. Even with the proposed rate increases, Manitobans would continue to benefit from having the lowest electricity rates in the country.

Manitoba Hydro passes the cost it pays for natural gas directly through to its customers with no markup. The Corporation uses financial instruments in the natural gas futures market to reduce the volatility associated with natural gas costs. As a result of this initiative, the Corporation has reduced the volatility of Primary Gas rates by approximately 20 per cent compared to what it would otherwise have been. This initiative is but one component of the Corporation's overall strategy to manage the volatility associated with the purchase of natural gas. Other components include setting the quarterly Primary Gas rates based on a 12-month prospective basis; the use of deferral accounts to capture timing differences; and the natural hedge provided by underground storage.

Over the fiscal year 2003-04, four changes to natural gas prices were passed on to Manitoba Hydro customers: in May 2003 ( 1.7 per cent increase ), August 2003 ( 10.2 per cent decrease, including the removal of a deferral rider), November 2003 ( 3.0 per cent increase ), and in February 2004 ( 1.1 per cent increase ). The Corporation's Primary Gas rate is updated on a quarterly basis according to the projected cost of Primary Gas supplies for the next 12 months as forecasted in financial markets.



## TRANSMISSION AND DISTRIBUTION

### *Tribute to our Customers:* **Interconnected Utilities**

The ability to import and export electricity to and from neighbouring utilities through 12 interconnecting transmission lines to Ontario, Saskatchewan and the United States is a crucial element of our support operations. The relationship has demonstrated its value many times over the years from severe weather occurrences to severe drought. The special relationship Manitoba Hydro has with its largest export market in the United States, accounted for 85 per cent of total exports sales in 2003-04. Revenues from these sales continue to help keep rates charged to Manitobans substantially lower than would otherwise be the case.



## TRANSMISSION AND DISTRIBUTION

### ► North Eastern blackout points to reliability, security cornerstones

The massive power failure across Ontario and the northeast United States on August 14 was a dramatic illustration of the importance of power system reliability and security. Investigation by a joint Canada-U.S. task force determined that the principal causes were inadequate situational awareness, inadequate System Operator training and inadequate vegetation management in the Ohio utility's area where the blackout was precipitated. Manitoba Hydro's power system is designed to safely withstand the sudden forced outage of any single element on the system, whether it's the mechanical failure of a generator or ice build up on a transmission line. In addition, there are operating limits and contingency plans in place to address failures beyond the scope of the "single worst loss" scenario.

The backbone of these contingency plans is the ability to import electricity from neighbouring utilities through interconnecting transmission lines to Ontario, Saskatchewan, and the United States. In total, there are 12 interconnections in Manitoba Hydro's system. Together they are capable of simultaneously importing 1 100 MW. These interconnections proved essential in providing a secure supply of electricity for Manitoba in light of this summer's low water flows.

In 2003 efforts with utilities south of Manitoba Hydro in the Mid-Continent Area Power Pool (MAPP) region to create a new stand-alone reliability organization, known as the Midwest Reliability Organization (MRO), continued. Manitoba Hydro has an opportunity to have a seat on the board of directors. Once approved by the North American Electricity Reliability Council the MRO would

replace MAPP as a regional reliability council. The MRO footprint encompasses a larger geographic region than the existing MAPP Reliability Council. The MRO is planning to become fully operational in January 2005.



Manitoba's extreme climate will often test Manitoba Hydro's reliability of supply. Here, crews work at restoring power on a lower voltage distribution line in Winnipeg following a Spring snowstorm.

## TRANSMISSION AND DISTRIBUTION

### ▮ System Operator Training, certification

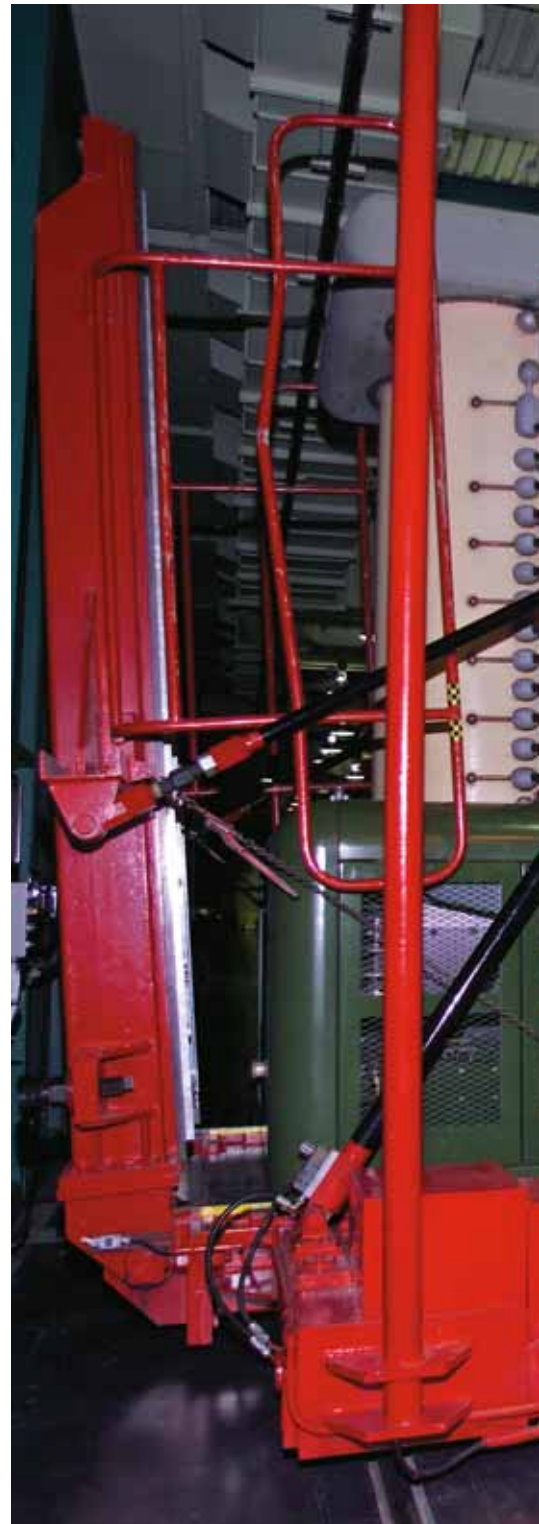
In response to electrical industry reliability requirements, North American Electricity Reliability Council (NERC) certification of system operators is required for staff that is directly responsible for reliable operation of the interconnected bulk electric system. Manitoba Hydro is certified as a Trainer for operators. In 2003-04, five Manitoba Hydro staff were certified as NERC System Operators and 20 others re-certified. New training was developed and implemented on a Power System Simulator to prepare System Operators to recognize and appropriately respond to system emergencies. The functionality and security of the computer system that monitors and controls the power grid is continually evaluated to ensure system operators have the necessary tools and system visibility to operate safely and reliably.

### ▮ Winnipeg -Interlake-Nelson River Fibre Optic Cable install nears completion

Progress continues on the installation of a fibre optic cable communications system, through the Interlake, from Winnipeg to the Nelson River stations in Northern Manitoba. The system will replace existing microwave radio communications systems that can no longer meet power system reliability requirements. Upon completion of the project in June 2004, Manitoba Hydro will have over 2 000 kilometres of fibre optic cable installed within the province.

Manitoba Hydro continues to permit carriers, internet service providers and community aggregators access to its broadband capacity at commercially competitive rates. The delivery of broadband services is showing continued interest and growth and, where available, has had a positive impact upon communities by providing medical, educational and socio-economic opportunities.

A newly developed technology is currently being evaluated by Manitoba Hydro that enables power utilities to transmit and receive broadband data on existing medium voltage distribution power lines. This technology is being tested by several utilities in Canada after successful deployment in European utilities.



## TRANSMISSION AND DISTRIBUTION

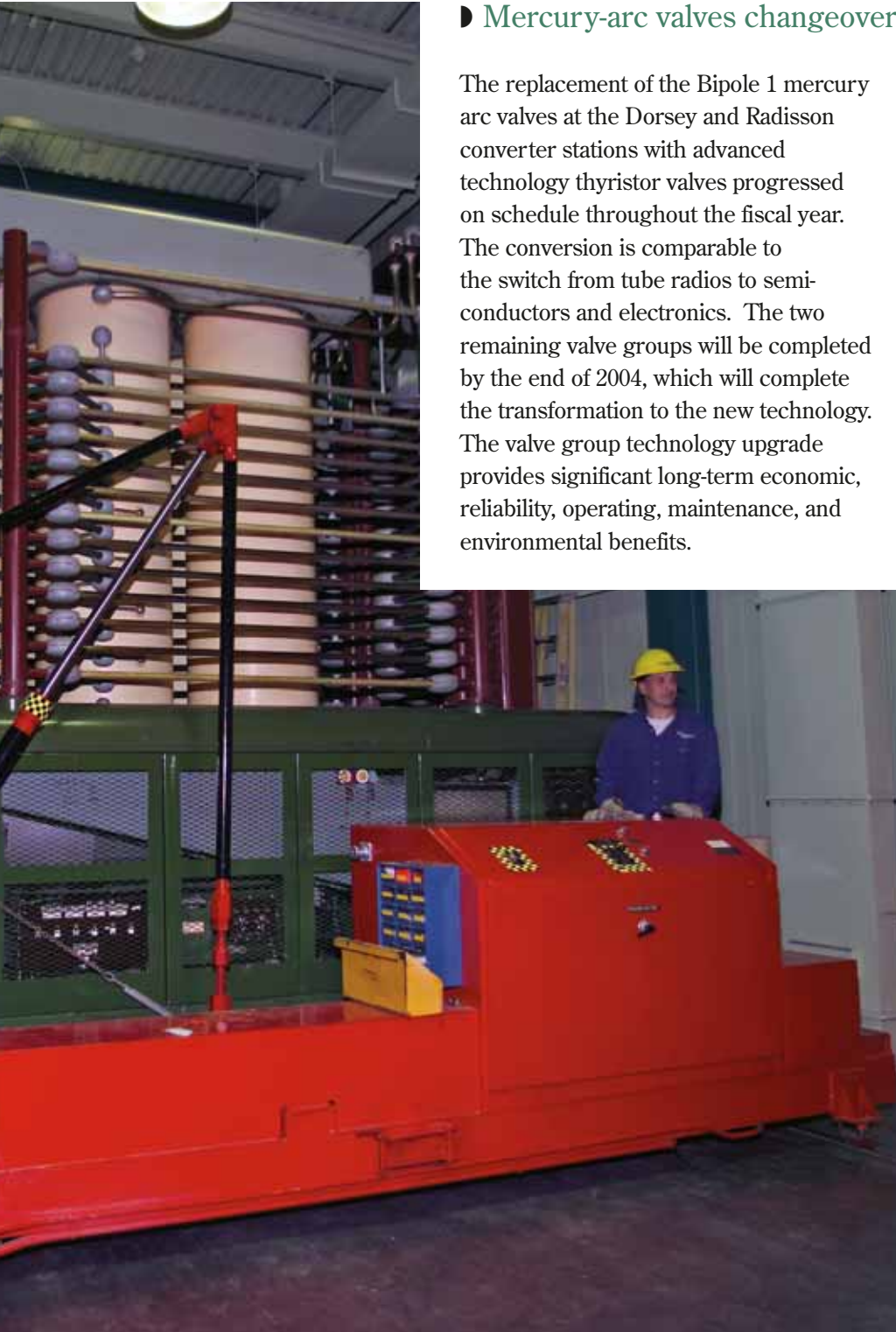
### ► Mercury-arc valves changeover to thyristors technology

The replacement of the Bipole 1 mercury arc valves at the Dorsey and Radisson converter stations with advanced technology thyristor valves progressed on schedule throughout the fiscal year. The conversion is comparable to the switch from tube radios to semi-conductors and electronics. The two remaining valve groups will be completed by the end of 2004, which will complete the transformation to the new technology. The valve group technology upgrade provides significant long-term economic, reliability, operating, maintenance, and environmental benefits.

A multi-project initiative aimed at improving reliability and reducing the severity of outages at the HVDC converter stations of Radisson, Heday, and Dorsey began in 2003-04. For example, battery systems were upgraded, eliminating the possibility for small failures in battery back up equipment to cascade into larger system outages.

An ongoing HVDC converter stations program to identify problem transformers and acquire spare transformers resulted in two transformers being replaced in 2003 and a further three transformers identified for replacement over the next two years. The planned replacement of these transformers will improve reliability, reduce potential outage costs, and reduce risk from catastrophic failure.

The oil spill containment system for Dorsey, Radisson, and Heday converter stations was reassessed and upgraded in 2003-04. This involved complete site assessments, and the installation of monitoring wells, perimeter berms, and buffer zones. Rapid removal of spilled oil from a failed transformer will minimize the potential for fire damage to equipment as well as controlling the environmental impact.



A Dorsey Converter Station employee proceeds to transport a mercury arc valve out of the station in preparation for the conversion to thyristor valve technology. The changeover to the advanced technology progressed on schedule throughout the year.



## TRANSMISSION AND DISTRIBUTION



*Tribute to our Customers:*  
**Mid-size industrial**

Barry Larocque and Craig Senchuk of Atom-Jet Industries, located in Brandon, are a small manufacturer that specializes in customized machining for a diverse sector of industries from mining to food processing. Manitoba Hydro worked with the company to change out its T12 fluorescent lighting system in their shop to the more efficient T8's all under the redesigned Power Smart Commercial Lighting Program. The changeover resulted in an annual saving of over 9 000 kilowatt hours. The company was one of over 340 lighting retrofits that took place under the program in 2003-04.

## TRANSMISSION AND DISTRIBUTION

### ► Subtransmission lines increased

A 24 kV distribution line is being built to the new community at Hughes Lake. Community members of the Marcel Colomb First Nation were employed to assist with the various construction activities.

A rebuild of the 66 kV line through the Sagkeeng First Nation got underway in January 2004, employing members from that community.

A new 66 kV line to enhance the reliability to the community of South Indian Lake from Leaf Rapids was constructed in 2003-04. The project provided employment to local residents from the communities of Pukatawagan, Granville Lake, Nelson House and South Indian Lake.

A high speed electronic voltage control device that will improve voltage support and power quality in the communities of Bloodvein, Berens River, Poplar River, and Little Grand Rapids on the east side of Lake Winnipeg was placed in service at the Bloodvein Station. The installation provides life extension to the existing 66 kV system, deferring the need to construct a new 115 kV transmission line from Pine Falls to Bloodvein and a new 115-66 kV station near Bloodvein until 2011.

A pilot project in the Maples area of Winnipeg to assess the feasibility and cost-effectiveness of silicone injecting old 15 kV underground cable has shown to be a safe and environmentally friendly alternative to replacement. With an expected cable life extension of greater than 25 years, the cost of injection is 30 per cent of the cost of cable replacement. It also has minimum impact on the environment since the existing cable is not abandoned and extensive landscaping is not required.

Following extensive consultation with Manitoba Parks, Department of Fisheries and Oceans, and Whiteshell Provincial Park cottage owners, construction of Brereton Lake Station and associated distribution line improvements were completed. The project greatly improved the reliability of service to customers in this environmentally sensitive area.

### ► Ongoing replacements, maintenance continues

Various station site improvement projects involving the replacement of electrical components to upgrades of transformer units took place at the following stations in 2003-04: Arlington, Assiniboine Wilkes, Bloodvein, Dorsey, Great Falls, Harrow, Kelsey, Ponton, Portage South, Radisson, Rorketon, Thompson-Mystery Lake Road, Transcona, and Winkler.

### ► 4-in-1 trenching program implemented

Manitoba Hydro has implemented an underground residential distribution design that incorporates the underground cable and pipe facilities of electric, cable TV, telephone and natural gas in one trench. This design provides significant cost savings and ensures the appropriate placement of these facilities relative to each other resulting in easier locates by the utilities involved.

### ► Natural gas pipelines distribution expands

To meet the increased loads in the Morden/Winkler area, new gas pipelines were installed parallel to the existing transmission pipeline supplying gas from Oakville to the towns of Morden and Winkler.

## POWER SUPPLY

### ► Drought hits hard after 14-year absence

With water levels the second lowest since the 1940s, Manitoba's major river systems have limited the Corporation's hydraulic generation and necessitated it being a net importer of electricity, the first time since 1989. Energy in reservoir storage across Western Canada is at a 27-year low. Lake Winnipeg was at its second lowest level since Manitoba Hydro began regulating the lake for power production purposes in 1976.

Over 2003-04, water supply conditions have been near to the lowest on record for most of Manitoba and Northwest Ontario. Near average levels of precipitation across Saskatchewan and parts of Alberta were not sufficient to compensate for the very dry conditions in Manitoba and Ontario. Precipitation levels in the Lake of the Woods basin during the 2002-03 winter were the second lowest in 100 years.

In 2003-04, Manitoba Hydro successfully managed the water supply and planned system operations ensuring that sufficient supplies of electricity would be available to serve our customers.

During 2003-04, because of the drought, Manitoba Hydro managed its reservoir outflows throughout the summer and fall to ensure the reliability of the province's electricity supply, discontinuing most non-firm export sales. About 30 per cent of Manitoba Hydro's total supply requirements were provided



Power Trading Manager Denise Mortimer shares the scheduled energy sales for the day with President and Chief Executive Officer Bob Brennan. The 2003-04 year was a particularly challenging one for the utility's power trading operations because of the severe drought conditions in the province. However, through the utility's strong interconnected system with other jurisdictions and successful management of the water supply, sufficient supplies of electricity were available to Manitoba Hydro customers.

## POWER SUPPLY

by imports of purchased electricity and the utility's two thermal generating stations at Brandon and Selkirk. Reservoir releases were managed to balance the impact of low water on other waterway users.

Manitoba Hydro was active in both the gas and power markets, arranging for power and natural gas purchases to ensure both export and domestic load requirements were met in the most economical manner. Over 7 million MWh of power and 8 billion cubic feet of gas were bought. Gas was purchased and stored in southern Ontario, Kansas, and Oklahoma. Over the winter the majority of the gas was sold back to the market as alternative lower cost supplies of electricity were found. Most power was purchased from Minnesota and North Dakota but it was also purchased from as far away as Texas and British Columbia. Contributing to keeping costs down this year was having increased import capability as a result of the Glenboro-Harvey transmission line that went into full service in 2002-03, increasing Manitoba Hydro's dependable import capability from the United States to 700 MW.

### ► New consumption records reached

During 2003-04, Manitoba Hydro reached a new historical peak demand for electricity of 3 959 MW and for natural gas of 556 710 gigajoules. Demand for natural gas from the Selkirk and Brandon generating stations contributed to the natural gas peak. Both occurred on January 5, 2004.



Ice fog blankets the provincial capital as the extreme cold grips the province in January contributing to the utility reaching a historical peak demand for both electricity and natural gas on the same day: January 5, 2004.

## POWER SUPPLY

### ► Re-runnering of Kelsey moves ahead

Improving generation production at the Kelsey Generating Station by installing new turbine runners and other components will go ahead thanks to a comprehensive analysis undertaken by Manitoba Hydro using sophisticated three dimensional hydraulic models. The models examined how it would impact the environment with respect to water level variations and velocities. The models were coupled with a Geographic Information System to effectively demonstrate to regulators that the environmental effects would be negligible.



Manitoba Hydro staff joined Chief William Miles of Shamattawa First Nation in celebrating completion of the new diesel generating station that brings expanded electricity service to the 900 residents of Shamattawa. The community is located 800 kilometres north of Winnipeg.

### ► Shamattawa Diesel Station in service

An expanded diesel generating station that adds three 1 015-kilowatt diesel generating units to meet the projected power demand in this northern community of 900 residents went into service July 2003. The two-year construction project involved Manitoba Hydro and the joint venture contractor, Shamattawa First Nation and A1 Renovating Ltd. The station was also relocated to a site just west of the community's wastewater lagoon, virtually eliminating any noise that may have been heard by residents and reducing any potential effects on air quality.

### ► Soil remediation projects continue

Cleanup of the decommissioned diesel generating station sites in several north central Manitoba communities continued. The communities were connected to the electrical power grid in 1998. In 2003-04, site cleanup was essentially completed in Oxford House while soil remediation continues in St. Theresa Point.

Soil cleanup and water sample monitoring were also undertaken at Moose Lake, Norway House, Cormorant, Pikwitonei, Brochet, and Gods Lake Narrows.

### ► Protecting our generation investments

Various upgrades and maintenance efforts to the Corporation's generating stations and surrounding infrastructure were undertaken during 2003-04.

Generator cooling modifications were completed to all 10 of the Long Spruce generating units resulting in significant cost savings and extending the expected life and performance of the generators.

Great Falls Generating Station's Unit #3 was returned to service following a major overhaul that included re-runnering, generator rewind, new transformer and other mechanical upgrades.

## POWER SUPPLY



At the Pointe du Bois Generating Station, the oldest hydroelectric generating station operating in Western Canada, removal of a turbine runner and shaft assembly is underway. This Unit's turbine runner is one of several in the station that has undergone refurbishment or replacement. Replacement of the runners in two of the 16 units at the station are expected to increase the output of each unit by 13 per cent and boost generation revenue by up to \$4 million over the next 10 years.

Unit #1 at Pointe du Bois Generating Station was also returned to service after a broken turbine shaft was replaced. To enhance structural integrity and stability and increase station spill capacity, concrete rehabilitation work was completed on the station's spillway and associated structures. Unit #2 at Slave Falls Generating Station was also restored to service in December 2003 after extensive repairs following a bearing failure.

Grand Rapids Generating Station underwent numerous maintenance upgrades and repair work to its spillway gates, turbine mechanical parts and powerhouse crane. Major dyke repairs were performed at selected locations on the forebay dyke. Work has also begun on a major overhaul of Unit #4 which will allow it to operate as a synchronous condenser as well as upgrading the associated control system.

Near the Jenpeg Generating Station, repairs to the Kiskitto dyke and water control structure were completed by completely rebuilding the structure. The work was carried out by a local Norway House contractor. The dyke was found to be in need of maintenance work in the fall of 2001. In 2002-03, cofferdams were built to facilitate the removal of the dyke and make way for construction of the new earth dyke and concrete water control works.

### ► Reliability Centered Maintenance

Generation availability and reliability continued to improve with the implementation of Reliability Centered Maintenance practices. Implementation was completed at the Selkirk Generating Station and has been completed at Grand Rapids, Jenpeg, McArthur and Seven Sisters generating stations.

## POWER SUPPLY

### ► Dam safety

At the Kettle Generating Station, Manitoba Hydro's Emergency Preparedness Plan was tested simulating a main dam breach to ensure that staff and others outside of the organization knew the issues of such an unlikely occurrence. The exercise involved Fox Lake First Nation, the Town of Gillam, Gillam RCMP, Hudson Bay Railway Company, Gillam Hospital, Gillam School, Manitoba Highways Department, and Manitoba Conservation.

Both Pine Falls and McArthur generating stations underwent a dam safety review with a site inspection in 2003-04.

Manitoba Hydro's Dam Safety Program ensures its dams are constructed, operated and maintained in a safe manner following national standards and criteria. This program is based on the Canadian Dam Association's "Dam Safety Guidelines".

### ► Brandon serves pivotal role in drought year

Strategically and economically, Manitoba Hydro benefits from the diversity associated with maintaining some coal-fired generation on its system. Brandon Generating Station's Unit #5 was used to displace costly imports and reduce the overall cost of meeting power demands in Manitoba. It is estimated that during 2003-04, operation of the coal-fired Unit #5 saved the Corporation \$24 million compared to using gas-fired generation or purchasing imported power.

### ► NCN, Manitoba Hydro partnership developments

Manitoba Hydro and Nisichawayasihk Cree Nation (NCN) have moved closer in 2003-04 to finalize a partnership to develop the new Wuskwatim hydroelectric generating station in northern Manitoba. The proposed 200 MW generating station at Taskinigup Falls on the Burntwood River is considered to be a low impact project that will flood less than one-half square kilometre. The earliest that the project could bring new electricity to market following the receipt of all environmental approvals and the decision to proceed with construction would be in 2010.

Under the framework of the partnership, Manitoba Hydro will own at least 67 per cent of the \$800 million project, and NCN will have an option to own up to 33 per cent. Negotiating teams for both parties are now working on the legal text of a project development agreement that will be subject to a ratification vote of the Nisichawayasihk membership and approval by the Manitoba Hydro-Electric Board and Manitoba Government.

In addition to its ownership position, NCN will benefit from a new training centre and pre-project training opportunities, employment, and business contracts. The project also includes training and employment benefits for other northern Aboriginal people.

## POWER SUPPLY



### Wuskwatim project goes under the public microscope

The Manitoba Clean Environment Commission began public hearings in March 2004 into the need for, alternatives to, and environmental assessment of the Wuskwatim Generating Station and associated transmission facilities. The hearings are part of the comprehensive federal and provincial environmental review of the project. The commission will provide its recommendations to the Minister of Conservation prior to final licensing decisions by the province. Canada will consider the commission's report before final licensing decisions by the federal government.



NCN Chief Jerry Primrose, above, gives his opening remarks at the Clean Environment Commission's public hearings into the environmental review of the Wuskwatim Generating Station and its associated transmission facilities. Manitoba Hydro's Ed Wojczynski, along with NCN Councillor Elvis Thomas, bottom right also presented at the hearing.

The hearings are the culmination of a review process that began in December 2001, when Manitoba Hydro and the Nisichawayasihk Cree Nation as co-proponents of the proposed projects submitted Environment Act Proposals. Environmental Impact Statements for both the Wuskwatim Generating Station and the associated transmission facilities were submitted to Manitoba Conservation in April 2003. The submissions, consisting of a combined 18 volumes and appendices, are based on more than two years of field studies and public consultations. Manitoba Hydro also submitted a "Need For and Alternatives To" report intended to demonstrate the need to develop Wuskwatim and what other resource options were considered.



## POWER SUPPLY

### ► Partnership building continues with four Keeyask partners

The partnership building process initiated by the Tataskweyak Cree Nation (TCN) and Manitoba Hydro for the development of the 620 MW Gull Generating Station is continuing. The Cree name for Gull is Keeyask, and if the project proceeds the station will likely carry that name.

In July 2003, TCN, War Lake First Nation and Manitoba Hydro entered into an Agreement respecting the terms of participation of War Lake in the arrangements set out in the October 2000 Agreement-in-Principle with TCN. The agreement enables War Lake First Nation to join TCN in the development process of the proposed Gull hydroelectric project and to maintain an opportunity to share in ownership with Manitoba Hydro of the generating station proposed for development at Gull Rapids. As well, War Lake First Nation joined TCN in negotiating terms of various agreements necessary to conclude a binding Project Development Agreement setting out the terms and conditions for development of the generating station in partnership with Manitoba Hydro.

In addition to Tataskweyak and War Lake, Manitoba Hydro continues to participate in discussions with Fox Lake Cree Nation and York Factory First Nation regarding their involvement in the development of the Gull project.



In a camp at the site of the proposed future Gull (Keeyask) Generating Station, a geologist examines bedrock core samples taken from the area. For the last four years, about 60 scientists and local community members from Split Lake have undertaken environmental field studies in the area.

## POWER SUPPLY

### ► Wind and alternative sources of energy

Wind energy continues to be the fastest growing renewable energy source in Canada and the global market today. Manitoba Hydro has been monitoring wind energy technology since the early 1990s. In 2003-04, the Corporation continued to gather data related to seven wind monitoring sites installed over the last fiscal year in south western Manitoba. A final report, expected in the summer of 2004, will indicate the most promising sites for possible wind development.



In addition to the site monitoring, Manitoba Hydro has also acquired detailed wind resource maps that determine the best locations for further assessment of potential wind monitoring locations and possible developments. The utility plans to produce or purchase 250 MW of wind power or about five per cent of Manitoba Hydro's generating capacity should it be viable from an economical and technical perspective.

Negotiations were being finalized at fiscal year end with a large potential wind developer on a Power Purchase Agreement and Integration and Operating Agreement with Manitoba Hydro. Bison Wind, formerly known as Sequoia/Global Renewable Energy Partners, plans to develop 99 MW of wind generation in the St. Leon area by May 2005. The agreement will mark the first non-utility generator in the province to sell their electricity to Manitoba Hydro.

Wind power information was provided to the Clean Environment Commission hearings into the Wuskwatim generation and transmission project. Information included wind energy capital cost calculations, cold weather operations, land requirements, employment during construction and operation, wind farm locations, and capacity factors.

A joint venture agreement with Shell Renewables Canada in April 2003 to explore wind development opportunities in Manitoba was dissolved late in 2003 at the request of Shell.

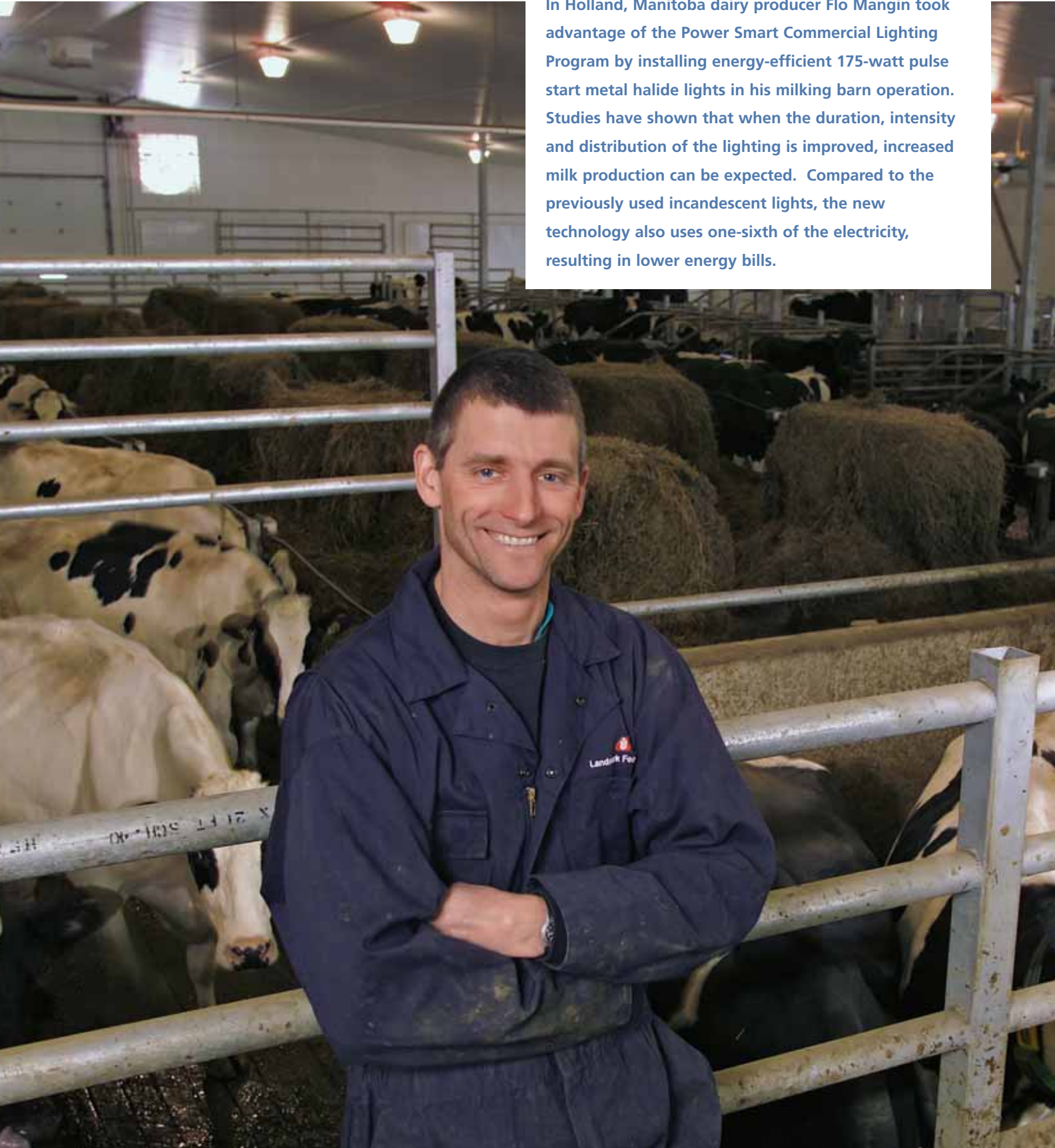
### ► Wind generator first to use open access interconnection tariff

In December 2003, Manitoba Hydro published an Open Access Interconnection Tariff, which provides for the interconnection of privately-owned generators to the Manitoba Hydro system. The tariff applies to both Manitoba Hydro and third party generation interconnection. The first party to make use of the tariff will be Bison Wind. The tariff is very much in keeping with comparable tariffs throughout North America.

## POWER SUPPLY

### *Tribute to our customers:* **Agricultural**

In Holland, Manitoba dairy producer Flo Mangin took advantage of the Power Smart Commercial Lighting Program by installing energy-efficient 175-watt pulse start metal halide lights in his milking barn operation. Studies have shown that when the duration, intensity and distribution of the lighting is improved, increased milk production can be expected. Compared to the previously used incandescent lights, the new technology also uses one-sixth of the electricity, resulting in lower energy bills.



## POWER SUPPLY



### ► Bioenergy, an environmental source

Manitoba Hydro continues to have a significant role in the development of bioenergy in Manitoba. Bioenergy makes use of any material, excluding fossil fuels, which is or was a living organism, ultimately a form of stored solar energy. It is a firm product and therefore its value is comparable to thermal and hydraulic sources of energy. The Corporation has partnered with three other Canadian utilities to further investigate developments in the utilization of biomass for electric power generation. In 2003-04, Manitoba Hydro co-presented the Bioenergy Opportunities seminar in Winnipeg. A total of 160 industry stakeholders from across Canada attended to learn more about this alternative energy source and the challenges and opportunities it represents.

### ► Other energy fuels

Manitoba Hydro continues to participate in studies and discussions pertaining to the manufacture and use of hydrogen in Manitoba. Alternative options for utilizing vented hydrogen gas at the Nexen sodium chlorate facility near Brandon were studied.

Work continues on the installation of an on-site electrolysis system for the production of industrial-grade hydrogen at the Dorsey Converter Station. Manitoba Hydro is the largest user of industrial grade hydrogen within Manitoba, with the majority being consumed at Dorsey as a specialized coolant in synchronous condensers.

Other alternative energies being investigated and monitored include fuel cells, utilizing hog waste in agricultural barn heating systems, and the use of solar photovoltaic panels for external cladding on buildings.

### ► New transmission line studied by Manitoba/Ontario utilities

A Memorandum of Understanding to support a feasibility study to be conducted by Manitoba Hydro and Hydro One on a clean energy sale was signed by Manitoba and Ontario in June 2003. The study will look at the construction of potential new generating facilities in Manitoba and a high-voltage transmission line between the two provinces. Manitoba Hydro and Hydro One will look at costs for generating and transmitting the energy, estimated delivery dates and environmental and regulatory requirements.

The clean energy sale could supply as much as five per cent of Ontario's peak demand and deliver enough electricity to meet the annual demands of over 600 000 households. The project could also displace up to six megatonnes of CO<sup>2</sup> annually, about 15 per cent of the annual CO<sup>2</sup> emissions produced by Ontario's fossil-fuel generating stations.

## ENVIRONMENT

### ▮ Selkirk Generating Station studies complete

A study by the University of Winnipeg's Centre for Forest Interdisciplinary Research concluded that there was no indication of forest decline in the area around the Selkirk Generating Station. The study was commissioned by the provincial government to look into concerns by some local residents. The study did find that poor soils and urban development contributed to forest decline in the Bird's Hill Park area.

Selkirk also received an honourable mention for the 2002 Pollution Prevention Awards in the category of Greenhouse Gas Reduction. The generating station was converted from coal to natural gas as part of a plan to extend the useful life of the plant until about 2020. The Canadian Council of the Ministers of the Environment in presenting the award recognized Manitoba Hydro's contribution to reducing greenhouse gas emissions and the commitment to improving environment today and tomorrow.

Sunset at Gull Rapids, future site of the Gull (Keeyask) Generating Station in Northern Manitoba.



## ENVIRONMENT

### ► Climate Change Gold

Canada's Climate Change Voluntary Challenge and Registry (VCR Inc.) recognized Manitoba Hydro as a Gold Champion Level Reporter for its 2003 Climate Change Action Plan update. This is Manitoba Hydro's fifth consecutive Gold Status award and the first time that the Corporation scored 100 per cent on the scoring system used by VCR Inc.

VCR Inc. is a non-profit partnership of over 900 industries and governments across Canada, whose mission is to provide the means for promoting, assessing and recognizing the effectiveness of the voluntary approach in addressing climate change.

In 1998, Manitoba Hydro made a voluntary commitment to reduce average net greenhouse gas emissions from 1991–2012 to six per cent below 1990 levels. As of fiscal year end, the Corporation has reduced its cumulative greenhouse gas emissions by more than 253 000 tonnes since 1990. Manitoba Hydro has achieved these reductions through many completed or ongoing projects in generation, demand-side management, fuel switching, natural gas operations, and fleet fuel consumption. Manitoba Hydro also exports power into jurisdictions dependent on fossil-fuel resources for generation capacity. These exports displace fossil-fuelled generation in those jurisdictions and thereby contribute to global reductions of greenhouse gas emissions.

As a founding member of the Chicago Climate Exchange, a voluntary North American emission trading pilot program, Manitoba Hydro purchased its first greenhouse gas emission allowances in September 2003. Approximately 18 000 tonnes out of 100 000 tonnes of greenhouse emission credits available were purchased at the Exchange's first greenhouse gas emissions auction. The purchase was attributable to the drought conditions being experienced by the utility this year and the subsequent reliance on fossil-fueled generation.

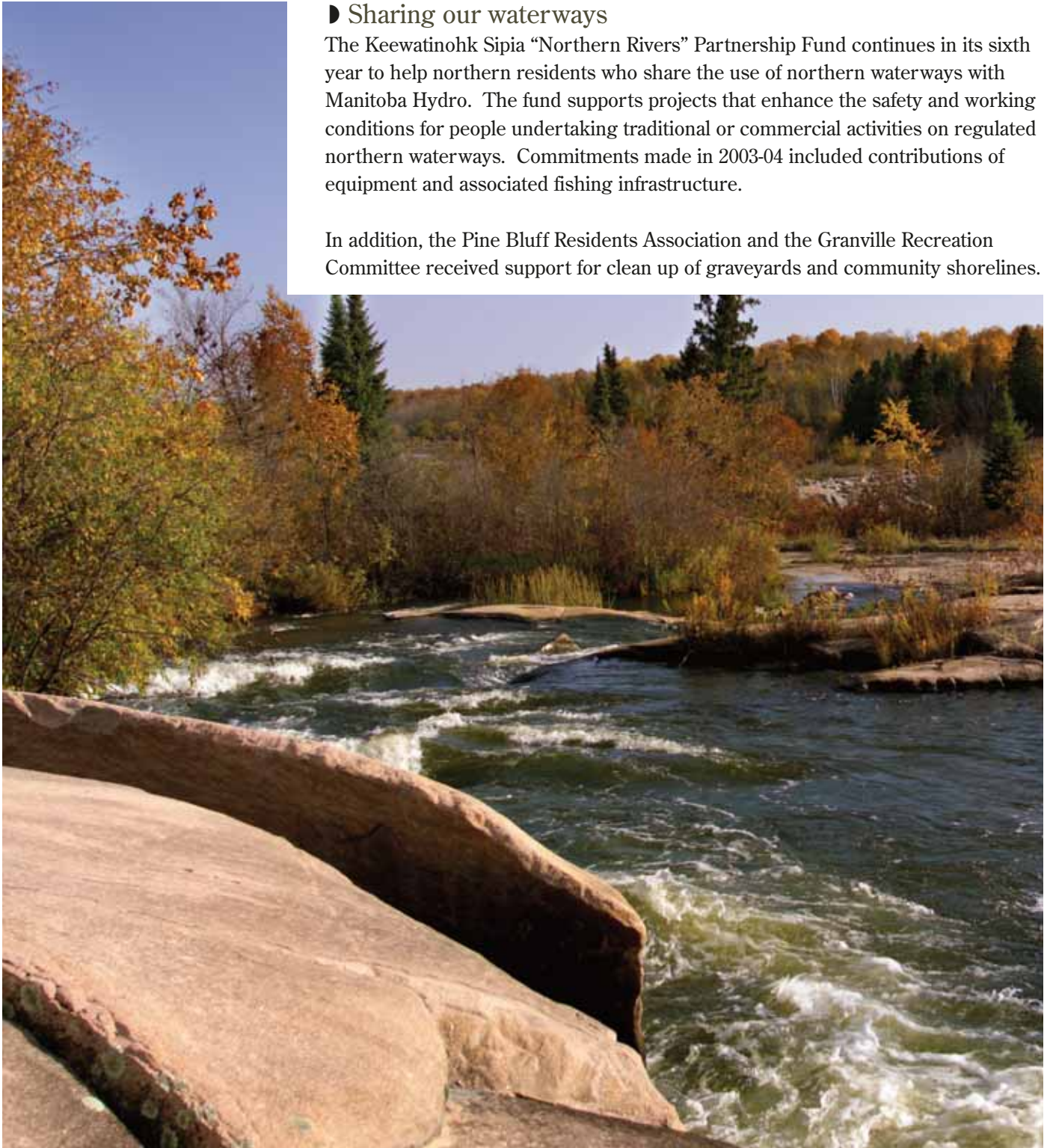


## ENVIRONMENT

### ▮ Sharing our waterways

The Keewatinohk Sipiia “Northern Rivers” Partnership Fund continues in its sixth year to help northern residents who share the use of northern waterways with Manitoba Hydro. The fund supports projects that enhance the safety and working conditions for people undertaking traditional or commercial activities on regulated northern waterways. Commitments made in 2003-04 included contributions of equipment and associated fishing infrastructure.

In addition, the Pine Bluff Residents Association and the Granville Recreation Committee received support for clean up of graveyards and community shorelines.



Pinawa Channel on the Winnipeg River, site of the first hydroelectric generating station in Manitoba to operate year round. The Pinawa station, which was retired in 1951, is now a Provincial Heritage Park.

## ENVIRONMENT

### ▮ Partnerships for the environment

The Environmental Partnership Fund continues to offer support to a whole range of community based not-for-profit organizations to undertake various environmental projects with a strong educational focus. In 2003-04, 20 such projects were funded under the program throughout the province.

An innovative curriculum development program with the Mystery Lake School Division was piloted in 2003-04. The program is an aboriginal-focused, land-based program that brings in traditional ecological knowledge instruction by elders into the science and biology curriculum.

Manitoba Hydro entered into a new funding agreement with the Manitoba Wildlife Rehabilitation Organization for a two-year period. The Corporation is a key supporter of the organization's public raptor education program. Manitoba Hydro is also involved with other electrical utilities in developing mitigation techniques to reduce the effects on raptors from construction of transmission facilities.

In 2003-04, the Environmental Partnership Fund supported the Manitoba Envirothon, a competition for high school students in conjunction with the Manitoba Forestry Association, Green Kids Organization, and the Go Green, Green Commuting initiative.

### ▮ Building community forests

Now in its eighth year of operation, the 10-year, \$3.5 million Forest Enhancement Program continues to be one of the most successful community focused programs that Manitoba Hydro has ever implemented. The program funds about 60 projects annually. Funding is split between small and large scale community tree planting initiatives, forest education programs, and forestry research projects.

### ▮ Spirit of the Earth Awards

The Spirit of the Earth Awards, introduced in November 2002, recognize environmental achievements in improving the environment or in the promotion of environmental awareness by Aboriginal Peoples or in projects that directly involve Aboriginal Peoples. In 2003-04, 10 awards were presented to individuals and organizations who exemplified the aims of the Spirit of the Earth Awards program through projects or activities that helped to improve the natural environment. During a special ceremony on National Aboriginal Day, June 21, 2003, recipients were presented with an original wolf sculpture by an Aboriginal artist, symbolizing the Spirit of the Earth in Aboriginal culture.



Manitoba Hydro and various provincial wildlife organizations work together to rehabilitate raptors such as this Peregrine Falcon.



## ENVIRONMENT

### ► Potable water in NFA communities

Manitoba Hydro and Canada have signed a Letter of Understanding (LOU) to settle obligations under the Northern Flood Agreement (NFA) regarding potable water. Canada will provide the funds to upgrade sewer and water facilities at the NFA communities of Cross Lake, Nelson House, Norway House, Split Lake, and York Factory. Under the terms of the LOU, Manitoba Hydro is contributing \$40.5 million over the next two decades towards the total settlement package of \$90.5 million.

### ► Grand Rapids forebay agreements

Manitoba Hydro and Manitoba are working with the Mosakahiken Cree Nation and Moose Lake Community to finalize settlement agreements that would resolve outstanding issues related to land and resource management impacts of the 1964 Grand Rapids hydroelectric project. The agreement with the Mosakahiken Cree Nation is complete with the exception of one issue relating to the maintenance of a road from the Crossing Bay Reserve Area to the highway leading to the main reserve. An agreement with the Moose Lake Community Council is in the final stages of completion.

In March 2004, Manitoba Hydro and Manitoba completed the final agreements with the Chemawawin Cree Nation and the Easterville Community. The agreements include monetary components, completion of land obligations and additions, and establishment of a joint co-management arrangement.

### ► Other agreements with communities

An agreement is being finalized between Manitoba, Manitoba Hydro and the Fox Lake First Nation for mitigation and compensation of past adverse effects from hydro development in their traditional territory.

A final settlement agreement is in the process of being finalized between Manitoba, Manitoba Hydro, and War Lake First Nation to resolve past adverse effects from hydro development. Discussions are ongoing with the communities of Mathias Colomb Cree Nation, Marcel Colomb First Nation, and the Community Association of Granville Lake to resolve adverse effects from Laurie River development.



Manitoba Hydro continues to address project effects with Aboriginal communities. Manitoba Hydro supports the communities in their efforts to define and pursue a vision for future generations.

## ENVIRONMENT



Agreements-in-Principle to resolve past adverse effects from the Churchill River Diversion and Lake Winnipeg Regulation Project were signed in April 2003 by Manitoba Hydro, Manitoba, and each of the Cross Lake and Norway House community councils. Similar issues are being addressed for the Nelson House community council.

Efforts to resolve past grievances associated with the Churchill River Diversion Project with the displaced residents of South Indian Lake are proceeding pursuant to mediation ordered by the NFA Arbitrator.

### ► Addressing project effects

Manitoba Hydro and Manitoba continue to work with the Cross Lake First Nation, as represented by the Pimicikamak Cree Nation, to develop and implement an Action Plan for fulfillment of obligations under the NFA at Cross Lake. The NFA action plan consists of a number of discretionary and core programs led by Manitoba Hydro and another group of programs led by the Province with a budget of \$11.3 million over 15 months. The majority of effort in terms of cost and human resources over the past year involved debris collection and disposal at the Jenpeg forebay. Other notable programs from last year include shoreline clean up at the Cross Lake community and remedial works at various culturally significant sites on Sipiwesk Lake. Discussions towards the next Plan are underway.

In addition to the provision of safety measures for people traveling on waterways affected by hydroelectric development, Manitoba Hydro continued to implement further programs in the Cross Lake area pursuant to the NFA. These measures included providing snowmobile trails, snowmobile patrols, emergency cabins, and safety program coordinating functions with the Cross Lake First Nation. During the open water season, marker buoys, portages, boat patrols, docks, and boat launches have been established to increase safety for users of the waterway.

A domestic fishing and alternative foods programs jointly funded by Manitoba and Manitoba Hydro continues in the Cross Lake community. The program provides employment for 20 or more local fishers and the annual delivery of around 100 000 kilograms of fish to meet the local consumption needs for the entire community. In addition, support is provided for community gardens, and poultry, beef and pork products on a special basis. The program also provides all food items for a school hot lunch program. It is estimated that, as in previous years, nearly one million meals were provided by the program to Cross Lake residents.

To date, we have spent \$540 million for remedial works, compensation and/or mitigation initiatives in northern Manitoba. Of that amount, approximately \$87 million has been spent at Cross Lake.

## EMPLOYEES AND SAFETY

### Employee agreements ratified

Since the acquisition of Winnipeg Hydro in the fall of 2002, significant negotiations have taken place to integrate its employees into the current Manitoba Hydro environment.

In 2003-04, Manitoba Hydro reached new agreements with all five of its collective bargaining units: Local 2034 of the International Brotherhood of Electrical Workers (IBEW); the Canadian Union of Public Employees (CUPE), Local 998 and Local 500; the Communications, Energy and Paperworkers Union (CEPU), Local 681; and the Association of Manitoba Hydro Staff and Supervisory Employees (AMHSSE). The new agreements included significant benefit harmonization across the Corporation and the creation of a Supplementary Pension Plan unique to Manitoba Hydro.



Manitoba Hydro engineer Leanne Weedon is part of the Resource Planning and Market Analysis group that studies the economics of new hydro development. Research into the career development and mobility of female engineers by the University of Manitoba is being supported by Manitoba Hydro.

### Encouraging employee diversity

Building a diverse workforce that is representative of Manitoba's population continues to be a key corporate objective. A number of these initiatives related to Manitoba Hydro's goals received significant attention from outside agencies and groups during 2003-04. Manitoba Hydro created a program that has generated interest from the Canadian Forces Personnel Support Agency in Ottawa and the local business community reintegrating workers with Acquired Brain Injuries into the workforce. The Corporation cooperated closely with organizations such as Neuro Recovery Services, LifeWorks, Manitoba Brain Injury Association, and Network South Enterprises to ensure the program's success. The Manitoba Schizophrenia Society has also recognized Manitoba Hydro's work in hiring and supporting workers with mental and psychiatric illness. Work is continuing with the Canadian Council on Rehabilitation and Work, Partners for Workplace Inclusion Pilot project to identify work placements for individuals with disabilities.

The Corporation has partnered with the University of Manitoba to pilot a program that assists in the placement of foreign trained professional immigrants. Manitoba Hydro has also supported research within the University's Faculty of Engineering to better understand the career development and mobility of female engineers within their profession. As a major provincial employer of engineers, Manitoba Hydro's own engineers are participating in the data gathering process that will be used to enhance recruitment and retention efforts.

A four-year pilot program to showcase non-traditional trades and technology occupations to young female Aboriginal youth concluded year two in 2003-04. Known as "Building the Circle—Exploring Engineering, Technology & Trades Summer Camp", the camp provides exposure and hands on experience in these occupations and is being shared with other industries throughout Canada interested in reviewing the camp model.

## EMPLOYEES AND SAFETY

### ► Preparing our employees of tomorrow for the trades of the future

The pre-placement trades' initiatives continue to enroll Aboriginal candidates. The initiative provides academic upgrading and pre-placement trades training for candidates who do not currently possess the requisite credentials to enter directly into the trades programs. Trainees were hired from throughout Manitoba including Norway House, Grand Rapids, Leaf Rapids, Pikwitonei, Wabowden, Thompson, and Cross Lake.

As part of the proposed new hydroelectric development in the north, the Wuskwatim and Keeyask Training Consortium were established in 2003-04. Along with Manitoba Hydro, the entity consists of Northern Aboriginal organizations and the Province of Manitoba. The consortium proposed the



establishment of the Hydro Northern Training and Employment Initiative, to facilitate the training of Northern Aboriginal people, enabling them to take advantage of employment on the proposed Wuskwatim and Gull (Keeyask) hydroelectric projects in Northern Manitoba. Under the initiative, more than 1 000 Northern Aboriginal people will receive training in a broad range of skills over a five-year interval to gain employment. Nearly \$6.3 million has been invested to date to prepare northern Aboriginal residents for future hydroelectric employment opportunities.



A partnership between Nisichawayasihk Cree Nation, Province of Manitoba Advanced Education and Training, Transportation and Government Services, and Manitoba Hydro involved a provincial road construction project that required training of northern residents.

### ► Jenpeg weather watchers acknowledged

Every day for the past 30 years, staff at the Jenpeg Generating Station have collected climate information for Environment Canada. In June 2003, the volunteer climate observers were presented with the Morley K. Thomas Award for 30 years of volunteer climate gathering.



### ► Safety continues as top priority

Continuing to provide a safe work environment for its employees is a top objective for Manitoba Hydro. To support this goal, numerous fire, occupational health, workplace environmental, and accident protection programs have been developed over the years. Thirty-nine Workplace Safety and Health Committees use a safety management system that identifies and reports all components of safety at Manitoba Hydro. Over the last five years, Manitoba Hydro has seen a steady improvement in safety performance both on the electricity and natural gas side of its operations.

## EMPLOYEES AND SAFETY



Safety issues related to the transportation and use of large agricultural equipment beneath Manitoba Hydro's power lines were addressed through targeted safety messages related to line clearances.

The implementation of a peer-to-peer safety observation work method in the workplace was approximately 75 per cent complete at the end of the fiscal year. The Behaviour-Based Safety program uses observation to emphasize safe behaviour and the benefits of measuring and recognizing safe behaviour. The program particularly targets frequency of accidents and lost days with the aim of providing a sustainable improvement in safety practices and procedures.

### Public safety education

In September 2003 a cooperative initiative by Manitoba Hydro and Manitoba Public Insurance's Driver Education Program aimed at educating drivers about the danger of downed power lines was launched. Program components included billboards, posters and print, and radio announcements. Over 22 000 driver education students received information regarding how to safely exit a vehicle or assist someone trapped in a vehicle in an emergency situation.

The Call Before You Dig program that promotes safe working excavating procedures issued tree tags to landscapers and greenhouses across Manitoba. The tags highlighted both the Call Before You Dig message and the phone numbers for underground power line location information. The tree tags were included with the tree purchases. Longstanding means of communicating this important message continued throughout the year. As well, videos on safe excavation practices were made available to contractors who held staff safety seminars.

## EMPLOYEES AND SAFETY

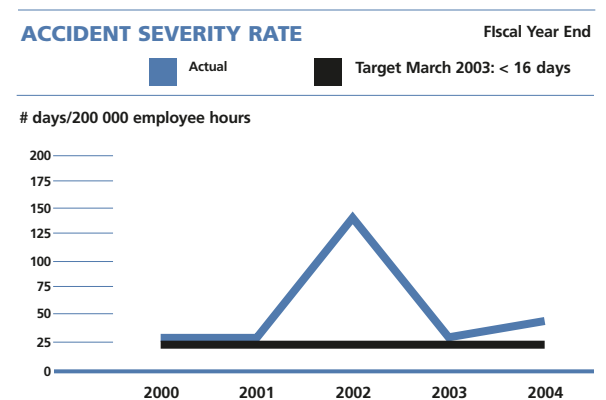
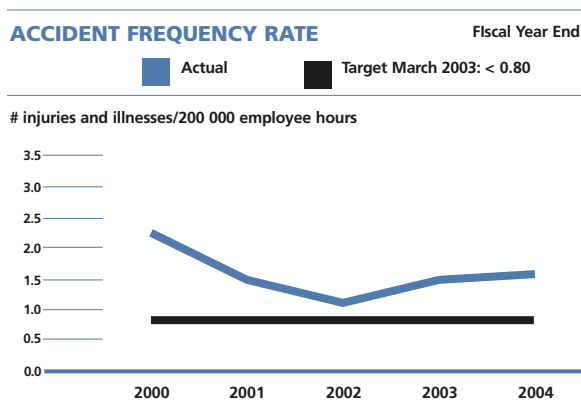
As the size of agricultural equipment increases, safety issues related to the transportation of equipment and contact with overhead power lines have become an increasingly important issue. Manitoba Hydro, in cooperation with the Keystone Agricultural Producers, and the departments of Agriculture, Food and Rural Initiative, Labour and Immigration, and Transportation and Government Services developed an initiative to promote the safe movement of large equipment. The program is also supported through farm equipment dealers who alert customers to the minimum line clearance of new farm equipment.

Each year Manitoba Hydro visits Grade 5 and 6 classrooms to present information on electricity, natural gas and the inherent dangers of playing near electrical equipment. During the 2003-04 fiscal year, staff visited over 345 schools and reached over 12 000 students.

A two-year cooperative agreement with Nunavut Power, in which the utility purchased educational resources developed by Manitoba Hydro, concluded in 2003-04. The resource, customized by Manitoba Hydro, consisted of school binders and posters. Manitoba Hydro's Electrosaurus character had been utilized in a "Nunasaurus" theme throughout the binder and poster series.

### Carbon monoxide safety

For the third consecutive year, the "Put Your Family First" safety campaign was conducted in an effort to reduce the number of carbon monoxide poisoning-related illnesses and deaths in Manitoba. Since the onset of this program, there have been no fatalities.



## CORPORATE CITIZENSHIP



*Tribute to our customers:*  
**Community**

Each year, Manitoba Hydro tours around the province to over 60 festivals and fairs to showcase its Corporate float that features a safety message and its safety and Power Smart mascots to young and old alike. Manitoba Hydro's Doug Atamanchuk is one of many employees who have logged many miles and hours on the parade circuit supporting a tradition in communities that began in the 1920s.

## CORPORATE CITIZENSHIP



### ▮ Supporting the community festivals

Manitoba Hydro was a major sponsor of the Western Canada Summer Games, held in August 2003 in Selkirk, Beausejour, Stonewall, and Gimli. As the exclusive sponsor of athletics, Manitoba Hydro representatives from corresponding communities had the opportunity to present 57 medals to winning athletes. The Corporation was also a major sponsor of the Ford World Curling Championship in Winnipeg. More than 100 Manitoba Hydro employees volunteered their time and energy at this event. As regional sponsor of the 2003 Manitoba Indigenous Summer Games held in Brandon, Manitoba Hydro presented medals to athletes at the track and field venue. Over a thousand Aboriginal athletes participated in the sports of soccer, track and field, canoeing, beach volleyball, softball, and golf.

Manitoba Hydro continued its tradition of sponsoring the Rural Forum, a rural economic development community event held in Brandon. The Corporation presented an alternative energy options seminar at the event.

About 100 000 people enjoyed the fifth annual Power Smart Festival of Lights Parade in Winnipeg to mark the start of the holiday season. More than 60 illuminated floats traveled down Portage Avenue to Memorial Park.

At the seventh Annual Vision Quest, an annual conference that promotes Aboriginal economic, business and community development, Manitoba Hydro sponsored the Aboriginal Human Resources Strategies workshop and had an opportunity to display its own training and educational program materials at the trade show.



## CORPORATE CITIZENSHIP



*Tribute to our customers:*  
**Major institutional**

The Health Sciences Centre is the largest health care referral, teaching and research centre serving residents of Manitoba, Northwestern Ontario and Nunavut. It is the largest facility of its kind in Canada, sitting on 32 acres of land in central Winnipeg and a major referral centre for complex health problems. It is also one of Manitoba Hydro's major customers with very specialized needs with respect to its energy use and reliability of service.

## CORPORATE CITIZENSHIP



### ► Reaching out to the community

Manitoba Hydro and The Salvation Army launched a voluntary customer contributions program called “Neighbours Helping Neighbours”, that will provide emergency funding for lower income families or individuals who are in economic crisis in paying their natural gas or electricity bill. The Salvation Army administers the program.

### ► Education through history

During its second year of operation, the Manitoba Electrical Museum & Education Centre hosted about 5 000 visitors. Over 38 per cent of the visitors were school groups. The Museum is home to a vast collection of electrical artifacts collected by retired Manitoba Hydro and electrical industry employees. The education centre component at the Museum helps to educate the public about electricity and its importance and roots in Manitoba.

### ► Innovative research and development

The relationship Manitoba Hydro cultivates with universities, research centres, and technological organizations and associations have long proven its value to Manitoba Hydro’s operations. Much of this collaborative research allows the Corporation to participate in research projects at less than half of the total cost of the work. The costs of laboratories and associated professionals are often borne by the originating organization. As well, other utilities and associated industries will be contributors. The exchanges of ideas and collaboration on projects have led to such shared innovations as a new generation of power relays and power information recorders, online monitoring of high voltage breakers to predict maintenance requirements, and valuable information to assist in dealing with the effects of geomagnetic storms on power systems. The leveraging of these valuable resources within these organizations has contributed to Manitoba Hydro meeting its mandate to deliver power at the least cost possible with the highest reliability.

In reaching its long term objectives in research and development, Manitoba Hydro leverages its own resources by working with coordinating organizations such as; the Canadian Electricity Association, the Canadian Standards Association, the Electric Power Research Institute of the USA, the Canadian Gas Association, the American Gas Association, the American Society of Heating, Refrigeration and Air Conditioning Engineers, the Canadian Hydropower Association and the International Hydropower Association. These organizations coordinate research and development activities as part of their programming that Manitoba Hydro utilizes.

In addition to enhancing scientific knowledge, Manitoba Hydro has a working relationship with many universities, in particular with the Universities of Manitoba and Winnipeg. Recently, the utility has entered into a five-year agreement with the University of Manitoba for research into power systems simulation which we expect will lead to improved system reliability and availability. Manitoba Hydro has helped to establish an Industrial Research Chair in Alternative Energy to investigate the economics and practicality of bioenergy, wind, solar, industrial waste, and run of the river small hydro. The Natural Sciences and Engineering Research Council of Canada is a major funding participant in both these studies.

In 2003-04, work with the University of Winnipeg and the University of Regina in the area of prairie adaptive research collaboration began to provide better information on the nature, causes and consequences of climate variability in Western Canada. Manitoba Hydro is also co-funding a research project of the U.S. Department of Energy in the boreal forest near Thompson, Manitoba, to develop an understanding of how the boreal forest will respond to climate change.

## CORPORATE CITIZENSHIP



Louie, the Lightning Bug makes an impression on a young visitor at the annual Teddy Bears picnic in Assiniboine Park.

A number of projects over the past fiscal year have contributed to Manitoba Hydro's overall knowledge base. Some of the projects the Corporation has been involved with include: testing a fuel cell in a single family home; studying water quality, plants and wildlife in the delta marshes of Manitoba; promoting science and engineering for talented high school students at the Deep River Science Academy - Whiteshell Campus; studying seals, polar bears, and beluga whales in the Hudson Bay area; studying flooding of uplands in a controlled scientific area examining mercury concentrations and greenhouse gases; measuring the tilting (glacial rebound) of Lake Winnipeg; and a photovoltaic installation in south side windows at the downtown Red River College campus.

## SUBSIDIARIES

### Manitoba HVDC Research Centre

The Manitoba HVDC Research Centre completed its fourth year of operations as a subsidiary of Manitoba Hydro and continues to add strong value by focusing on its existing strengths and expertise within the Centre. Three key areas of research activity centers on simulation research, power electronics and instrumentation. Its highly successful Manitoba-made PSCAD power system simulation software and Real Time Playback system has sold over 31 600 various licenses of this software in 67 countries.

The Centre continues to promote a collaborative research approach through its strong partnerships with Manitoba Hydro, the Power Systems Laboratory at the University of Manitoba, RTDS Technologies and its industrial partners, such as ABB and Siemens. In addition to the power simulation technologies, the centre has been actively involved in the development of SF6 greenhouse gas monitoring equipment, power electronic building blocks to develop modular technologies in order to reduce the cost of this equipment, digitally controlled current amplifiers for use in relay testing and substation auxiliaries, machine vision systems, and electric field space charge research for live line work.

### Manitoba Hydro International

Manitoba Hydro International, Inc. (MHI) has provided utility consulting training and management services to more than 80 client organizations in over 45 countries during its 18 years of operation. MHI offers unique opportunities for employees to participate in projects involving diverse cultures from around the world, enabling them to work more effectively within the Corporation's own culturally diverse work environment.

## SUBSIDIARIES

MHI continues to support other Manitoba-based businesses who wish to market their services internationally. MHI is working with Manitoba firms such as Wardrop Engineering, TransGrid Solutions, Electranix, and Teshmont and with national organizations such as AMEC, SNC Lavalin and Acres on various opportunities overseas.

Providing assistance to developing countries across the globe demonstrates the Corporation's standing as a citizen of the world. In this regard, MHI has a long standing relationship with the Canadian International Development Agency (CIDA) to carry out work with other consortiums when working overseas.

A five-year project in the Balkans involves contributions from MHI in the areas of transmission, system operation and maintenance, electricity exchange, GIS systems, distribution systems, human resource management, and demand side management. In 2003-04, assistance was provided in the areas of regulatory filing requirements, standard market design, market facilitation group, transmission system operators restructuring and gender equity.

An ongoing project in Central America is nearing the end of its sixth and final year. MHI has provided over 50 staff over the course of the project in the areas of transmission system operation and maintenance, demand side management and performance management and gender equity. Countries receiving assistance include Costa Rica, El Salvador, Nicaragua, Honduras, Panama, and Guatemala.

Other assignments in 2003-04 included the continuation of projects in India, Jamaica, Nigeria, China, and the United States. The Line Fault Locator developed and manufactured by Manitoba Hydro and used on our HVDC transmission system has been sold to Siemens AG as a component on their HVDC transmission system sales. In 2003-04, an agreement related to the installation and commissioning of this device through Siemens AG has been concluded with an Australian utility.

MHI has been, for the first time, contracted by the World Bank to assist in the completion of the Sierra Leone Bumbuna hydroelectric project that was suspended due to the civil war in 1997.

### ► Meridium Power

Meridium Power, a subsidiary of Manitoba Hydro, is undertaking to develop the Canadian market for the company's proprietary line of electric motor and power protection products. These innovative products are based on patented Written-Pole® Technology, a revolutionary motor and generator technology developed with the assistance of Manitoba Hydro. The technology extends the capabilities of electric motors and "battery-free" power protection products in a variety of agricultural, commercial and industrial applications.

The requirement for three-phase service in many rural applications is eliminated with the use of the specialized large single-phase motors, reducing the cost of service for both electric utilities and their customers. The energy-efficient operation of the motor provides ongoing benefits to customers accustomed to the high operating costs of conventional single-phase electric or diesel-powered alternatives.

## SUBSIDIARIES

### ▶ **Manitoba Hydro Utility Services**

In 2003-04, Manitoba Hydro Utility Services (MHUS) began its sixth year of operations as a subsidiary of Manitoba Hydro. The company has 90 employees located throughout the Province of Manitoba. MHUS provides meter reading services and temporary resource placement to the utility on a cost recovery basis. This temporary resource base provides Manitoba Hydro's field operations department with flexibility in acquiring qualified staff to assist with peak workload requirements.

MHUS's provision of dual meter reading services, reading both gas and electric meters at the same time, contributes to keeping meter reading costs among the lowest in Canada. In 2003-04, MHUS expanded its meter reading territories with a target for completion of rural integration by the end of 2004. The company also increased the number of temporary resource placements by 38 per cent.

### ▶ **Business initiative exceeds sales projections**

W.I.R.E. Services, in its third year of operations as a business initiative of Manitoba Hydro, exceeded its sales projections reaching almost \$3 million in sales in 2003-04. Worldwide Integrated Rating Enhancement (W.I.R.E) Services provides transmission line verification and re-rating services to the electric utility industry. The service is based on the technological expertise of Manitoba Hydro employees, and utilizes advance technology for thermal rating and upgrading transmission lines.

During 2003-04, W.I.R.E. Services signed its first U.S. service contract. In Canada, projects in Newfoundland and Alberta were concluded. Work is continuing for SaskPower on one of the largest single data collection projects carried out in North America.



## Financial Review

## MANAGEMENT'S DISCUSSION AND ANALYSIS

The Management's Discussion and Analysis should be read in conjunction with the consolidated financial statements and the notes related thereto. Together, these statements explain the business of the Corporation and provide forward-looking statements regarding the anticipated financial and operational performance of Manitoba Hydro. Such forward-looking statements are subject to a number of risks and uncertainties which may cause actual results to differ from those anticipated. To the extent known to management, risks and uncertainties have been quantified within reasonable ranges of materiality.

As a Crown Corporation owned by the Province of Manitoba, Manitoba Hydro's mandate is to provide for the continuance of a supply of energy to meet the needs of the province and to promote economy and efficiency in the development, generation, transmission, distribution, supply, and end-use of energy. In the performance of its mandate, Manitoba Hydro engages in a wide range of energy-related endeavours within and outside the Province of Manitoba. Performance measurements, as referenced in the Management's Discussion and Analysis, attest to Manitoba Hydro's position as one of the leading energy providers in North America.

### Financial Overview

Manitoba Hydro incurred a net loss on consolidated operations of \$436 million for the year ended March 31, 2004. This was a significant deterioration from net income of \$71 million attained in the previous fiscal year and was almost entirely due to the impacts of drought on the hydraulic generation system. During 2003-04, extraprovincial revenues dropped by \$112 million from the previous year and imports and thermal generation of electricity increased by \$418 million as a result of reduced hydraulic generation.

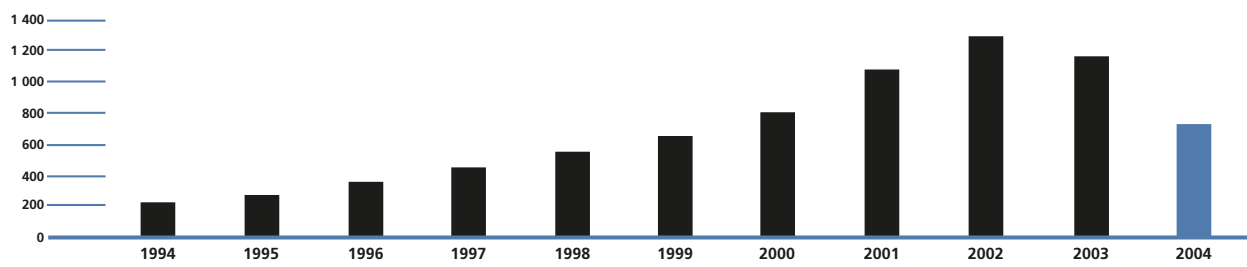
While the net loss in 2003-04 was significant, it was not unexpected. Manitoba Hydro's long-term financial forecasts take into account that drought conditions will typically occur about once every 10 years and that such conditions will have negative financial consequences. The risk of drought was one of the primary drivers behind the significant buildup in retained earnings over the past decade.

As indicated in the following chart, retained earnings reached a peak of \$1.3 billion at March 31, 2002 and were at a sufficient level to withstand the low water flow conditions that have occurred over the past two fiscal years.

#### RETAINED EARNINGS

millions of dollars

Fiscal year ending March 31



It is noteworthy that the buildup in retained earnings was achieved mainly through sales of surplus energy on export markets in non-drought years and with minimal rate increases to domestic customers. It is fully expected that the drought-induced losses of 2003-04 will be recouped over future years when water conditions improve and surplus electricity is again available for sale on export markets.

## MANAGEMENT'S DISCUSSION AND ANALYSIS

As indicated in the following table, the consolidated net loss of \$436 million was comprised of a net loss of \$428 million in the electricity sector and an \$8 million net loss in the gas sector. The loss in the gas sector includes a Corporate allocation of \$15 million related to the costs of Manitoba Hydro's acquisition of Centra Gas Manitoba Inc. in 1999. Since the acquisition date, natural gas ratepayers have only had a 0.4% rate increase to cover distribution operating costs of the gas segment. In the future, the Corporation plans to further reduce operating costs by taking full advantage of synergies between electricity and gas operations and to implement lower than inflation rate increases to gradually build retained earnings in the gas segment.

<b>CONSOLIDATED FINANCIAL RESULTS</b>	<b>2003-04</b>	2002-03	Change
		<i>millions of dollars</i>	
<b>Electric Operations</b>			
Manitoba revenue	936	891	45
Extraprovincial revenue	351	463	(112)
Expenses	1 715	1 281	434
Net (loss) income	(428)	73	(501)
<b>Natural Gas Operations</b>			
Revenue	494	515	(21)
Cost of gas sold	375	392	(17)
Expenses	112	110	2
Net income before Corporate allocations	7	13	(6)
Corporate allocations	15	15	-
Net loss	(8)	(2)	(6)
<b>Consolidated net (loss) income</b>	<b>(436)</b>	<b>71</b>	<b>(507)</b>
<b>Retained earnings</b>	<b>734</b>	<b>1 170</b>	<b>(436)</b>
<b>OPERATING STATISTICS</b>	<b>2003-04</b>	2002-03	Change
<b>Electric Operations</b>		<i>billions of kilowatt hours</i>	
Generation	19.3	29.2	(9.9)
Energy sales - Manitoba	19.3	19.3	-
Energy sales - Extraprovincial	7.0	9.7	(2.7)
		<i>thousands of kilowatts</i>	
Manitoba peak load	3 959	3 916	43
<b>Natural Gas Deliveries</b>		<i>millions of cubic metres</i>	
Residential sales	653	714	(61)
Commercial and industrial sales	893	980	(87)
	1 546	1 694	(148)
Transportation service	577	640	(63)
	2 123	2 334	(211)

Electricity revenues and expenses for 2003-04 include the full year operations of Winnipeg Hydro which was acquired by the Corporation on September 3, 2002. The comparative results for 2002-03 include 7 months of Winnipeg Hydro's operations. Since the date of acquisition, the former Winnipeg Hydro has been integrated with the operations of Manitoba Hydro.



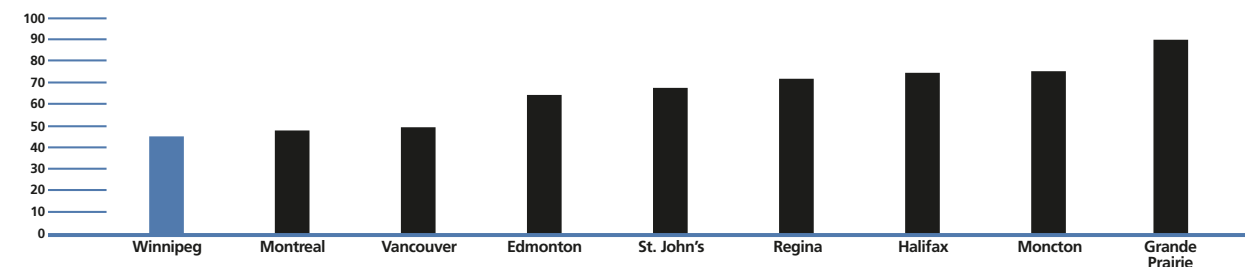
## MANAGEMENT’S DISCUSSION AND ANALYSIS

### Electricity Operations

Manitoba Hydro maintains its status of having the lowest domestic electricity rates of any major utility in North America. Manitoba Hydro’s electricity customers continue to enjoy a long period of rate stability with 2003-04 marking the seventh consecutive year of no electricity rate increases for residential and small commercial customers and the twelfth consecutive year of no rate increases to large industrial customers. Effective April 1, 2003, rates were reduced to the large industrial and small commercial customer classes by 2% and 1% respectively as a result of a Public Utilities Board proceeding in which the regulator determined that these customer classes warranted further rate relief. Based on an annual survey of Canadian electricity bills, monthly bill comparisons at May 1, 2004 are as follows:

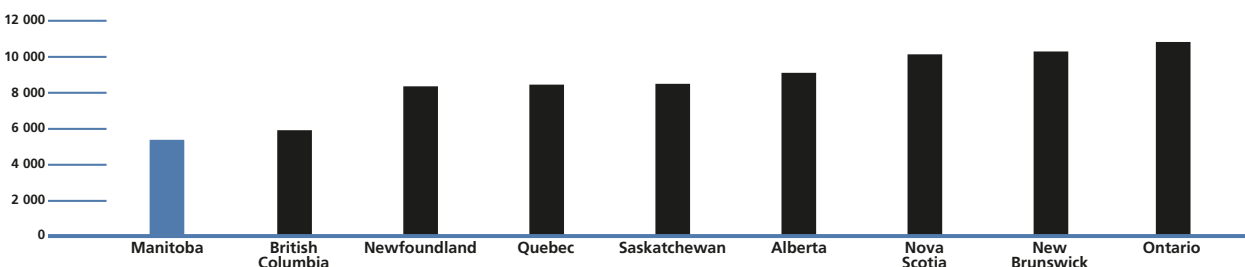
#### RESIDENTIAL ELECTRIC BILLS

750 kWh per month  
dollars per month



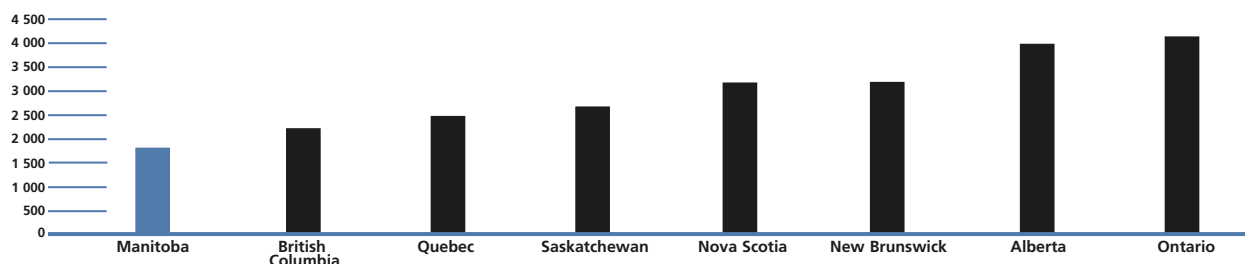
#### GENERAL SERVICE MEDIUM BILLS

300 kW and 120 000 kWh per month  
dollars per month



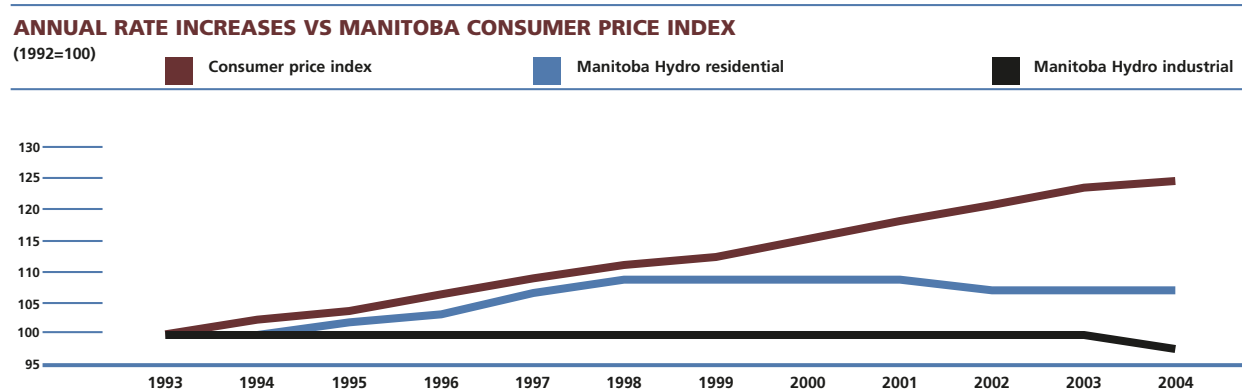
#### INDUSTRIAL ELECTRIC BILLS

100 MW and 62 GWh per month  
thousands of dollars per month



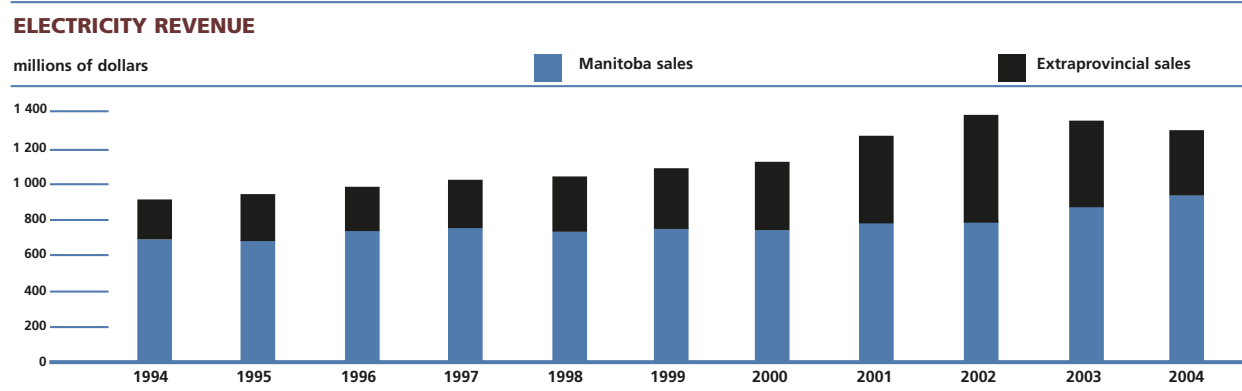
## MANAGEMENT'S DISCUSSION AND ANALYSIS

As indicated in the accompanying graph, rate changes to electricity customers have been well below inflation since the last rate increase to industrial customers in 1992. Over that period of time, the real cost of electricity for residential customers and large industrial customers, after adjusting for inflation, has declined by 14% and 22% respectively.



### Electricity Revenues

Total revenues from electricity operations amounted to \$1 287 million, or \$67 million lower than the 2002-03 fiscal year. Electricity sales within the province of \$936 million increased by \$45 million over the prior year, with Winnipeg Hydro accounting for approximately \$21 million of the increase. Extraprovincial sales of \$351 million represented a \$112 million decline from the prior year due to the reduced hydraulic generation resulting from low water flows.



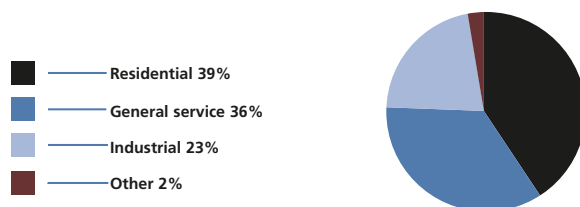
MANITOBA ELECTRICITY SALES	2003-04	2002-03	Change	2003-04	2002-03	Change
	<i>millions of dollars</i>			<i>kWh in thousands **</i>		
Residential customers*	368	354	14	6 266	6 136	130
General service customers*	339	296	43	6 197	5 602	595
Industrial customers	211	205	6	6 817	6 540	277
Winnipeg Hydro - wholesale	-	20	(20)	-	988	(988)
Other	18	16	2	-	-	-
	936	891	45	19 280	19 266	14

\* Previous year figures include Winnipeg Hydro sales for the 7-month period from the date of acquisition.

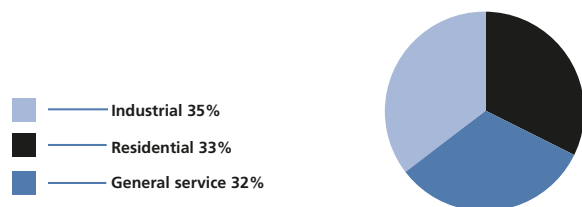
\*\* Excludes load losses.

## MANAGEMENT'S DISCUSSION AND ANALYSIS

### MANITOBA ELECTRICITY REVENUE



### MANITOBA kWh CONSUMPTION



Electricity consumption for 2003-04 in Manitoba was 19.3 billion kilowatt hours, which was unchanged from the previous year.

Revenue from sales to residential customers for 2003-04 increased by \$14 million to \$368 million due primarily to the additional retail sales associated with the acquisition of Winnipeg Hydro. The number of residential customers increased by 3 429 during the year, and totaled 443 186 at March 31, 2004.

Revenue from general service customers, increased by \$43 million to \$339 million for 2003-04. The large industrial sector increased by \$6 million to \$211 million. The increases were mainly attributable to the acquisition of Winnipeg Hydro, as well as increased demand in the industrial sector. Rate decreases to industrial and general service customers of 2% and 1% respectively partially offset these increases by approximately \$7 million. The total number of general service and industrial customers increased by 479 to 62 697 at March 31, 2004.

### EXTRAPROVINCIAL SALES

Extraprovincial revenues declined to \$351 million, \$112 million lower than revenues reported in 2002-03. The decrease was attributable to the reduction in hydraulic generation and reduced energy available for sale to the export market. Energy sold outside Manitoba was 7.0 billion kilowatt hours in 2003-04, 2.7 billion kilowatt hours less than in 2002-03. Of the total extraprovincial revenue, \$297 million or 85% was derived from the U.S. market, while \$54 million or 15% was from sales to other Canadian provinces.

### Electricity Expenses

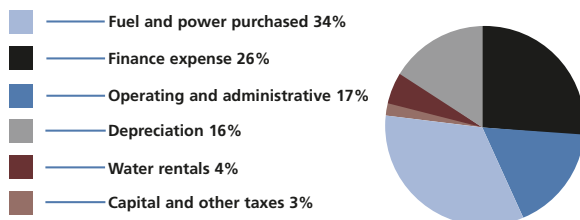
Total expenses of the electricity operations amounted to \$1 715 million, an increase of \$434 million or 34% from the previous fiscal year. Higher fuel and power purchases attributable to lower water supply conditions accounted for \$418 million of the total increase in expenses. The remaining \$16 million increase in expenses was the net result of increases in operating and administration, finance, depreciation and tax expenses, partially offset by a decrease in water rental costs.

ELECTRICITY EXPENSES	2003-04	2002-03*	Change
		<i>millions of dollars</i>	
Operating and administrative	293	272	21
Depreciation and amortization	276	264	12
Water rentals and assessments	71	103	(32)
Fuel and power purchased	569	151	418
Capital and other taxes	51	48	3
Finance expense	455	443	12
	1 715	1 281	434

\*Previous year figures include Winnipeg Hydro operations for the 7-month period from the date of acquisition.

## MANAGEMENT'S DISCUSSION AND ANALYSIS

### ELECTRICITY EXPENSES



### Operating and Administrative Expenses

Operating and administrative expenses include the labour, material and overhead costs associated with operating, maintaining and administering the electrical facilities of the Corporation. In 2003-04, operating and administrative expenses amounted to \$293 million, an increase of 8% or \$21 million over 2002-03. The acquisition of Winnipeg Hydro accounted for approximately \$14 million of the increase. The remaining increase is due to increased maintenance on the generation, transmission and distribution facilities of the Corporation.

### Depreciation and Amortization

Depreciation expense totaled \$276 million in 2003-04, an increase of \$12 million or 5% over 2002-03. The increase was mainly attributable to new additions to plant and equipment during the year as well as to the addition of Winnipeg Hydro's generation and distribution assets to Manitoba Hydro's system.

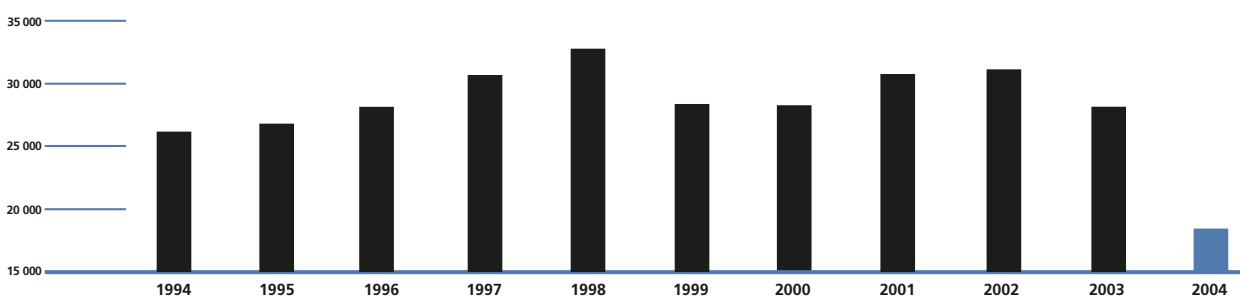
ELECTRICITY DEPRECIATION AND AMORTIZATION	2003-04	2002-03	Change
		<i>millions of dollars</i>	
Generation	87	82	5
Transmission	10	10	–
Stations	58	54	4
Distribution	66	59	7
Other	55	59	(4)
	276	264	12

### Water Rentals and Assessments

Water rentals are paid to the Province of Manitoba for the use of water resources by Manitoba Hydro in the operation of its hydroelectric generating stations. The \$32 million decrease in water rentals reflects lower water flows on Manitoba's major river systems and the resulting decrease in hydraulic generation from 28.6 billion kilowatt hours in 2002-03 to 18.5 billion kilowatt hours in 2003-04.

### HYDRAULIC GENERATION

(GWh)

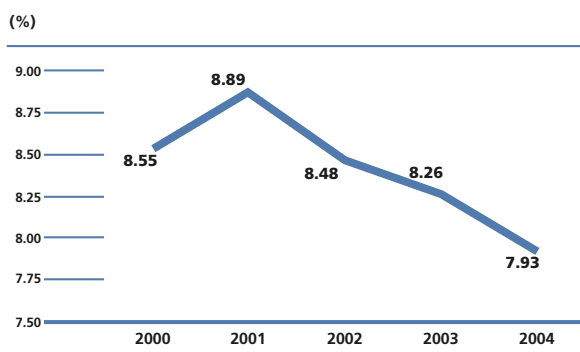


## MANAGEMENT'S DISCUSSION AND ANALYSIS

### Fuel and Power Purchased

Fuel and power purchased amounted to \$569 million in 2003-04, an increase of \$418 million from the previous year. The increase was comprised of increased power purchases of \$387 million and increased thermal generation costs of \$31 million. An increase in the volume of energy purchases required as a result of reduced hydraulic generation and increased domestic demand accounted for \$255 million of the increase in power purchases. Higher purchase prices accounted for \$126 million of the increase, with higher transmission charges accounting for the remaining \$6 million increase. In total, power purchases and thermal generation amounted to 10.4 billion kilowatt hours compared to 3.8 billion kilowatt hours in the previous year.

### WEIGHTED AVERAGE INTEREST RATE



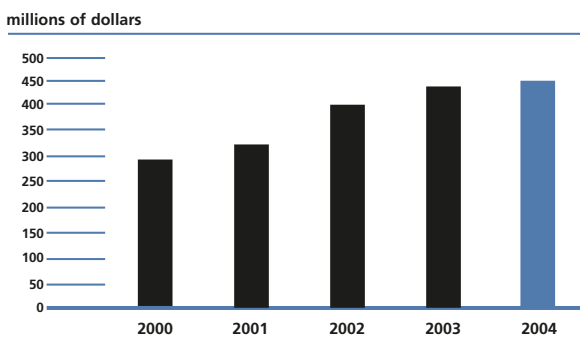
### Finance Expense

Finance expense totaled \$455 million in 2003-04, an increase of \$12 million compared to the previous year. The increase reflects the net impact of a decrease in gains on the sale of sinking fund investments and an increase in the net debt of the Corporation, partially offset by favourable foreign exchange and interest rates. Low interest rates for new debt and floating rate debt reduced the Corporation's weighted average interest rate from 8.26% in 2002-03 to 7.93% in 2003-04.

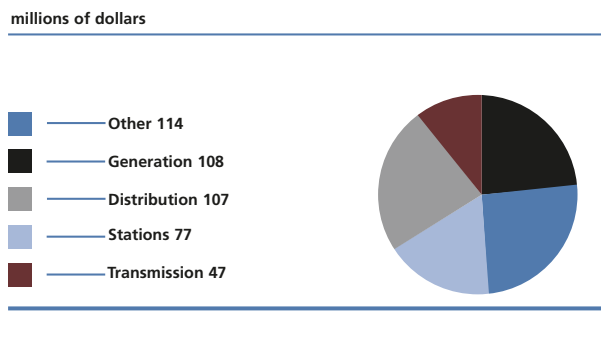
### Electricity Capital Expenditures

Expenditures for capital construction in the electricity sector totaled \$453 million in 2003-04 compared to \$443 million during the previous fiscal year. Generation capital expenditures of \$108 million included \$37 million for hydraulic generation system upgrades and \$66 million related to future generation facilities. New transmission line and transmission upgrade projects totaled \$47 million. Substation additions and upgrades were \$77 million, including a \$35 million expenditure to replace mercury-arc valves with thyristor valves to improve transmission reliability. Distribution system additions and modifications were \$107 million to meet the service requirements of customers throughout the province. The remaining capital expenditures of \$114 million were for replacement of equipment and facilities and for new information technology development projects.

### NET CAPITAL EXPENDITURES ELECTRICAL



### ELECTRICITY CAPITAL EXPENDITURES IN 2004



## MANAGEMENT'S DISCUSSION AND ANALYSIS

### ► Natural Gas Operations

Centra Gas Manitoba Inc. (Centra Gas) is a wholly-owned subsidiary of Manitoba Hydro. Centra Gas distributes natural gas to approximately 229 200 residential, 16 000 commercial and 8 400 industrial customers in the Province of Manitoba.

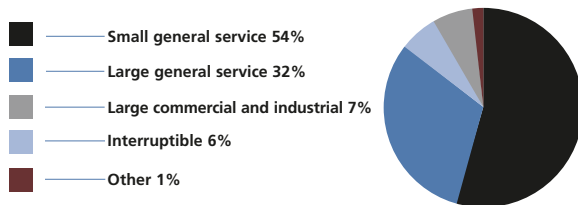
Net income from natural gas operations before Corporate allocations amounted to \$7 million, in 2003-04 or \$6 million lower than the 2002-03 fiscal year. The decline in net income was mainly attributable to decreased demand due to warmer weather. After Corporate allocations of \$15 million related to Centra Gas acquisition costs, the net loss in the natural gas sector was \$8 million in 2003-04 compared to a net loss of \$2 million in the previous year.

#### NATURAL GAS REVENUES

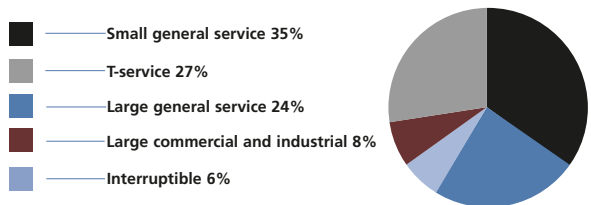
Natural gas revenues from the sale and distribution of natural gas during 2003-04 were \$494 million, a decrease of \$21 million from the previous year. The decrease was attributable to decreased demand due to warmer weather. After deducting the cost of gas sold, which is a pass-through cost with no mark up by Manitoba Hydro, net revenues amounted to \$119 million, a decrease of \$4 million or 3% from fiscal 2002-03. Natural gas deliveries were 2 123 million cubic metres in 2003-04 compared to 2 334 million cubic metres in 2002-03.

	GAS REVENUE			GAS DELIVERIES		
	2003-04	2002-03	Change	2003-04	2002-03	Change
	<i>millions of dollars</i>			<i>millions of cubic metres</i>		
Small general service	266	282	(16)	741	812	(71)
Large general service	155	161	(6)	520	565	(45)
Large commercial and industrial	37	37	–	164	189	(25)
Interruptible	29	28	1	121	128	(7)
T-service and other	7	7	–	577	640	(63)
	494	515	(21)	2 123	2 334	(211)

#### NATURAL GAS REVENUE



#### NATURAL GAS DELIVERIES



In accordance with Manitoba Hydro's rate setting methodology for natural gas, commodity rates are changed every quarter based on 12-month forward natural gas market prices. In 2003-04 rates for natural gas supplied to residential customers changed on an annualized basis as follows:

- May 1, 2003 1.7% increase
- August 1, 2003 10.2% decrease (including the removal of a deferral rider)
- November 1, 2003 3.0% increase
- February 1, 2004 1.1% increase

In addition, a 0.4% general rate increase related to the non-gas costs of operating the utility was implemented effective April 1, 2003. This was the first general rate increase implemented by Manitoba Hydro since it acquired Centra Gas in 1999.

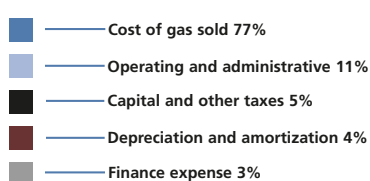
## MANAGEMENT'S DISCUSSION AND ANALYSIS

### NATURAL GAS EXPENSES

Expenses related to the natural gas operations, excluding cost of gas sold, were \$112 million in 2003-04, an increase of \$2 million from the prior year. Increases of \$3 million in depreciation and \$4 million in capital and other taxes were largely offset by decreases of \$4 million in finance expense and \$1 million in operating and administrative expenses. The decreases in operating and administrative expenses reflect the ongoing realization of synergies which were projected when Manitoba Hydro acquired Centra Gas in 1999.

NATURAL GAS EXPENSES	2003-04	2002-03	Change
		<i>millions of dollars</i>	
Cost of gas sold	375	392	(17)
Operating and administrative	53	54	(1)
Depreciation and amortization	20	17	3
Capital and other taxes	22	18	4
Finance expense	17	21	(4)
	487	502	(15)

### NATURAL GAS EXPENSES



Under a contract with Nexen Marketing, Centra Gas purchased 977 million cubic metres of natural gas based on monthly Alberta indexed pricing and 328 million cubic metres under daily Alberta indexed pricing. In addition to this current long-term contract, Centra Gas delivered natural gas on behalf of brokers to 37 333 (2003 - 39 550) customers receiving natural gas under Direct Purchase arrangements.

### NATURAL GAS CAPITAL EXPENDITURES

Capital expenditures for the year were \$32 million compared to \$22 million for the previous fiscal year. The capital expenditure program reflects the continuing growth in new business, system improvement and other expenditures used to meet the needs of the existing customer base and to bring natural gas services to more Manitobans.

## MANAGEMENT'S DISCUSSION AND ANALYSIS

### ▮ Subsidiaries

In addition to Centra Gas, the Corporation has four wholly-owned subsidiaries involved in energy-related business enterprises for purposes of enhancing stakeholder service and value. The four subsidiaries are as follows:

**Manitoba Hydro Utility Services Ltd. (MHUS)** provides meter reading and other services to Manitoba Hydro and other utilities.

**Manitoba HVDC Research Centre Inc. (HVDC)** provides research and development services and products to the electrical power system industry.

**Manitoba Hydro International Ltd. (MHI)** provides professional consulting, operations, maintenance and project management services to energy sectors world-wide, either exclusively or through partnerships.

**Meridium Power Inc. (MP)** distributes motive power and power protection products, ranging from large horsepower single phase motors to battery-free power protection systems for industrial and telecommunication applications.

The following table outlines the revenues and expenses of the subsidiary companies that are included in the consolidated financial statements of Manitoba Hydro.

	<b>MHUS</b>	<b>HVDC</b>	<b>MHI</b>	<b>MP</b>	<b>TOTAL</b>
	<i>in thousands of dollars</i>				
Revenues	4 692	3 074	8 052	85	15 903
Expenses	4 608	2 906	7 633	381	15 528
Net income (loss)	84	168	419	(296)	375

### ▮ Corporate Financing

In 2003-04, proceeds received from new financing arranged by the Corporation amounted to \$1 013 million primarily through the issuance of Provincial Advances for \$985 million and a Manitoba Hydro-Electric Board Bond of \$28 million in connection with mitigation settlements. Proceeds from new financing were used to refinance debt and to fund new cash requirements.

In 2003-04, the Corporation retired \$474 million of debt that was comprised of Provincial Advances of \$453 million, Manitoba Hydro-Savings Bonds of \$11 million, and Manitoba Hydro-Electric Board Bonds of \$10 million.



## MANAGEMENT'S DISCUSSION AND ANALYSIS

### Corporate Performance Measures

The Corporate Strategic Plan is built upon Manitoba Hydro's Vision "to be the best utility in North America with respect to safety, rates, reliability, customer satisfaction, and environmental management and to always be considerate of the needs of customers, employees and stakeholders." The following performance measures are among those utilized by the Corporation in measuring progress towards achieving the goals set out in the Corporate Strategic Plan:

#### SAFETY IN THE WORK ENVIRONMENT

Safety is the Corporation's most important goal and is incorporated into the daily activities of all employees. Manitoba Hydro is committed to significantly improving its safety performance and is implementing a comprehensive safety management system including behaviour-based safety.

#### EXCEPTIONAL VALUE FOR CUSTOMERS

Exceptional value for customers is measured in terms of low rates, public safety, reliability and customer satisfaction.

#### WORKING RELATIONSHIPS WITH ABORIGINAL PEOPLES

Manitoba Hydro is committed to further increasing Aboriginal representation in its workforce and to place increased emphasis on building enduring working relationships with Aboriginal peoples.

#### PROTECTING THE ENVIRONMENT

Through careful management of new and existing facilities and infrastructure, Manitoba Hydro continues to operate in an environmentally responsible manner. Manitoba Hydro is dedicated to sustainable development and protecting the environment.

#### FINANCIAL TARGETS

The Corporation has three primary financial targets to enhance its financial strength, to contribute to rate stability and predictability, and to protect the Corporation and its customers from a variety of other risks. The financial targets are Interest Coverage, Capital Coverage and Debt/Equity.

	Measure	Target	Performance
Safety in the Work Environment	High-risk accidents	0	13
	Accident severity rate (per 200 000 hours worked)	< 16 days	29.0 days
	Accident frequency rate (per 200 000 hours worked)	< 0.80 accidents	1.71 accidents
Exceptional Value for Customers	Retail electric rates	Lowest in North America	Lowest in North America
	Retail natural gas rates	Amongst the lowest in North America	6th in Canada
	Average electric customer outage time (per customer per year)	≤ 92 minutes	75 minutes
	Average electric customer outage frequency (per customer per year)	≤ 1.3 outages	1.0 outages
	CEA Customer Service Index	Best in Canada	Best in Canada

## MANAGEMENT'S DISCUSSION AND ANALYSIS

	Measure	Target	Performance
<b>Working Relationships with Aboriginal Peoples</b>	% Aboriginal employment Corporate (by 2005)	10%	9.7%
	% Aboriginal employment Northern (by 2005)	33%	31.5%
<b>Protecting the Environment</b>	Environmental component of CEA Customer Service Index	≥ 8.5	8.1
	Net Greenhouse Gas Emissions (6% below 1990 levels)	< 0.537 megatonnes	0.536 megatonnes
<b>Finance</b>	Interest Coverage	> 1.10	0.17
	Capital Coverage	> 1.0	< 1.0
	Debt/Equity (by 2011-12)	75:25	87:13

### ► Risk Management

Manitoba Hydro faces a number of operational and business risks in the fulfillment of its mandate. The principal risks and uncertainties include: water supply, energy market prices, future energy supply and demand, interest and foreign exchange rates, infrastructure security, and the maintenance of strategic business relationships.

All major risks are closely monitored and effectively managed by the Corporation through a systematic and coordinated process. A Risk Management Steering Committee coordinates risk management activities across the Corporation. Risk Management activities include risk identification and assessment, risk monitoring, the establishment of risk tolerances and risk mitigation.

Sensitivity analysis is conducted on major risks to determine the Corporation's risk exposure and to ensure that risks are within established tolerances. Actions are taken to reduce the likelihood of negative events occurring or to reduce the consequences should negative events occur.

### ► Outlook

In spite of the drought conditions of 2003-04, Manitoba Hydro's excellent service record was maintained. Droughts are a normal part of managing a hydroelectric utility and Manitoba Hydro incorporates the risk of low water levels into all of its long-term financial plans.

The last electricity rate increase for residential and small commercial customers was 1.3%, effective April 1, 1997. Since that time, Manitoba Hydro has been able to forego rate increases because favourable export revenues made it possible to absorb increases in costs of providing service. However, current drought conditions have significantly reduced Manitoba Hydro's ability to generate hydroelectricity and the associated revenues earned from export electricity sales. Consequently, Manitoba Hydro applied to the Manitoba Public Utilities Board (PUB) for approval of rate increases averaging 3.0% effective April 1, 2004 and an additional 2.5% effective April 1, 2005. Even with the proposed increases, Manitoba customers will continue to have electricity rates that are the lowest in North America.

## MANAGEMENT'S DISCUSSION AND ANALYSIS

Manitoba Hydro continues to work with First Nations on potential hydroelectric development in the north. The proposed 200 MW Wuskwatim Generating Station, planned for a site on the Burntwood River, is being jointly developed with the Nisichawayasihk Cree Nation of Nelson House. Currently, the Corporation's proposal for the Wuskwatim station, with a targeted in-service date of 2010, is before Manitoba's Clean Environment Commission for review.

Studies are proceeding on another northern hydroelectric facility, the 620 MW Gull (Keeyask) Generating Station on the Nelson River, which is being examined in partnership with Tataskweyak Cree Nation and War Lake, Fox Lake and York Factory First Nations. Studies are also ongoing with respect to the Conawapa Generating Station, which has the potential to add 1 250 MW to Manitoba Hydro's system.

Since 1991, Manitoba Hydro's Power Smart programs have resulted in estimated demand savings of approximately 292 MW and annual energy savings of approximately 631 GWh. To date, over \$100 million in energy savings has been realized. Power Smart initiatives are expected to achieve cumulative total savings of 356 MW and 1 272 GWh per year by 2011-2012.

Manitoba Hydro is also in the midst of a year-long study to monitor wind speed and direction at seven sites in the province. Should it prove to be viable from an economic and technical perspective, up to 250 MW of wind power could be developed at one or more of these sites as early as 2005-06.

Planning is proceeding for the construction of a third high voltage direct current transmission line that will further bolster the reliability of Manitoba's electricity supply, adding an additional connection between hydroelectric generating stations in the north and our southern transmission system.

Manitoba Hydro is currently working with its design architect to plan a signature design head office building that speaks to Manitoba Hydro's commitment to sustainable development. The new building will not only meet our needs today, but will also offer future flexibility to adapt to Manitoba Hydro's changing requirements.

Steady economic performance and low electricity prices continue to play a fundamental role in the increased load growth of the industrial businesses within Manitoba. Electricity use in this sector is expected to grow at an average of 1.7% annually over the next 10 years.

Domestic electricity demand experienced strong growth in 2003-04 as a result of increases in consumer demand, business investments, government expenditures and investments. Stronger than expected growth was experienced in housing starts as a result of the strongest population growth since 1986 and lower interest rates. In the long term (2010-2025), Manitoba real GDP growth should trend around the 2.0% rate and increases in the number of Manitoba residential electricity customers should be around 1 600 annually.

In the natural gas sector, prices have been volatile and are expected to remain volatile. The upward trending volatility is driven by increasing demand for natural gas in North America with housing, electricity generation and manufacturing being the primary drivers. The rate impacts of natural gas volatility on Manitoba Hydro's customers are mitigated through the use of seasonal storage facilities, derivative financial instruments, and the Equal Payment Plan Program.

Manitoba Hydro will continue to offer its customers a secure, economic and efficient energy supply along with value-added services at rates that are among the lowest in North America.

## MANAGEMENT REPORT

FOR THE YEAR ENDED MARCH 31

The accompanying consolidated financial statements and all additional information contained in the Annual Report are the responsibility of management and have been approved by the Manitoba Hydro-Electric Board. The financial statements have been prepared by management in accordance with accounting principles generally accepted in Canada, applied on a basis consistent with that of the preceding year. In management's opinion the consolidated financial statements have been properly prepared within reasonable limits of materiality, incorporating management's best judgment regarding all necessary estimates and all other data available up to June 10, 2004. The financial information presented elsewhere in the Annual Report is consistent with that in the consolidated financial statements.

Management maintains internal controls to provide reasonable assurance that the assets of the Corporation are properly safeguarded and that the financial information is reliable, timely and accurate. An internal audit function independently evaluates the effectiveness of these internal controls on an ongoing basis and reports its findings to management and to the Audit Committee of the Board.

The responsibility of the external auditors, Ernst & Young LLP, is to express an independent, professional opinion on whether the consolidated financial statements are fairly presented in accordance with Canadian generally accepted accounting principles. The Auditors' Report outlines the scope of their examination and their opinion.

The Audit Committee of the Board is composed of three members of the Manitoba Hydro-Electric Board. The Audit Committee of the Board meets with the external auditors, representatives of the Auditor General's Office, the internal auditors and management to satisfy itself that each group has properly discharged its respective responsibility and to review the consolidated financial statements before recommending approval by the Board. The Board has reviewed the Annual Report in advance of its release and has approved its content and authorized its publication.

On behalf of management:



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



V.A. Warden, CMA, FCMA  
*Vice-President  
Finance & Administration  
and Chief Financial Officer*

Winnipeg, Canada  
June 10, 2004

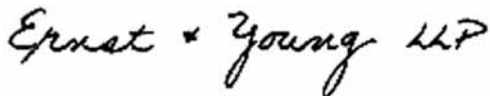
## AUDITORS' REPORT

To the Manitoba Hydro-Electric Board

We have audited the consolidated balance sheet of The Manitoba Hydro-Electric Board as at March 31, 2004 and the consolidated statements of income, retained earnings and cash flows for the year then ended. These consolidated financial statements are the responsibility of the Corporation's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audit.

We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Corporation as at March 31, 2004 and the results of its operations and its cash flows for the year then ended in accordance with Canadian generally accepted accounting principles.



Chartered Accountants

Winnipeg, Canada  
June 10, 2004

## CONSOLIDATED STATEMENT OF INCOME

FOR THE YEAR ENDED MARCH 31

	Notes	2004	2003
<i>millions of dollars</i>			
<b>REVENUES</b>			
Electric	Manitoba	936	891
	Extraprovincial	351	463
Gas	Commodity	375	392
	Distribution	119	123
		1 781	1 869
Cost of gas sold		375	392
		1 406	1 477
<b>EXPENSES</b>			
Operating and administrative		346	326
Depreciation and amortization		296	281
Water rentals and assessments		71	103
Fuel and power purchased		569	151
Capital and other taxes		73	66
		1 355	927
Income before finance expense		51	550
Finance expense		487	479
<b>NET (LOSS) INCOME</b>		(436)	71

## CONSOLIDATED STATEMENT OF RETAINED EARNINGS

FOR THE YEAR ENDED MARCH 31

	Notes	2004	2003
<i>millions of dollars</i>			
<b>RETAINED EARNINGS, BEGINNING OF YEAR</b>		1 170	1 302
Net (loss) income		(436)	71
		734	1 373
Distribution to the Province of Manitoba		–	203
<b>RETAINED EARNINGS, END OF YEAR</b>		734	1 170

The accompanying notes are an integral part of the consolidated financial statements.

**CONSOLIDATED BALANCE SHEET****AS AT MARCH 31**

	Notes	2004	2003
<i>millions of dollars</i>			
<b>ASSETS</b>			
<b>PROPERTY, PLANT AND EQUIPMENT</b>			
In service		10 399	9 991
Less accumulated depreciation		3 241	3 042
		7 158	6 949
Construction in progress		378	356
	5	7 536	7 305
<b>CURRENT ASSETS</b>			
Bank balances and temporary investments	6	6	30
Accounts receivable and accrued revenue		371	393
Interest receivable		7	9
Materials and supplies, at average cost		81	69
		465	501
<b>OTHER ASSETS</b>			
Sinking fund investments	7	715	948
Pension assets	8	556	457
Deferred debt costs	9	213	571
Goodwill		108	108
Other deferred costs	10	310	344
		1 902	2 428
		9 903	10 234

Approved on behalf of the Board:



Victor H. Schroeder, QC  
Chairman of the Board



Hon. Saul Cherniack, PC, CM, OM, QC  
Chairman of the Audit Committee

	Notes	2004	2003
		<i>millions of dollars</i>	
<b>LIABILITIES AND RETAINED EARNINGS</b>			
<b>LONG-TERM DEBT</b>			
Long-term debt net of sinking fund investments		6 399	5 977
Sinking fund investments	7	715	948
	11	7 114	6 925
<b>CURRENT LIABILITIES</b>			
Accounts payable and accrued liabilities		255	258
Notes payable	12	93	128
Accrued interest		107	111
Current portion of long-term debt	11	276	343
		731	840
<b>OTHER LIABILITIES</b>			
Deferred liabilities and credits	13	294	301
Pension obligation	8	507	479
Asset purchase obligation	14	249	255
		1 050	1 035
<b>CONTRIBUTIONS IN AID OF CONSTRUCTION</b>		274	264
<b>RETAINED EARNINGS</b>		734	1 170
		9 903	10 234

*The accompanying notes are an integral part of the consolidated financial statements.*



**CONSOLIDATED STATEMENT OF CASH FLOWS****FOR THE YEAR ENDED MARCH 31**

	Notes	2004	2003
		<i>millions of dollars</i>	
<b>OPERATING ACTIVITIES</b>			
Cash receipts from customers		1 813	1 863
Cash paid to suppliers and employees		(1 449)	(983)
Interest paid		(537)	(550)
Interest received		46	102
		(127)	432
<b>FINANCING ACTIVITIES</b>			
Proceeds from long-term debt		1 013	734
Sinking fund withdrawals		269	644
Retirement of long-term debt		(474)	(977)
Discount on long-term debt		-	92
Mitigation liability	17	(16)	(26)
Distribution to the Province of Manitoba		(3)	(200)
Notes payable		(36)	(54)
		753	213
<b>INVESTING ACTIVITIES</b>			
Property, plant and equipment, net of contributions		(498)	(484)
Sinking fund payment		(106)	(134)
Other		(46)	(11)
		(650)	(629)
<b>NET (DECREASE) INCREASE IN CASH</b>		(24)	16
Cash at beginning of year		30	14
<b>CASH AT END OF YEAR</b>		6	30

*The accompanying notes are an integral part of the consolidated financial statements.*

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

FOR THE YEAR ENDED MARCH 31, 2004

### NOTE 1 SIGNIFICANT ACCOUNTING POLICIES

The consolidated financial statements include the financial statements of the Corporation and its subsidiaries. For purposes of consolidation, all significant intercompany accounts and transactions have been eliminated.

a) **PROPERTY, PLANT AND EQUIPMENT**

Property, plant and equipment is stated at cost which includes direct labour, materials, contracted services, a proportionate share of overhead costs and interest applied at the weighted average cost of capital. Finance expense is allocated to construction until a capital project becomes operational or a decision is made to abandon, cancel or indefinitely defer construction. Once the transfer to in service property, plant and equipment is made, finance expense allocated to construction ceases and depreciation and finance expense charged to operations commences.

b) **DEPRECIATION**

Depreciation is provided on a straight-line remaining life basis. The major components of generating stations are depreciated over the lesser of the remaining life of the major component or the remaining life of the associated generating station.

The range of estimated service lives of each major asset category is as follows:

Generation	- Hydraulic	45 - 100 years
	- Thermal	25 - 45 years
Transmission	- Lines	20 - 53 years
	- Stations	20 - 53 years
Distribution (Electricity and Gas)		20 - 65 years

Provision for removal costs of major property, plant and equipment is charged to depreciation expense on a straight-line basis over the remaining service lives of the related assets. In accordance with utility accounting practices, retirements of these assets, including costs of removal, are charged to accumulated depreciation with no gains or losses reflected in operations. The estimated service lives and removal costs of the assets are based upon depreciation studies conducted periodically by the Corporation. A provision for estimated future costs of removal and site restoration costs related to the decommissioning of the thermal generating stations is recorded as a deferred liability.

c) **FOREIGN CURRENCY TRANSLATION**

Revenues and expenditures resulting from transactions in foreign currencies are translated into Canadian dollar equivalents at exchange rates in effect at the transaction dates except to the extent that revenues are used to hedge future long-term foreign debt obligations. In accordance with the Corporation's Exposure Management Program, revenues used as hedges are firm U.S. export revenues which are translated at the historical book value exchange rates of the respective U.S. debt obligations to which the firm revenues are linked and for which they, together, form an effective hedge. The maturity dates of U.S. debt obligations extend through 2023. For purposes of bridging the timing of U.S. debt maturities and the U.S. revenue streams used to hedge those debt maturities, the Corporation utilizes U.S. sinking funds. The investment income from the U.S. sinking fund is retained within the Exposure Management Program to form part of the long-term debt obligation hedge.

Long-term monetary assets and liabilities denominated in U.S. currencies are translated into Canadian currency at the exchange rate prevailing at the balance sheet date. The exchange gains or losses, resulting from the translation of these long-term monetary items, which are related to liabilities hedged by future U.S. revenue streams, are deferred to the date in which the sales are made.

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

Current monetary assets and liabilities denominated in foreign currencies are translated into Canadian currency at the exchange rate prevailing at the balance sheet date. Any exchange gains and losses on the translation of current monetary assets and liabilities are credited or charged to operations in the current period.

Cross currency swap arrangements transacted by the Province of Manitoba (the Province) on the Corporation's behalf are utilized to manage exchange rate exposures and as a means to capitalize on favourable financing terms in either U.S. or Canadian capital markets. Cross currency agreements represent an exchange of principal and/or interest flows denominated in one currency for principal and/or interest flows denominated in another. Such transactions effectively amend the terms of the original debt obligation with the Province with the swapped debt arrangement.

d) **PENSION AND OTHER EMPLOYEE BENEFITS**

An independent actuary using the accrued benefit method and management's best estimate economic and demographic assumptions, determines the costs and obligations of pension benefits. Pension expense is comprised of the cost of pension benefits provided during the year plus the amortization of the cost of past service benefits and experience gains and losses. The unamortized present value of past service benefits and actuarially determined experience gains or losses are recognized in the financial statements as a deferred asset or credit. The Corporation utilizes the "corridor method" of amortizing actuarial gains and losses. The amortization of experience gains and losses is recognized only to the extent that the cumulative unamortized net actuarial gain or loss exceeds 10% of the greater of the accrued benefit obligation and the fair market value of plan assets at the beginning of the year. When required, the excess of the cumulative gain or loss balance is amortized over the expected average remaining service life of the employees covered by the plan.

All pension assets are stated at current market value.

Pension and long-term disability expenses pertaining to the former Winnipeg Hydro employees are recognized at the time contributions are made to the City of Winnipeg Civic Employees Benefit Program. The Program is a defined benefit pension plan with multiple participating employers.

Other employee benefits earned by employees include vacation, vested sick leave and long-term disability. Where applicable, the cost of these benefits is determined based on management's best estimate economic and demographic assumptions.

e) **DEBT DISCOUNTS AND PREMIUMS**

Debt discounts and premiums are amortized to finance expense on a straight-line basis over the life of the respective debt.

f) **SINKING FUND INVESTMENTS**

The Corporation records sinking fund investments at par value. The difference between the cost and the par value of each investment is recorded as a premium or discount and is amortized on a straight-line basis over the remaining life of the investment. Any gain or loss on early disposal of investments is credited or charged to operations.

g) **TEMPORARY INVESTMENTS**

Temporary investments are recorded at the lower of cost or market.

h) **PLANNING STUDIES**

Planning studies costs related to uncommitted major generation or transmission facilities are deferred and amortized on a straight-line basis over 15 years. The balance of the unamortized costs of a project which proceeds during the 15-year period is transferred to the capital cost of the project.

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

- i) **POWER SMART PROGRAMS**  
The costs of the Corporation's energy conservation programs, referred to as Power Smart, are deferred and amortized on a straight-line basis over periods of up to 15 years.
- j) **SITE RESTORATION COSTS**  
Site restoration costs incurred are recorded as a deferred expense and are amortized on a straight-line basis over 15 years.
- k) **REVENUES**  
Customers' meters are read and billed on a cyclical basis. Revenues are accrued in respect of energy delivered for those cycles not yet billed.
- l) **CONTRIBUTIONS IN AID OF CONSTRUCTION**  
Contributions are required from customers whenever the costs of extending service exceed specified construction allowances. Contributions are amortized on a straight-line basis over the estimated service lives of the related assets.
- m) **COST OF GAS SOLD**  
Cost of natural gas sold is recorded at the same rates charged to customers. The difference between the recorded cost of natural gas and the actual cost of natural gas is carried as an account receivable/payable and recovered or refunded in future rates.
- n) **DERIVATIVE FINANCIAL INSTRUMENTS**  
The Corporation utilizes derivative financial instruments to mitigate natural gas price volatility. Amounts paid or received under these financial instruments are recognized as part of the cost of natural gas.
- The Corporation mitigates natural gas price volatility to customers through the use of derivative products restricted to price swaps, call options and collars. These derivative products are applied to 90% of natural gas volumes that are certain to be required under a "warmest year" scenario for a period up to twelve months. A stringent control environment is maintained to manage any risks related to the application of derivatives.
- Interest rate swap agreements transacted by the Province on the Corporation's behalf are utilized to manage the fixed and floating interest rate mix of the total debt portfolio, interest rate exposure, and related overall cost of borrowing. Interest rate swap agreements represent an agreement between two parties to periodically exchange payments of interest without the exchange of the principal amount upon which the payments are based. The Province may also enter into forward start interest rate swap arrangements where the agreement to exchange interest payments commences at some future date. In either swap arrangement, the terms of the debt advanced by the Province to the Corporation are amended by the swap.
- o) **ACQUISITION COSTS**  
Costs associated with the acquisition of Centra Gas Manitoba Inc. (Centra Gas) and Winnipeg Hydro have been deferred and are being amortized on a straight-line basis over a period of 30 years.
- p) **DEFERRED TAXES**  
The taxes paid by Centra Gas as a result of its change to non-taxable status on acquisition by Manitoba Hydro have been deferred and are being amortized, on a straight-line basis, over a period of 30 years.

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

- q) **GOODWILL**  
Goodwill represents the amount of the Corporation's investments in Centra Gas and Winnipeg Hydro over and above the fair market value of the net assets acquired. The goodwill balance is evaluated annually to determine whether any impairment has occurred. An impairment would be recognized if it was determined that the carrying value of the Corporation's investments in Centra Gas or Winnipeg Hydro exceeded the present value of the future cash flows from these investments. Should impairment occur, it would be recorded as a charge against operations in the year of impairment.
- r) **USE OF ESTIMATES**  
The preparation of financial statements in accordance with generally accepted accounting principles requires management to make estimates and assumptions that affect amounts reported in the financial statements. Actual amounts could differ from those estimates, but differences are not expected to be material.
- s) **REGULATION**  
The prices charged for the sale of electricity and natural gas within Manitoba are subject to review and approval by the Public Utilities Board of Manitoba. The consolidated financial statements take into account certain regulatory accounting practices which differ from accounting practices applied in unregulated enterprises, and which relate specifically to select deferred charges and the retirement of property, plant and equipment.

### NOTE 2 EXTRAPROVINCIAL REVENUES

	2004	2003
	<i>millions of dollars</i>	
United States	297	379
Canada	54	84
	351	463

The effective exchange rate for translation of U.S. revenues used as a hedge of long-term debt is \$1.00 U.S. = \$1.232 Canadian (2003 - \$1.00 U.S. = \$1.232 Canadian). If U.S. revenues designated as a hedge were recorded at average exchange rates prevailing throughout the year, U.S. revenues would have amounted to \$302 million (2003 - \$397 million).

### NOTE 3 WATER RENTALS AND ASSESSMENTS

	2004	2003
	<i>millions of dollars</i>	
Water rentals	64	95
Land rentals and assessments	7	8
	71	103

Water rentals are paid to the Province for the use of water resources in the operation of the Corporation's hydroelectric generating stations. Water rental rates during the year were \$3.34 per MWh (2003 - \$3.34 per MWh).

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

### NOTE 4 FINANCE EXPENSE

	2004	2003
	<i>millions of dollars</i>	
Interest on debt	565	590
Interest allocated to construction	(35)	(27)
Investment income	(43)	(84)
	487	479

Included in interest on debt is \$70 million (2003 - \$74 million) related to the Provincial Debt Guarantee Fee. The fee during the year was 0.95% of the total outstanding debt guaranteed by the Province (2003 - 0.95%).

Investment income includes interest earned on Canadian and U.S. sinking funds established for the retirement of long-term debt. U.S. sinking fund interest income designated as a hedge of U.S. denominated long-term debt is recorded at the historical book value rate of the associated debt. The effective exchange rate for translation of these revenues is \$1.00 U.S. = \$1.232 Canadian (2003 - \$1.00 U.S. = \$1.232 Canadian).

### NOTE 5 PROPERTY, PLANT AND EQUIPMENT

	2004			2003		
	<i>millions of dollars</i>					
	In Service	Accumulated Depreciation	Construction in Progress	In Service	Accumulated Depreciation	Construction in Progress
Generation						
- Hydraulic	4 200	1 164	233	4 110	1 106	182
- Thermal	469	165	4	452	147	16
Transmission						
- Lines	727	202	8	715	191	10
- Stations	1 925	760	73	1 841	711	49
Distribution	2 165	645	26	2 053	583	29
Other	913	305	34	820	304	70
	10 399	3 241	378	9 991	3 042	356

### NOTE 6 BANK BALANCES AND TEMPORARY INVESTMENTS

	2004	2003
	<i>millions of dollars</i>	
Bank balances	6	-
Temporary investments	-	30
	6	30

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

### NOTE 7 SINKING FUND INVESTMENTS

As provided by The Manitoba Hydro Act, the Corporation pays an annual sinking fund installment to the Minister of Finance of the Province of Manitoba of not less than 1% of the principal amount of the outstanding debt on the preceding March 31, and 4% of the balance in the sinking fund at such date. Payments to the sinking fund during the year were \$106 million (2003 - \$134 million). Income earned on sinking fund investments is included with investment income for the year.

Sinking funds are invested in government bonds and the bonds of highly rated corporations and financial institutions.

	2004	2003
	<i>millions of dollars</i>	
Canadian investments	301	257
U.S. investments	414	691
	715	948

Canadian investments have a weighted average term to maturity of 2.6 years (2003 - 5.4 years) and an effective yield to maturity of 6.2% (2003 - 6.0%). U.S. investments have a weighted average term to maturity of 7.0 years (2003 - 5.7 years) and an effective yield to maturity of 4.7% (2003 - 4.8%). U.S. investments are translated into Canadian currency at the exchange rate prevailing at the balance sheet date, \$1.00 U.S. = \$1.31 Canadian (2003 - \$1.00 U.S. = \$ 1.47 Canadian).

### NOTE 8 PENSION ASSETS AND OBLIGATION

Manitoba Hydro employees are eligible for pensions under the Manitoba Civil Service Superannuation Fund (the Fund). The Fund is a defined benefit plan that requires the Corporation to contribute 50% of the pension disbursements made to retired employees. In addition, the former employees of Centra Gas are entitled to pension benefits earned under the Centra Gas curtailed pension plans up to December 31, 2000, for salaried employees and up to June 21, 2001, for union employees. The former Winnipeg Hydro employees continue to earn benefits under the City of Winnipeg Civic Employees' Benefit Program in which, upon its acquisition of Winnipeg Hydro, Manitoba Hydro became a participating employer.

The most recent actuarial valuations for the Corporation's pension obligation were performed with respect to the liabilities outstanding as at December 31, 2003. These valuations incorporated management's best estimate assumptions and took into consideration the long-term nature of the pension plans. The pension liability pertaining to the Fund amounted to \$507 million at March 31, 2004 (2003 - \$479 million).

The significant actuarial assumptions adopted in measuring the Corporation's pension and other employee benefit obligations are as follows:

	2004	2003
Discount rate	7.0%	7.0%
Expected long-term rate of return on plan assets	7.5%	7.5%
Rate of compensation increase, including merit and promotions	2.0-3.0%	2.0-3.0%

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

The Manitoba Civil Service Superannuation Board manages the assets of the Fund on behalf of the Corporation. Pension assets are valued at market rates and are invested as follows:

	2004	2003
	<i>millions of dollars</i>	
Bonds and debentures	228	205
Equities	268	187
Mortgages	–	10
Short-term investments	19	12
Real estate	41	43
Fair value of plan assets	556	457
Accrued benefit obligation	507	479
Fund status - plan surplus (deficit)	49	(22)
Net accrued valuation adjustments	56	115
Net expense	9	9
Benefits paid	20	19
Employee contributions	18	16

The return on pension fund assets was positive 21.6% (2003 negative 3.2%).

The weighted average term to maturity on fixed income investments is 8.8 years (2003 - 7.5 years).

Information about the curtailed Centra Gas defined benefit pension plans as at March 31, in aggregate, is as follows:

	2004	2003
	<i>millions of dollars</i>	
Fair value of plan assets	53	43
Accrued benefit obligation	66	65
Fund status - plan deficit	13	22
Net accrued valuation adjustments	13	22
Net expense	1	1
Benefits paid	4	3
Employer contributions	4	1

### NOTE 9 DEFERRED DEBT COSTS

	2004	2003
	<i>millions of dollars</i>	
Deferred foreign exchange	166	513
Premium on purchase of sinking fund investments	36	42
Other	11	16
	213	571

Deferred foreign exchange represents the net translation gains and losses on U.S. long-term monetary items that will be offset through the translation of future U.S. firm revenue and investment income streams.



## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

### NOTE 10 OTHER DEFERRED COSTS

	2004	2003
	<i>millions of dollars</i>	
Power Smart programs	61	50
Planning studies	37	35
Deferred taxes	45	47
Pension valuation	56	115
Contract receivables	33	28
Site restoration costs	20	19
Acquisition costs	19	20
Other	39	30
	310	344

The amortization of deferred costs amounting to \$19 million (2003 - \$18 million) is included in depreciation and amortization expense.

### NOTE 11 LONG-TERM DEBT

In 2004, the Corporation arranged long-term financing in the principal amount of \$1 013 million (2003 - \$734 million). Provincial advances were arranged for \$955 million with fixed coupon rates in the range of 4.5% to 5.2% and \$30 million with floating coupon rates starting at 2.1%. In addition, a \$28 million Manitoba Hydro-Electric Board Bond was issued for mitigation projects with a fixed coupon rate of 10.0%.

	2004	2003
	<i>millions of dollars</i>	
Advances from the Province of Manitoba represented by debenture debt of the Province	6 493	6 375
Manitoba HydroBonds	673	684
Manitoba Hydro-Electric Board Bonds	224	209
	7 390	7 268
Less: Current portion of long-term debt	276	343
	7 114	6 925

Included in the current portion of long-term debt is \$247 million (2003 - \$304 million) of debt maturities and \$29 million (2003 - \$39 million) of floating-rate Manitoba HydroBonds with maturity dates in 2007 and 2008. Floating rate Manitoba HydroBonds are redeemable at the option of the holder.

Long-term debt, excluding Manitoba Hydro-Electric Board Bonds issued for mitigation projects in the amount of \$64 million (2003 - \$36 million), is guaranteed by the Province of Manitoba.

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

Debt principal amounts are summarized by fiscal years of maturity in the following table:

Years of Maturity	2004					2003
	Canadian	U.S.	Total	Cdn Yields	U.S. Yields	Total
	<i>millions of Canadian dollars</i>					
2005	276	–	276	3.6%	–	218
2006	106	–	106	4.6%	–	106
2007	72	–	72	6.1%	–	72
2008	294	–	294	5.5%	–	294
2009	–	323	323	–	5.9%	362
	748	323	1 071	5.3%	5.9%	1 052
2010-2014	758	767	1 525	5.2%	6.6%	1 101
2015-2042	2 699	2 095	4 794	8.1%	7.7%	4 772
	4 205	3 185	7 390	7.7%	7.5%	6 925

U.S. debt is translated into Canadian currency at the exchange rate prevailing at the balance sheet date, \$1.00 U.S. = \$1.31 Canadian (2003 - \$1.00 U.S. = \$1.47 Canadian).

### NOTE 12 NOTES PAYABLE

	2004	2003
	<i>millions of dollars</i>	
Canadian notes	81	128
U.S. notes	12	–
	93	128

Notes payable outstanding at March 31, 2004, have terms ranging from 1 to 62 days and bear interest at the average effective rate of 2.0% for Canadian notes (2003 - 2.8%) and 0.9% for U.S. notes. The Corporation has bank credit facilities that provide for overdrafts and notes payable up to an amount of \$500 million denominated in Canadian and/or U.S. currency. U.S. notes are translated into Canadian currency at the exchange rate prevailing at the balance sheet date, \$1.00 U.S. = \$1.31 Canadian (2003 \$1.00 U.S. = \$1.47 Canadian).

### NOTE 13 DEFERRED LIABILITIES AND CREDITS

	2004	2003
	<i>millions of dollars</i>	
Mitigation liability (note 17)	121	118
Employee future benefits, excluding pensions	90	75
Refundable advances from customers	25	40
Decommissioning of thermal generating stations	15	16
Debt premium and expense	15	33
Interest income and other credits	28	19
	294	301

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

### NOTE 14 ASSET PURCHASE OBLIGATION

Effective September 3, 2002, the Corporation acquired the net assets of Winnipeg Hydro from the City of Winnipeg. The results of Winnipeg Hydro's operations have been included in Manitoba Hydro's electric operations since that date. The Asset Purchase Obligation represents the net present value of payments to the City of Winnipeg of \$25 million per annum in years 2004 to 2006, \$20 million per annum in years 2007 to 2010, and \$16 million per annum in year 2011 and each year thereafter in perpetuity.

### NOTE 15 FINANCIAL INSTRUMENTS

#### Derivative Financial Instruments

The Corporation has entered into collar contracts until January 2005 to purchase 32 910 000 gigajoules of gas at a weighted average price of \$5.51 per gigajoule. The weighted average forward price per the Alberta Energy Company Exchange at March 31, 2004 was \$6.57 per gigajoule.

These contracts will be recorded in the month the gas is delivered. At March 31, 2004, the valuation of these contracts showed a positive fair value of \$12 million. There were no unrecognized financial liabilities relative to these contracts.

#### Foreign Exchange Contracts

As at March 31, 2004, there were foreign exchange contract purchases of \$15 million U.S. at a weighted average exchange rate of \$1.31 (2003 - \$15 million U.S. at a weighted average exchange rate of \$1.47) and no foreign exchange contract sales (2003 - \$15 million U.S. at a weighted average exchange rate of \$1.47). The carrying values of the foreign exchange contracts approximate their fair value.

#### Fair Value

The estimated fair values of the Corporation's long-term debt and sinking fund investments are based on year-end market interest and exchange rates for similar debt and investment instruments. As at March 31, 2004, the estimated fair value of the Corporation's total long-term debt amounted to \$9 238 million (2003 - \$8 967 million). The estimated fair value of sinking fund investments which the Corporation uses for the purpose of repaying long-term debt amounted to \$787 million at March 31, 2004 (2003 - \$1 032 million).

The carrying values of all other financial assets and liabilities approximate fair value.

#### Interest Rate Risk

Interest rate risk is associated with notes payable net of temporary investments, the current portion of long-term debt net of the current portion of sinking fund investments, and floating rate long-term debt which totaled \$1 436 million at March 31, 2004. For information purposes, an increase of 1% in the interest rate would reduce net income by \$14 million for March 31, 2004 (2003 - \$15 million).

#### Credit Risk

Credit risk on sinking fund investments, pension assets and short-term investments is minimized as the Corporation invests exclusively in government-guaranteed bonds, highly rated investments or well diversified investment portfolios. The majority of the Corporation's accounts receivable are owing from domestic consumers who are in diversified industries and from sales to other utilities. Credit risk in the export market is minimized through the application of established credit requirements.

Credit risk associated with counterparties is minimized by establishing minimum credit rating requirements, setting potential exposure limits and monitoring exposure against these limits, and when necessary, obtaining financial assurances from counterparties.

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

### NOTE 16 COMMITMENTS AND CONTINGENCIES

Outstanding commitments, principally for construction, are approximately \$151 million (2003 - \$185 million). In addition, with the acquisition of Winnipeg Hydro, the Corporation made a commitment to commence construction of an office building in downtown Winnipeg on or before September 3, 2007.

The Corporation will incur future costs associated with the assessment and remediation of contaminated lands and for the phase-out and destruction of polychlorinated biphenyl contaminated mineral oil from electrical equipment. Although these costs cannot be reasonably determined at this time, a contingent liability exists. The actual costs incurred are currently recorded in the period the remediation occurs.

### NOTE 17 MITIGATION

The Corporation is party to an agreement dated December 16, 1977, with Canada, the Province of Manitoba and the Northern Flood Committee Inc., representing the five First Nations in the communities of Cross Lake, Nelson House, Norway House, Split Lake and York Landing. This agreement, in part, provides for compensation and remedial measures necessary to ameliorate the impacts of the Churchill River Diversion and Lake Winnipeg Regulation projects. Comprehensive settlements have been reached with all communities except Cross Lake.

Expenditures incurred to mitigate the impacts of the Churchill River Diversion and Lake Winnipeg Regulation projects amounted to \$29 million during the year (2003 - \$40 million). To March 31, 2004, \$540 million (2003 - \$511 million) has been spent in mitigating and compensating the project-related impacts.

The Corporation has also entered into agreements with the Province of Manitoba whereby the Corporation has assumed obligations of the Province with respect to northern development projects. The Corporation has assumed obligations, a portion of which remains outstanding, totaling \$143 million (2003 - \$144 million) for which water power rental charges were fixed until March 31, 2001.

In recognition of the anticipated mitigation payments to be incurred, the Corporation has recorded a total liability of \$121 million (2003 - \$118 million). Reassessments of this liability will be made as settlements are achieved. There are other mitigation issues, the outcomes of which are not determinable at this time.

### NOTE 18 DISTRIBUTION TO THE PROVINCE OF MANITOBA

The Government of Manitoba enacted legislation amending The Manitoba Hydro Act to provide for a distribution from the retained earnings of Manitoba Hydro to the Province of Manitoba in each of the fiscal years 2002-03 and 2003-04. In accordance with the legislation, the distribution for the fiscal year 2003-04 would not exceed 75% of the Corporation's net income for the fiscal year. On this basis, no payments will be made for the year ended March 31, 2004. The total distribution in respect of fiscal year 2002-03 was \$203 million.

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

### NOTE 19 SEGMENTED INFORMATION

The Corporation operates primarily in two business segments, electricity and natural gas. Each segment has its own particular economic characteristics and differs in nature, production processes and technology. The electricity segment encompasses the generation, transmission and distribution of electricity. The gas segment represents natural gas supply and distribution activities through the operations of Centra Gas. The Corporate segment represents the costs to acquire Centra Gas and to integrate its operations into those of Manitoba Hydro. These costs are allocated to gas and electricity segments in accordance with the synergy benefits derived by each of these segments as a result of the acquisition.

The following table contains information related to the operating results, assets, liabilities and retained earnings by segment:

	Electricity		Gas		Corporate		Total	
	2004	2003	2004	2003	2004	2003	2004	2003
	<i>millions of dollars</i>							
Revenue	1 287	1 354	494	515	–	–	1 781	1 869
Expenses								
Operating & administrative	293	272	53	54	–	–	346	326
Depreciation & amortization	274	262	20	17	2	2	296	281
Water rentals & assessments	71	103	–	–	–	–	71	103
Fuel & power purchased	569	151	–	–	–	–	569	151
Capital & other taxes	51	48	22	18	–	–	73	66
Cost of gas sold	–	–	375	392	–	–	375	392
Finance expense	453	441	17	21	17	17	487	479
Total expenses	1 711	1 277	487	502	19	19	2 217	1 798
Net (loss) income								
before allocation	(424)	77	7	13	(19)	(19)	(436)	71
Corporate allocation	(4)	(4)	(15)	(15)	19	19	–	–
Net (loss) income								
after allocation	(428)	73	(8)	(2)	–	–	(436)	71
Total assets	9 357	9 651	546	583	–	–	9 903	10 234
Total liabilities	8 650	8 516	519	548	–	–	9 169	9 064
Total retained earnings	707	1 135	27	35	–	–	734	1 170

### NOTE 20 COMPARATIVE FIGURES

Where appropriate, comparative figures for 2003 have been reclassified in order to conform to the presentation adopted in 2004.

## CORPORATE GOVERNANCE

The Manitoba Hydro-Electric Board has committed to issue this Disclosure Statement to the Minister responsible for Manitoba Hydro on an annual basis.

A Disclosure Statement is mandatory for companies whose shares are publicly traded, so that shareholders can assess the company's governance. Although not mandatory for Crown Corporations such as Manitoba Hydro, a Disclosure Statement is a best practice.

## APPROACH TO GOVERNANCE

Manitoba Hydro's approach to corporate governance is summarized in the "Terms of Reference for the Manitoba Hydro-Electric Board." The Terms of Reference are posted on Manitoba Hydro's Web site at [www.hydro.mb.ca](http://www.hydro.mb.ca). Copies may also be obtained from Public Affairs, Manitoba Hydro, 820 Taylor Avenue, Winnipeg, Manitoba, R3C 2P4 or by calling (204) 474-3233.

Manitoba Hydro models its approach to corporate governance on emerging best practices in Canada, the United States and Great Britain including recommendations from bodies such as the Manitoba Crown Corporations Council, The Conference Board of Canada and The Toronto Stock Exchange.

The following summarizes Manitoba Hydro's approach:

- ▶ *Strategic Planning*  
The Board sits as the planning committee for the Corporation and approves the Corporate Strategic Plan each year.
- ▶ *Succession Planning*  
A Board committee has responsibility for succession planning.
- ▶ *Financial Forecasting*  
A Board committee reviews the Corporation's Integrated Financial Forecast and makes recommendations to the Board.
- ▶ *Risk Management*  
The Board approves the integrated risk management plan developed and maintained by the Corporation.
- ▶ *Internal Controls*  
The Audit Committee of the Board meets at least twice a year and obtains opinions from external auditors, internal auditors and management on the quality of internal controls.
- ▶ *Legal Compliance*  
Known deficiencies are rectified and systems to confirm compliance to the Board are in development.
- ▶ *Conflict of Interest*  
Conflict of interest policies are in place for members of the Board, officers, and employees.
- ▶ *Director Orientation*  
Members of the Board receive orientation materials that are continually updated.
- ▶ *Ethics & Social Responsibility*  
The Board reviews the Corporation's Code of Ethics, and ethics and social responsibility are considered in Board decisions.
- ▶ *Disclosure Obligations*  
Minutes of Board meetings are public, the Corporation's Annual Report and quarterly financial statements are tabled in the Legislature, the Corporation is reviewed by the Crown Corporations Council and by a committee of the Legislature.

**CONSOLIDATED FINANCIAL STATISTICS**

For the year ended March 31

	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995
	<i>millions of dollars</i>									
<b>REVENUES</b>										
Electrical:										
Residential	368	354	314	320	300	300	299	312	301	272
General Service	550	501	425	415	395	400	394	388	378	358
Winnipeg Hydro Wholesale	–	20	47	46	42	48	46	50	56	54
Extraprovincial	351	463	588	480	376	326	297	268	246	253
Other Revenue	18	16	11	8	9	6	5	6	5	5
Gas:										
Residential	235	247	225	240	137	–	–	–	–	–
Commercial/Industrial	252	261	248	259	130	–	–	–	–	–
Transportation	4	4	4	2	1	–	–	–	–	–
Other Revenue	3	3	2	3	1	–	–	–	–	–
	<b>1 781</b>	<b>1 869</b>	<b>1 864</b>	<b>1 773</b>	<b>1 391</b>	<b>1 080</b>	<b>1 041</b>	<b>1 024</b>	<b>986</b>	<b>942</b>
<b>EXPENSES</b>										
Operating and Administrative	346	326	298	285	269	223	213	226	224	222
Depreciation and Amortization	296	281	260	249	227	198	191	178	169	160
Water Rentals	71	103	113	56	51	50	56	51	47	45
Fuel and Power Purchased	569	151	71	48	33	59	14	13	14	10
Finance Expense	487	479	482	420	419	411	419	418	426	427
Capital and Other Taxes	73	66	61	61	58	39	37	37	36	22
Cost of Gas Sold	375	392	365	384	182	–	–	–	–	–
	<b>2 217</b>	<b>1 798</b>	<b>1 650</b>	<b>1 503</b>	<b>1 239</b>	<b>980</b>	<b>930</b>	<b>923</b>	<b>916</b>	<b>886</b>
<b>NET (LOSS) INCOME</b>	<b>(436)</b>	<b>71</b>	<b>214</b>	<b>270</b>	<b>152</b>	<b>100</b>	<b>111</b>	<b>101</b>	<b>70</b>	<b>56</b>
<b>ASSETS</b>										
Property, Plant and Equipment	10 399	9 991	9 072	8 762	8 454	7 815	7 441	7 089	6 866	6 634
Less Accumulated Depreciation	3 241	3 042	2 834	2 609	2 407	2 217	2 054	1 899	1 778	1 638
Construction in Progress	378	356	388	275	188	176	221	274	222	173
Sinking Fund Investments	715	948	1 515	1 350	1 282	1 111	988	637	555	527
Current and Other Assets	1 652	1 981	2 264	2 188	1 175	981	1 021	1 032	872	753
	<b>9 903</b>	<b>10 234</b>	<b>10 405</b>	<b>9 966</b>	<b>8 692</b>	<b>7 866</b>	<b>7 617</b>	<b>7 133</b>	<b>6 737</b>	<b>6 449</b>
<b>LIABILITIES AND RETAINED EARNINGS</b>										
Long-Term Debt	7 114	6 925	7 123	6 968	6 611	5 883	5 548	4 246	4 767	5 011
Current and Other	1 781	1 875	1 699	1 629	988	1 050	1 242	2 241	1 486	1 025
Contributions in Aid of Construction	274	264	281	281	275	267	261	191	130	129
Retained Earnings	734	1 170	1 302	1 088	818	666	566	455	354	284
	<b>9 903</b>	<b>10 234</b>	<b>10 405</b>	<b>9 966</b>	<b>8 692</b>	<b>7 866</b>	<b>7 617</b>	<b>7 133</b>	<b>6 737</b>	<b>6 449</b>
<b>CASH FLOWS</b>										
Operating Activities	(127)	432	554	334	374	366	297	273	265	240
Financing Activities	753	213	100	170	440	64	262	256	141	(211)
Investing Activities	650	629	638	521	856	507	532	455	373	335
<b>FINANCIAL INDICATORS</b>										
Interest Coverage <sup>1</sup>	0.17	1.14	1.42	1.62	1.35	1.23	1.25	1.23	1.16	1.13
Debt Ratio <sup>2</sup>	0.87	0.80	0.77	0.80	0.83	0.84	0.86	0.88	0.91	0.92
Capital Coverage <sup>3</sup>	(0.32)	1.10	1.67	1.18	1.28	1.22	1.13	1.10	1.00	1.00

<sup>1</sup> Interest Coverage represents net income plus interest on debt divided by interest on debt.<sup>2</sup> Debt Ratio represents debt (long-term debt plus notes payable minus temporary investments) divided by debt plus retained earnings plus contributions in aid of construction.<sup>3</sup> Capital Coverage represents internally generated funds divided by capital expenditures net of expenditures for new generation and transmission.

## OPERATING STATISTICS

For the year ended March 31

	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995
<b>SYSTEM CAPABILITY</b>										
Capability (000 kW)	5 471	5 466	5 230	5 210	5 116	5 137	5 137	5 343	5 343	5 343
Manitoba Firm Peak Demand (000 kW)	3 959	3 916	3 760	3 637	3 524	3 559	3 490	3 409	3 588	3 268
Percent Change	1.1	4.1	3.4	3.2	(1.0)	2.0	2.4	(5.0)	9.8	(7.0)
<b>SYSTEM SUPPLY</b>										
Total Energy Supplied (000 000 kWh)										
Generation	19 338	29 167	32 633	32 687	30 146	30 043	34 032	31 842	29 318	28 119
Scheduled Energy Imports	7 053	3 043	1 512	333	464	735	456	625	814	606
Isolated Systems	11	11	10	10	9	17	28	35	33	30
<b>Total System Supply</b>	<b>26 402</b>	<b>32 221</b>	<b>34 155</b>	<b>33 030</b>	<b>30 619</b>	<b>30 795</b>	<b>34 516</b>	<b>32 502</b>	<b>30 165</b>	<b>28 755</b>
Manitoba Load (at Generation)										
Energy Supplied for Manitoba (000 000 kWh)										
Integrated System	21 933	21 965	20 412	20 123	19 101	19 398	19 095	19 249	19 024	17 793
Isolated Systems	11	11	10	10	9	17	28	35	33	30
Total Manitoba Load (at Generation)	21 944	21 976	20 422	20 133	19 110	19 415	19 123	19 284	19 057	17 823
Percent Change	(0.1)	7.6	1.4	5.4	(1.6)	1.5	(0.8)	1.2	6.9	(1.5)
<b>SYSTEM DEMAND</b>										
Energy Sold (000 000 kWh)										
Residential	6 266	6 135	5 206	5 282	4 928	4 947	4 937	5 340	5 288	4 800
General Service	13 014	12 143	10 258	9 939	9 448	9 657	9 430	9 159	8 931	8 454
Winnipeg Hydro Wholesale <sup>1</sup>	–	629	1 452	1 431	1 401	1 684	1 528	1 569	1 582	1 486
Direct Customers	43	46	42	46	43	43	54	56	55	57
Total Manitoba Sales	19 323	18 953	16 958	16 698	15 820	16 331	15 949	16 124	15 856	14 797
Extraprovincial Sales	4 389	9 463	12 091	12 065	10 868	11 404	13 567	11 499	9 659	9 425
<b>Total System Sales</b>	<b>23 712</b>	<b>28 416</b>	<b>29 049</b>	<b>28 763</b>	<b>26 688</b>	<b>27 735</b>	<b>29 516</b>	<b>27 623</b>	<b>25 515</b>	<b>24 222</b>
Gas Deliveries (millions of cubic metres)										
Residential	653	714	645	699	626	–	–	–	–	–
Commercial/Industrial	893	980	899	974	887	–	–	–	–	–
Transportation	577	640	502	501	530	–	–	–	–	–
	2 123	2 334	2 046	2 174	2 043	–	–	–	–	–
Number of Customers										
Electric:										
Residential	443 186	439 757	355 473	353 297	352 618	349 710	345 847	343 197	340 567	338 539
General Service	62 697	62 218	50 062	49 743	49 405	49 153	48 481	48 204	48 067	47 738
	505 883	501 975	405 535	403 040	402 023	398 863	394 328	391 401	388 634	386 277
Gas:										
Residential	229 194	227 071	225 258	224 020	222 110	–	–	–	–	–
Commercial/Industrial	24 437	24 202	24 093	24 054	23 651	–	–	–	–	–
	253 631	251 273	249 351	248 074	245 761	–	–	–	–	–
Number of Employees										
Regular	4 389	4 399	3 862	3 904	3 806	3 277	3 113	3 021	3 124	3 167
Construction	1 006	966	899	797	866	836	868	905	859	774
	5 395	5 365	4 761	4 701	4 672	4 113	3 981	3 926	3 983	3 941

<sup>1</sup> Manitoba Hydro supplied energy to Winnipeg Hydro on a wholesale basis to the acquisition date of September 3, 2002, and on a retail basis to residential and general service customers, thereafter.



## MANITOBA HYDRO-ELECTRIC BOARD



**Victor H. Schroeder, QC**  
Associate, Levene Tadman  
Barristers and Solicitors  
Winnipeg, Manitoba

**Hon. Saul Cherniack, PC,**  
CM, OM, QC  
Winnipeg, Manitoba

**Phil Dorion**  
President and CEO, Aseneskak  
Opaskwayak, Manitoba

**David Friesen**  
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Friesens Corporation  
Altona, Manitoba

**Ken Hildahl**  
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Sales and Marketing,  
Manitoba Blue Cross  
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Area Superintendent  
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**Garry Leach**  
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Refining Corporation  
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Mayor of Churchill and  
Member of the  
York Factory First Nation

**Leslie Turnbull**  
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## MANITOBA HYDRO SENIOR OFFICERS



**Robert B. Brennan, FCA**  
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Vice-President Power Supply

**E. Ruth Kristjanson,**  
BA (Hons), MA  
Vice-President  
Corporate Relations

**Gerry W. Rose, MBA**  
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Customer Service and Marketing

**Al M. Snyder, P. Eng**  
Vice-President Transmission and  
Distribution

**Ken M. Tennenhouse,**  
LL.B  
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**Vince A. Warden,**  
CMA, FCMA  
Vice-President Finance and  
Administration &  
Chief Financial Officer

# MAJOR ELECTRIC AND GAS FACILITIES

PROVINCE OF MANITOBA AS AT MARCH 31, 2004



## SOURCE OF ELECTRICAL ENERGY GENERATED AND IMPORTED

FOR THE YEAR ENDED MARCH 31, 2004

### Nelson River 56.74%

Billion kWh generated	15.0
Limestone	17.68%
Kettle	16.87%
Long Spruce	14.05%
Kelsey	5.50%
Jenpeg	2.65%

### Winnipeg River 10.79%

Billion kWh generated	2.9
Seven Sisters	2.60%
Great Falls	2.39%
Pine Falls	1.76%
Pointe du Bois	1.67%
McArthur	1.06%
Slave Falls	1.31%

### Saskatchewan River 2.33%

Billion kWh generated	0.6
Grand Rapids	2.33%

### Laurie River 0.12%

Laurie River #1	0.06%
Laurie River #2	0.06%

### Thermal & Imports 30.02%

<i>Thermal</i>	
Billion kWh generated	3.1
Brandon	2.54%
Selkirk	0.59%
<i>Imports (scheduled)</i>	
Billion kWh generated	7.1
Imports	26.90%

## GENERATING STATIONS AND CAPABILITIES

FOR THE YEAR ENDED MARCH 31, 2004

### Interconnected Capabilities

Station	Location	Number of Units	Net Capability (MW)
<i>Hydraulic</i>			
Great Falls	Winnipeg River	6	131
Seven Sisters	Winnipeg River	6	165
Pine Falls	Winnipeg River	6	88
McArthur	Winnipeg River	8	55
Pointe du Bois	Winnipeg River	16	78
Slave Falls	Winnipeg River	8	67
Grand Rapids	Saskatchewan River	4	479
Kelsey	Nelson River	7	223
Kettle	Nelson River	12	1 220
Jenpeg	Nelson River	6	132
Long Spruce	Nelson River	10	1 010
Limestone	Nelson River	10	1 340
Laurie River (2)	Laurie River	3	10

### *Thermal*

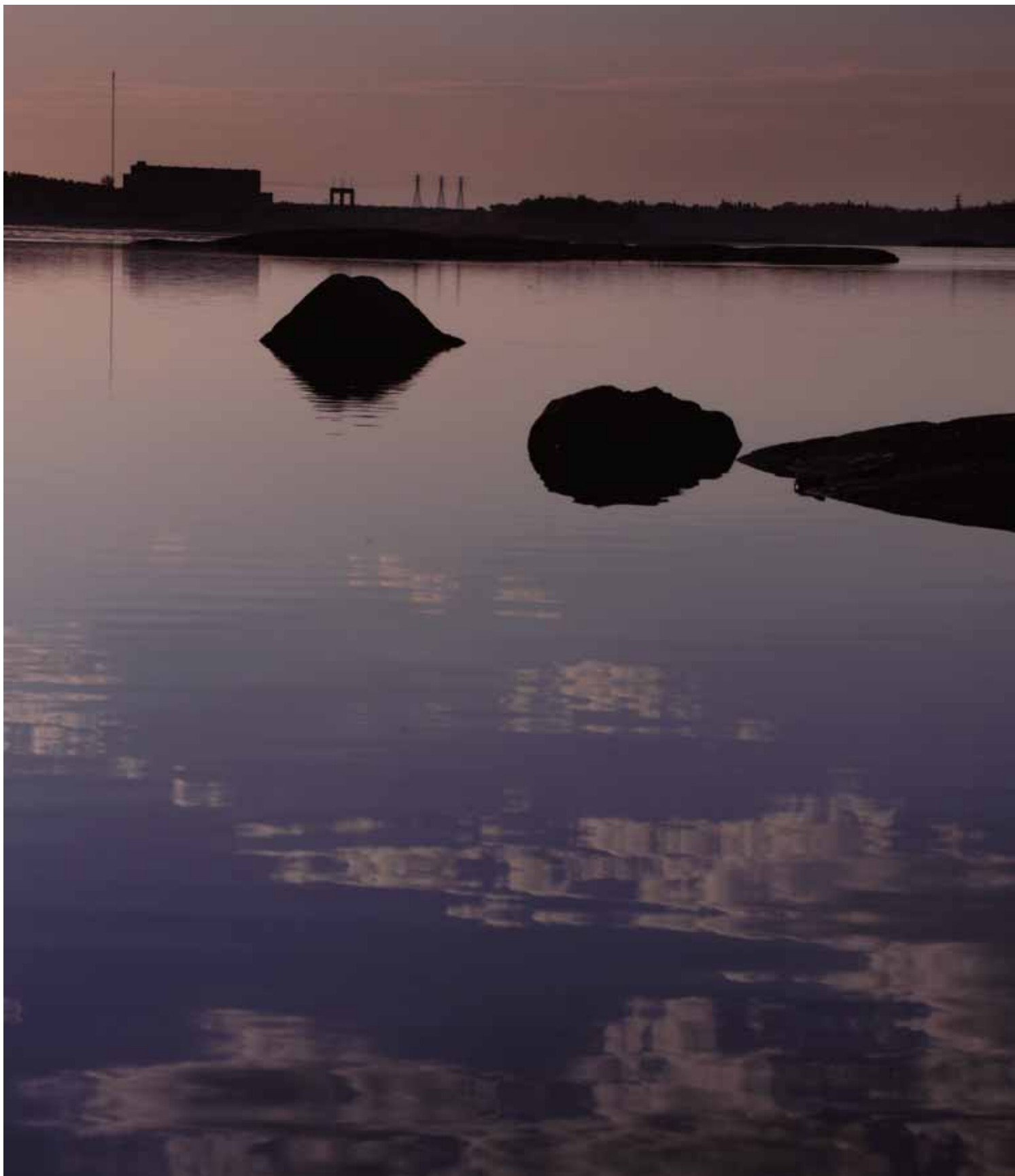
Brandon	3	347
Selkirk	2	126

### Isolated Capabilities

#### *Diesel*

Brochet	3
Lac Brochet	2
Shamattawa	3
Tadoule Lake	1

**Total Generating Capability 5 481**



Seven Sisters Generating Station on the Winnipeg River was one of 14 generating stations in Manitoba Hydro's system affected by the drought conditions during 2003-04.

## GLOSSARY

**AECO:** Alberta Energy Company. The company offers market-hub services.

**Demand:** The size of any load, expressed in kilowatts (kW), averaged over a specified period of time.

**Distribution System:** The wood poles, conductors and transformers that deliver electricity to customers. It transforms high voltages to lower, usable levels. Electricity is distributed at 120/240 volt (V) for most residential customers and 120 V to 600 V for the majority of industrial and commercial customers.

**Energy:** The ability to do work. Electrical utilities sell electrical energy to their customers who, in turn, convert this energy into a desirable form—such as work, heat, light or sound. It is measured in kilowatt hours (kWh).

**Generator:** A machine that converts mechanical energy—such as a rotating turbine driven by water or steam or wind—into electrical energy.

**Natural Gas:** Natural gas is a fossil fuel, made from hydrocarbons stored millions of years ago when plant and material was buried in the earth's crust. Composed mostly of methane, a colourless and non-toxic substance, natural gas creates virtually no unburned particles or smoke to pollute the atmosphere. The products of combustion are chiefly carbon dioxide and water—the same products exhaled by the human body.

**Peak Load:** Record of maximum amount of electricity used in a given time period.

**Power Grid:** A number of interconnecting electrical power systems which link together electrical utilities covering a large geographical area.

**Transmission System:** The towers and conductors that transport electricity in bulk form from a source of supply to either local areas for distribution, or to power systems of out-of-province electrical utilities. Electricity is usually transported via transmission lines in amounts ranging from 66 kV to 500 kV.

### ACCOUNTING TERMS

**Blended Forward Interest Rate Swap:** An agreement between two parties to exchange predetermined fixed and floating interest rates on a specified notional amount of a principal debt or investment for a specified term. The fixed interest rate is a bond yield calculation based on the fixed interest rate of the existing debt or investment and the fixed interest rate of the forward interest rate swap.

**Exposure Management Program:** U.S. dollar hedging program used by the Corporation to offset U.S. dollar cash flows from debt, investments and net exports to eliminate the impact of fluctuations in the U.S. dollar exchange rate.

**Financial Instrument:** Bonds, provincial advances, short-term promissory notes, temporary and long-term investments, and swap option and foreign exchange contracts.

**Foreign Exchange Contract:** An agreement to exchange a predetermined amount of currency on a specified future date at a specified price.

**Forward Interest Rate Swap:** An agreement between two parties to exchange predetermined fixed and floating interest rates on a specified notional amount of a principal debt or investment for a specified term beginning at a future date.

**Retained Earnings:** Net accumulated earnings that a business has not distributed to shareholders.

**Sinking Fund:** A fund of cash and securities set up to provide for the orderly retirement of a debt.

**Swap:** An agreement between two parties to exchange cash flows at predetermined rates on specified notional amounts at specified future dates.

**Yield:** The average return of a debt or investment using a bond yield convention which recognizes the future interest payments, capital gains or losses, commissions, discounts and premiums.

**Weighted Average Yield Rate:** The average return of debt or investment using the bond yield convention weighted by the remaining term to maturity.

### UNITS OF MEASURE

**BTU:** British thermal unit. The amount of energy required to raise the temperature of one pound of water one degree Fahrenheit. It works out to about 1 000 joules.

**Gigajoule:** A measure of energy of natural gas—one billion joules. One gigajoule of energy is equivalent to that provided by approximately 278 kilowatt hours of electricity or 30 litres of gasoline.

**Gigawatt (GW):** The unit of electrical power equivalent to one billion watts or one million kilowatts.

**Joule:** A unit of energy.

**Kilovolt (kV):** The unit of electrical pressure, or force, equivalent to 1 000 volts (V).

**Kilowatt hour (kWh):** The unit by which electrical energy is measured. For example, 10—100 W light bulbs switched on for one hour would use one kilowatt hour (1 000 W for one hour).

**Megawatt (MW):** The unit of electrical power equal to one million watts or 1 000 kilowatts (kW).



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Meridum Power Inc.: [www.meridiumpower.ca](http://www.meridiumpower.ca)  
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