TAB 8

MANITOBA HYDRO
2010/11 & 2011/12 GENERAL RATE APPLICATION

ENERGY SUPPLY

INDEX

MANITOBA HYDRO
2010/11 & 2011/12 GENERAL RATE APPLICATION

ENERGY SUPPLY

8.0 OVERVIEW

Tab 8 provides information on energy supply planning as well as an estimate of energy generation based on current water conditions.

Section 8.1 provides highlights of the 2009 approved plan for energy supply and demand for the Manitoba Hydro system.

Section 8.2 describes Manitoba Hydro's criteria that are utilized to ensure an adequate supply of capacity and dependable energy.

Section 8.3 provides supply and demand tables that summarize the capacity and dependable energy for each year up to the year 2025.

Section 8.4 provides information on the following major projects and initiatives: Wuskwatim GS, wind generation, Bipole III transmission, Pointe du Bois GS, Kelsey GS Upgrade, Conawapa GS, Keeyask GS, Demand Side Management, and thermal resources.

Section 8.5 provides an update on export markets and export sales including the status of current long-term sale negotiations.

Section 8.6 provides an update on system operations, energy in reservoir storage and water conditions and an estimate of hydraulic generation for 2009/10 based on water conditions as of October 31, 2009.

Section 8.7 provides information related to the loss of revenues due to the risk of an extended drought period commencing in 2011/12 with a duration of five years.

8.1 ENERGY SUPPLY

The 2009 plan for power resources is the most recent corporately approved update of energy supply and demand for the Manitoba Hydro system and is based on corporately approved information available prior to August 2009. The 2009 plan incorporates the 2009 Electric Load Forecast and the 2009 Power Smart Plan for demand side management.

The 2009 plan for power resources includes the construction of major new resources, Keeyask GS (in-service 2018) and Conawapa GS (in-service 2022). The construction of Keeyask and Conawapa in close succession meets the demand of Manitoba domestic load and facilitates the new export sales to Wisconsin Public Service ("WPS") and Minnesota Power (MP) and the construction of a new interconnection into Minnesota and Wisconsin. The 2009 plan includes an extension to the existing export sale and diversity contacts to Northern States Power ("NSP") over the existing interconnection.

The 2009 plan includes a number of other major generation projects. The next proposed hydroelectric resource is the Wuskwatim project for which construction began in August, 2006 with first power expected in 2011/12. The plan includes the purchase of power from the existing St. Leon 100 MW wind farm and the purchase of an additional 300 MW of wind generation starting in 2010/11, although recent negotiations with a wind developer are for less than 300 MW.

The 2009 plan assumes that the Pointe du Bois Generating Station will be redeveloped at a higher capability than the existing facility with first power in 2016/17. Due to increasing cost estimates for redeveloping Pointe du Bois, a reassessment of the potential options has been initiated with increased emphasis on maintaining the existing powerhouse and replacing spillway structures.

The 2009 plan for power resources includes the Bipole III transmission line for system reliability requirements and also for transmitting existing and future northern generation. The line is expected to extend from the proposed Conawapa site to the Riel converter station east of Winnipeg, with an in-service date of 2017/18. Concept engineering for the west-side route is being finalized including selection of the overall capacity.

8.2 POWER RESOURCE PLANNING CRITERIA

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

Capacity Criterion

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.

Reserves are intended to protect against capacity shortfalls resulting from three types of contingencies: breakdown of generation 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.

Reserve margins of 12% are adequate in Manitoba Hydro's predominately hydraulic system because of the relatively low outage rates of hydro generating units combined with relatively small size of units. For comparison, reserve margins on thermal systems are typically required to be in the 15% to 20% range.

Dependable Energy Criterion

Manitoba Hydro has adopted an energy supply (GW.h) planning criterion that recognizes the limitation of hydroelectric generation during drought conditions. This energy criterion requires that the Manitoba Hydro System shall be capable of a dependable supply of energy to meet forecast firm load demand. Specifically, there must be sufficient firm energy sources to meet firm energy demand in the event of a repeat of the lowest historic river flow conditions. It should be noted that the dependable flow has been determined by adjusting historic flows to represent present use conditions and accounting for expected withdrawals of water upstream of Manitoba.

The dependable supply includes energy from hydro-electric and thermal stations, purchases from wind farms, firm energy imports from out-of-province, as well as contracted non-firm imports from the reserves of neighbouring utilities. Contracted non-firm imports for meeting firm load should not exceed 10% of firm energy requirement.

Non-firm imports associated with a reduction of a firm export sale in low flow years are not included in the 10% limit.

8.3 SUPPLY AND DEMAND SUMMARY

The firm electric supply and demand summary during the winter peak (MW) for the Manitoba system between fiscal years 2010/11 and 2025/26 is provided in Table 1. Demand includes the 2009 forecast of Manitoba load plus contracted extraprovincial exports and capacity reserve requirements. Table 2 provides a similar summary for firm energy (GW.h) supply and demand during each year between fiscal years 2010/11 and 2025/26.

Table 1

System Firm Capacity (Winter Peak) Demand and Resources (MW)

2009 Base Load Forecast

Fiscal Year	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
Power Resources																
Manitoba Hydro Plants																
Existing	4900	4900	4900	4900	4900	4900	4900	4900	4900	4900	4900	4900	4900	4900	4900	4900
Wuskwatim		200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
Conawapa (net addition)													520	1040	1300	1300
Keeyask (net addition)									90	450	630	630	630	630	630	630
Bipole III HVDC LINE								89	89	79	79	79	79	10	10	10
Manitoba Thermal Plants																
Brandon Unit 5 (Drought Operation)	105	105	105	105	105	105	105	105	105							
Selkirk	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132
Brandon Units 6-7 SCCT	298	298	298	298	298	298	298	298	298	298	298	298	298	298	298	298
Wind Power: 400 MW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
(Wind has no dependable capacity for Winter Peak)																
Demand Side Management	88	129	159	181	185	188	193	206	218	228	238	247	256	265	269	261
Major Rerunnering (incremental to existing)																
Kelsey Rerunnering	11	34	77	77	77	77	77	77	77	77	77	77	77	77	77	77
Pointe du Bois Redeveloped							43	43	43	43	43	43	43	43	43	43
Imports																
Total Contracted	616	616	616	550	550	385	385	385	385	385	385	385	385	385	385	
TOTAL POWER RESOURCES	6150	6414	6487	6443	6447	6285	6333	6435	6537	6792	6982	6992	7520	7980	8244	7851
Peak Demand																
2009 Base Load Forecast	4437	4530	4601	4664	4765	4820	4876	4924	4973	5038	5103	5168	5233	5299	5365	5432
Non-Committed Construction Power																
Exports																
Total Contract Sales	638	638	605	605	605	413	413	413	578	743	963	963	1375	1375	1375	825
Total Demand	5075	5168	5206	5269	5370	5232	5288	5336	5551	5780	6065	6130	6608	6674	6740	6257
Reserve	448	454	459	472	483	510	516	520	524	531	538	544	551	558	565	621
TOTAL PEAK DEMAND	5522	5622	5665	5741	5853	5742	5804	5856	6075	6311	6603	6674	7159	7232	7305	6878
SURPLUS (w/ B#5)	627	792	823	702	594	543	528	579	462	481	379	318	361	748	938	973
EXPORTABLE SURPLUS	522	687	718	597	489	438	423	474	357	481	379	318	361	748	938	973

Table 2

System Firm Energy Demand and Dependable Resources (GW.h)
2009 Base Load Forecast

Fiscal Year	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
Power Resources																
Manitoba Hydro Plants																
Existing	21090	21080	21060	21040	21030	20920	20900	20880	20870	20850	20840	20830	20820	20820	20810	20560
Wuskwatim		550	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250
Conawapa (net addition)													2151	4550	4550	4550
Keeyask (net addition)									1371	2900	2900	2900	2900	2900	2900	2900
Bipole III HVDC LINE								243	243	258	258	258	258	162	162	162
Manitoba Thermal Plants																
Brandon Unit 5 (Drought Operation)	811	811	811	811	811	811	811	811	811							
Selkirk	953	953	953	953	953	953	953	953	953	953	953	953	953	953	953	953
Brandon Units 6-7 SCCT	2354	2354	2354	2354	2354	2354	2354	2354	2354	2354	2354	2354	2354	2354	2354	2354
Wind Power: 400 MW	818	1254	1254	1254	1254	1254	1254	1254	1254	1254	1254	1254	1254	1254	1254	1254
Demand Side Management	440	606	719	819	842	798	825	890	949	993	1037	1082	1115	1151	1158	1133
Major Rerunnering (incremental to existing)																
Kelsey Rerunnering																
Pointe du Bois Redeveloped							60	150	150	150	150	150	150	150	150	150
Imports																
Total Contracted	2796	2796	2796	2705	2705	2410	2414	2414	2797	3258	3846	3948	4652	4715	4715	4014
TOTAL POWER RESOURCES	29262	30404	31197	31186	31199	30750	30821	31198	33001	34220	34842	34979	37857	40259	40256	39280
Demand																
2009 Base Load Forecast	24759	25323	25763	26177	26783	27137	27495	27808	28088	28452	28818	29185	29555	29927	30300	30681
Non-Committed Construction Power		10	30	55	90	100	120	125	100	80	80	100	90	30	5	
Exports																
Total Contract Sales	3404	3385	3259	3156	3156	1560	1352	1352	1926	2614	3494	3648	4992	5086	5086	3589
TOTAL DEMAND	28163	28718	29052	29388	30029	28797	28967	29285	30114	31146	32392	32933	34637	35043	35391	34270
SURPLUS (w/ B#5)	1099	1686	2145	1798	1171	1953	1854	1913	2888	3074	2450	2046	3220	5216	4865	5011
EXPORTABLE SURPLUS	288	875	1334	987	360	1142	1043	1102	2077	3074	2450	2046	3220	5216	4865	5011

8.4 MAJOR PROJECTS

The 2009 plan for power resources includes several major projects that Manitoba Hydro either has committed to, or has under consideration, related to supply-side initiatives. Demand Side Management is treated as a supply-side resource for purposes of resource planning. The characteristics of these supply-side initiatives are summarized below:

Wuskwatim Generating Station

The Wuskwatim Generating Station is a 200 MW hydroelectric development on the Burntwood River and is scheduled for an in-service date of 2011/12 with an in-service cost of $1.3 billion. The scheduled in-service dates are: Unit 1 - October 2011, Unit 3 - December 2011, and Unit 2 - February 2012.

Construction commenced in August 2006 and the project is currently on schedule. A major milestone was reached on May, 2009 with the first concrete placed. Approximately 65,000 cubic metres of concrete will be placed this year.

Wind Generation

The 2009 plan for power resources includes the continued purchase of power from the existing St. Leon 100 MW wind farm and the further purchase of power from a 300 MW of wind farm starting in 2010/11. There is now the expectation that this next phase of wind development will be less than the 300 MW that is assumed in the 2009 plan for power resources. In recent negotiations with a wind developer for the purchase of wind power, a wind farm in the order of 138 MW is being considered. In the longer term there may be additional phases of wind development, but currently no specific plans are in place.

Bipole III Project

The 2009 plan for power resources includes the Bipole III transmission line for reliability requirements and also for transmitting existing and future northern generation. While the general location of the Bipole is the West side, no specific route has been selected as of November, 2009. The line is expected to extend from the proposed Conawapa site to the Riel converter station east of Winnipeg, with an in-service date of 2017/18. Concept engineering for the Bipole is being finalized including selection of the overall capacity.

Manitoba Hydro completed an introductory round of community consultations in 2008, is holding a second round of consultation including public open houses in 2009/10 and plans to hold a third round of consultations on alternative routes into 2010/11.

Pointe du Bois Generating Station

The 2009 plan for power resources includes replacement of Pointe du Bois spillway structures and the redevelopment of the powerhouse for a higher capability than the existing facility with an in-service date of 2016/17. Due to recent increases in capital costs, the plan to redevelop the Pointe du Bois powerhouse is being reviewed. There is a need to replace the spillway structures in the near term and plans to continue with this portion of the project are expected to proceed. However, no final decisions have been made at this time regarding this site.

Additional activities including field studies, design and preparation for project licencing have been undertaken since 2008.

Kelsey Generating Station Upgrade

The 2009 plan for power resources continues to include a major upgrade of the Kelsey GS which consists of the replacement of all seven turbines resulting in greater utilization of water flow at the site. This upgrade is expected to be fully in-service by March 2012 and with the potential to increase the plant rating from 224 MW to approximately 300 MW. The project is proceeding on a unit by unit basis, with a review being conducted before undertaking each additional unit replacement. Therefore, the program for remaining units can be deferred at any time.

Upgraded turbines will be able to pass more water and thus capture more of the energy during higher flows periods. While this does not increase dependable energy, there will be an increase in average energy of about 350 GW.h per year. There are seven units at Kelsey GS and each unit is expected to gain about 11 MW. To date, three units have been replaced resulting in a 33 MW increase in capacity.

Conawapa Generating Station

The 2009 plan for power resources includes the Conawapa GS (in-service in 2022/23) following the construction of Keeyask (first unit in-service in 2018/19). If Keeyask is not the next plant to be developed, it would be preferable to advance Conawapa to 2021/22. Conawapa is located downstream of Limestone GS on the Nelson River. The current design rating for Conawapa is 1485 MW under ideal operating conditions with a winter peak rating of 1300 MW that is utilized in resource planning work as the net addition to the system.

Manitoba Hydro and each of the in-vicinity communities (Fox Lake Cree Nation, York Factory First Nation, Tataskweyak Cree Nation, and War Lake First Nation) have met regularly over the past year to discuss the Conawapa Project and more specifically its Project Description and Environmental components. Manitoba Hydro is in the process of developing the details of a Conawapa Aboriginal Opportunities Package consisting of an income stream and training, employment and business opportunities.

The Conawapa field studies for the environmental assessment of project effects are nearing completion and have involved the participation of the local communities. The concept engineering for Conawapa still needs to be finalized.

Keeyask Generating Station

The 2009 plan for power resources includes the Keeyask GS with the first unit in service in 2018/19 which is its earliest possible in-service date. Keeyask can be brought in to service approximately four years earlier than Conawapa due to a shorter construction schedule and advanced environmental assessment work. Keeyask is located upstream of the Kettle generating station on the Nelson River. The current design rating for Keeyask is 695 MW under ideal operating conditions with a winter peak rating of 630 MW that is utilized in resource planning work.

The four in-vicinity Keeyask Cree Nation ("KCN") communities all voted to ratify the Joint Keeyask Development Agreement ("JKDA"). A JKDA signing ceremony was held on May 29, 2009.

The majority of the Keeyask Generating Station environmental field studies are complete and the socio-economic field and community studies have been initiated. Manitoba

Hydro has been working jointly with the four Keeyask Cree Nations on the environmental assessment for the last several years and various sections of the Generation Environmental Impact Statement are being drafted.

The environmental and regulatory work for Keeyask is more advanced than the work on Conawapa. This advanced work, along with a shorter construction schedule, has resulted in the ability to bring Keeyask into service approximately four years earlier than Conawapa.

Demand Side Management

The 2009 plan for power resources includes Demand Side Management Programs which target a 915 MW reduction in peak load and a 3,271 GW.h reduction in annual energy consumption by 2024/25. As of March 31, 2009 these programs have achieved a 271 MW reduction of peak load and a 1,218 GW.h reduction in annual energy consumption. Anticipated changes to Codes and Standards for new equipment (e.g. refrigerators, electric motors and lighting) are expected to result in reductions of 375 MW and 895 GW.h which are reflected in Manitoba Hydro's load forecast. The remaining reduction of 269 MW and 1,158 GW.h is treated as a resource option in the 2009 plan for power resources.

Thermal Resources

The Environment Act License for Selkirk GS was received in 2008. The Selkirk GS is in good physical condition and is expected to remain serviceable well beyond 2025/26. The dependable energy rating of the Selkirk GS was reduced in 2009 to reflect operation under system drought conditions which limit energy production due to availability of cooling water.

As of January 1, 2010, the generation from the coal-fired Unit 5 at the Brandon GS will be restricted under Manitoba's Climate Change and Emissions Reductions Act. Other than minimal generation to maintain reliable operation at the plant, Brandon Unit 5 will be used to generate power only to support emergency operations which includes energy requirements during drought periods. The 2009 plan includes operation of Brandon Unit 5 until at least March 2019.

8.5 EXPORT MARKETS AND EXPORT SALES

Current Market Conditions

Manitoba Hydro's US export customers have reduced their load forecasts in the last year primarily due to the downturn in the US economy. Their load forecasts remain relatively flat in the short term and then rise in the mid to long term. Given the potential for high and volatile natural gas costs for new natural gas fired generation and environmental uncertainties of new coal generation, there is continued interest in long-term, dependable hydraulic supply from Manitoba as an alternative to new thermal generating stations. Energy from hydro is also recognized as a complementary partner to new intermittent renewable generation resources (such as wind), provided it is economic compared to customer's alternatives.

Customers' demand for low carbon resources is growing given the potential for new carbon legislation being introduced in the United States. Concerns regarding potential carbon legislation were a key factor for several utilities in their decision to withdraw as participants in the 500 to 600 MW Big Stone II coal project near Milbank, South Dakota. This proposed development was subsequently cancelled on November 2, 2009. A portion of the output from this project was destined for utilities in Minnesota. Uncertainty over how greenhouse gas requirements will impact future power prices is a significant issue for those evaluating supply alternatives. Coal is still the fuel source for over 50% of US electricity generators thus making renewable and low carbon hydraulic energy a strategic asset of Manitoba Hydro.

Prices for Manitoba Hydro's export energy have increased significantly in the last ten years as a result of electricity deregulation in the US, a general tightening of supply, increased demand for low emitting resources, and a general rise in natural gas prices. Recently however, spot and short-term energy prices have decreased by 50% due to a softening US economy and reduced natural gas prices. In addition, the establishment of the MISO Ancillary Services Market and development of new wind resources in North Dakota and Minnesota have further contributed to lower prices. Figure 8.5.1 shows the monthly average on-peak (5 x 16) and off-peak (balance of hours) energy prices as posted at the Midwest ISO's Manitoba Pricing Node.

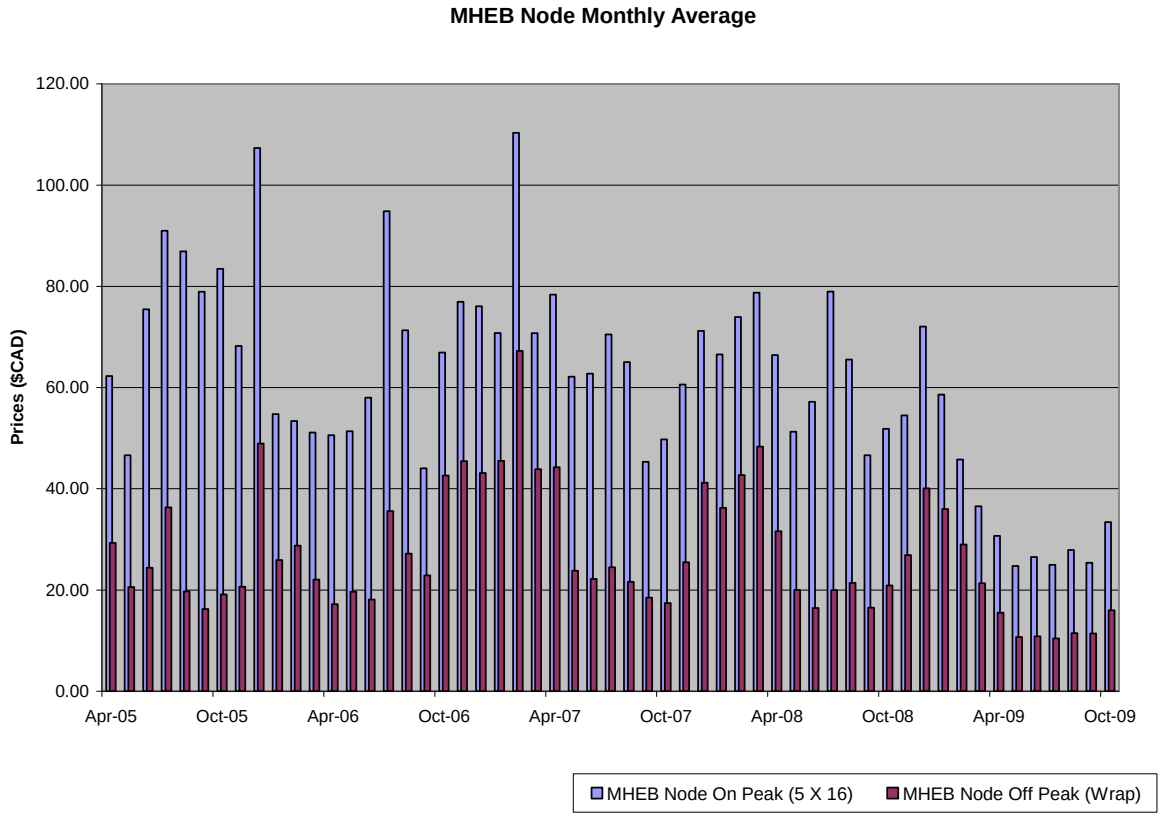

Figure 8.5.1, Monthly Average On-Peak and Off Peak Pricing at MHEB Node

Manitoba Hydro currently has good access to open electricity markets, both in the US Midwest operated by MISO (the MidWest Independent System Operator) and in Ontario operated by the IESO (Independent Electricity System Operator). The design of these markets allows Manitoba Hydro to compete, as an external market participant, on a relatively level playing field with generators located within the markets. However, market rules are designed to benefit those with load and generation within the market footprint, and it is a continual challenge for Manitoba to maintain non discriminatory access to these open electricity markets. From an overall perspective, open transmission access in the US and open energy markets have been very beneficial to Manitoba Hydro.

Manitoba Hydro's recent average pricing experience of long-term dependable sales versus on-peak 5x16 opportunity sales is depicted in Figure 8.5.2. The vast majority of dependable sales are for on-peak energy (5x16) which makes a price comparison to 5x16 opportunity sales appropriate. Demand charges have been included in the dependable sale prices. Since 2005, 5x16 opportunity sales prices have exceeded dependable prices until the spring of 2009 when the relationship dramatically changed as load reduced and

natural gas prices decreased. A portion of the variability for both sales types is due to variations in the US-Cdn exchange rate. In US dollar terms, prices for dependable sales would appear to be even more stable over the years than shown in Figure 8.5.2. Long-term dependable sales provide export revenue stability to Manitoba Hydro compared to the much more volatile opportunity market.

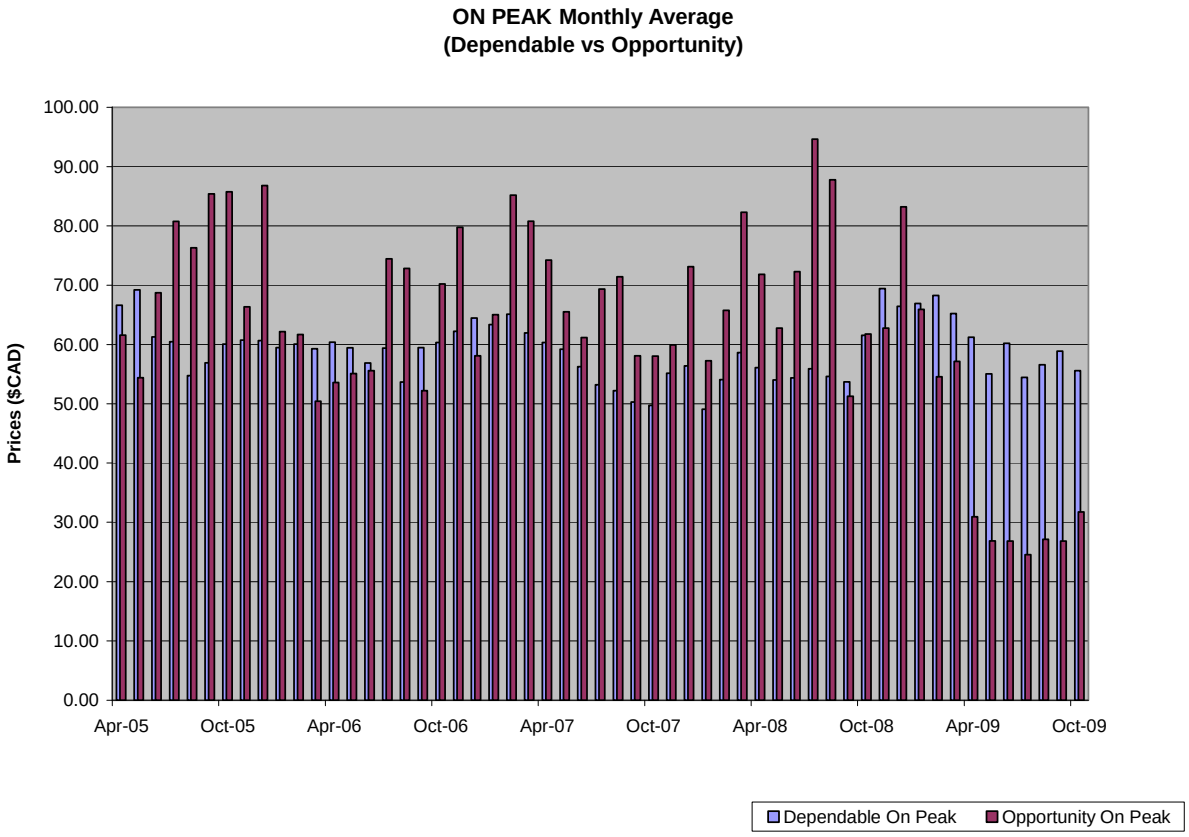

Figure 8.5.2, Monthly Average On-Peak Pricing (Dependable vs. Opportunity)

Long-Term Sales Under Negotiation

Manitoba Hydro has firm commitments and binding Term Sheets for almost all its firm power including that available from Keeyask and Conawapa until about 2032/33. In addition, Manitoba Hydro has Memoranda of Understanding with several other utilities for power and energy from Keeyask and Conawapa. With the exception of the Xcel 375 MW term sheet which is fully backed by energy guarantees from Xcel, all other terms sheets are conditional on the construction of major new hydro-electric generating facilities and new Manitoba and US transmission. Even with the construction of the 200 MW Wuskwatim plant and the potential addition of new wind energy facilities, new

resources will be required to provide dependable energy for Manitoba load by approximately 2022/23. All export sales made by Manitoba Hydro have a lower degree of firmness compared to the firm load of domestic customers in Manitoba, and therefore, export sales can be curtailed if required to maintain service to Manitoba domestic firm load.

All long-term sales discussions and confidential information are protected by mutual non-disclosure agreements signed by Manitoba Hydro and the respective counterparty. Therefore, specific pricing and terms and conditions cannot be provided in a public forum.

Xcel Energy Power Sale - 375/500 MW from 2015 to 2025

On October 31, 2006, Manitoba Hydro ("MH") and Xcel Energy ("Xcel") signed a Term Sheet for power sales of 375 MW from 2015 to 2021, 500 MW from 2021 to 2025, and 350 MW seasonal diversity (MH sells 350 MW of capacity during the summer season and MH purchases 350 MW of capacity during the winter season) from 2015 to 2025. As a result of 2007 Minnesota legislation, which potentially affected Xcel's need for new resources, negotiations were suspended for nine months to allow Xcel to review and confirm their need and for regulatory confirmation. Following company and regulatory confirmation, negotiations resumed in May 2008 on the definitive agreements and these negotiations are ongoing.

Minnesota Power (MP) Term Sheet - 250 MW from 2020 to 2035

On December 12, 2007, MH and Minnesota Power (MP) signed a Term Sheet setting out the terms for a 15 year 250 MW power sale to Minnesota Power beginning in about 2020. The sale is contingent on the construction of new hydraulic generation and associated transmission in Manitoba and on the construction of a new MB-US transmission interconnection.

In addition, the MP Term Sheet also contained a second sale of a non-firm energy sale of 3.3 TW.h starting May 2008 and continuing until 2022. Energy deliveries under the short term bridging agreements commenced May 1, 2008. Negotiations on this second sale definitive non-firm agreement are currently underway with signing expected in late 2009.

Wisconsin Public Service (WPS) Term Sheet - 500 MW from 2018 to 2032

On March 31, 2008, MH and Wisconsin Public Service ("WPS") signed a Term Sheet setting out the terms for a long-term sale of up to 500 MW of System Participation Power from 2018 to 2032. The sale is contingent on the construction of new hydraulic generation in Manitoba and on the construction of a new MB-US transmission interconnection. The sale is also contingent upon a change to Wisconsin Renewable Portfolio Standard laws to recognize new hydraulic generation in Manitoba as "renewable resources".

A System Impact Study Coordination Agreement between MP, WPS and MH to study the new Manitoba-US transmission interconnection was signed on February 18, 2009. In addition, a tri-party Facilities Studies Coordination Agreement was signed. This agreement addresses how the three parties will work together and collectively represent the transmission project to the Midwest ISO with one common voice. The Midwest ISO completed the System Impact Study in July 2009 and will begin the final stage of engineering studies, the Facilities Study, in September, 2009. This final stage of study is estimated to take one year.

In addition, MH and WPS signed a five-year, 100 MW non-firm Energy Sale Agreement effective June 1, 2009. The intent of this agreement is to maintain the 100 MW firm transmission path to Wisconsin utilizing surplus energy that Manitoba Hydro would otherwise sell in the MISO market.

8.6 WATER CONDITIONS

2009 System Operations

Although accumulated precipitation for the entire Nelson-Churchill basin was 103% of normal for the period April 1 to October 31, 2009, year-to-date water supply conditions have been well above average as indicated in Figure 8.6.1. By fiscal year end it is expected that annual inflows will be in the top five or six of the historical record.

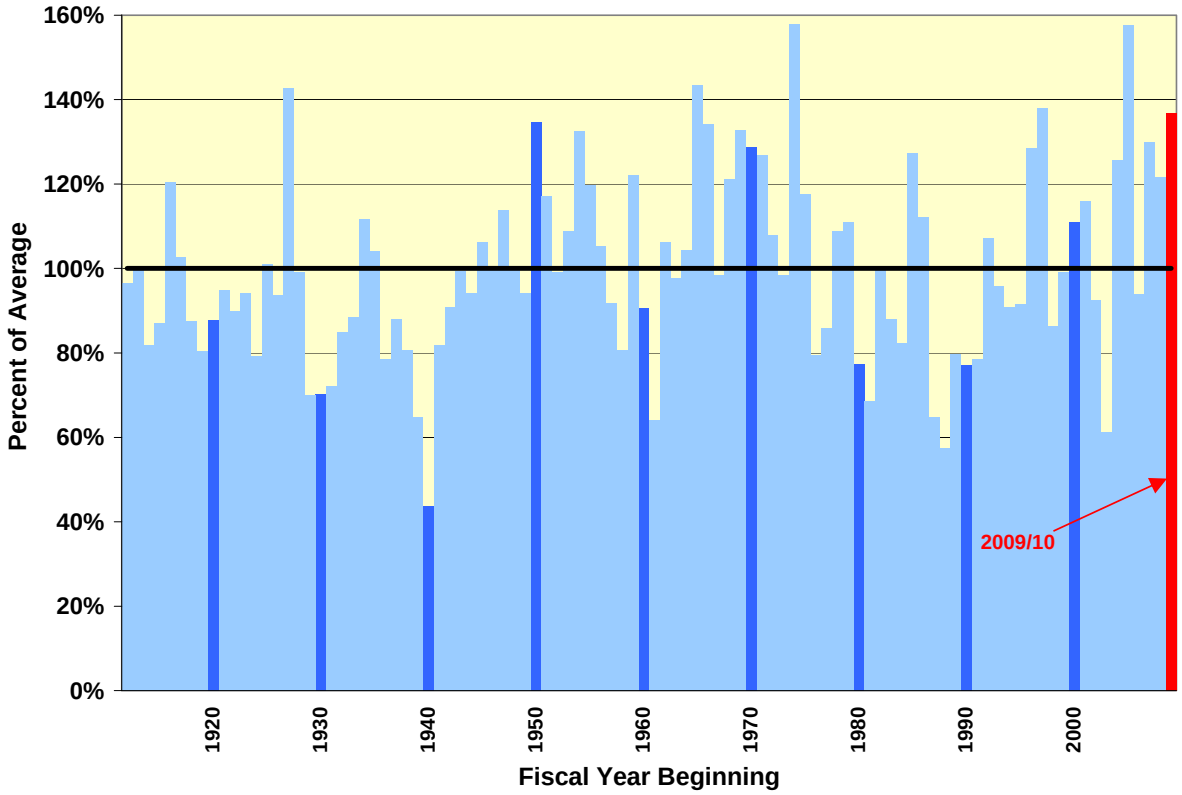

Figure 8.6.1, Historical Water Supply

In 2009 reservoir operations were focused on managing the high flood flows from the Red and Winnipeg Rivers. Specifically, Lake Winnipeg outflows were maintained at maximum from the end of March, 2009 through to September, 2009 in response to the Lake Winnipeg Water Power License discharge requirements when levels exceed 715 feet. The lake reached its maximum level of 715.5 in July. As a result of the subsequent flood flows on the Nelson River, the Churchill River Diversion flow was reduced to minimize flood impacts on Split Lake which required high amounts of spillage down the lower Churchill River at Missi Falls. River flows exceeded generating station capacity on the Lower Nelson from May 13 to October 15, requiring the sale of energy in the off-peak markets with the balance of the water passing over the spillways.

Figure 8.6.2 provides a time-series plot of the daily gross energy from inflows to the Manitoba Hydro system compared to the 30 previous years of data. The chart indicates the much above average spring and early summer inflows, declining back to near average inflows in July, followed by above average inflows through August as a result of late summer rainfall. By mid-November energy from inflows has returned to the historical 30-year average.

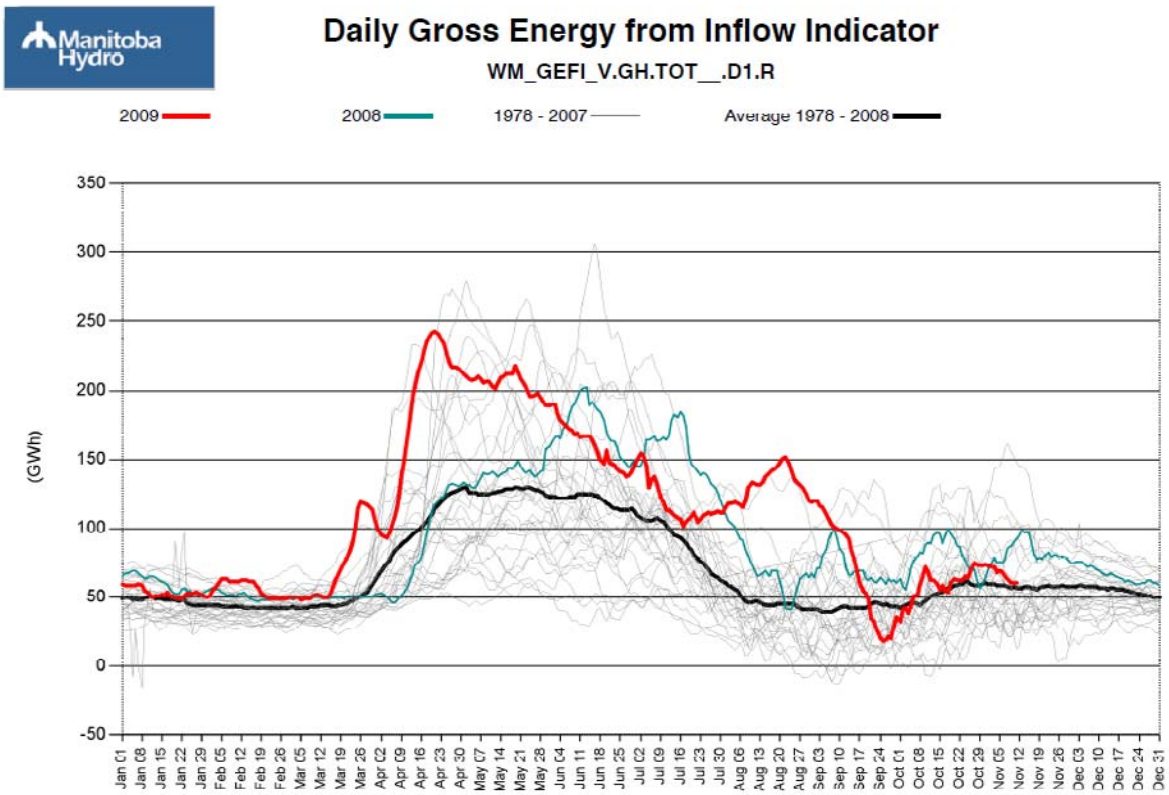

Figure 8.6.2, Daily Gross Energy from Inflow Indicator

Energy in Reservoir Storage

Energy in reservoir storage is shown in Figure 8.6.3. This indicator is for the eighteen major reservoirs in Manitoba Hydro's watersheds. Storage levels were over 3 TW.h above average on April 1, 2009 and rose rapidly through the spring mainly in response to the Red and Winnipeg River floods. At mid-November, 2009 storage amounts are 2.6 TW.h above the 30-year average and it is likely that storage levels will remain above average at year end as ice restrictions in the outlet channels of Lake Winnipeg prevent accelerated withdrawals.

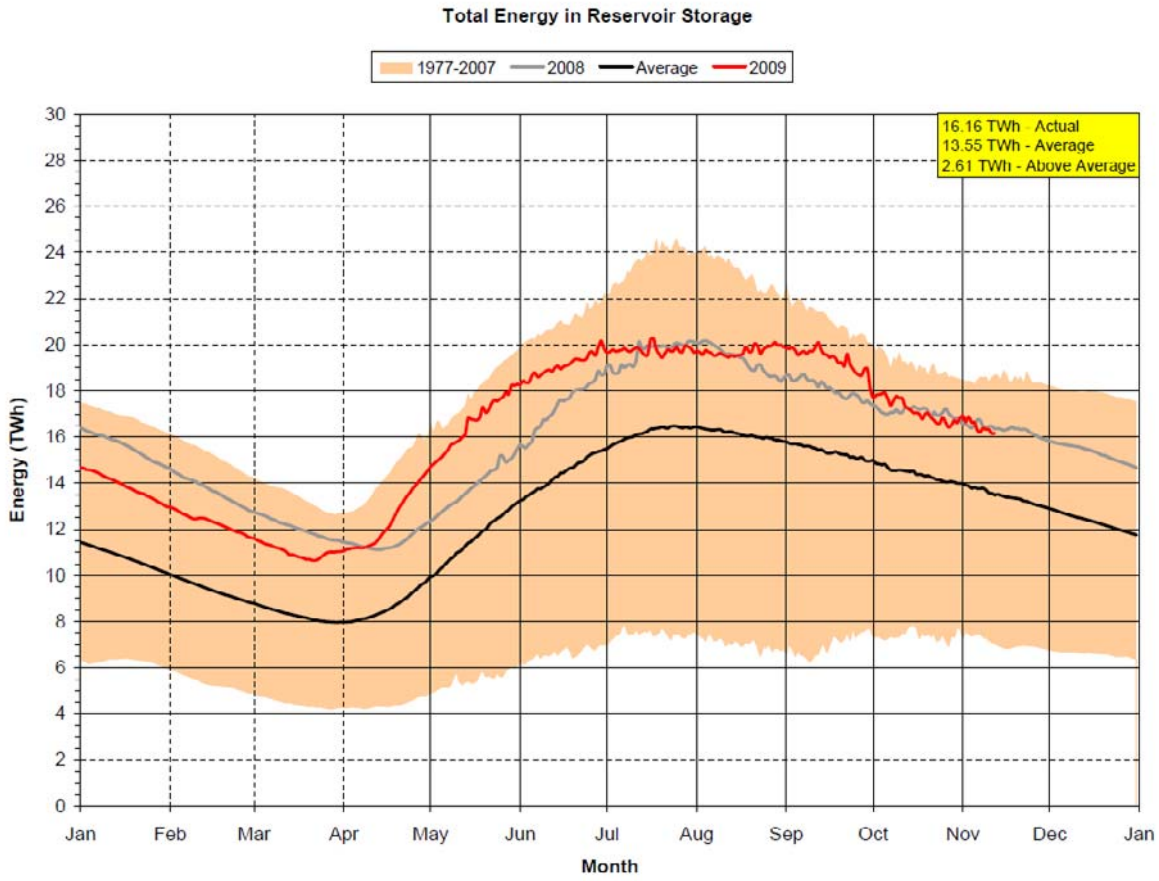

Figure 8.6.3, Total Energy in Reservoir Storage

Total Hydraulic Generation

The history of Total Hydraulic Generation since the in-service of Limestone GS is shown in Figure 8.6.4. Total hydraulic generation is forecast to exceed 34 TW.h for fiscal year 2009/10 potentially making it the third highest hydraulic generation year on record

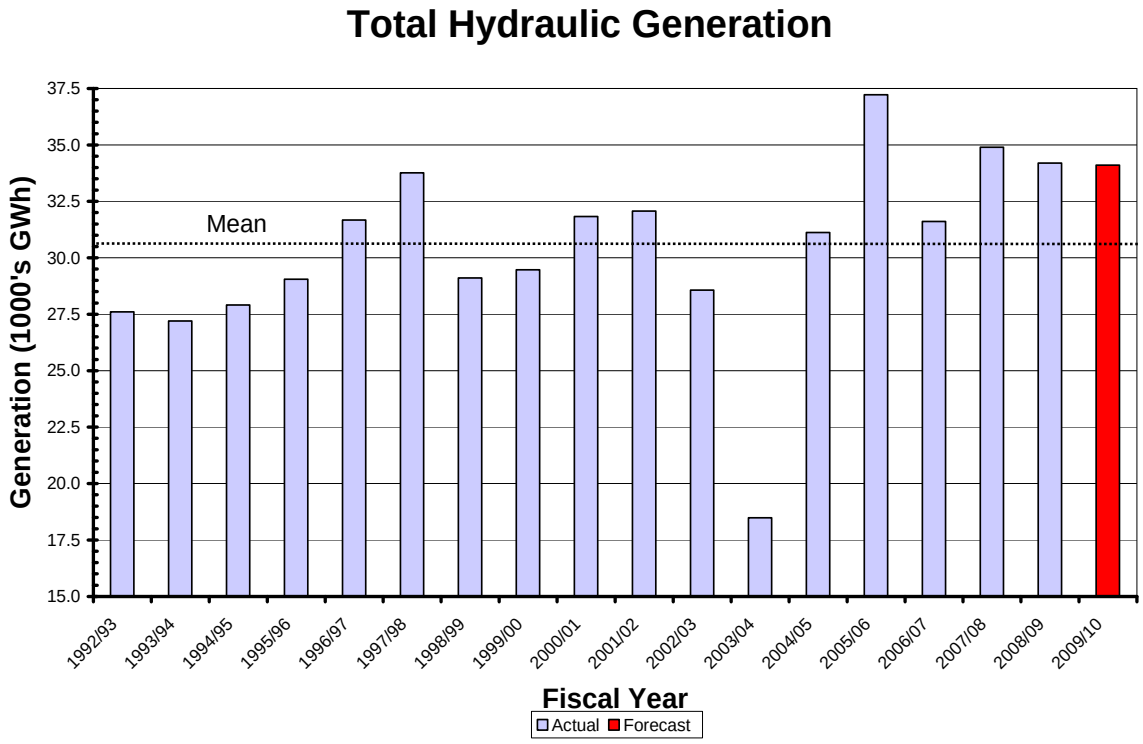

Figure 8.6.4, Total Hydraulic Generation

8.7 FINANCIAL IMPACT OF DROUGHT

The reduction in hydroelectric energy supply during periods of extended low flow conditions can have a significant negative impact on Manitoba Hydro's financial situation. For example, the difference in net revenue between the extremely low water year 2003/04 and the forecast was more than $480 million. The reduction in revenue would have been much greater if the drought conditions had persisted for several consecutive years similar to the low flow period between 1987 and 1992. The future occurrence of such a five-year drought if it occurred between the years 2011/12 to 2015/16 would decrease net revenues by a total of about $2.0 billion compared to the expected revenue under the entire range of flow conditions. This impact on net revenues would increase to $2.4 billion with consideration of financing costs associated with additional borrowing requirements up to the year 2015/16.

The $2.4 billion estimate of the financial impact of a five-year drought is due to a significant reduction in export revenue combined with the requirement to operate high-cost Manitoba Hydro thermal generation facilities for long time periods and to import

significant quantities of high-cost energy. There is a significant risk that this estimate could be greater if a series of adverse conditions occurred coincident with this time period. It is possible that natural gas prices, and consequently electricity prices in the export market, could be exceptionally high resulting not only in additional cost to operate Manitoba Hydro's gas-fired generation but also resulting in increased cost of import energy, especially during peak periods. If the prices for thermal fuel and import energy were about 35% higher than forecast, the financial impact of drought would increase by an additional $0.5 billion.

Another factor that has similar impacts as electricity prices in the export and import market is the currency exchange rate for the US dollar. A low Canadian dollar relative to the US dollar increases the export revenue that is lost in a drought and increases the cost of import energy and cost of operating thermal generation in Manitoba. This would be offset to some degree by reductions in finance expense denominated in USD.

A further factor that could increase the cost of drought is the occurrence of a more extreme drought compared to that which occurred during the five year period between 1987 and 1992. For example, the seven year drought representing flows from the period 1936/37 to 1942/43 would cause an increase in the drought impact by an additional $0.5 billion.