

CAC/MSOS/MH I-1

Subject: Letter of Application

Reference: Tab 1, page 2

Preamble: Reference is made to reducing the BMC in both 2010 and 2011 in order to assist low income customers with low metered monthly consumption.

- a) Please confirm that these changes will increase the monthly bills for low income residential customers with higher than average monthly use.**

ANSWER:

Please see Manitoba Hydro's response to PUB/MH I-220(b) which compares the proposed Residential rate (which reflects a lower Basic Charge and higher tail block energy charge) to the revised Residential rate as per Order 18/10.

CAC/MSOS/MH I-1

Subject: Letter of Application

Reference: Tab 1, page 2

Preamble: Reference is made to reducing the BMC in both 2010 and 2011 in order to assist low income customers with low metered monthly consumption.

- b) Does Manitoba Hydro have any information on the monthly electricity usage of low income residential customers, as to whether they typically use more or less electricity than the average residential customer?**

ANSWER:

Low income residential customers typically use less electricity than the average.

For electrically heated customers, the average electricity use for the LICO sector is 20,466 kW.h, the average electricity use for the LICO-125 sector is 21,116 kW.h and the average electricity use for all customers is 25,868 kW.h.

For non-electrically heated customers, the average electricity use for the LICO sector is 6,782 kW.h, the average electricity use for the LICO-125 is 7,250 kW.h and the average electricity use for all customers is 10,096 kW.h.

CAC/MSOS/MH I-1

Subject: Letter of Application

Reference: Tab 1, page 2

Preamble: Reference is made to reducing the BMC in both 2010 and 2011 in order to assist low income customers with low metered monthly consumption.

- c) Please explain why it was viewed as appropriate to adjust the rate design to assist low income residential customers with low metered monthly usage, when such an adjustment will have an adverse impact on low income residential customers with high monthly usage.**

ANSWER:

This strategy can positively benefit all lower income Manitobans. As noted, lower income customers with lower energy use due to the size of their home will immediately receive the benefit of the elimination/reduction of the basic charge (and will not be required to wait for landlord controlled energy efficiency initiatives). Lower income Manitobans with large, drafty, inefficient homes that fall within the larger use and therefore inverted tail block, can upgrade the efficiency of their home through the Lower Income Energy Efficiency Program.

CAC/MSOS/MH I-2 (REVISED)

Subject: Letter of Application

Reference: Tab 1, page 2, page 2

Preamble: Reference is made to 2009 rate increases implemented by a number of Canadian electric utilities.

- a) **Does Manitoba Hydro have any information regarding the rate adjustments the referenced utilities are seeking and/or have been granted for 2010? If so, please provide.**

ANSWER:

Many utilities have announced rate increases for 2010 since Manitoba Hydro filed its Application. BC Hydro announced a proposed 9.26% rate increase to be effective April 1, 2010 (based on a 6.11% across-the-board increase plus a 4% Deferral Account Rate Rider applicable to the energy component of various rate tariffs). SaskPower filed an application in February 2010 for a 7% system average rate increase to be effective August 1, 2010. If approved the rate increase will vary by customer class with Urban Residential customers seeing an increase of 7.5%. Nova Scotia Power incorporated a DSM Cost Recovery Rider and a Fuel Adjustment Mechanism charge to their rates on January 1, 2010. The charges are applicable during the 2010 calendar year and vary by rate class, for example the Residential DSM Cost Recovery = 0.193 ¢/kW.h and Fuel Adjustment Mechanism = (0.184) ¢/kW.h. Lastly, Hydro-Quebec announced an across-the-board rate increase of 0.4% to take effect April 1, 2010.

CAC/MSOS/MH I-3

Subject: Reasons for the Application

Reference: Tab 2, page 1

a) Please re-do Table 2.1.1 with the following adjustments:

- **Include 2007 Actual Results**
- **Report Retained Earnings and Debt Ratio for Electric Operations**

ANSWER:

Please see Manitoba Hydro's response to PUB/MH I-1(a).

CAC/MSOS/MH I-4

Subject: Reasons for Application

Reference: Tab 2, page 1

**Manitoba Hydro's Annual Report for Year Ended March 31, 2009,
Note 22**

- a) **Please provide schedules that reconcile the actual electricity segment results shown in the March 2009 Annual Report for the years 2008 and 2009 with the values reported in Tab 2 of the current Application.**

ANSWER:

Please see the following table for a reconciliation for the years 2008 and 2009.

	2008 Annual Report	2008 Actuals Application	Difference	Reason
Total Revenue	1,722	1,707	(15)	Removal of Subsidiary Revenue
Operating, Maintenance and Administrative	335	323	(12)	Removal of Subsidiary Expense
Finance Expense	401	401	-	
Depreciation and Amortization	324	324	-	
Water Rentals and Assessments	124	124	-	
Fuel and Power Purchased	134	135	1	Intercompany gas purchases for Selkirk & Brandon
Capital and Other Taxes	57	57	-	
Corporate Allocation	7	8	1	Rounding
Total Expenses	1,382	1,370	(12)	Removal of Subsidiary Expense
Net Income	340	337	(3)	

	2009 Annual Report	2009 Actuals Application	Difference	Reason
Total Revenue	1,784	1,766	(18)	Removal of Subsidiary Revenue
Operating, Maintenance and Administrative	377	360	(17)	Removal of Subsidiary Expense
Finance Expense	402	401	(1)	Rounding
Depreciation and Amortization	347	346	(1)	Rounding
Water Rentals and Assessments	123	123	-	
Fuel and Power Purchased	176	176	-	
Capital and Other Taxes	63	64	1	Rounding
Corporate Allocation	7	8	1	Rounding
Total Expenses	1,495	1,478	(17)	Removal of Subsidiary Expense
Net Income	289	288	(1)	

CAC/MSOS/MH I-5 (REVISED)

Subject: Reasons for Application

Reference: Tab 2, page 3

a) Please provide a schedule comparing the actual values for 2007/08 and 2008/09 with the those assumed in MH07-1 (which underpinned the last GRA) for the following items:

- Hydraulic Generation (GWh)
- Thermal Generation (GWh)
- Purchases (GWh)
- Domestic Sales (GWh)
- Exports (GWh)
- Export Revenues (\$)
- Net Export Revenues (S)

ANSWER:

Note that subsequent to receipt of round II information requests, this response has been revised for clarity.

	Notes	2007/08 MH07-1	2007/08 Actuals	Variance
Hydraulic Generation (GWh)		33,979	34,897	(918)
Thermal Generation (GWh)		351	456	(105)
Total Purchases (GWh)	1	1,200	836	(898)
Domestic Sales (GWh)	2	23,690	23,985	(295)
Exports (GWh)	3	11,152	11,086	(1,196)
Total Export Revenues (000 \$)	4	\$583,465	\$624,971	(41,506)
Net Export Revenues (000 \$)	5	\$465,648	\$508,828	(43,180)

	Notes	2008/09 MH07-1	2008/09 Actuals	Variance
Hydraulic Generation (GWh)		30,930	34,193	(3,263)
Thermal Generation (GWh)		203	334	(131)
Total Purchases (GWh)	1	1,514	981	(1,065)
Domestic Sales (GWh)	2	24,278	24,285	(7)
Exports (GWh)	3	7,549	10,122	(4,171)
Total Export Revenues (000 \$)	4	\$469,799	\$622,646	(152,847)
Net Export Revenues (000 \$)	5	\$337,562	\$465,052	(127,490)

Notes:

1. includes wind and *excludes* system merchant
2. at generation (i.e. includes losses) and includes station service load
3. *excludes* system merchant
4. includes system merchant revenues, includes transmission credits, includes renewable energy credits
5. calculated as: Total Export Revenue – Total Purchases - transmission charges

Also note that supply and demand imbalance from the above figures can be attributed to transmission losses and, to a lesser extent, inadvertent energy.

CAC/MSOS/MH I-5

Subject: Reasons for Application

Reference: Tab 2, page 3

- b) **Please discuss the export market conditions (i.e, prices experienced) actually experienced in 2007/08 and 2008/09 relative to those forecast in MH07-1.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-13(f).

CAC/MSOS/MH I-5 (REVISED)

Subject: Reasons for Application

Reference: Tab 2, page 3

c) **Please provide a schedule that compares actual values for 2008/09 with those assumed in MH08-1 (with underpinned the April 1/09 Rate Adjustment) for the following items:**

- **Hydraulic Generation (GWh)**
- **Thermal Generation (GWh)**
- **Purchases (GWh)**
- **Domestic Sales (GWh)**
- **Exports (GWh)**
- **Export Revenues (\$)**
- **Net Export Revenues (\$)**

ANSWER:

Note that subsequent to receipt of round II information requests, this response has been revised for clarity.

	Notes	2008/09 MH08-1	2008/09 Actuals	Variance
Hydraulic Generation (GWh)		34,084	34,193	(109)
Thermal Generation (GWh)		463	334	129
Total Purchases (GWh)	1	861	981	(1,718)
Domestic Sales (GWh)	2	24,117	24,285	(165)
Exports (GWh)	3	10,279	10,122	(1,441)
Total Export Revenues (000 \$)	4	\$620,700	\$622,646	(1,946)
Net Export Revenues (000 \$)	5	\$488,686	\$465,052	23,634

Notes:

1. includes wind and *excludes* system merchant
2. at generation (i.e. includes losses) and includes station service load
3. *excludes* system merchant
4. forecast and actual include system merchant revenues, includes transmission credits, includes renewable energy credits
5. calculated as: Total Export Revenue – Total Purchases - transmission charges

Also note that supply and demand imbalance from the above figures can be attributed to transmission losses and, to a lesser extent, inadvertent energy.

CAC/MSOS/MH I-5

Subject: Reasons for Application

Reference: Tab 2, page 3

- d) Please discuss the export market conditions (i.e, prices experienced) actually experienced in and 2008/09 relative to those forecast in MH08-1.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-13(f).

CAC/MSOS/MH I-6

Subject: Reasons for the Application

Reference: Tab 2, Table 2.1.2

**Manitoba Hydro's Annual Report for Year Ended March 31, 2009,
Note 22**

- a) **Please provide a revised version of Table 2.1.2 that includes 2008 and 2009 actual values. Note: Please provide any explanations necessary to reconcile the 2008 and 2009 values presented in the response with those presented for the Electricity Segment in Manitoba Hydro's Annual Report.**

ANSWER:

Please see the following revised version of table 2.1.2. Please see Manitoba Hydro's response to CAC/MSOS/MH I-4(a) for a reconciliation of information for 2008 and 2009.

(in millions of \$)	2008	2009	2010			2011			2012		
	Actual	Actual	MH09-1	MH08-1	Variance	MH09-1	MH08-1	Variance	MH09-1	MH08-1	Variance
General Consumers at approved rates	1,075	1,127	1,160	1,159	1	1,159	1,190	(31)	1,177	1,214	(37)
Projected Rate Increases	-	-	-	45	(45)	33	82	(49)	69	120	(51)
Extraprovincial Revenue (net of fuel, power purchased and water rentals)	366	323	191	235	(44)	141	159	(18)	195	153	42
Other	8	16	7	7	-	7	7	-	8	8	-
Total Revenues	1,448	1,466	1,358	1,445	(87)	1,342	1,438	(96)	1,449	1,495	(46)
Operating and Administrative	323	360	372	358	14	380	365	15	403	379	24
Finance Expense	401	401	417	420	(3)	413	426	(13)	468	473	(5)
Depreciation and Amortization	324	346	368	371	(3)	386	388	(2)	407	431	(24)
Capital and Other Taxes	57	64	73	71	2	76	74	2	77	74	3
Corporate Allocation	8	8	8	8	-	9	8	1	9	8	1
Total Expenses	1,112	1,178	1,237	1,228	9	1,263	1,261	2	1,363	1,365	(2)
Non-controlling Interest	-	-	-	-	-	-	-	-	1	2	(1)
Net Income	337	288	121	217	(96)	78	177	(99)	87	132	(45)

CAC/MSOS/MH I-6

Subject: Reasons for the Application

Reference: Tab 2, Table 2.1.2

**Manitoba Hydro's Annual Report for Year Ended March 31, 2009,
Note 22**

b) **Please provide a revised version of Table 2.1.2 that includes MH07-1 and for each of the three forecasts provides the following additional information for all three years:**

- **Export Volumes (GWh)**
- **Export Revenues (\$)**
- **Hydraulic Generation (GWh)**
- **Thermal Generation (GWh)**
- **Thermal Costs (\$)**
- **Purchases (\$)**
- **Purchase Volumes (GWh)**
- **Domestic Sales Volumes (GWh)**

ANSWER:

Please see the attached tables.

Table 2.1.2 Revised

(in millions of \$)	2010			2011			2012		
	MH09-1	MH08-1	MH07-1	MH09-1	MH08-1	MH07-1	MH09-1	MH08-1	MH07-1
General Consumers at approved rates	1,160	1,159	1,129	1,159	1,190	1,154	1,177	1,214	1,169
Projected Rate Increases		45	65	33	82	100	69	120	136
Extraprovincial Revenue (net of fuel, power purchased and water rentals)	192	235	128	141	159	107	195	152	134
Other	7	7	8	7	7	8	8	8	8
Total Revenues	1,358	1,446	1,330	1,342	1,438	1,369	1,449	1,495	1,448
Operating and Administrative	372	358	358	380	365	365	403	379	377
Finance Expense	417	420	440	413	426	444	468	473	492
Depreciation and Amortization	368	371	354	386	388	368	407	431	393
Capital and Other Taxes	73	71	66	76	74	69	77	74	70
Corporate Allocation	8	8	8	9	8	8	9	8	8
Total Expenses	1,237	1,228	1,225	1,263	1,261	1,254	1,363	1,364	1,341
Non-controlling Interest							1	2	7
Net Income	121	218	104	78	177	115	87	133	113

Additional Information Requested

(in millions of \$)	2010			2011			2012		
	MH09-1	MH08-1	MH07-1	MH09-1	MH08-1	MH07-1	MH09-1	MH08-1	MH07-1
Export Revenues	354	478	392	315	440	389	517	458	445
Thermal Costs	8	20	59	8	49	59	41	59	57
Power Purchases	36	111	99	56	122	117	171	144	143

(GWh)	2010			2011			2012		
	MH09-1	MH08-1	MH07-1	MH09-1	MH08-1	MH07-1	MH09-1	MH08-1	MH07-1
Export Volumes	9,149	7,901	6,729	7,122	6,243	6,565	7,841	6,537	7,195
Hydraulic Generation	33,124	31,176	29,050	30,525	29,270	29,156	30,067	29,995	30,014
Thermal Generation	152	475	928	159	500	922	432	587	907
Purchase Volumes	733	1,974	2,267	1,508	2,392	2,422	2,616	2,438	2,579
Domestic Sales Volumes	23,968	24,875	25,066	24,346	25,489	25,517	24,728	26,050	25,845

CAC/MSOS/MH I-6

Subject: Reasons for the Application

Reference: Tab 2, Table 2.1.2

**Manitoba Hydro's Annual Report for Year Ended March 31, 2009,
Note 22**

- c) **Please provide an explanation for the \$13 M increase in 2010 OM&A as between MH08-1 and MH09-1.**

ANSWER:

The following table details the change in the OM&A target for 2009/10:

	(\$ millions)	
OM&A Per IFF08		358
CICA Accounting Changes		
Reduction in Stores Overhead Capitalized	5	
Reduction in Capitalization of Intangible Assets	4	
Reduced A&G Overhead Capitalized	2	
		11
Accounting Classification Adjustments & Transfers		
Transfer of Gillam & Frontier School Division Payments	-5	
Transfer of Wire & Telecom Services to MHI	3	
		-2
Business Changes		
Operating Changes, Net of Cost Savings & Capitalization	5	
		5
OM&A Per IFF09		<u><u>372</u></u>

CAC/MSOS/MH I-6

Subject: Reasons for the Application

Reference: Tab 2, Table 2.1.2

**Manitoba Hydro's Annual Report for Year Ended March 31, 2009,
Note 22**

**d) Please provide an explanation for the \$14 M increase in 2011 OM&A as between
MH08-1 and MH09-1.**

ANSWER:

The following table details the change in the OM&A target for 2010/11:

	(\$ millions)	
OM&A Per IFF08		365
CICA Accounting Changes		
Reduction in Stores Overhead Capitalized	5	
Reduction in Capitalization of Intangible Assets	4	
Reduced A&G Overhead Capitalized	2	
		11
Accounting Classification Adjustments & Transfers		
Transfer of Gillam & Frontier School Division Payments	-5	
Transfer of Wire & Telecom Services to MHI	3	
		-2
Business Changes		
Other Operating Changes, Net of Capitalization and Cost Savings	6	
		6
OM&A Per IFF09		<u>380</u>

CAC/MSOS/MH I-6

Subject: Reasons for the Application

Reference: Tab 2, Table 2.1.2

**Manitoba Hydro's Annual Report for Year Ended March 31, 2009,
Note 22**

- e) **Please provide an explanation for the \$25 M increase in 2012 OM&A as between MH08-1 and MH09-1.**

ANSWER:

The following table details the change in the OM&A target for 2011/12:

	(\$ millions)	
OM&A Per IFF08		379
CICA & IFRS Accounting Changes		
Reduction in Stores Overhead Capitalized	5	
Reduction in Capitalization of Intangible Assets	4	
Reduced A&G Overhead Capitalized	2	
Provision for IFRS	15	
		26
Accounting Classification Adjustments & Transfers		
Transfer of Gillam & Frontier School Division Payments	-5	
Transfer of Waterways Management to Operating	5	
Transfer of Wire & Telecom Services to MHI	3	
		3
Business Changes		
Wuskwatim Generating Station	6	
Other Operating Changes, Net of Capitalization & Cost Savings	-11	
		-5
OM&A Per IFF09		<u><u>403</u></u>

CAC/MSOS/MH I-7

Subject: Reasons for the Application

Reference: Tab 2, page 2, lines 16-23

- a) **Please discuss more fully the market outlook for export prices that underlay the export revenue projection in MH08-1 for 2010, 2011 and 2012 and contrast it with the current outlook for export prices for the same period. Please also outline the factors that have led to this change in market conditions.**

ANSWER:

The specific details of Manitoba Hydro's electricity export price forecast, including details on specific pricing factors, are commercially sensitive information, and therefore are confidential since public release could harm the Corporation in negotiation of contracts for export sales.

As a general comment, the export price analysis underlying MH08-1 was completed in the spring 2008 before the financial crisis and subsequent global recession became apparent. The possibility of a severe financial crisis was not widely predicted by mainstream economists and was not a factor in the forecast for export prices in early 2008. Energy prices remained strong early in the financial crisis and subsequent global recession translating into a Manitoba Hydro forecast of medium to high prices for electricity exports in the years leading up to 2012/13 in MH08-1.

Short-term power prices in the summer of 2009 were down significantly from previous summers due to a combination of reduced demand resulting from the recession, low natural gas prices (again resulting from reduced demand due to the recession), and an unusually cool summer which resulted in lower US loads due to reduced summer air conditioning needs. The outlook underlying IFF09-1 for 2009/10 and 2010/11 is for export prices to be significantly below the export price assumptions underlying MH08-1.

The economic conditions which have led to a short-term softening of natural gas and power demand appear to be easing. Canada's three-quarter-long recession appears to be over in the third quarter of 2009 and recently there has been growth in the U.S. gross domestic product. Manitoba Hydro's current outlook for electricity export prices is for somewhat of a recovery in 2010/2011, and a return to the long-term outlook for 2011/12.

CAC/MSOS/MH I-7

Subject: Reasons for the Application

Reference: Tab 2, page 2, lines 16-23

- b) **Is the long term outlook (i.e., post-2012) for export prices the same in MH09-1 as it was in MH08-1 and MH07-1? If not, please describe any changes in the long term outlook as between the three forecasts and explain the basis for any changes.**

ANSWER:

Appendix 5.2 states that the export price forecast for post 2010/2011 is the same for both MH08-1 and MH09-1. For a general description of export prices underlying MH07-1 in comparison to export prices underlying MH08-1 and MH09-1, please see the response to CAC/MSOS/MH I-34(c).

CAC/MSOS/MH I-7

Subject: Reasons for the Application

Reference: Tab 2, page 2, lines 16-23

- c) **In the last GRA, Manitoba Hydro indicated that the average export price for 2006/07 was 5.1 cents/kWh (CAC/MSOS (MH) 1 –2 (e)). Please clarify whether this price reflected all export sales for 2006/07 or just Short-Term Opportunity sales (i.e., sales negotiated less than one-year in advance per Tab 4, page 6). If based on all sales please provide the relevant value for Short-Term Opportunity sales.**

ANSWER:

The average export price for 2006/07 was 5.1 cents/kW.h considering all export sales. The opportunity sales average price for 2006/07 was 4.7.

CAC/MSOS/MH I-7

Subject: Reasons for the Application

Reference: Tab 2, page 2, lines 16-23

- d) **Relative to the year 2006/07, please provide the average price for Short-Term Opportunity sales experienced in 2007/08 and 2008/09. Please explain the extent to which the average price (relative to that experienced in 2006/07) varied due to increases/decreases in the proportion of off-peak sales versus changes in market conditions.**

ANSWER:

The average Opportunity price in 2006/07 is \$47.23 / MWh in Canadian dollars. The 2007/08 and 2008/09 average prices are \$47.05 and \$48.14 respectively.

	2006/07	2007/08	2008/09
Average Price Cdn/MW.h	47.23	47.05	48.14
% change in Cdn/MW.h		-0.4%	1.9%
Volume MW.h	6,250,056	7,813,314	6,492,720
Average Price US/MW.h	42.08	45.16	44.14
% change in US/MW.h		7.3%	4.9%
Average US Exchange Rate	1.1352	1.0256	1.1710
% change in US Exchange Rate		-9.7%	3.2%
Average On Peak Price US\$/MW.h	54.41	58.31	58.90
% change		7.2%	8.3%
MW.h (5 X 16)	2,896,256	3,785,270	3,132,807
Average Off Peak Price US\$/MW.h	30.38	28.89	24.80
% change		-4.9%	-18.4%
Volume MW.h (wrap)	3,353,800	4,028,044	3,359,913

CAC/MSOS/MH I-8

Subject: Reasons for the Application

Reference: Tab 2, page 3, lines 29-35 and page 4, lines 1-13

- a) **In the referenced lines on page 3, Manitoba Hydro appears to accept that the debt ratio can exceed its 75% target during the “decade of investment”. However, on page 4 Manitoba Hydro states that it is important to maintain an adequate level of retained earnings. Has Manitoba Hydro established any criteria or guidelines regarding what an acceptable versus unacceptable debt ratio and/or level of retained earnings would be during the forthcoming decade? If yes, please indicate what they are and how the criteria/guidelines were established.**

ANSWER:

Manitoba Hydro’s long-standing target for the debt/equity ratio has been 75:25. The adequacy of this target and the level of equity (or retained earnings) at any given time depends upon the risks the Corporation faces and the tolerance that the Board of Manitoba Hydro has for risk in consideration of the current and projected circumstances. For example, at a time when water storage reservoir levels are full and export markets and prices are strong, the Board may be comfortable that the level of equity is adequate for the immediately ensuing period. The fact that Manitoba Hydro’s domestic rates are so much lower than other jurisdictions also allows for a higher tolerance for lower equity because the capacity to increase rates is substantially greater than elsewhere (should the need arise). A Financial Forecast that shows significant recovery to the debt/equity ratio in the “decade of returns” is also a consideration in the adequacy of the ratio in the intervening years.

The absolute level of equity is also an important consideration in determining its adequacy. With drought being one of the most significant risks faced by Manitoba Hydro, retained earnings should be sufficient to withstand a recurrence of the worst drought on record.

CAC/MSOS/MH I-8

Subject: Reasons for the Application

Reference: Tab 2, page 3, lines 29-35 and page 4, lines 1-13

- b) **Please provide a copy of the analysis and associated assumptions supporting the statement that “should the Corporation experience a repeat of the worst drought on record the impact on retained earnings could exceed \$2.4 billion”.**

ANSWER:

The impact of the 5-year drought is determined by calculating the revenue difference between the 5 drought years and expected conditions corresponding to the average of all flow conditions. Please refer to the reference provided in the response to RCM/TREE/MH I-33(a) for further information on the assumptions and methodology for determining the cost of extended drought periods. The current determination of drought cost is similar to that provided in RCM/TREE/MH I-33(a) except the drought is assumed to begin in 2011/12, and the assumptions on load forecast, export and import prices, and currency exchange rates are consistent with IFF09-1.

The \$2.4 billion drought impact that is referenced in the information request includes financing costs. Without additional financing, the drought impact is equal to \$2.0 billion. In the table on the following page, the components of this \$2.0 billion drought impact are given in terms of revenues and expenses together with the increased annual financing costs totaling \$0.4 billion over the five year period. In addition, the impact on energy supply and sales is also provided.

	2011/12	2012/13	2013/14	2014/15	2015/16	Total
Impact of 5-Year Drought on Revenues (millions of \$ Cdn)						
Revenue						
Extra-Provincial Sales	-220	-295	-186	-225	-198	-1124
Expense						
Water Rental	-24	-36	-17	-19	-16	-111
Fuel & Power Purchase	223	483	80	114	89	990
Net Revenue (Exclude Finance Expense)	-419	-742	-249	-320	-271	-2003
Finance Expense	9	46	88	115	145	403
Net Revenue (Include Finance Expense)	-428	-788	-337	-435	-416	-2406
Impact of 5-Year Drought on Energy (GWh/yr)						
Extra-Provincial Sales	-3542	-4190	-3162	-3408	-3016	-17318
Hydro Generation	-7117	-10707	-5060	-5584	-4779	-33246
Fuel & Power Purchase	3021	5658	1515	1748	1396	13338

CAC/MSOS/MH I-8

Subject: Reasons for the Application

Reference: Tab 2, page 3, lines 29-35 and page 4, lines 1-13

- c) Per page 4, lines 12-13, have the credit agencies provided any comments or observations regarding the minimum acceptable level of retained earnings and/or maximum acceptable debt ratio for Manitoba Hydro? If so, please provide the relevant reports.

ANSWER:

For credit rating agency comments or observations please see the recent credit rating reports as provided in response to:

- PUB/MH I-68,
- CAC/MSOS/MH I-8(d), and
- CAC/MSOS/MH I-120(a).

CAC/MSOS/MH I-8

Subject: Reasons for the Application

Reference: Tab 2, page 3, lines 29-35 and page 4, lines 1-13

- d) Please provide the most recent credit agency reports for Manitoba Hydro and for the Province of Manitoba.**

ANSWER:

Please see the response to PUB/MH I-68 for the Manitoba Hydro credit agency reports.

Please see Appendix 36 for the credit rating reports for the Province of Manitoba from DBRS (September 25, 2009) and Moody's Investors Service Full Analysis report (December 24, 2009) and Credit Opinion (January 25, 2010).

CAC/MSOS/MH I-9

Subject: Corporate Overview
Reference: Tab 3, page 1, lines 21-22
Appendix 3.1
2008 GRA, PUB/MH II-7 d)

- a) **Please provide a copy of the 2007/08 CSP and also provide a schedule that**
- **Sets all of the targets set for 2007/08**
 - **For each target, reports the actual results for 2007/08**

ANSWER:

Please see Appendix 33 – The Corporate Strategic Plan for 2007/08.

Please see Attachment 1 for the 2007-08 CSP targets and performance reported for 2007-08.

Targets in 2007-2008 CSP & Results for 2007-2008

GOAL	MEASURE	TARGET	PERFORMANCE REPORTED AS MARCH 31, 2008
Improve Safety in the Work Environment	High-risk incidents	0	9
	Accident severity rate	<16 days per 200 000 hours worked	24.5 days
	Accident frequency rate	<0.08 accidents per 200 000 hours worked	1.3
Provide Customers with Exceptional Value	Retail rates: electricity	Lowest in North America	One of the lowest in North America
	Retail distribution rates: natural gas	Among the lowest in North America	Among the lowest in North America
	System average interruption duration	≤ 92 minutes	112.27
	System average interruption frequency	≤ 1.3 per year	1.24
	Canadian Electrical Association (CEA) Customer Service Index	Best in Canada	Best in Canada
	Public contacts - natural gas & electric	20% injury reduction (Target is 20% reduction of average of previous 5 years = 11 injuries)	23
	Natural gas market share	100% of new franchises ≥ 60% of commodity sales	58.37% of commodity sales
Be a Leader in Strengthening Working Relationships with Aboriginal Peoples	Percentage of impacted Aboriginal communities with a workable management framework	100%	81% workable and 19% in progress
	Percentage Aboriginal employment	All targets by March 2008	
	<ul style="list-style-type: none"> • Corporate 12.5 % • Northern 38% • Management 5.5% • Professional 6% 		14.3% 41.9% 4.4% 5.7%
Improve Corporate Financial Strength	Interest coverage	> 1.2	1.71
	Debt/equity ratio	75/25 by the year 2011-2012	77/23
	Capital financing ratio	>1	1.6
	Operation maintenance and Administration (OM&A) Cost per customer - electric	\$640 per customer (March 2008)	\$619 per customer as of March 2008
	OM&A Cost per customer - gas	\$213 per customer (March 2008)	\$215 per customer as of March 2008
Maximize Export Power Net Revenues	Net export revenue as a percentage of total electric revenue	25% - 2007/08 through 2016/17 40% by 2019	29.2%
Attract, Develop, and Retain a	Percentage of non-entry positions filled by	Range 8% - 12%	11.5%

GOAL	MEASURE	TARGET	PERFORMANCE REPORTED AS MARCH 31, 2008
Highly Motivated Workforce that Reflects the Demographics of Manitoba	external applicants		
	Percentage of designated group members in Manitoba Hydro workforce <ul style="list-style-type: none"> • Women • Women in management • Women professionals • Persons with a disability • Visible minorities 	All targets by 2008 26% 16% 32% 4.6% 4.25%	24.5% 15.7% 32.7% 5.6% 4.7%
Be Proactive in Protecting the Environment and be the Leading Utility in Promoting Sustainable Energy Supply and Service	Environmental Component of CEA Customer Service Index	≥ 8.5	8.3
	Manitoba Hydro Corporate Citizenship Index - environmental component	≥ 8.4	7.7
	Greenhouse Gas Emissions <ul style="list-style-type: none"> • Overall (Net) • Electricity generation • Natural gas generations • Fleet, buildings (natural gas), diesel generation & SF 	< 0.520 megatonnes < 0.461 megatonnes < 0.017 megatonnes < 0.042 megatonnes	0.352 0.492 0.0216 0.0458
Be An Outstanding Corporate Citizen	CEA Public Attitude Index	≥ 8.5	8.4
	Manitoba Hydro Corporate Citizenship Index	≥ 8.2	7.6
Proactively Support Agencies Responsible for Business Development in Manitoba	Agency satisfaction	100% satisfied	100% satisfied
Be a National Leader in Implementing Cost-Effective Energy Conservation and Emerging Energy Systems	Demand Side Management (DSM) - electric energy saved	1 350 gigawatt-hours (GWh) per year by March 2008 2 695 GWh per year by 2017 - 2018	1415 GWh
	DSM - electric capacity saved (at winter peak)	564 megawatts (MW) by March 2008 848 MW by 2017 - 2018	492 MW
	DSM - natural gas energy saved	28 million cubic metres per year by March 2008 101 million cubic metres per year by 2017 - 2018	26.8 million cubic meters (net savings with interactive effects)
	Alternative capacity installed (or delivered)	400 MW by 2011	99 MW

CAC/MSOS/MH I-9

Subject: Corporate Overview
Reference: Tab 3, page 1, lines 21-22
Appendix 3.1
2008 GRA, PUB/MH II-7 d)

- b) **The 2007/08 CSP makes reference (page 4) to a Strategy of implementing “a plan to improve reliability of the transmission and distribution systems”. There is also a similar strategy set out in the most recent CSP provided in Appendix 3.1 (page 6). Please provide a copy of the plan and indicate the specific initiatives undertaken in 2007/08 and 2008/09.**

ANSWER:

In 2007, Manitoba Hydro implemented a Corporate NERC Reliability Compliance Program to coordinate and manage its compliance activities related to mandatory NERC (North American Electric Reliability Corporation) and MRO (Midwest Reliability Organization) reliability standards. As a registered entity with NERC and the MRO, Manitoba Hydro’s compliance with these reliability standards is regularly monitored, including on-site audits every three years. The Corporation is committed to compliance and continues to work diligently to ensure adherence to the standards. Responsibility for compliance with specific standards is assigned to subject matter experts throughout the Corporation. Manitoba Hydro’s executive and senior management monitor the program’s activities through their involvements in the compliance program’s steering committee. The compliance program is supported by Corporate Policy and a formal program manual, which clearly outlines processes as well as roles and responsibilities in support of compliance.

CAC/MSOS/MH I-9

Subject: Corporate Overview
Reference: Tab 3, page 1, lines 21-22
Appendix 3.1
2008 GRA, PUB/MH II-7 d)

- c) **The 2007/08 CSP (page 5) makes reference to a strategy of developing “corporate and business unit performance measures”. There is also a similar strategy set out in the most recent CSP provided in Appendix 3.1 (page 10). Please describe Manitoba Hydro’s progress since the last GRA with respect to implementing this strategy.**

ANSWER:

Each year as part of the CSP process, targets and measures for the Corporation as a whole have been reviewed and refined. As part of the annual business planning process, business units develop business plans to support the goals of the CSP and have continued to develop, review and improve, as appropriate, measures related to their activities.

These efforts have been given new focus through the establishment of the Corporate Planning and Strategic Analysis Business Unit. The Vice-President for this Business Unit has initiated a review of existing corporate performance measures, with a view to providing recommendations within the next year.

CAC/MSOS/MH I-9

Subject: Corporate Overview
Reference: Tab 3, page 1, lines 21-22
Appendix 3.1
2008 GRA, PUB/MH II-7 d)

- d) **As follow-up to the previous question, please describe any corporate or business unit performance measures that have been established and indicate what the results were for 2007/08 and/or 2008/09. Please also indicate any targets that have been established for these measures for 2009/2010.**

ANSWER:

Please see Manitoba Hydro's responses to CAC/MSOS/MH I-9(a) and (c) and Appendix 3.1 2010/11 & 2011/12 General Rate Application filing for 2009-10 targets.

Please see also Attachment 1 for the 2008-09 CSP targets and performance reported for 2008-09.

Targets in 2008-2009 CSP & Results for 2008-2009

GOAL	MEASURE	TARGET	PERFORMANCE REPORTED AS MARCH 31, 2009
Improve Safety in the Work Environment	High-risk incidents	0	1
	Accident severity rate	<16 days per 200 000 hours worked	25.33 days
	Accident frequency rate	<0.08 accidents per 200 000 hours worked	1.3
Provide Customers with Exceptional Value	Retail rates: electricity	Lowest in North America	Lowest rates in North America
	Retail distribution rates: natural gas	Among the lowest in North America	Among the lowest in North America
	System average interruption duration	≤ 92 minutes	100.61
	System average interruption frequency	≤ 1.3 per year	1.39
	Canadian Electrical Association (CEA) Customer Service Index	Best in Canada	Best in Canada
	Public contacts - natural gas & electric	20% injury reduction (Target is 20% reduction or <13 injuries)	18
	Natural gas market share	100% of new franchises ≥ 60% of commodity sales	59.45% of commodity sales
Be a Leader in Strengthening Working Relationships with Aboriginal Peoples	Percentage of impacted Aboriginal communities with a workable management framework	100%	81% workable and 19% in progress This measure is under review.
	Percentage Aboriginal employment <ul style="list-style-type: none"> • Corporate • Northern • Management • Professional 	All targets by March 2009 14.7 % 43% 5.5% 6%	15% 42% 5.1% 5.2%
Improve Corporate Financial Strength	Interest coverage	> 1.2	1.58
	Debt/equity ratio	75/25 by the year 2011-2012	75/25
	Capital financing ratio	>1	1.81
	Operation maintenance and Administration (OM&A) Cost per customer - electric	\$665 per customer (March 2009)	\$682 per customer as of March 2009
	OM&A Cost per customer - gas	\$220 per customer (March 2009)	\$224 per customer as of March 2009
Maximize Export Power Net Revenues	Net export revenue as a percentage of total electric revenue	25% - 2008/9 through 2016/17 40% by 2019	28%
Attract, Develop, and Retain a Highly Motivated Workforce that	Percentage of non-entry positions filled by external applicants	Range 8% - 12%	12.6%

**PERFORMANCE REPORTED
AS MARCH 31, 2009**

GOAL	MEASURE	TARGET	PERFORMANCE REPORTED AS MARCH 31, 2009
Reflects the Demographics of Manitoba	Percentage of designated group members in Manitoba Hydro workforce <ul style="list-style-type: none"> • Women • Women in management • Women professionals • Persons with a disability • Visible minorities 	All targets by 2009 26% 17% 34% 5.9% 4.9%	24.6% 15.9% 33.4% 5.2% 5.2%
Be Proactive in Protecting the Environment and be the Leading Utility in Promoting Sustainable Energy Supply and Service	Environmental Component of CEA Customer Service Index	≥ 8.5	8.2
	Manitoba Hydro Corporate Citizenship Index - environmental component	≥ 8.4	7.68
	Greenhouse Gas Emissions <ul style="list-style-type: none"> • Overall (Net) • Electricity generation • Natural gas generations • Fleet, buildings (natural gas), diesel generation & SF 	< 0.520 megatonnes < 0.461 megatonnes < 0.018 megatonnes < 0.042 megatonnes	0.32 0.488 0.0216 0.0455
Be An Outstanding Corporate Citizen	CEA Public Attitude Index	≥ 8.5	8.1
	Manitoba Hydro Corporate Citizenship Index	≥ 8.2	7.62
Proactively Support Agencies Responsible for Business Development in Manitoba	Agency satisfaction	100% satisfied	100% satisfied
Be a National Leader in Implementing Cost-Effective Energy Conservation and Emerging Energy Systems	Demand Side Management (DSM) - electric energy saved	1 530 gigawatt-hours (GWh) per year by March 2009 2 695 GWh per year by 2017 - 2018	1550 GWh
	DSM - electric capacity saved (at winter peak)	601 megawatts (MW) by March 2009 848 MW by 2017 - 2018	522 MW
	DSM - natural gas energy saved	36.1 million cubic metres per year by March 2009 101 million cubic metres per year by 2017 - 2018	38.5 million cubic meters (net savings with interactive effects)
	Alternative capacity installed (or delivered)	400 MW by 2011	128 MW

CAC/MSOS/MH I-9

Subject: Corporate Overview
Reference: Tab 3, page 1, lines 21-22
Appendix 3.1
2008 GRA, PUB/MH II-7 d)

- e) **The 2007/08 CSP (page 5) makes reference to “improving the capital investments decision support process”. There is also a similar strategy set out in the most recent CSP provided in Appendix 3.1 (page 10). Please describe what improvements have been made to the capital investment decision support process since the last GRA.**

ANSWER:

Capital investment decisions at Manitoba Hydro are evaluated and prioritized to ensure they are consistent with Corporate and Business Unit plans. Continuous improvements are made to the process through an ongoing effort to ensure an efficient allocation of limited resources among competing projects and initiatives. One of the roles of the new Corporate Planning and Strategic Analysis Business Unit is to help address competing BU priorities.

CAC/MSOS/MH I-9

Subject: Corporate Overview
Reference: Tab 3, page 1, lines 21-22
Appendix 3.1
2008 GRA, PUB/MH II-7 d)

- f) **The 2007/08 CSP (page 5) makes reference to improving “capital expenditure reporting and accountability”. There is also a similar strategy set out in the most recent CSP provided in Appendix 3.1 (page 10). Please describe what improvements have been made in this area since the last GRA.**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-9(e).

CAC/MSOS/MH I-9

Subject: Corporate Overview
Reference: Tab 3, page 1, lines 21-22
Appendix 3.1
2008 GRA, PUB/MH II-7 d)

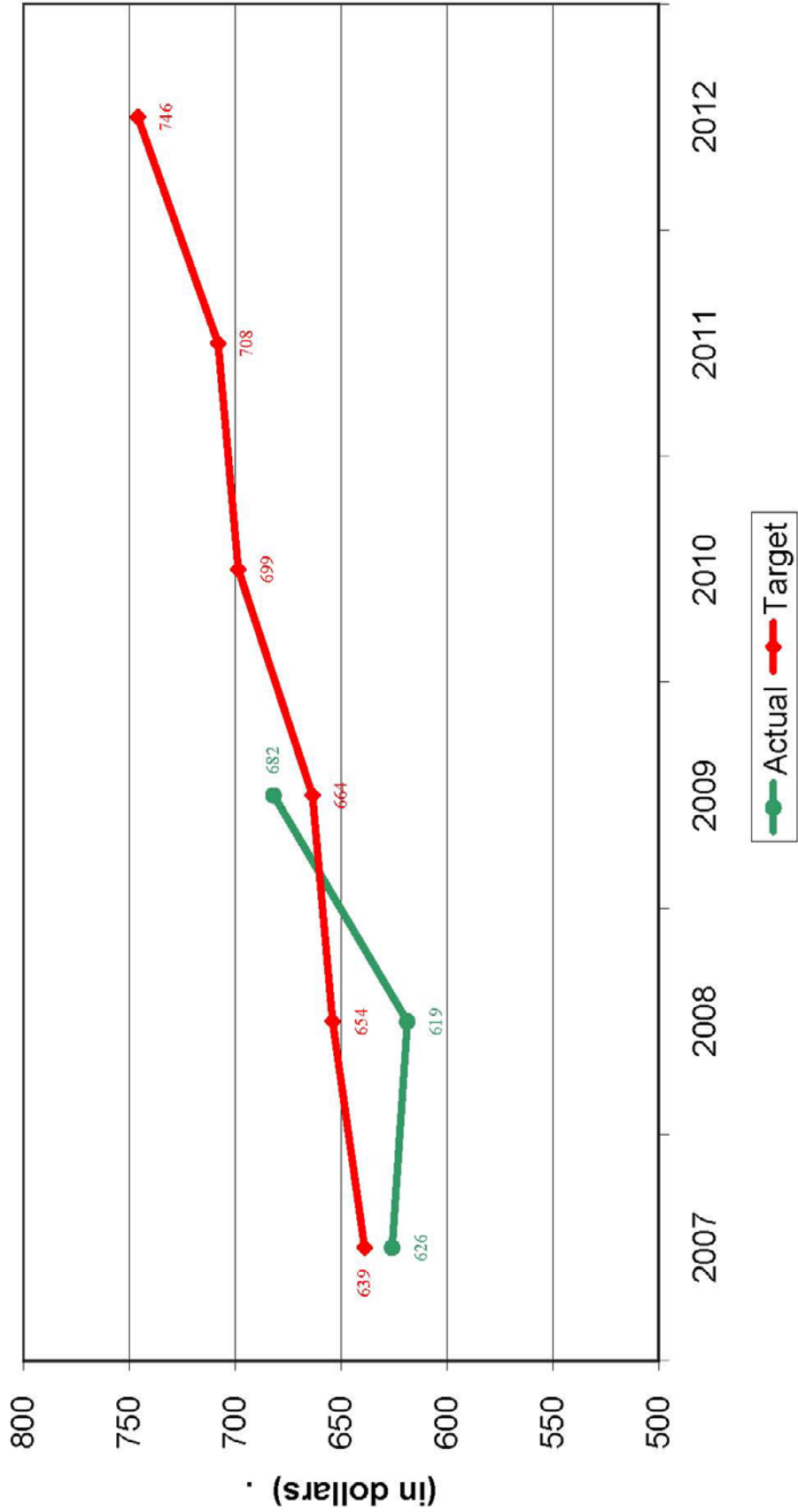
- g) Please provide an updated response to PUB/MH II-7 d) (from 2008 GRA) starting with the year 2006/07. Please also provide the actual OM&A and customer values for each year used to determine the cost per customer.**

ANSWER:

OM&A Cost per Customer

(in thousands of \$)	2007	2008	2009	2010	2011	2012
Actual						
OM&A (000's)	323,466	322,697	359,660			
# of Customers	516,861	521,599	527,472			
OM&A per Customer	626	619	682			
Target						
OM&A (000's)	327,630	340,200	349,000	371,504	379,695	403,370
# of Customers	512,755	520,156	525,964	531,804	536,267	540,756
OM&A per Customer	639	654	664	699	708	746

Manitoba Hydro
 Operating, Maintenance & Administrative Expense per Customer
 Based on the Corporate Strategic Plan
 For the Years 2007 to 2012



CAC/MSOS/MH I-10

Subject: Corporate Overview

Reference: Tab 3, page 8

Appendix 4.4, Schedule 4.5.4

2008 GRA, PUB/MH I – 20 (b) and CAC/MSOS / MH 11 – 16 (a)

- a) **Please provide a year over year analysis similar to that submitted in the last GRA (see above references) for the period starting 2007/08 up to 2011/12.**

ANSWER:

Please see Manitoba Hydro's response to PUB/MH I-34(b) for year over year analysis.

CAC/MSOS/MH I-11

Subject: corporate overview

Reference: Tab 3, page 10

- a) **How have the Corporation's plans for capital projects (and the justifications or business cases for those projects) changed due to the current recession, and the decrease in export prices?**

ANSWER:

The Corporation reviews its capital expenditure target annually and its individual projects on an ongoing basis. The annual capital review (CEF09) showed additional capital project requirements primarily in the new generation and system refurbishment areas. However, after giving consideration to the economic environment, the 10 year total capital target was reduced moderately from the CEF08 level. This reduction to approved project spending was accomplished through an increase to the target adjustment of \$169 million, including a \$144 million reduction in 2009/10 and a further \$42 million reduction in 2010/11.

To the extent that the recession and other factors have impacted the requirement for capital work and to meet the reduced capital expenditure forecast, individual projects are adjusted or deferred where possible while still continuing to meet the requirements for safe, efficient, and reliable service.

CAC/MSOS/MH I-11

Subject: corporate overview

Reference: Tab 3, page 10

- b) Is the Corporation's current ambitious list of capital projects still justified given the current economic downturn and the decrease in export prices?**

ANSWER:

As indicated in the response to part (a) of this question, individual projects are being reviewed for their requirement and adjusted or deferred as appropriate. All projects that are sustained are considered justified during this period, on the basis of safety, reliability, environmental sustainability and efficiency of operations.

CAC/MSOS/MH I-11

Subject: corporate overview

Reference: Tab 3, page 10

- c) **Has the Corporation considered scaling back some of its capital projects due to the current economic climate? If so, please provide the factors considered and the outcome of the consideration.**

ANSWER:

Please see Manitoba Hydro's response to part (a) of this question.

CAC/MSOS/MH I-12

Subject: Actual Financial Results

Reference: Tab 4, pages 2-3

**Manitoba Hydro's Annual Report for Year Ended March 31, 2009,
Note 22**

- a) **If not explained in previous responses, please reconcile the differences between the Total Revenue, OM&A and Net Income values for 2007/08 and 2008/09 reported in Schedule 4.1.0 with those in Manitoba Hydro's Annual Report.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-4(a).

CAC/MSOS/MH I-12

Subject: Actual Financial Results

Reference: Tab 4, pages 2-3

**Manitoba Hydro's Annual Report for Year Ended March 31, 2009,
Note 22**

- b) **Apart from OM&A, please confirm whether differences for the other line items are only attributable to "rounding". If not, please explain the differences.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-4(a).

CAC/MSOS/MH I-13

Subject: Financial Results and Forecast – Extraprovincial Revenue

Reference: Tab 4, pages 6-8

- a) **What is the impact on 2011/12 Export revenues of moving from a forecast based on median water flows to one based on average revenue over the entire series of possible flows.**

ANSWER:

2011/12 Extraprovincial Revenue (\$Millions)		
IFF09-1 Average Revenue from All Flows	Median Flows	Difference
\$554.2	\$572.3	\$18.1

CAC/MSOS/MH I-13

Subject: Financial Results and Forecast – Extraprovincial Revenue

Reference: Tab 4, pages 6-8

- b) Please provide the exchange rates used for each year to convert the US sales in Schedule 4.3.0 to Canadian dollars.

ANSWER:

The monthly exchange rates used to convert the US sales to Canadian dollars for 2007/08 and 2008/09 are based the noon month-end exchange rates as per the Bank of Canada.

The Forecast for 2009/10 is a combination of actual and forecast exchange rates. Therefore, the noon month-end exchange rate as per the Bank of Canada is used for April to July 2009 and the monthly forecast exchange rate of 1.11 is applied to the remaining months.

	Actuals		Forecast		
	2007/08	2008/09	2009/10	2010/11	2011/12
Annual Average Rate	1.0256	1.1345	1.1176	1.07	1.09

CAC/MSOS/MH I-13

Subject: Financial Results and Forecast – Extraprovincial Revenue

Reference: Tab 4, pages 6-8

c) **Please provide a schedule that for 2006/07 to 2008/09 sets out the volumes and revenues associated with:**

- **Dependable Sales**
- **Short-Term Firm Sales**
- **Short-Term Energy**
- **Spot Market Sales**
- **Other Miscellaneous Services.**

ANSWER:

Below is a schedule which sets out the volumes and revenues associated with dependable and opportunity sales. Opportunity sales are shown as either contract or spot market. Other sales include ancillary services and merchant sales.

Sales	2006/07		2007/08		2008/09	
	Mwh	Revenue	Mwh	Revenue	Mwh	Revenue
		(CDN \$)		(CDN \$)		(CDN \$)
Dependable	3,653,788	218,013,802	3,921,035	208,629,442	4,087,091	233,466,153
Short Term						
Bilateral	4,034,860	242,547,027	1,974,135	92,169,622	1,758,275	100,092,362
Spot Market	2,215,205	52,666,604	5,839,672	235,657,264	4,730,445	185,236,845
Other Misc.						
Services	1,205,533	60,134,040	1,262,196	71,548,902	1,597,652	87,282,551

CAC/MSOS/MH I-13

Subject: Financial Results and Forecast – Extraprovincial Revenue

Reference: Tab 4, pages 6-8

d) Please provide an update to CAC/MSOS (MH) 1 –33 a) {per 2008 GRA}.

ANSWER:

Tables below have been updates as per the 2008 GRA with values to December 2009 for the 2009/10 fiscal year.

TOTAL SALES						
	DEPENDABLE SALES		OPPORTUNITY SALES		SYSTEM MERCHANT SALES	
	GWh	CAD \$	GWh	CAD \$	GWh	CAD \$
2000/01	6,352	223,138,576	5,801	216,927,371	0	0
2001/02	6,277	322,068,849	6,022	280,792,868	0	0
2002/03	6,544	339,221,224	3,191	137,117,410	0	0
2003/04	6,231	295,476,336	735	52,185,471	11	473,904
2004/05	5,633	289,749,063	4,798	239,277,193	315	10,518,118
2005/06	4,044	239,590,165	10,303	510,384,667	919	62,926,861
2006/07	3,654	218,013,802	6,250	295,213,631	1,206	60,134,039
2007/08	3,921	208,629,442	7,814	327,826,886	1,262	71,548,902
2008/09	4,087	233,466,153	6,489	286,653,254	1,598	85,958,504
2009/10	2,613	147,423,918	6,554	145,683,166	541	17,569,845

TOTAL U.S. SALES									
	U.S. DEPENDABLE SALES			U.S. OPPORTUNITY SALES			U.S. SYSTEM MERCHANT SALES		
	GWh	CAD \$	US \$	GWh	CAD \$	US \$	GWh	CAD \$	US \$
2000/01	4,895	199,168,895	169,908,422	4,511	166,675,224	142,165,381	0	0	0
2001/02	4,767	262,865,376	168,100,356	5,083	247,381,289	157,623,656	0	0	0
2002/03	4,947	277,448,984	179,618,184	2,713	114,747,101	74,942,044	0	0	0
2003/04	5,245	259,347,230	189,868,274	507	35,187,891	27,499,575	0	3,710	2,797
2004/05	5,633	289,749,063	226,341,463	3,218	170,503,849	136,723,761	109	1,163,641	901,572
2005/06	4,044	239,590,165	201,202,052	8,879	400,507,197	336,700,704	0		
2006/07	3,654	218,013,802	192,260,768	5,877	270,180,884	240,553,600	0	0	0
2007/08	3,921	208,629,442	202,672,290	7,332	288,915,585	279,839,294	0	0	0
2008/09	4,087	233,466,153	209,114,260	6,071	236,966,187	218,656,448	0	0	0
2009/10	2,613	147,423,918	134,276,396	6,218	122,882,922	112,517,145	33	1,525,389	1,326,001

OPPORTUNITY EXPORTS				
	On Peak GWh	Off Peak GWh	On Peak Avg Price (CAD \$)	Off Peak Avg Price (CAD \$)
2005/06	4,485	5,819	70.62	34.26
2006/07	2,876	3,374	62.84	34.61
2007/08	3,785	4,029	65.70	29.52
2008/09	3,133	3,360	70.70	27.11
2009/10	2,833	3,498	28.31	14.51

CAC/MSOS/MH I-13

Subject: Financial Results and Forecast – Extraprovincial Revenue

Reference: Tab 4, pages 6-8

- e) **Does the 2009/2010 market price decrease impact at all on the anticipated revenues from Dependable Sales? If yes, please explain why.**

ANSWER:

The majority of Manitoba Hydro's dependable sales contracts are at fixed prices (adjusted annually by escalators such as the US GDP deflator). These sale contract prices are not affected by the recent spot market price decrease. Some of Manitoba Hydro's dependable contracts have prices tied to spot market prices. Revenues under these contracts have been affected by the recent market price decrease.

CAC/MSOS/MH I-13

Subject: Financial Results and Forecast – Extraprovincial Revenue

Reference: Tab 4, pages 6-8

f) The discussion on page 7 makes reference to a significant market price decrease in 2009/10.

- Does this decrease apply to both Short-Term Firm prices as well as Short-Term Energy and Spot Market prices?**
- Please provide any publically available information regarding MISO-area market prices for 2007/08 to 2009/2010 that would illustrate this.**

ANSWER:

Yes, this price decrease applies to all short term transactions.

MISO-area market prices for 2007/08 to 2009/2010 are shown below. Average Day Ahead on peak, off peak and monthly average market prices at MISO's MHEB pricing node have been included. The information is also publically available on the MISO website: http://mktweb.midwestiso.org/publish/Folder/10b1ff_101f945f78e_-75e70a48324a.

MISO - Day Ahead MHEB LMP (US\$/MWh)

	2007/08			2008/09			2009/10		
	On Peak	Off Peak	Average	On Peak	Off Peak	Average	On Peak	Off Peak	Average
April	70.84	41.77	55.34	65.77	33.81	49.43	25.72	14.29	19.88
May	59.58	24.68	41.20	52.94	21.78	35.85	23.08	11.39	16.42
June	59.03	23.37	40.01	56.15	18.45	36.04	22.84	10.73	16.65
July	67.52	28.16	45.93	79.48	24.28	50.39	23.14	10.91	16.96
August	61.55	23.46	42.30	61.68	24.93	41.52	25.45	12.24	18.21
September	46.15	20.46	31.31	43.76	20.55	31.38	24.02	12.86	18.07
October	52.40	22.65	37.37	42.63	18.82	30.60	31.02	16.72	23.48
November	61.99	27.00	43.33	45.71	23.32	32.78	26.91	15.84	20.76
December	73.51	46.27	57.99	60.19	33.69	46.23	41.07	24.63	32.41
January	67.44	38.72	52.31	48.15	30.39	38.41	52.88	36.86	44.26
February	75.63	44.02	59.28	36.08	23.85	29.67			
March	76.61	48.34	61.11	29.04	18.07	23.26			

MISO also provides monthly and seasonal market reports highlighting and analyzing market conditions:

http://www.midwestmarket.org/publish/Folder/2b8a32_103ef711180_-7d620a48324a?rev=1

CAC/MSOS/MH I-13

Subject: Financial Results and Forecast – Extraprovincial Revenue

Reference: Tab 4, pages 6-8

g) The discussion on page 7 makes reference to a forecast increase in interruptible prices for 2011/2012.

- Does this forecast increase apply just to the prices applicable to Short-Term Energy or does it also apply to Short-Term Firm and Spot Market prices?**
- Please describe how the forecast 2011/2012 prices for each of these three categories of export sales compare to the 2008/09 actual prices.**

ANSWER:

The increase in export prices in 2011/12 applies to all opportunity sales including short-term firm and spot market sales.

The specific details of Manitoba Hydro's electricity export price forecast, including details relating to specific categories of exports, are commercially sensitive information, and therefore are confidential since public release could harm the Corporation in negotiation of contracts for export sales. Given that the forecast of specific components of the 2011/12 forecast for export prices is confidential, the overall average of firm and opportunity exports is provided as an indicator of the forecast. The actual price for all export sales in 2008/09 was \$51.60/MW.h while the forecast in IFF09-1 for 2011/12 is \$65.90/MW.h.

CAC/MSOS/MH I-13

Subject: Financial Results and Forecast – Extraprovincial Revenue

Reference: Tab 4, pages 6-8

h) What is the assumed output of the St. Joseph Wind Farm and Wuskwatim Generation station for 2011/2012?

ANSWER:

The 2009/10 power resource plan assumes that the 2011/12 output of the 300 MW St Joseph wind farm is 1100 GW.h on average over the period of a year. This generation estimate has been adjusted for transmission losses by increasing the actual plant output by 10% in order to be consistent with other generation resources that may be farther from the load center and to recognize that transmission losses are inherently included in the load forecast.

The output of the Wuskwatim G.S. is about 670 GW.h for 2011/12 which corresponds to the first in-service year when only a portion of the units are in service. The output of 670 GW.h is the average annual generation that is derived from the average of all flow conditions and is based on the assumption of first unit in service in October, 2011 followed by additional units in December and February.

CAC/MSOS/MH I-13

Subject: Financial Results and Forecast – Extraprovincial Revenue

Reference: Tab 4, pages 6-8

- i) Are there any other wind purchases assumed up to 2011/12 and, if yes, how much?

ANSWER:

The Integrated Financial Forecast includes 400 MW of wind generation with 300 MW of new wind generation assumed to be available by 2011/12. It is now expected that in this time frame new wind generation will not exceed 138 MW and may not be available until after 2011/12.

CAC/MSOS/MH I-13

Subject: Financial Results and Forecast – Extraprovincial Revenue

Reference: Tab 4, pages 6-8

- j) Please contrast the actual export volumes and prices for 2007/08 and 2008/09 with those assumed in MH07-1.

ANSWER:

Forecast and Actual export volumes and prices are listed below.

	FORECAST MH-07				ACTUAL			
	2007/08		2008/09		2007/08		2008/09	
	Avg Price		Avg Price		Avg Price		Avg Price	
	GWh	CDN\$	GWh	CDN\$	GWh	CDN\$	GWh	CDN\$
Dependable Short Term Contract	3,625	54.32	3,228	56.37	3,921	53.22	4,087	57.12
Spot Market	1,411	57.93	18	27.89	1,974	66.86	1,758	73.39
	6116	40.51	4302	55.74	5,840	40.35	4,730	38.80

CAC/MSOS/MH I-13

Subject: Financial Results and Forecast – Extraprovincial Revenue

Reference: Tab 4, pages 6-8

k) Please contrast the current outlook for export prices and volumes in the period 2009/10 to 2011/12 with that assumed in MH07-1.

ANSWER:

The average price and export volumes assumed in MH07-1 and MH08-1 (as requested in information request CAC/MSOS/MH I-13(m) and MH09-1 are in the table below.

	MH07-01	MH08-01	MH09-01
Total Export Sales for 2009/10	6,608 GWh	7,901 GWh	9,149 GWh
Average Export Price for 2009/10	\$62.9 / MWh	\$69.0 / MWh	\$36.2 / MWh
Total Export Sales for 2010/11	6,442 GWh	6,867 GWh	7,122 GWh
Average Export Price for 2010/11	\$64.4 / MWh	\$67.4 / MWh	\$41.0 / MWh
Total Export Sales for 2011/12	7,066 GWh	7,191 GWh	7,843 GWh
Average Export Price for 2011/12	\$66.7 / MWh	\$66.9 / MWh	\$65.9 / MWh

CAC/MSOS/MH I-13

Subject: Financial Results and Forecast – Extraprovincial Revenue

Reference: Tab 4, pages 6-8

- l) Please contrast the actual export volumes and prices for 2008/09 with that assumed in MH08-1.

ANSWER:

Forecast and Actual export volumes and prices for 2008/09 are listed below.

	FORECAST MH-08		ACTUAL	
	2008/09		2008/09	
	GWh	Avg Price	GWh	Avg Price
CDN\$		CDN\$		
Dependable	3,750	53.19	4,087	57.12
Short Term				
Contract	703	90.85	1,758	73.39
Spot Market	5,827	44.19	4,730	38.80

CAC/MSOS/MH I-13

Subject: Financial Results and Forecast – Extraprovincial Revenue

Reference: Tab 4, pages 6-8

m) Please contrast the current outlook for export prices and volumes in the period 2009/10 to 2011/12 with that assumed in MH08-1.

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-13(k). In that response prices and volumes from MH08-1 are compared to current prices in MH09-1 in the period 2009/10 to 2011/12.

CAC/MSOS/MH I-14

Subject: Financial Results and Forecast – Other Revenue

**Reference: Tab 4, pages 9-10
2008/09 Annual Report**

- a) **Why is there no reported “affiliate” revenue? Where/how are the revenues associated with Manitoba Hydro’s subsidiaries (see 2008/09 Annual Report, page 78) accounted for?**

ANSWER:

The Annual Report includes affiliate revenue and expense in the electricity segment. This application relates to the Electric Utility Operations only and therefore affiliated revenues and expenses are not included.

CAC/MSOS/MH I-14

Subject: Financial Results and Forecast – Other Revenue

**Reference: Tab 4, pages 9-10
2008/09 Annual Report**

- b) Please provide an aggregated operating statement for Manitoba Hydro's subsidiaries for 2007/08 to 2011/12 at a level of detail equivalent to that used in the Financial Statement projections in MH07-1.

ANSWER:

The following table provides an aggregated operating statement for Manitoba Hydro's subsidiaries for 2007/08 to 2011/12.

MANITOBA HYDRO SUBSIDIARIES

(000's)	2007/08	2008/09	2009/10	2010/11	2011/12
	<u>Actual</u>	<u>Actual</u>	<u>Forecast</u>	<u>Forecast</u>	<u>Forecast</u>
Revenue	\$ 15 518	\$ 19 255	\$ 19 349	\$ 20 278	\$ 21 842
Expenses					
Operating and Administrative	11 806	17 579	14 336	14 962	16 060
Finance Expense	(58)	(66)	5	19	57
Depreciation and Amortization	300	316	356	368	381
Water Rentals and Assessments	-	-			
Fuel and Power Purchased	-	-			
Capital and Other Taxes	282	313	315	318	322
Corporate Allocation					
Total Expenses	<u>12 330</u>	<u>18 142</u>	<u>15 012</u>	<u>15 667</u>	<u>16 820</u>
Net Income	<u>\$ 3 188</u>	<u>\$ 1 113</u>	<u>\$ 4 337</u>	<u>\$ 4 611</u>	<u>\$ 5 022</u>

CAC/MSOS/MH I-14

Subject: Financial Results and Forecast – Other Revenue

**Reference: Tab 4, pages 9-10
2008/09 Annual Report**

- c) Please provide a list of the various services/activities captured under “miscellaneous revenue”.

ANSWER:

On an actual basis, this category includes miscellaneous non-operating income and expense items such as litigation and contractual settlements, investment write-offs as well as Pharmicare processing fees. The forecast includes only Pharmicare processing fees and tenant revenue.

CAC/MSOS/MH I-14

Subject: Financial Results and Forecast – Other Revenue

**Reference: Tab 4, pages 9-10
2008/09 Annual Report**

- d) For those services/activities where the charges are based on a fixed rate, please list the services and activities and the associated 2009/2010 rate.

ANSWER:

The Pharmacare processing rate is \$1.61 per contract per month. The lease arrangement for the tenants of the new head office are confidential as agreed to in the lease agreements.

CAC/MSOS/MH I-14

Subject: Financial Results and Forecast – Other Revenue

**Reference: Tab 4, pages 9-10
2008/09 Annual Report**

- e) With respect to part d), please indicate whether Manitoba Hydro proposes to change any of these “rates” for 2010/2011.

ANSWER:

There are no plans to change the Pharmacare rates for 2010/11.

CAC/MSOS/MH I-15

Subject: Financial Results and Forecast – OM&A

Reference: Tab 4, pages11-13

- a) **What was the number of vacancies at the end of 2007/08 and at the end of 2008/09 that required filling?**

ANSWER:

The budgeted EFT complement at March 31, 2008 was 5,799 as compared to the actual EFT level of 5,688 resulting in a vacancy factor of 147 EFTs.

The budgeted EFT complement at March 31, 2009 was 6,030 as compared to the actual EFT level of 5,840 resulting in a vacancy factor of 190 EFTs.

CAC/MSOS/MH I-15

Subject: Financial Results and Forecast – OM&A

Reference: Tab 4, pages11-13

b) Does the forecast FTE count for 2009/2010 – 2011/2012 assume there are no vacancies?

ANSWER:

The forecast EFT (FTE) count for years 2009/10 to 2011/12 assumes a vacancy factor in each of the years.

As part of the budget process a vacancy factor is calculated for each year based on historical data as well as known or expected turnover for the upcoming forecast years. Consideration is given for expected retirements, as well as time allotment for the hiring process.

CAC/MSOS/MH I-15

Subject: Financial Results and Forecast – OM&A

Reference: Tab 4, pages11-13

- c) **Does the forecast OM&A for 2009/10 – 2010/12 assume there are no vacancies throughout the year? If yes, why is no allowance made for a natural level of vacancy due to staff turnover/replacement?**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-15(b)

CAC/MSOS/MH I-15

Subject: Financial Results and Forecast – OM&A

Reference: Tab 4, pages11-13

- d) Why are there no OM&A costs associated with affiliates reported in Schedule 4.5.0 as there was in Appendix 12.1 of the 2008 GRA?**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-14(a).

CAC/MSOS/MH I-15

Subject: Financial Results and Forecast – OM&A

Reference: Tab 4, pages11-13

- e) **Do either the actual or the forecast OM&A costs attributable to Electric Operations include any OM&A associated with Manitoba Hydro’s subsidiaries?
If yes, please provide a schedule that identifies the amount by year.**

ANSWER:

The actual and forecast OM&A costs attributable to Electric Operations in this Application do not include any OM&A costs associated with Manitoba Hydro’s subsidiaries.

CAC/MSOS/MH I-16

Subject: OM&A Expense

**Reference: Appendix 4.4
Appendix 3.1**

- a) **Appendix 3.1 (page 10) states that the Corporate Target for OM&A per Electric Customer is \$673 for March 2010. However, Appendix 4.4 (page 2) reports a 2009/2010 OM&A/customer result of \$699. Please reconcile.**

ANSWER:

\$673 is a target of OM&A per customer to be achieved by March 2010 as set out in the 2009-10 CSP which was finalized in Q4 2008-09; \$699 is the forecast of OM&A per customer as at March 31, 2010 that is presented in Appendix 4.4 which was prepared on January 15, 2010.

CAC/MSOS/MH I-16

Subject: OM&A Expense

**Reference: Appendix 4.4
Appendix 3.1**

b) What additional measures, over and above those reflected in the Application, is Manitoba Hydro planning on taking in order to achieve its 2009/2010 Corporate Target?

ANSWER:

Manitoba Hydro's cost control process is outlined in Section 3.3 of the Application. As evidenced in this section, there is a continuous planning and reporting process in place which allows management to

- Prioritize programs and projects;
- Manage changing conditions;
- Provide changes in corporate direction;
- Establish communication on performance; and
- React to unforeseen conditions on a timely basis.

The application of this process ensures that expenditures are appropriate, resources are deployed effectively, and that any corrective actions are taken if necessary.

CAC/MSOS/MH I-16

Subject: OM&A Expense

**Reference: Appendix 4.4
Appendix 3.1**

- c) **Please provide a copy of the 2008/09 CSP and comment on whether or not Manitoba Hydro met its corporate target with respect to OM&A per customer.**

ANSWER:

Please see Appendix 34 – The Corporate Strategic Plan for 2008-09.

Target OM&A per customer: \$665

Performance OM&A per customer: \$682.

CAC/MSOS/MH I-16

Subject: OM&A Expense

Reference: Appendix 4.4

Appendix 3.1

- d) **Please provide a schedule setting out the customer numbers underlying the chart on page 2 (Appendix 4.4) and provide projected customer numbers out to 2019/2020.**

ANSWER:

Please see the following table for the number of customers used on page 2 of Appendix 4.4.

	Year	# of Customers
Actual	2004/05	505,666
	2005/06	509,791
	2006/07	516,861
	2007/08	521,599
	2008/09	527,472
Forecast - IFF09	2009/10	531,804
	2010/11	536,267
	2011/12	540,756
	2012/13	545,215
	2013/14	549,623
	2014/15	553,968
	2015/16	558,286
	2016/17	562,580
	2017/18	566,841
	2018/19	571,081
2019/20	575,158	

CAC/MSOS/MH I-17

Subject: OM&A Expense

Reference: Appendix 4.4, pages 3-10

a) Please explain fully the reasons for the following items shown on page 3:

- **Transfer of Waterways Management to Operating**
- **Transfer of Gilliam and Frontier School Division**
- **Transfer of Wire and Telecom Services to MHI**

ANSWER:

Transfer of Waterways Management to Operating

Subsequent to the completion of a generating station that involves flooding of areas, a cleanup is required to remove debris that accumulates in the waterways, stabilize the shoreline, and address other consequences of this flooding. This debris can cause damage to the generating station and a danger to persons and equipment which utilize the affected waterway. The clean up costs are appropriately capitalized as a cost of constructing the generating station.

Efforts to clean up the waterways were enhanced approximately 5 years ago at which time it was also determined to be appropriate to transition the program from capital to ongoing operations. The transfer of these costs to OM&A in 2011/12 represents the forecasted ongoing costs for this program. No waterways management costs for existing generation will be capitalized after that time.

Transfer of Gilliam and Frontier School Division

Manitoba Hydro has agreements with the Town of Gilliam and the Frontier School Division whereby it contributes funding to operate the town of Gilliam and the Gillam School respectively. These costs have been charged to operating expense as they did not literally qualify as either municipal taxes or grants in lieu of taxes which are classified as Capital and Other Taxes. Because the substance of the payments to the Town of Gilliam and to the Frontier School Division was consistent in principle with other costs included in the Capital and Other Taxes classification, the costs have now been reclassified as such.

Transfer of W.I.R.E. Services & Telecom to MHI

W.I.R.E. Services provides transmission line thermal rating and re-rating solutions in the electric utility industry. In order to facilitate W.I.R.E. Services being able to effectively offer its services to international markets it was moved to a similar business environment, allowing W.I.R.E. Services and MHI to share ideas, strategies and create cost saving synergies as a result of sharing common processes, systems and infrastructure.

Manitoba Hydro Telecom Services provides scalable broadband capacity and associated services utilizing surplus fiber on Manitoba Hydro's fiber optic network. The creation of a new MHI division of Telecom Services resulted from the need to separate commercial product and services offerings from Manitoba Hydro to allow Manitoba Hydro Telecommunications engineering staff to focus on core functions, while leaving the commercial undertaking to continue so long as it remains profitable. Similar to the W.I.R.E. Services, the transfer provided the forum for MHTS & MHI to share ideas, strategies and create cost saving synergies.

CAC/MSOS/MH I-17

Subject: OM&A Expense

Reference: Appendix 4.4, pages 3-10

- b) With respect to page 4, please provide a Table that sets out the CPI values along with the OM&A; number of customers and resulting ratio for each utility by year and indicate the sources of the data used.

ANSWER:

Please see the following table for the data used on page 4 of Appendix 4.4.

Manitoba Hydro	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>
OM&A	299	311	323	323	360
Number of Customers	505,666	509,791	516,861	521,599	527,472
OM&A Cost per Customer - Electric	591	609	626	619	682
% Change		3.2%	2.7%	-1.1%	10.2%
Indexed	100	103	106	105	115

Source: Page 2 of Appendix 4.4 & Manitoba Hydro 2009 Annual Report

Hydro Quebec	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>
OM&A	2,154	2,245	2,389	2,541	2,497
Number of Customers	3,701,275	3,752,510	3,815,126	3,868,972	3,913,444
OM&A Cost per Customer	582	598	626	657	638
% Change		2.8%	4.7%	4.9%	-2.8%
Indexed	100	103	108	113	110

Source: Hydro Quebec 2008 Annual Report

SaskPower	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>
OM&A	317	336	360	416	430
Number of Customers	439,165	441,692	445,569	451,713	460,006
OM&A Cost per Customer	722	761	808	921	935
% Change		5.4%	6.2%	14.0%	1.5%
Indexed	100	105	112	128	130

Source: SaskPower 2008 Annual Report

BC Hydro & BC Transmission Corporation	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>
BC Hydro OM&A	717	805	716	942	915
BC Transmission Corporation OM&A	72	157	168	186	207
Total OM&A	789	962	884	1,128	1,122
BC Hydro Number of Customers	1,675,258	1,704,892	1,736,987	1,767,194	1,801,328
OM&A Cost per Customer	471	564	509	638	623
% Change		19.8%	-9.8%	25.4%	-2.4%
Indexed	100	120	108	136	132

Source: BC Hydro 2009 Annual Report, BCTC 2005-2009 Annual Reports

Canadian CPI	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>
% Change	2.3%	1.9%	2.1%	2.2%

Source: Economic Outlook Spring 2009 page 5

CAC/MSOS/MH I-17

Subject: OM&A Expense

Reference: Appendix 4.4, pages 3-10

- c) With respect to page 6, how does Manitoba Hydro determine the asset maintenance and replacement requirements for a given year? In particular, how is asset age used and what other information is used?**

ANSWER:

The assessment of Manitoba Hydro's asset maintenance and replacement requirements is an ongoing, dynamic process. Functional areas routinely consider numerous factors in the assessment process, including customer requirements and growth patterns, asset condition, performance, age, failure rates, employee and public safety, corporate policy, manufacturer's recommendation, clearance requirements, environmental legislation and appropriate costs and revenues. Assets are installed, repaired, overhauled, replaced, or retired based on these complex assessments and are prioritized with consideration to availability of financial and human resources.

Hydraulic Generating Stations, HVDC Converter Stations, and Major Water Control Stations

The assessments are driven by service time, manufacturer's recommendation, performance, regulatory requirements, environmental legislation or corporate policy. Condition assessments are performed by various experts in Power Supply which may lead to recommendations for repair, overhaul or replacement.

The Corporate Dam Safety Program's principal activities include surveillance inspections, instrumentation monitoring, engineering analyses and condition assessments of dams and dikes within a consequence category framework, and the systematic utilization of failure models-based condition assessment techniques. All concrete and earth-filled structures are scored on a Health Index basis and this system is used to prioritize repairs and upgrades to dams.

The Insulation Testing Department performs condition assessments on all critical electrical insulated equipment such as transformers and generator rotors and stators. Frequently, these

electrical tests predict the end of life or when significant rehabilitation of a transformer or hydraulic generating unit is required.

Apparatus Inspection Program conducts condition assessments of electrical and mechanical equipment used in the generation & transmission of electric power.

System outages are reviewed to determine the cause of the outage and to determine the steps required to correct the problem. A system called HVDC Data Storage & Retrieval (HDS&R) is used to capture performance data and trending information relating to outages.

This infrastructure is managed using the following processes and tools. A computerized maintenance management system called Applied Maintenance Planning System (AMPS) is the main tool used by station staff to plan and schedule day to day maintenance tasks and inspections and document asset condition. The application Power Supply Performance (PowerUp) is used to record and provide reports on unit operating availability, reliability and performance. Reliability Centered Maintenance (RCM) is used to determine maintenance tasks and inspections, time frames and work criticality.

Power Supply is now using a new tool called hydroAmp to provide an Equipment Health Index for main drive train (items whose failure could cause extended outages) components at Hydraulic Generating Stations. Technical teams comprised of experts from the four organizations involved in hydroAMP, the Bureau of Reclamation (BOR), Hydro-Québec (HQ), the Army Corps of Engineers (COE), and the Bonneville Power Administration (BPA), joined together in 2001 to develop condition assessment guides for hydroelectric power plants. The result of this collaborative work is a common framework and process to streamline, simplify and improve the assessment and documentation of the condition of hydroelectric equipment and facilities in order to support condition-based prioritization of hydropower asset management.

Centralized capital planners coordinate rehabilitation requests from generating station staff, Manitoba Hydro equipment experts from design and maintenance engineering departments and finally Equipment Health Index information from hydroAmps is used to build long term capital plan. The plan is entered into a program tool called CAMELOT (Capital and Maintenance Long Term) where the portfolio of proposed projects is prioritized and scheduled. Scheduling has to take into account project priority levelizing cash flow, staffing resources and minimizing unit outage time. Finally the Capital Project Justification (CPJ) process is used to present the Business Case for asset replacement for Manitoba Hydro executive approval.

A new tool called Asset Investment Planning (AIP) has just been approved for Power Supply. The tool replaces CAMELOT and will connect to all data sources used for capital planning including Enterprise Asset Management, hydroAMPS, SAP and PowerUp. The Asset capital planner can then review assets at all stations and run custom reports looking for assets that may be candidates for a capital rehabilitation program. Examples of attributes that could be part of the search are assets with an age well beyond expected life, assets that have a poor health index and or have a poor performance history.

This program will be used to build a twenty year plan but release of individual items in the plan will still require a thorough business case and CPJ approval. This program should be fully functioning in approximately 2 years.

Transmission Systems and Communication System Stations

The various components of this infrastructure are maintained in a variety of ways. The transmission line clearance program verifies clearances using laser technology. Lines will be refurbished to maintain mandated clearances. The circuit breaker replacement program reviews the breaker age and low short circuit interrupting capability. Transmission lines are inspected yearly on a periodic basis and defective components are scheduled for replacement. This process uses the T-Line database (developed internally) to keep track of inspections and required maintenance work for transmission lines.

The performance of Manitoba Hydro's communications infrastructure is continuously monitored, and performance reports are generated monthly and annually to identify troublesome equipment and systems. An investigation is performed on all systems that have exceeded performance targets and, where deemed necessary, remedial work or replacement is recommended.

Electric equipment and stations asset groups are assessed periodically through inspections, and condition monitoring activities. The data is compiled in the Regional Maintenance System (RMS), when assessed in light of operating history and performance by specialized equipment experts, the need for repair, replacement or modified maintenance activities is established. These efforts are to ensure continued reliability.

Overall, the Capital Project Justification (CPJ) process is used to justify and prioritize significant expenditures for asset replacement. There are some new tools are being reviewed

including a Transmission Geographical Information System (GIS) which will be used to integrate the prioritization and scheduling functionality.

Distribution Systems

The Distribution system is assessed based on equipment failure history. Routine failures are assessed based on similar models to address future failures. The Distribution system is also assessed when designs for new facilities are required in areas where there are existing facilities; the existing plant is investigated and addressed. A Civil Infrastructure Condition Assessment program has been established to review and document the state of civil infrastructure in the Manitoba Hydro distribution system.

The Distribution Maintenance Planning System (DMPS) is used for tracking and scheduling maintenance work. The Integrated Pole Maintenance (IPM) process tests the condition of the poles and applies reconditioning treatments to extend life. The Underground Assessment Program is designed to assess the condition of the underground plant and to make repairs to deficiencies found during the assessment. The street light standard testing program includes annual inspection and severely deteriorated standards are replaced. Service interruption reports are used to analyze causes of outages and assess possible deterioration of hardware, insulators and other equipment.

Overall, the Capital Project Justification (CPJ) process is used to justify and prioritize significant expenditures for asset replacement. There are some new tools being introduced to improve the management of infrastructure: Mobile Workforce Management will assist with scheduling and dispatching and a Pole Maintenance database will track individual pole information (type of pole, problems, maintenance history).

CAC/MSOS/MH I-17

Subject: OM&A Expense

Reference: Appendix 4.4, pages 3-10

- d) Please identify those environmental and regulatory requirements that have changed since the last GRA and are “cost drivers” for 2009/10 – 2011/2012. To the extent possible, please identify the increased costs over the period due to these changes.**

ANSWER:

The pace of environmental and regulatory change affecting Manitoba Hydro has been rapid. The following outlines some of the changes and the impacts to Manitoba Hydro in meeting these requirements.

NERC Standards

NERC (North American Electric Reliability Corporation) standards currently apply in Manitoba pursuant to Order in Council No. 206/2004, which authorized Manitoba Hydro to join the MRO (Midwest Reliability Organization - a regional delegate of NERC) in 2003 and adopt its standards.

In 2005, Canadian federal and provincial authorities signed a Memorandum of Understanding with NERC which expressed support for mandatory standards. Implementation is specific to each Province. Legislation, passed in June 2009, makes compliance to NERC/MRO standards a legal requirement in Manitoba for any user, owner, and operator of the electric grid. The legislation, which still awaits proclamation to become effective, gives the Lieutenant Governor in Council authority to adopt NERC/MRO standards and authorizes the MRO to monitor compliance, by way of regulation. It also gives the PUB authority to review and remand a NERC standard on a complaint basis and final enforcement authority to impose penalties and sanctions for a violation of the standards.

There are approximately 90 NERC standards currently in effect and another 25 or so are anticipated within the next few years. Manitoba Hydro already complies with the great majority of these standards as a result of its past practice to voluntarily follow NERC standards.

The impacts of compliance are dispersed throughout many operational functions within the Corporation. As a result it is difficult to quantify the total cost impact; however the following examples demonstrate cost pressures associated with heightened requirements:

- Temporary staff positions have been created to implement new standards related to cyber security. These standards require a dedicated project team and an investment in additional physical infrastructure and cyber security technology. Total cost impact is pending further analysis and review.
- Requirement for an annual program of testing the real and reactive capabilities and the governor and exciter control systems of 20% of Hydro's generating units rated more than 10 MW. Other related improvements necessary include physical and cyber security system upgrades, increased alarm monitoring (requiring hardware and software upgrades), and redundant backup systems to help ensure reliable performance of generating assets. This initiative includes 2 additional EFT requirements, external consulting fees for onsite training of operational and engineering staff, and costs associated with the development and implementation of GPARS (Generator Parameter Analysis Reporting System). Estimated incremental cost impact is \$600 k.
- The standard now requires a more rigorous Vegetation Management Program. An annual commitment of .25 EFT is needed to maintain the administrative portion of compliance along with funding for additional vegetation control activities related to inspection, data collection, brushing and clearing. Estimated incremental cost impact is in the range of \$200 to \$500 k.
- Effort has been underway during the past two years to document Manitoba Hydro's compliance for audit purposes, in accordance with the new mandatory system. Two new permanent staff positions have been created to manage the processes and controls necessary for an effective compliance program. Estimated incremental cost impact is \$200 k.

Safety & Workplace Environment Programs

Changes in provincial regulation, national safety standards and improvement orders issued to Manitoba Hydro have had a direct impact on costs associated with the administration of its safety system. This has been accelerated in recent years due to the increased priority given to enforcement by the provincial health and safety regulator. In addition, Environment Canada has introduced several new regulations under the Canadian Environmental Protection Act (CEPA), the new Federal Chemical Substances

Challenge and industry protocols that directly affect the management of Hazardous Materials at Manitoba Hydro.

In meeting these requirements, significant work effort is necessary to update policy and procedure documents and develop and conduct training to make certain staff understand the requirements of the new regulations and their impacts on work practices. Additional oversight & review is also needed to ensure compliance given the growing number of regulatory requirements. Examples of changes in safety and workplace environment programs include:

- Changes in electrical safety standards were a driver in the establishment of a Flame Resistant Clothing program which continues today with an annual maintenance budget of approx. \$1.0 million per year. It is expected that there will be significant work in this area due to new requirements for engineered arc flash assessments.
- A regulatory change mandated replacement of all system locks to comply with lock out requirements. The legislation now requires the industry including utilities to eliminate the process of “tagging out” electrical switches with a paper caution tag with a “hard lock system” to ensure the switch is not inadvertently turned back on.
- Environment Canada and the CEA have established a joint industry protocol for the management of SF₆ and other insulating gases at Canadian utilities. This project will require future incremental costs associated with a new EFT to coordinate the program as well as costs to fulfill the requirements of the new protocol.
- In accordance with both provincial regulation and Federal Chemical Substance Challenge, establish and maintain an industry standard level Corporate Asbestos inventory. This will likely require a new EFT to coordinate and maintain the Asbestos inventory. In addition new dollars and the commitment of several EFTs may be required if Manitoba Hydro pursues a corporate-wide comprehensive Hazardous Materials (Chemical) inventory system.

Regulatory - PUB Directives

As filed in Tab 13 of the recent 2010/11 & 2011/12 General Rate Application, there are a number of outstanding directives impacting both external and internal resource requirements.

Those directives which may have a significant cost impact include:

- Order 32/09; Directive 4
MH to file by September 30, 2009, for Board approval, a conceptual outline for an in-depth and independent study of all the operational & business risks facing the Corporation. The study to be a thorough and quantified Risk Analysis, including probability of all identified operational and business risks... etc.
- Order 150/08; Directive 2
With respect to MH's export program, MH is to work co-operatively with Board staff and/or advisors to develop a process that will enhance the Board's understanding of MH's export program and its potential impact on domestic rates. MH is to thereafter file a report with the Board that may include the following... etc.
- Order 150/08; Directive 6
MH to undertake and file with the Board, by a date to be fixed by the Board after its review of the study outline to be filed by MH by June 30, 2009, an independent benchmarking study of key performance metrics,... etc.
- Order 150/08; Directive 7
MH to undertake and file with the Board an Asset Condition Assessment Report by a date to be fixed by the Board after its review of the Terms of Reference... etc.
- Order 150/08; Directive 17
MH report to the Board.. as to whether there are greater global environmental benefits (GHG) and economic benefits to be achieved by exporting hydraulically-generated electricity than would be achieved by fuel switching... etc.
- Order 150/08; Directive 18
Various lower income directives.

In order to meet these requirements, considerable work demands will be placed on internal resources throughout the Corporation as many of the major directives require input and collaboration from a number of areas. In some cases the use of internal resources adds incremental dollars in that overtime must be scheduled to assure that attention is paid to regular workload as well as to responding to the many recent PUB directives. In other cases, the use of internal resources does not add incremental dollars, but defers other work requirements which may result in inefficiencies and overall higher costs. As well, many of the directives require funding for external services, including consulting resources which provide the necessary level of independence and expertise. Over time, as these regulatory requirements are maintained or increased, additional staff

may have to be added to a number of areas in the Corporation in order to meet the workload requirements on a consistent basis.

Although it has not been budgeted, and the cost implications have not become fully apparent, Manitoba Hydro expects that the current Electric GRA process will cost significantly more than previous processes. This is due to the addition of a major risk review component to the current proceeding, as well as to the additional complexities introduced by many recent PUB directives and Manitoba Hydro's responses to them. Also, it is noted that 15 years ago, it was common for an Electric GRA to be filed in late November and an interim, or even final PUB Order received by early April the following year. The length of proceedings has increased substantially since then. In 2007 Manitoba Hydro filed a GRA application on August 1 and did not receive an interim Board Order until late June, 2008. In the current proceeding, although three months have elapsed since the filing of the Application, Manitoba Hydro is still in process of responding to first round information requests. Fifteen years ago, at this point of elapsed time, Manitoba Hydro would be preparing or filing Rebuttal Evidence. Manitoba Hydro has determined that the number of first round information requests in this process has exceeded, by a significant margin, the total information requests in both rounds received during previous proceedings. Manitoba Hydro continues to file additional material on which it anticipates that there will be further first round information requests. It now appears unlikely that a hearing will be completed until sometime in the fall of 2010, so it may be more than a full year before a final Order is received in respect of this Application. For several departments within the corporation, providing the necessary input to these proceedings has caused regular work to be almost or completely suspended.

Environmental

The most significant drivers for recent and expected changes to the Corporation's environmental obligations include: increasing concern over climate change; enhanced stakeholder engagement in the planning stages of infrastructure development; government policy; industry standards; governance and risk mitigation requirements; the need for specialized skills sets; the continued movement to more integrated, predictive, preventive strategies.

The obligations may take the form of voluntary agreements; third-party verification; membership with associations that endorse more robust measurement and reporting; increased resource requirements for design, measurement and control of risk mitigation measures; changes in resource planning in response to government policy; increased

resources required for engagement in consultation processes on issues that have significant impact for our operations, particularly in the area of species and habitat protection; additions to existing legislation that requires additional monitoring.

Examples of additional environmental requirements include:

- Grand Rapids Fish Hatchery - Ongoing operational costs associated with the transfer of ownership to Manitoba Hydro of the Grand Rapids Fish Hatchery from Manitoba Water Stewardship. Estimated incremental cost impact is \$500 k.
- Sutherland Monitoring - Manitoba Hydro presented a report to the Technical Advisory Committee (TAC), which is comprised of City, Provincial and Federal regulatory agencies. The report recommended a proposed management plan for the 35 Sutherland site. If approved Manitoba Conservation will issue a Directors Order to Manitoba Hydro to implement the management plan. The implementation of the plan is forecast to commence in April 2010. Estimated cost impact is pending outcome of Director's Remedial Order.
- Air Emission Monitoring - Requirements rooted in the Environment Act Licences, Environment Canada Guidelines and US EPA Guidelines directly impact the thermal stations' ability to be in regulatory compliance. This initiative requires an additional EFT to monitor air emissions from all thermal generating units and schedule and oversee annual Relative Accuracy Test Audits for all continuous emission monitoring systems (CEMS) and annual speciated mercury source testing for Brandon Unit 5. Estimated incremental cost impact is \$100 k.
- Vegetation Management for Grand Rapids Spillway Channel - In recognition of the environmental impact of debris becoming dislodged in the Grand Rapids Spillway Channel and being carried into the Saskatchewan River and thus into Lake Winnipeg, a study was undertaken. The results indicated that the scope of the vegetation clearing at Grand Rapids required additional work to limit the debris making its way to Lake Winnipeg. This requirement will be an ongoing operational requirement and has been contracted to the Fisherman's Co-op who had the first right of refusal on brush clearing in this area. The agreement with the Grant Rapids Fisherman's Co-op was signed in August 2009 and will expire March 2015. Estimate incremental cost impact is \$100 k.

CAC/MSOS/MH I-17

Subject: OM&A Expense

Reference: Appendix 4.4, pages 3-10

- e) **Please provide the source data referenced on page 8 regarding weekly earnings in Canada.**

ANSWER:

Please go to the following link to see the information from the Statistics Canada website.

<http://www.statcan.gc.ca/daily-quotidien/091222/t091222b1-eng.htm>

CAC/MSOS/MH I-17

Subject: OM&A Expense

Reference: Appendix 4.4, pages 3-10

- f) Page 9 reports the impacts of recent investment losses on pension costs. Are these increased cost reported under “Benefits” in Schedule 4.5.2? For which years is the amortization included and how much is it annually?**

ANSWER:

Manitoba Hydro has forecast its pension costs to increase in 2010/11 by approximately \$2 million as a result of pension investment performance experience up to 2008/09 and forecasted for 2009/10.

The impact for years beyond 2010/11 could be influenced substantially by IFRS considerations and by future investment performance.

The pension cost increase for 2010/11 is reported under benefits in schedule 4.5.1 and has been subject to escalation only for 2011/12.

CAC/MSOS/MH I-17

Subject: OM&A Expense

Reference: Appendix 4.4, pages 3-10

- g) With respect to page 10, please provide the basis for the \$15 M general provision for the impact of IFRS.**

ANSWER:

Please see Manitoba Hydro's response to MIPUG/MH I-10(b).

CAC/MSOS/MH I-17

Subject: OM&A Expense

Reference: Appendix 4.4, pages 3-10

h) For both MH07-1 and MH08-1 please indicate what provision for IFRS was included, the year(s) impacted.

ANSWER:

MH07-1 had no provision for IFRS.

MH08-1 had a \$15 million provision for each year commencing with 2011/12. This provision was included in the depreciation and amortization category.

CAC/MSOS/MH I-18

Subject: OM&A Expense

Reference: Appendix 4.4, page 11-13

a) Pages 11-13 list a number of technology related initiatives that Manitoba Hydro indicates it will be pursuing to enhance productivity. For each project listed please provide:

- When the project will be undertaken/completed
- The cost of project
- The business case supporting the project. If not part of the business case, please also provide the expected annual cost savings and overall cost/benefit analysis for the project.

ANSWER:

IT STRATEGIES - CORPORATE PERSPECTIVE

Proposed Response to CAC/MSOS (MH) 1 - 18

(Unless otherwise stated all dollars are in thousands)

PROJECT NAME	START DATE	COMPLETION DATE	COST	NPV BENEFIT (based on a 10 year period)
Common Sales Interface (CSI)	2008 06	2011 08	\$1 531	\$1 692
Mobile Workforce Management (MWM)	2006 04	2011 11	\$11.3 million	\$13.2 million (based on estimated costs to completion)
Transmission GIS (TGIS)	2009 03	2010 06	\$1 907	\$645
Transmission Operations Data System (TODS)	2008 10	2010 10	\$1 984	\$1 927

Advanced Metering Initiative (AMI) Pilot

Please see Manitoba Hydro's response to CAC/MSOS/MH I-57(b)

Enterprise Asset Management System (EAM)

Start Date: The Enterprise Asset Management system (EAM) project is currently being planned and is tentatively scheduled to begin in late 2010 / early 2011 subject to approvals.

Completion Date: The project is forecast to take approximately two years to complete from start to finish.

Detail EAM project costs, benefits, justification and schedules will not be finalized until later this year.

CAC/MSOS/MH I-19

Subject: OM&A Expense

Reference: Appendix 4.4, pages 13-16

- a) Please provide a schedule that indicates how much of the year over year change in Wages and Salaries is due to: i) Net Changes in EFTS vs. ii) Changes in Salary – for each year from 2007/08 to 2011/12.

ANSWER:

Please refer to the following table.

	Actuals 2006/07	Actuals 2007/08	Actuals 2008/09	Forecast 2009/10	Forecast 2010/11	Forecast 2011/12
Wages & Salaries in 000's(Schedule 4.5.2)	\$ 344,701	\$ 359,249	\$ 380,031	\$ 411,832	\$ 415,215	\$ 424,765
Attributable to Change in EFTS*		\$ 4,189	\$ 11,752	\$ 20,682	\$ 2,896	\$ -
Attributable to Change in Salary		\$ 10,359	\$ 9,030	\$ 11,119	\$ 487	\$ 9,550
Change in Wages & Salaries		\$ 14,548	\$ 20,782	\$ 31,801	\$ 3,383	\$ 9,550

* assume an average salary/EFT

CAC/MSOS/MH I-19

Subject: OM&A Expense

Reference: Appendix 4.4, pages 13-16

- b) Page 14 indicates that OM&A for 2007/08 was “abnormally low”. Please explain why this was the case. Please also update Schedule to include 2006/07 EFTs and Labour & Benefit Costs per EFT.**

ANSWER:

OM&A costs for 2007/08 were “abnormally low” primarily as a result of the high number of staff vacancies. Please see CAC/MSOS/MH I-19(d) for further discussion.

Please see the following revised schedule for 2006/07 through 2011/12.

MANITOBA HYDRO
OPERATING, MAINTENANCE AND ADMINISTRATIVE COSTS BY COST ELEMENT

(000's)

	2006/07 Actual	2007/08 Actual	2008/09 Actual	2009/10 Forecast	2010/11 Forecast	2011/12 Forecast	Average Annual Compounded Growth % Inc/(Dec)
<i>Labour</i>							
Wages, Salaries	\$ 344,701	\$ 359,249	\$ 380,031	\$ 411,832	\$ 415,215	\$ 424,765	4.3
Overtime	38,896	41,781	45,890	47,248	48,061	49,166	4.8
Employee Benefits	73,636	76,807	83,671	85,872	93,035	95,175	5.3
Subtotal - Labour and Benefits	457,233	477,838	509,592	544,952	556,311	569,106	4.5
EFTs (Straight Time + Overtime)	6,007	6,090	6,312	6,648	6,704	6,704	2.2
Labour & Benefits per EFT	76	78	81	82	83	85	2.2
Employee Safety & Training	3,487	3,646	4,145	4,357	4,747	4,856	6.8
Travel	27,729	28,331	31,671	31,960	32,963	33,721	4.0
Motor Vehicle	19,731	22,423	24,125	22,967	23,114	23,646	3.7
Materials & Tools	25,414	27,824	29,338	25,762	26,178	26,780	1.1
Consulting & Professional Fees	8,498	7,503	9,137	10,593	10,904	11,155	5.6
Construction & Maintenance Services	13,711	15,938	18,000	21,489	21,785	22,286	10.2
Building & Property Services	24,697	25,740	28,685	20,506	20,671	21,146	(3.1)
Equipment Maintenance & Rentals	11,606	11,719	13,028	13,794	13,858	14,177	4.1
Consumer Services	4,316	4,651	5,230	5,572	5,683	5,814	6.1
Computer Services	2,622	1,131	858	682	696	712	(23.0)
Collection Costs	7,218	5,256	5,019	4,430	4,542	4,646	(8.4)
Customer & Public Relations	6,493	6,665	6,355	5,870	6,014	6,152	(1.1)
Sponsored Memberships	1,187	1,192	1,464	1,242	1,267	1,296	1.8
Office & Administration	14,939	14,427	14,538	15,326	15,703	15,857	1.2
Communication Systems	1,866	1,353	1,449	1,572	1,603	1,640	(2.6)
Research & Development Costs	3,251	2,979	3,059	4,029	4,110	4,205	5.3
Miscellaneous Expense	2,422	3,292	901	1,066	1,087	1,112	(14.4)
Contingency Planning	-	-	-	3,994	3,361	2,491	
Operating Expense Recovery	(20,570)	(23,314)	(21,519)	(16,462)	(16,497)	(16,670)	(4.1)
Total Costs	615,849	638,594	685,075	723,701	738,099	754,129	4.1
Capital Order Activities	(176,992)	(192,338)	(205,175)	(231,073)	(235,040)	(239,741)	6.3
CICA Accounting Changes*	-	-	5,000	7,000	7,000	7,000	
Provision for IFRS	-	-	-	-	-	15,000	
Capitalized Overhead	(61,887)	(67,289)	(66,198)	(67,964)	(69,021)	(70,447)	2.6
Operating and Administration Charged to Centra	(53,505)	(56,270)	(59,042)	(60,160)	(61,343)	(62,570)	3.2
OM&A Attributable to Electric Operations	\$ 323,465	\$ 322,697	\$ 359,660	\$ 371,504	\$ 379,695	\$ 403,370	4.5

* Other CICA Accounting Changes totalling \$4 million (beginning in 2009/10) are embedded within the Total Costs

CAC/MSOS/MH I-19

Subject: OM&A Expense

Reference: Appendix 4.4, pages 13-16

- c) **Please indicate the number of trainees and number of apprentices that are included annually in the EFTs reported for 2007/08 through 2011/12.**

ANSWER:

The trainee numbers for fiscal 2008 to fiscal 2012 are as follows:

	<u>Actual 2007/08</u>	<u>Actual 2008/09</u>	<u>Forecast 2009/10</u>	<u>Forecast 2010/11</u>	<u>Forecast 2011/12</u>
Trainees	426	524	565	588	588

CAC/MSOS/MH I-19

Subject: OM&A Expense

Reference: Appendix 4.4, pages 13-16

- d) Was there any particular event or cause the high number of vacancies in the 2007/08 base year (page 15).**

ANSWER:

The high number of vacancies in 2007/08 is due in part to difficulties in hiring qualified professional and trades personnel. Historically, Manitoba Hydro had been quite successful with a relatively passive recruitment and retention strategy, however during this time the competition in the labour market was strong. In addition, due to the demographics of Manitoba Hydro workforce, retirement levels were rising. In 2007 there were 170 retirements and at the beginning of 2008 there were over 700 employees eligible to retire, as indicated on page 6 of Appendix 4.4.

Several strategies and initiatives have been put in place over the past few years successfully reducing some of the vacancies. These include introduction of new trades trainee programs; increased emphasis on succession planning for key positions; enhanced employment partnerships with Aboriginal organizations and greater recruitment visibility at schools, universities and colleges.

CAC/MSOS/MH I-19

Subject: OM&A Expense

Reference: Appendix 4.4, pages 13-16

- e) **What was the reason for contracting out line locates within the City of Winnipeg (page 16)? In what year was the contracting out initiated and what was the incremental cost for Consumer Services for that year?**

ANSWER:

Line locates were contracted out primarily as a result of staff shortages within Manitoba Hydro. This was initiated in 2008/09 with an incremental cost for Consumer Services of \$774,000 for that year.

CAC/MSOS/MH I-19

Subject: OM&A Expense

Reference: Appendix 4.4, pages 13-16

- f) Is Manitoba Hydro Utility Services (MHUS) an affiliate/subsidiary of Manitoba Hydro? If yes, why is there no reference to it in the 2008/09 Annual Report (page 78).**

ANSWER:

Manitoba Hydro Utilities Services (MHUS) is a subsidiary of Manitoba. There is a reference to MHUS within the table on page 78 of the 2008/09 Annual Report.

CAC/MSOS/MH I-19

Subject: OM&A Expense

Reference: Appendix 4.4, pages 13-16

- g) The discussion on the subsequent pages identifies a number of areas where additional staff is being added to address anticipated attrition. Reference is also made to significant vacancies in 2007/08. Based on these factors why is overtime increasing by more than 4% per annum (twice the rate of escalation), when 2007/08 is used as the “base year”. With the aforementioned factors (e.g. filling of vacancies) one would have expected overtime to go down – not up.**

ANSWER:

Since 2007/08 the primary reasons for the increase in overtime costs are i) impacts of wage escalation including contract settlement and merit and ii) to meet schedule requirements and maintain in-service dates, where economically justifiable, on various generation and transmission capital projects including Wuskwatim, Kelsey Re-Runnering and Bipole III.

CAC/MSOS/MH I-20

Subject: OM&A Expense

Reference: Appendix 4.4, pages 17-36

- a) **Please provide more details regarding the new activities undertaken by Corporate Planning and Strategic Analysis that require a 100% increase in staff between 2007/08 and 2010/2011.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS I-131(b) for a description of the activities undertaken by the Corporate Planning and Strategic Analysis Business Unit.

Please see the response to PUB/MH I-34(b) for a continuity schedule of EFT's by Division. As can be derived from this response, the year-to-year change in EFT's for Corporate Planning and Strategic Analysis is as follows:

	ACT 2007/08 EFTs	ACT 2008/09 EFTs	APP 2009/10 EFTs	APP 2010/11 EFTs	APP 2011/12 EFTs
Year-to-Year Change (%)	-5.4%	3.9%	16.3%	63.9%	0.0%

CAC/MSOS/MH I-20

Subject: OM&A Expense

Reference: Appendix 4.4, pages 17-36

- b) A material portion of the increase in staff for Power Supply appears to be to support capital projects. Please indicate, for each year, the proportion of Power Supply OM&A costs that is capitalized.

ANSWER:

Please see the following table the portion of Power Supply OM&A costs that are capitalized.

**POWER SUPPLY
CAPITALIZED OM&A COSTS**

(000,000's)

	2007/08	2008/09	2009/10	2010/11	2011/12
	Actual	Actual	Forecast	Forecast	Forecast
OM&A	127.6	142.2	145.0	148.1	151.5
Capital Credits	41.3	45.4	59.2	60.8	61.6
Gross OM&A	168.9	187.6	204.2	208.9	213.0
Percent of Costs Capitalized	24.5%	24.2%	29.0%	29.1%	28.9%

CAC/MSOS/MH I-20

Subject: OM&A Expense

Reference: Appendix 4.4, pages 17-36

- c) **Please describe the new energy management initiatives for 2009/10 and 2010/11 that require 10 additions EFTs for industrial and commercial customers and 5 additional EFTs for residential customers (pages 33-34).**

ANSWER:

Overall increased staffing levels were primarily due to:

Affordable Energy Program – The Affordable Energy department was established in 2008/09 to allow Manitoba Hydro to take a more aggressive approach in promoting energy efficiency for lower income Manitobans, First Nation communities, and other vulnerable communities. This department focuses on outreach activities to meet the special needs of these communities through specifically targeted activities and programs, as well as joint initiatives through community support and advocacy organizations.

Customer Engineering Services – The Customer Engineering Services department provides Manitoba Hydro with expertise in energy management and enhanced business growth solutions. These solutions are customer focused towards improving operating and production problems in an energy efficient way and provides users value in the form of more competitive and sustainable operations. Market focus is inclusive of the industrial, commercial, residential and agricultural sectors. Some of the areas of focus in this year and the next are further proactive deployment of the enhanced performance optimization program for industrial and larger commercial customers including increased number of facility energy screening studies, compressed air, pump and fan system scoping studies, commercial building recommissioning initiatives, introduction of next round of new lighting technologies for buildings and pathways, emerging technology demonstration for lighting program measure assessments, and deployment of planned bio-energy program demonstration initiatives.

CAC/MSOS/MH I-20

Subject: OM&A Expense

Reference: Appendix 4.4, pages 17-36

- d) **For each of the Business Units, the explanation of the change in OM&A costs includes very few (if any) references to cost saving measures or productivity initiatives. For each Business Unit, please identify any cost savings/productivity measures undertaken and where/how their impact is reflected in the analysis.**

ANSWER:

All Business Units review OM&A costs to actively manage & control expenditures in accordance with approved budgets. As outlined in Appendix 4.4 (pg 10-12) Manitoba Hydro actively pursues a number of cost savings measures. Other measures to control OM&A costs and increase productivity include:

- Vacancy management including a review of job requirements and optimization opportunities;
- Organizational changes to strengthen workplace relations and productivity;
- Consolidation of administrative duties;
- Use of in-house versus external training facilities;
- Optimization of training schedules;
- Closer analysis and scrutiny of the need and alternatives for travel to northern Manitoba;
- Curtailment of discretionary overtime not related to safety, unit availability or the environment;
- Minimize use of external resources where practical
- Deferral of work that is low risk to reliability;
- Reduced discretionary spending where practical;
- Automation of processes

The impact of these measures is reflected in Manitoba Hydro's ability to hold the annual rates of OM&A increases¹ to 1.9% in 2009/10, 2.2% in 2010/11 and 1.3% in 2011/12 despite higher wage and benefit settlements and increased work requirements due to aging infrastructure, expanding customer base and environmental and regulatory changes.

¹ Annual rates are after adjustments for CICA accounting changes and expense reclassifications.

CAC/MSOS/MH I-21

Subject: Financial Expense

Reference: Tab 4, pages 14-16

- a) **Please explain what the “Corporate Allocation” in Schedule 4.6.0 is for and why the value is negative for the “actual” years but positive for the first two “forecast” years.**

ANSWER:

Corporate allocation represents the annual acquisition cost of Centra Gas’ interest and provincial guarantee fee on the acquisition debt, and the amortization of the fair market value adjustment on the original Centra Gas long term debentures.

Please see response to PUB/MH I-35(c) for the answer to the second part of the question.

CAC/MSOS/MH I-21

Subject: Financial Expense

Reference: Tab 4, pages 14-16

- b) Please provide a schedule that sets out for each of the years (starting with 2008/09) the outstanding debt issues along with the interest rate, terms and annual expense associated with each issue that contribute to the reported Gross Interest Expense.

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-21(c).

CAC/MSOS/MH I-21

Subject: Financial Expense

Reference: Tab 4, pages 14-16

- c) **Based on the information provided in part (b), please provide the calculations supporting the average interest rates reported on page 14.**

ANSWER:

The attached schedule reconciles to the total interest on short term & long term debt expense shown in Schedule 4.6.0. This total annual expense is divided by the CAD principal equivalent in order to derive the weighted average interest rates. Note that the derived weighted average interest rates for the 2009/10 and 2010/11 forecast years have been amended (from 6.79% to 6.76% in 2009/10, and from 6.72% to 6.83% in 2010/11) to correct the summation of CAD principal equivalent in those years.

Manitoba Hydro
Calculation of Weighted Average Interest Rate
On Short and Long Term Debt
For the Year Ended March 31, 2008
CAC/MSOS/MH I - 21 (b) and (c)

Debt Series	Currency	Coupon Rate	Maturity Date	Principal Par Value CAD	Principal Par Value USD	Principal Equivalent (CAD Pn)	Interest
			(Note 1)	\$CAD Millions	\$USD Millions	\$CAD Millions (Note 2)	\$CAD Millions
HB8-FL	CAD	2.600%	15-Jun-07	10.2		2.1	0.1
HB8-5FX	CAD	5.500%	17-Jun-07	260.1		60.1	3.2
4X	CAD	6.375%	27-Jun-07	2.8		0.7	0.0
CO52	CAD	4.350%	29-Oct-07	30.0		17.3	0.8
CO61	CAD	3 BA + 0.03%	23-Mar-08	30.0		30.0	1.4
EF	USD	5.458%	1-Oct-08		200.0	207.5	11.4
EF-2	USD	6.543%	1-Oct-08		46.5	47.7	3.1
HB9-3FX	CAD	4.150%	15-Jun-09	29.0		29.1	1.2
4H	CAD	10.000%	14-Dec-09	14.5		14.5	1.4
EM-1	CAD	3 BA + 0.18375%	22-Feb-10	66.5		66.5	3.2
EM-3	CAD	6.350%	22-Feb-10	50.0		50.0	3.2
EM-4	CAD	6.350%	22-Feb-10	25.0		25.0	1.6
EM	USD	3 LIBOR + 0.0974%	22-Feb-10		50.0	52.8	2.9
EM-6	USD	3 LIBOR + 3.7129%	22-Feb-10		100.0	107.6	9.7
EM-5	USD	5.973%	22-Feb-10		97.1	104.5	6.3
FD2	CAD	3 BA + 0.0469%	12-Apr-10	4.0		4.0	0.2
HB10-3FX	CAD	4.600%	15-Jun-10	85.1		65.3	3.0
CO94	USD	6 LIBOR - 0.155%	22-Feb-11		200.0	21.9	0.6
HB9-FL	CAD	4.200%	15-Jun-11	34.4		43.2	1.8
HB9-5FX	CAD	4.350%	15-Jun-11	15.0		14.8	0.7
HB10-FL	CAD	4.200%	15-Jun-12	34.5		27.4	1.1
HB10-5FX	CAD	4.650%	15-Jun-12	15.4		12.2	0.6
ER2	CAD	3 BA +0.192%	3-Dec-12	50.0		50.0	2.5
4I	CAD	9.375%	11-Feb-13	10.0		10.0	0.9
5A	CAD	5.750%	30-Jun-13	40.0		28.8	1.7
5B	CAD	5.750%	30-Jun-13	6.9		4.8	0.3
DE	USD	8.120%	22-Jul-13		188.4	200.4	16.3
EX	CAD	5.460%	16-Sep-13	200.0		200.0	10.9
EZ3	CAD	6 LIBOR - 0.0645%	3-Dec-13	208.3		208.3	8.2
EZ4	CAD	3 BA + 0.0925%	3-Dec-13	9.5		9.5	0.4
4J	CAD	8.000%	20-Jan-14	15.0		15.0	1.2
EZ	USD	5.989%	21-Jan-14		150.0	158.6	9.6
CO66	CAD	4.610%	15-Jun-14	100.0		19.5	0.9
FA	CAD	4.687%	16-Jun-14	150.0		150.0	7.0
4K	CAD	9.125%	12-May-15	12.0		12.0	1.1
EY	CAD	5.490%	3-Dec-15	200.0		200.0	11.0
EY2	CAD	3 BA + 0.0455%	3-Dec-15	50.0		50.0	2.3
AZ	CAD	3 BA + 1.08%	17-Jul-16	200.6		200.6	11.4
ER1	CAD	7.467%	3-Sep-17	200.0		200.0	14.9
CO11	CAD	7.525%	22-Sep-17	55.5		55.5	4.2
4L	CAD	6.250%	17-Nov-17	20.0		20.0	1.2
BM	CAD	3 BA + 3.29%	15-Jan-18	255.0		255.0	20.1
ED-2	CAD	7.223%	2-Jun-18	284.1		284.1	20.5
ED-3	CAD	7.333%	2-Jun-18	92.7		92.7	6.8
EE	USD	9.500%	15-Sep-18		200.0	205.7	19.6
BU	USD	9.625%	1-Dec-18		200.0	205.9	19.9
3V	CAD	10.000%	30-Dec-18	3.5		3.5	0.4
3W	CAD	10.000%	30-Dec-18	2.0		2.0	0.2
3X	CAD	10.000%	30-Dec-18	5.0		5.0	0.5
3Y	CAD	10.000%	30-Dec-18	28.0		28.0	2.8
CO77-2	CAD	4.455%	11-Feb-20	100.0		80.5	3.6
CO77-3	CAD	3 BA - 0.175%	11-Feb-20	50.0		40.3	1.8
EM-2	USD	9.398%	15-Mar-20		150.0	158.4	14.9
CO32	USD	6.806%	2-Oct-20		47.0	49.2	3.4
FD	USD	6.766%	2-Oct-20		203.1	208.3	14.1
CO	USD	8.875%	15-Sep-21		300.0	309.8	27.6
4A	CAD	9.100%	31-Dec-21	3.5		3.5	0.3
FH-1	USD	6.405%	1-Feb-22		250.0	266.2	17.1

Manitoba Hydro
Calculation of Weighted Average Interest Rate
On Short and Long Term Debt
For the Year Ended March 31, 2008
CAC/MSOS/MH I - 21 (b) and (c)

Debt Series	Currency	Coupon Rate	Maturity Date	Principal Par Value	Principal Par Value	Principal Equivalent	Interest
				CAD	USD	(CAD Pn)	
				\$CAD Millions	\$USD Millions	\$CAD Millions	\$CAD Millions
				(Note 1)		(Note 2)	
FH-2	USD	6.406%	1-Feb-22		100.0	106.5	6.8
FH-3	USD	6 LIBOR + 0.1295%	16-Sep-22		150.0	154.9	8.6
DT	CAD	7.750%	22-Dec-25	170.0		170.0	13.2
DT-2	CAD	7.750%	22-Dec-25	130.0		130.0	7.6
4M	CAD	5.900%	2-Feb-29	30.0		30.0	1.8
4N	CAD	5.900%	2-Feb-29	30.0		30.0	1.8
EL-1	CAD	6.250%	1-Sep-29	125.0		125.0	7.8
EL-2	CAD	6.305%	1-Sep-29	50.0		50.0	3.2
EL-3	CAD	6.350%	1-Sep-29	75.0		75.0	4.8
CL	CAD	10.500%	5-Mar-31	599.9		599.9	63.0
4B	CAD	5.840%	1-Apr-31	3.4		3.4	0.2
4C	CAD	5.840%	1-Apr-31	1.4		1.4	0.1
4Y	CAD	5.650%	1-May-31	4.1		4.1	0.2
FD1	CAD	5.289%	12-Apr-35	175.0		175.0	9.3
CO52X	CAD	6.300%	29-Oct-35	30.0		12.7	0.8
EZ2	CAD	4.774%	3-Dec-35	54.0		54.0	2.6
EZ5	CAD	4.774%	3-Dec-35	46.0		46.0	2.2
FA-4	CAD	4.505%	5-Mar-37	50.0		50.0	2.3
FJ	CAD	5.104%	22-Sep-37	250.0		137.7	7.0
PB-2	CAD	4.600%	5-Mar-38	300.0		251.5	11.6
CO40	CAD	3 BA + 0.179%	5-Mar-42	50.0		50.0	2.4
CO68	CAD	4.565%	5-Mar-44	50.0		50.0	2.3
4Z	CAD	7.100%	9-Jun-57	7.0		7.0	0.5
Sub Total - Pn and Interest on Long Term Debt						7,309.4	496.7
Short Term Notes and Bank Overdraft						88.3	3.8
Interest on Temporary Investments						(65.8)	(2.8)
Foreign Exchange Gains/ Losses, and Other Interest Income/ Adjustments							2.9
Gross Interest (expense as per Schedule 4.6.0)						7,332.0	500.5
Provincial Guarantee Fee (expense as per Schedule 4.6.0)							69.9
Amortization of (Premiums) Discounts and Transaction Costs (expense as per Schedule 4.6.0)							(11.1)
Intercompany Interest Receivable (expense as per Schedule 4.6.0)						(362.3)	(19.8)
Total Pn and Interest on Short Term and Long Term Debt (expense as per Schedule 4.6.0)						6,969.7	539.5

Weighted Average Interest Rate on Short Term and Long Term Debt

7.74%

Note 1 The Maturity Date represents the maturity date of a physical debt issue or the maturity date of an interest rate derivative, whichever is later, in order to present the maturity of Manitoba Hydro's financial obligation.

Note 2 The Principal Equivalent (CAD Pn) represents the annualized amount of principal outstanding based on the number of days that the debt is outstanding during the year, and for USD issues also includes the impact of the foreign exchange rate used to record CAD equivalent periodic expenses.

Manitoba Hydro
Calculation of Weighted Average Interest Rate
On Short and Long Term Debt
For the Year Ended March 31, 2009
CAC/MSOS/MH I - 21 (b) and (c)

Debt Series	Currency	Coupon Rate	Maturity Date	Principal Par Value	Principal Par Value	Principal Equivalent	Interest
				CAD	USD	(CAD Pn)	
				\$CAD Millions	\$USD Millions	\$CAD Millions	\$CAD Millions
				(Note 1)		(Note 2)	
EF	USD	5.458%	1-Oct-08		200.0	100.1	5.4
EF-2	USD	6.543%	1-Oct-08		46.5	23.3	1.5
CO61	CAD	3 BA + 0.03%	23-Mar-09	30.0		29.3	0.9
HB9-3FX	CAD	4.150%	15-Jun-09	28.9		28.9	1.2
4H	CAD	10.000%	14-Dec-09	14.5		14.5	1.4
EM-1	CAD	3 BA + 0.18375%	22-Feb-10	66.5		66.5	2.0
EM-3	CAD	6.350%	22-Feb-10	50.0		50.0	3.2
EM-4	CAD	6.350%	22-Feb-10	25.0		25.0	1.6
EM	USD	3 LIBOR + 0.0974%	22-Feb-10		50.0	52.0	1.3
EM-6	USD	3 LIBOR + 3.7129%	22-Feb-10		100.0	104.0	6.4
EM-5	USD	5.973%	22-Feb-10		97.1	101.7	6.1
FD2	CAD	3 BA + 0.0469%	12-Apr-10	4.0		4.0	0.1
HB10-3FX	CAD	4.600%	15-Jun-10	85.0		85.1	3.9
C094	USD	6 LIBOR - 0.155%	22-Feb-11		200.0	221.4	6.2
HB9-5FX	CAD	4.350%	15-Jun-11	14.9		15.0	0.7
HB9-FL	CAD	2.400%	15-Jun-11	12.8		17.6	0.5
HB10-5FX	CAD	4.650%	15-Jun-12	15.4		15.4	0.7
HB10-FL	CAD	2.400%	15-Jun-12	8.1		13.6	0.5
ER2	CAD	3 BA + 0.192%	3-Dec-12	50.0		50.0	1.5
4I	CAD	9.375%	11-Feb-13	10.0		10.0	0.9
5A	CAD	5.750%	30-Jun-13	40.0		40.0	2.3
5B	CAD	5.750%	30-Jun-13	6.4		5.9	0.3
DE	USD	8.120%	22-Jul-13		188.4	191.9	15.5
EX	CAD	5.460%	16-Sep-13	200.0		133.7	7.3
C101	CAD	5.744%	16-Sep-13	200.0		71.8	3.9
EZ3	CAD	6 LIBOR - 0.0645%	3-Dec-13	208.3		208.3	4.9
EZ4	CAD	3 BA + 0.0925%	3-Dec-13	9.5		9.5	0.3
4J	CAD	8.000%	20-Jan-14	15.0		15.0	1.2
EZ	USD	5.989%	21-Jan-14		150.0	152.8	9.1
FA	CAD	4.687%	16-Jun-14	150.0		150.0	7.0
4K	CAD	9.125%	12-May-15	12.0		12.0	1.1
EY	CAD	5.490%	3-Dec-15	200.0		200.0	11.0
EY2	CAD	3 BA + 0.0455%	3-Dec-15	50.0		50.0	1.4
AZ	CAD	3 BA + 1.08%	17-Jul-16	200.6		200.6	8.3
ER1	CAD	7.467%	3-Sep-17	200.0		200.0	14.9
C011	CAD	7.525%	22-Sep-17	55.5		55.5	4.2
4L	CAD	6.250%	17-Nov-17	20.0		20.0	1.2
BM	CAD	3 BA + 3.29%	15-Jan-18	255.0		255.0	16.0
ED-2	CAD	7.223%	2-Jun-18	284.1		48.3	3.5
ED-3	CAD	7.333%	2-Jun-18	92.7		15.7	1.1
FC-3	CAD	7.169%	2-Jun-18	200.0		172.1	12.1
C097-1	CAD	7.123%	2-Jun-18	100.0		83.0	5.9
C097-2	CAD	7.233%	2-Jun-18	100.0		83.0	6.0
EE	USD	9.500%	15-Sep-18		200.0	204.3	19.3
BU	USD	9.625%	1-Dec-18		200.0	201.9	19.4
3V	CAD	10.000%	30-Dec-18	3.5		3.5	0.4
3W	CAD	10.000%	30-Dec-18	2.0		2.0	0.2
3X	CAD	10.000%	30-Dec-18	5.0		5.0	0.5
3Y	CAD	10.000%	30-Dec-18	2.0		12.7	1.3
CO77-2	CAD	4.455%	11-Feb-20	100.0		100.0	4.4
CO77-3	CAD	3 BA - 0.175%	11-Feb-20	50.0		50.0	1.3
EM-2	USD	9.398%	15-Mar-20		150.0	156.2	14.6
CO32	USD	6.806%	2-Oct-20		47.0	48.3	3.3
FD	USD	6.766%	2-Oct-20		203.1	208.6	14.1
CO	USD	8.875%	15-Sep-21		300.0	308.8	27.2
4A	CAD	9.100%	31-Dec-21	3.5		3.5	0.3
FH-1	USD	6.405%	1-Feb-22		250.0	261.2	16.7
FH-2	USD	6.406%	1-Feb-22		100.0	104.5	6.7
FH-3	USD	6 LIBOR + 0.1295%	16-Sep-22		150.0	154.9	4.7
DT	CAD	7.750%	22-Dec-25	170.0		170.0	13.2
DT-2	CAD	7.750%	22-Dec-25	130.0		130.0	7.3
4M	CAD	5.900%	2-Feb-29	30.0		30.0	1.8
4N	CAD	5.900%	2-Feb-29	30.0		30.0	1.8

Manitoba Hydro
Calculation of Weighted Average Interest Rate
On Short and Long Term Debt
For the Year Ended March 31, 2009
CAC/MSOS/MH I - 21 (b) and (c)

Debt Series	Currency	Coupon Rate	Maturity Date (Note 1)	Principal Par Value	Principal Par Value	Principal Equivalent	Interest \$CAD Millions
				CAD \$CAD Millions	USD \$USD Millions	(CAD Pn) \$CAD Millions (Note 2)	
EL-1	CAD	6.250%	1-Sep-29	125.0		125.0	7.8
EL-2	CAD	6.305%	1-Sep-29	50.0		50.0	3.2
EL-3	CAD	6.350%	1-Sep-29	75.0		75.0	4.8
CL	CAD	10.500%	5-Mar-31	599.9		599.9	63.0
4B	CAD	5.840%	1-Apr-31	3.4		3.4	0.2
4C	CAD	5.840%	1-Apr-31	1.4		1.4	0.1
4Y	CAD	5.650%	1-May-31	4.1		4.1	0.2
FD1	CAD	5.289%	12-Apr-35	175.0		175.0	9.2
CO52X	CAD	6.300%	29-Oct-35	30.0		30.0	1.9
EZ2	CAD	4.774%	3-Dec-35	54.0		54.0	2.6
EZ5	CAD	4.774%	3-Dec-35	46.0		46.0	2.2
FA-4	CAD	4.505%	5-Mar-37	50.0		50.0	2.2
FJ	CAD	5.104%	22-Sep-37	250.0		250.0	12.8
PB-2	CAD	4.600%	5-Mar-38	300.0		300.0	13.8
C099-1	CAD	3.251%	1-Dec-38	50.0		26.8	1.1
C099-2	CAD	3.251%	1-Dec-38	25.0		13.4	0.6
C099-3A	CAD	3.251%	1-Dec-38	25.0		13.4	0.6
C099-3B	CAD	3.251%	1-Dec-38	15.0		8.1	0.3
C100-1	CAD	4.707%	1-Dec-38	85.0		34.7	1.6
C100-2	CAD	4.637%	1-Dec-38	100.0		40.8	1.9
C102	CAD	4.988%	1-Mar-39	100.0		20.8	0.6
CO40	CAD	3 BA + 0.179%	5-Mar-42	50.0		50.0	1.5
CO68	CAD	4.565%	5-Mar-44	50.0		50.0	2.3
4Z	CAD	7.100%	9-Jun-57	7.0		7.0	0.5
Sub Total - Pn and Interest on Long Term Debt						7,615.5	477.7
Short Term Notes and Bank Overdraft						67.6	1.1
Interest on Temporary Investments						(144.1)	(2.4)
Foreign Exchange Gains/ Losses, and Other Interest Income/ Adjustments							(7.7)
Gross Interest (expense as per Schedule 4.6.0)						7,538.9	468.7
Provincial Guarantee Fee (expense as per Schedule 4.6.0)							70.4
Amortization of (Premiums) Discounts and Transaction Costs (expense as per Schedule 4.6.0)							(11.6)
Intercompany Interest Receivable (expense as per Schedule 4.6.0)						(388.8)	(18.2)
Total Pn and Interest on Short Term and Long Term Debt (expense as per Schedule 4.6.0)						7,150.2	509.3

Weighted Average Interest Rate on Short Term and Long Term Debt

7.12%

Note 1 The Maturity Date represents the maturity date of a physical debt issue or the maturity date of an interest rate derivative, whichever is later, in order to present the maturity of Manitoba Hydro's financial obligation.

Note 2 The Principal Equivalent (CAD Pn) represents the annualized amount of principal outstanding based on the number of days that the debt is outstanding during the year, and for USD issues also includes the impact of the foreign exchange rate used to record CAD equivalent periodic expenses.

Manitoba Hydro
Calculation of Weighted Average Interest Rate
On Short and Long Term Debt
For the Year Ended March 31, 2010
CAC/MSOS/MH I - 21 (b) and (c)

Debt Series	Currency	Coupon Rate	Maturity Date (Note 1)	Principal Par Value	Principal Par Value	Principal Equivalent	Interest \$CAD Millions
				CAD \$CAD Millions	USD \$USD Millions	(CAD Pn) \$CAD Millions (Note 2)	
HB9-3FX	CAD	4.150%	15-Jun-09	28.9		4.8	0.2
4H	CAD	10.000%	14-Dec-09	14.5		10.2	1.0
EM-1	CAD	3 BA +0.18375%	22-Feb-10	66.5		59.6	0.4
EM-3	CAD	6.350%	22-Feb-10	50.0		44.8	2.8
EM-4	CAD	6.350%	22-Feb-10	25.0		22.4	1.4
EM	USD	3 LIBOR + 0.0974%	22-Feb-10		50.0	49.9	0.5
EM-6	USD	3 LIBOR + 3.7129%	22-Feb-10		100.0	99.8	4.5
EM-5	USD	5.973%	22-Feb-10		97.1	96.9	5.8
FD2	CAD	3 BA + 0.0469%	12-Apr-10	4.0		4.0	0.0
HB10-3FX	CAD	4.600%	15-Jun-10	84.6		84.8	3.9
C094	USD	6 LIBOR - 0.155%	22-Feb-11		200.0	222.6	2.4
HB9-FL	CAD	1.000%	15-Jun-11	10.7		11.1	0.1
HB9-5FX	CAD	4.350%	15-Jun-11	14.9		14.9	0.7
HB10-FL	CAD	1.000%	15-Jun-12	6.8		7.1	0.1
HB10-5FX	CAD	4.650%	15-Jun-12	15.3		15.4	0.7
C107	CAD	3 BA + 0.40%	4-Sep-12	100.0		83.0	0.7
ER2	CAD	3 BA + 0.192%	3-Dec-12	50.0		50.0	0.4
4I	CAD	9.375%	11-Feb-13	10.0		10.0	0.9
5A	CAD	5.750%	30-Jun-13	40.0		40.0	2.3
5B	CAD	5.750%	30-Jun-13	4.8		4.8	0.3
DE	USD	8.120%	22-Jul-13		188.4	209.7	16.8
C101	CAD	5.744%	16-Sep-13	200.0		200.0	11.5
EZ4	CAD	3 BA + 0.0925%	3-Dec-13	9.5		9.5	0.1
EZ3	CAD	6 LIBOR - 0.0645%	3-Dec-13	208.3		208.3	2.2
4J	CAD	8.000%	20-Jan-14	15.0		15.0	1.2
EZ	USD	5.989%	21-Jan-14		150.0	167.0	9.8
FM-4	CAD	3 BA + 0.484%	1-Sep-14	100.0		57.5	0.6
4K	CAD	9.125%	12-May-15	12.0		12.0	1.1
EY	CAD	5.490%	3-Dec-15	200.0		200.0	11.0
EY2	CAD	3 BA + 0.0455%	3-Dec-15	50.0		50.0	0.3
AZ	CAD	3 BA + 1.08%	17-Jul-16	200.6		200.6	3.5
ER1	CAD	7.467%	3-Sep-17	200.0		200.0	14.9
C011	CAD	7.525%	22-Sep-17	55.5		55.5	4.2
4L	CAD	6.250%	17-Nov-17	20.0		20.0	1.2
BM	CAD	3 BA + 3.29%	15-Jan-18	255.0		255.0	10.1
FC-3	CAD	7.169%	2-Jun-18	200.0		200.0	14.3
C097-1	CAD	7.123%	2-Jun-18	100.0		100.0	7.1
C097-2	CAD	7.233%	2-Jun-18	100.0		100.0	7.2
EE	USD	9.500%	15-Sep-18		200.0	222.6	21.2
BU	USD	9.625%	1-Dec-18		200.0	222.6	21.2
3V	CAD	10.000%	30-Dec-18	3.5		3.5	0.4
3W	CAD	10.000%	30-Dec-18	2.0		2.0	0.2
3X	CAD	10.000%	30-Dec-18	5.0		5.0	0.5
3Y	CAD	10.000%	30-Dec-18	2.0		2.0	0.2
CO77-2	CAD	4.455%	11-Feb-20	100.0		100.0	4.5
CO77-3	CAD	3 BA - 0.175%	11-Feb-20	50.0		50.0	0.2
EM-2	USD	5.793%	15-Mar-20		150.0	167.0	15.1
CO32	USD	6.806%	2-Oct-20		47.0	52.3	3.6
FD	USD	6.766%	2-Oct-20		203.1	226.0	15.3
CO	USD	8.875%	15-Sep-21		300.0	334.0	29.6
4A	CAD	9.100%	31-Dec-21	3.5		3.5	0.3
FH-1	USD	6.405%	1-Feb-22		250.0	278.3	17.9
FH-2	USD	6.406%	1-Feb-22		100.0	111.3	7.2
FH-3	USD	6 LIBOR + 0.1295%	16-Sep-22		150.0	167.0	2.3
DT	CAD	7.750%	22-Dec-25	170.0		170.0	13.2
DT-2	CAD	7.750%	22-Dec-25	130.0		130.0	8.0
4M	CAD	5.900%	2-Feb-29	30.0		30.0	1.8
4N	CAD	5.900%	2-Feb-29	30.0		30.0	1.8
EL-1	CAD	6.250%	1-Sep-29	125.0		52.4	3.3
EL-2	CAD	6.305%	1-Sep-29	50.0		21.0	1.3
EL-3	CAD	6.350%	1-Sep-29	75.0		31.4	2.0
C108	CAD	6.150%	1-Sep-29	100.0		58.1	3.6
FM-1	CAD	6.634%	1-Sep-29	25.0		14.5	1.0
FM-2	CAD	6.734%	1-Sep-29	75.0		43.6	2.9
FM-3	CAD	6.689%	1-Sep-29	50.0		29.0	1.9

Manitoba Hydro
Calculation of Weighted Average Interest Rate
On Short and Long Term Debt
For the Year Ended March 31, 2010
CAC/MSOS/MH I - 21 (b) and (c)

Debt Series	Currency	Coupon Rate	Maturity Date	Principal Par Value	Principal Par Value	Principal Equivalent	Interest
				CAD	USD	(CAD Pn)	
				\$CAD Millions	\$USD Millions	\$CAD Millions	\$CAD Millions
				(Note 1)			
CL	CAD	10.500%	5-Mar-31	599.9		599.9	63.0
4B	CAD	5.840%	1-Apr-31	3.5		3.5	0.2
4C	CAD	5.840%	1-Apr-31	1.4		1.4	0.1
4Y	CAD	5.650%	1-May-31	4.2		4.2	0.2
FD1	CAD	5.289%	12-Apr-35	175.0		175.0	9.3
CO52X	CAD	6.300%	29-Oct-35	30.0		30.0	1.9
EZ2	CAD	4.774%	3-Dec-35	54.0		54.0	2.6
EZ5	CAD	4.774%	3-Dec-35	46.0		46.0	2.2
FA-4	CAD	4.505%	5-Mar-37	50.0		50.0	2.3
FA	CAD	4.687%	16-Jun-37	150.0		150.0	7.0
FJ	CAD	5.104%	22-Sep-37	250.0		250.0	12.8
PB-2	CAD	4.600%	5-Mar-38	300.0		300.0	13.8
C099-1	CAD	4.771%	1-Dec-38	50.0		50.0	2.4
C099-2	CAD	4.758%	1-Dec-38	25.0		25.0	1.2
C099-3A	CAD	4.758%	1-Dec-38	25.0		25.0	1.2
C099-3B	CAD	4.770%	1-Dec-38	15.0		15.0	0.7
C100-1	CAD	4.707%	1-Dec-38	85.0		85.0	4.0
C100-2	CAD	4.637%	1-Dec-38	100.0		100.0	4.6
C102	CAD	4.988%	1-Mar-39	100.0		100.0	5.0
NEW FEB 2010	CAD	4.600%	28-Feb-40	200.0		17.0	0.8
FK	CAD	4.650%	5-Mar-40	300.0		249.0	11.6
NEW MAR 2010	CAD	4.600%	31-Mar-40	200.0		-	
CO40	CAD	3 BA + 0.179%	5-Mar-42	50.0		50.0	0.4
CO68	CAD	4.565%	5-Mar-44	50.0		50.0	2.3
4Z	CAD	7.100%	9-Jun-57	7.0		7.0	0.5
Sub Total - Pn and Interest on Long Term Debt						8,190.1	476.5
Short Term Notes and Bank Overdraft						(85.4)	0.1
Interest on Temporary Investments						17.8	(0.2)
Foreign Exchange Gains/ Losses, and Other Interest Income/ Adjustments							(0.7)
Gross Interest (expense as per Schedule 4.6.0)						8,122.5	475.8
Provincial Guarantee Fee (expense as per Schedule 4.6.0)							72.3
Amortization of (Premiums) Discounts and Transaction Costs (expense as per Schedule 4.6.0)							(10.5)
Intercompany Interest Receivable (expense as per Schedule 4.6.0)						(416.2)	(16.4)
Total Pn and Interest on Short Term and Long Term Debt (expense as per Schedule 4.6.0)						7,706.3	521.2

Weighted Average Interest Rate on Short Term and Long Term Debt

6.76%

Note 1 The Maturity Date represents the maturity date of a physical debt issue or the maturity date of an interest rate derivative, whichever is later, in order to present the maturity of Manitoba Hydro's financial obligation.

Note 2 The Principal Equivalent (CAD Pn) represents the annualized amount of principal outstanding based on the number of days that the debt is outstanding during the year, and for USD issues also includes the impact of the foreign exchange rate used to record CAD equivalent periodic expenses.

Manitoba Hydro
Calculation of Weighted Average Interest Rate
On Short and Long Term Debt
For the Year Ended March 31, 2011
CAC/MSOS/MH I - 21 (b) and (c)

Debt Series	Currency	Coupon Rate	Maturity Date	Principal	Principal	Principal	Interest
				Par Value CAD \$CAD Millions	Par Value USD \$USD Millions	Equivalent (CAD Pn) \$CAD Millions (Note 2)	
			(Note 1)				
FD2	CAD	3 BA + 0.0469%	12-Apr-10	4.0		0.1	0.0
HB10-3FX	CAD	4.600%	15-Jun-10	84.6		17.6	0.8
C094	USD	6 LIBOR - 0.155%	22-Feb-11		200.0	191.7	2.1
HB9-FL	CAD	1.400%	15-Jun-11	10.7		10.8	0.1
HB9-5FX	CAD	4.350%	15-Jun-11	14.9		14.9	0.7
HB10-FL	CAD	1.400%	15-Jun-12	6.8		6.8	0.1
HB10-5FX	CAD	4.650%	15-Jun-12	15.3		15.3	0.8
C107	CAD	3 BA + 0.40%	4-Sep-12	100.0		100.0	1.6
ER2	CAD	3 BA + 0.192%	3-Dec-12	50.0		50.0	0.7
4I	CAD	9.375%	11-Feb-13	10.0		10.0	0.9
5A	CAD	5.750%	30-Jun-13	40.0		40.0	2.3
5B	CAD	5.750%	30-Jun-13	4.8		4.8	0.3
DE	USD	8.120%	22-Jul-13		188.4	201.6	16.4
C101	CAD	5.744%	16-Sep-13	200.0		200.0	11.5
EZ3	CAD	6 LIBOR - 0.0645%	3-Dec-13	208.3		208.3	2.2
EZ4	CAD	3 BA + 0.0925%	3-Dec-13	9.5		9.5	0.1
4J	CAD	8.000%	20-Jan-14	15.0		15.0	1.2
EZ	USD	5.989%	21-Jan-14		150.0	160.5	9.6
FM-4	CAD	3 BA + 0.484%	1-Sep-14	100.0		100.0	1.8
4K	CAD	9.125%	12-May-15	12.0		12.0	1.1
EY	CAD	5.490%	3-Dec-15	200.0		200.0	11.0
EY2	CAD	3 BA + 0.0455%	3-Dec-15	50.0		50.0	0.6
AZ	CAD	3 BA + 1.08%	17-Jul-16	200.6		200.6	5.2
ER1	CAD	7.467%	3-Sep-17	200.0		200.0	14.9
C011	CAD	7.525%	22-Sep-17	55.5		55.5	4.2
4L	CAD	6.250%	17-Nov-17	20.0		20.0	1.3
BM	CAD	3 BA + 3.29%	15-Jan-18	255.0		255.0	12.2
FC-3	CAD	7.169%	2-Jun-18	200.0		200.0	14.3
C097-1	CAD	7.123%	2-Jun-18	100.0		100.0	7.1
C097-2	CAD	7.233%	2-Jun-18	100.0		100.0	7.2
EE	USD	9.500%	15-Sep-18		200.0	214.0	20.3
BU	USD	9.625%	1-Dec-18		200.0	214.0	20.6
3V	CAD	10.000%	30-Dec-18	3.5		3.5	0.4
3W	CAD	10.000%	30-Dec-18	2.0		2.0	0.2
3X	CAD	10.000%	30-Dec-18	5.0		5.0	0.5
3Y	CAD	10.000%	30-Dec-18	2.0		2.0	0.2
CO77-2	CAD	4.455%	11-Feb-20	100.0		100.0	4.5
CO77-3	CAD	3 BA - 0.175%	11-Feb-20	50.0		50.0	0.6
EM-2	USD	5.793%	15-Mar-20		150.0	160.5	9.3
CO32	USD	6.806%	2-Oct-20		47.0	50.2	3.4
FD	USD	6.766%	2-Oct-20		203.1	217.3	14.7
CO	USD	8.875%	15-Sep-21		300.0	321.0	28.5
4A	CAD	9.100%	31-Dec-21	3.5		3.5	0.3
FH-1	USD	6.405%	1-Feb-22		250.0	267.5	17.1
FH-2	USD	6.406%	1-Feb-22		100.0	107.0	6.9
FH-3	USD	6 LIBOR + 0.1295%	16-Sep-22		150.0	160.5	2.2
DT	CAD	7.750%	22-Dec-25	170.0		170.0	13.2
DT-2	CAD	7.750%	22-Dec-25	130.0		130.0	7.8
4M	CAD	5.900%	2-Feb-29	30.0		30.0	1.8
4N	CAD	5.900%	2-Feb-29	30.0		30.0	1.8
C108	CAD	6.150%	1-Sep-29	100.0		100.0	6.2
FM-1	CAD	6.634%	1-Sep-29	25.0		25.0	1.7
FM-2	CAD	6.734%	1-Sep-29	75.0		75.0	5.1
FM-3	CAD	6.689%	1-Sep-29	50.0		50.0	3.3
CL	CAD	10.500%	5-Mar-31	599.9		599.9	63.0
4B	CAD	5.840%	1-Apr-31	3.5		3.5	0.2
4C	CAD	5.840%	1-Apr-31	1.4		1.4	0.1
4Y	CAD	5.650%	1-May-31	4.2		4.2	0.2
FD1	CAD	5.289%	12-Apr-35	175.0		175.0	9.3
CO52X	CAD	6.300%	29-Oct-35	30.0		30.0	1.9
EZ2	CAD	4.774%	3-Dec-35	54.0		54.0	2.6

Manitoba Hydro
Calculation of Weighted Average Interest Rate
On Short and Long Term Debt
For the Year Ended March 31, 2011
CAC/MSOS/MH I - 21 (b) and (c)

Debt Series	Currency	Coupon Rate	Maturity Date	Principal Par Value	Principal Par Value	Principal Equivalent	Interest
				CAD	USD	(CAD Pn)	
				\$CAD Millions	\$USD Millions	\$CAD Millions	\$CAD Millions
				(Note 1)		(Note 2)	
EZ5	CAD	4.774%	3-Dec-35	46.0		46.0	2.2
FA-4	CAD	4.505%	5-Mar-37	50.0		50.0	2.3
FA	CAD	4.687%	16-Jun-37	150.0		150.0	7.0
FJ	CAD	5.104%	22-Sep-37	250.0		250.0	12.8
PB-2	CAD	4.600%	5-Mar-38	300.0		300.0	13.8
C099-1	CAD	4.771%	1-Dec-38	50.0		50.0	2.4
C099-2	CAD	4.758%	1-Dec-38	25.0		25.0	1.2
C099-3A	CAD	4.758%	1-Dec-38	25.0		25.0	1.2
C099-3B	CAD	4.770%	1-Dec-38	15.0		15.0	0.7
C100-1	CAD	4.707%	1-Dec-38	85.0		85.0	4.0
C100-2	CAD	4.637%	1-Dec-38	100.0		100.0	4.6
C102	CAD	4.988%	1-Mar-39	100.0		100.0	5.0
NEW FEB 2010	CAD	4.600%	28-Feb-40	200.0		200.0	9.2
FK	CAD	4.650%	5-Mar-40	300.0		300.0	14.0
NEW MAR 2010	CAD	4.600%	31-Mar-40	200.0		200.0	9.2
NEW JUN 2010	CAD	4.650%	30-Jun-40	200.0		150.1	7.0
NEW AUG 2010	CAD	4.650%	31-Aug-40	200.0		116.2	5.4
NEW NOV2010	CAD	4.650%	30-Nov-40	200.0		66.3	3.1
NEW MAR 2011	CAD	4.650%	31-Mar-41	200.0		-	-
CO40	CAD	3 BA + 0.179%	5-Mar-42	50.0		50.0	0.7
CO68	CAD	4.565%	5-Mar-44	50.0		50.0	2.3
4Z	CAD	7.100%	9-Jun-57	7.0		7.0	0.5
Sub Total - Pn and Interest on Long Term Debt						8,441.7	488.6
Short Term Notes and Bank Overdraft						107.6	1.5
Interest on Temporary Investments						-	-
Foreign Exchange Gains/ Losses, and Other Interest Income/ Adjustments							1.9
Gross Interest (expense as per Schedule 4.6.0)						8,549.4	492.0
Provincial Guarantee Fee (expense as per Schedule 4.6.0)							78.1
Amortization of (Premiums) Discounts and Transaction Costs (expense as per Schedule 4.6.0)							2.3
Intercompany Interest Receivable (expense as per Schedule 4.6.0)						(450.5)	(19.4)
Total Pn and Interest on Short Term and Long Term Debt (expense as per Schedule 4.6.0)						8,098.9	553.0

Weighted Average Interest Rate on Short Term and Long Term Debt

6.83%

Note 1 The Maturity Date represents the maturity date of a physical debt issue or the maturity date of an interest rate derivative, whichever is later, in order to present the maturity of Manitoba Hydro's financial obligation.

Note 2 The Principal Equivalent (CAD Pn) represents the annualized amount of principal outstanding based on the number of days that the debt is outstanding during the year, and for USD issues also includes the impact of the foreign exchange rate used to record CAD equivalent periodic expenses.

Manitoba Hydro
Calculation of Weighted Average Interest Rate
On Short and Long Term Debt
For the Year Ended March 31, 2012
CAC/MSOS/MH I - 21 (b) and (c)

Debt Series	Currency	Coupon Rate	Maturity Date	Principal Par Value	Principal Par Value	Principal Equivalent	Interest
				CAD	USD	(CAD Pn)	\$CAD Millions
				\$CAD Millions	\$USD Millions	\$CAD Millions	\$CAD Millions
				(Note 1)		(Note 2)	
HB9-FL	CAD	3.600%	15-Jun-11	10.7		2.3	0.0
HB9-5FX	CAD	4.350%	15-Jun-11	14.9		3.1	0.1
HB10-FL	CAD	3.600%	15-Jun-12	6.8		6.8	0.2
HB10-5FX	CAD	4.650%	15-Jun-12	15.3		15.3	0.8
C107	CAD	3 BA + 0.40%	4-Sep-12	100.0		100.0	3.6
ER2	CAD	3 BA + 0.192%	3-Dec-12	50.0		50.0	1.7
4I	CAD	9.375%	11-Feb-13	10.0		10.0	0.9
5A	CAD	5.750%	30-Jun-13	40.0		40.0	2.3
5B	CAD	5.750%	30-Jun-13	4.8		4.8	0.3
DE	USD	8.120%	22-Jul-13		188.4	205.3	16.7
C101	CAD	5.744%	16-Sep-13	200.0		200.0	11.5
EZ3	CAD	6 LIBOR - 0.0645%	3-Dec-13	208.3		208.3	5.3
EZ4	CAD	3 BA + 0.0925%	3-Dec-13	9.5		9.5	0.3
4J	CAD	8.000%	20-Jan-14	15.0		15.0	1.2
EZ	USD	5.989%	21-Jan-14		150.0	163.5	9.8
FM-4	CAD	3 BA + 0.484%	1-Sep-14	100.0		100.0	3.7
4K	CAD	9.125%	12-May-15	12.0		12.0	1.1
EY	CAD	5.490%	3-Dec-15	200.0		200.0	11.0
EY2	CAD	3 BA + 0.0455%	3-Dec-15	50.0		50.0	1.6
AZ	CAD	3 BA + 1.08%	17-Jul-16	200.6		200.6	9.0
ER1	CAD	7.467%	3-Sep-17	200.0		200.0	14.9
C011	CAD	7.525%	22-Sep-17	55.5		55.5	4.2
4L	CAD	6.250%	17-Nov-17	20.0		20.0	1.3
BM	CAD	3 BA + 3.29%	15-Jan-18	255.0		255.0	17.1
FC-3	CAD	7.169%	2-Jun-18	200.0		200.0	14.3
C097-1	CAD	7.123%	2-Jun-18	100.0		100.0	7.1
C097-2	CAD	7.233%	2-Jun-18	100.0		100.0	7.2
EE	USD	9.500%	15-Sep-18		200.0	218.0	20.7
BU	USD	9.625%	1-Dec-18		200.0	218.0	21.0
3V	CAD	10.000%	30-Dec-18	3.5		3.5	0.4
3W	CAD	10.000%	30-Dec-18	2.0		2.0	0.2
3X	CAD	10.000%	30-Dec-18	5.0		5.0	0.5
3Y	CAD	10.000%	30-Dec-18	2.0		2.0	0.2
CO77-2	CAD	4.455%	11-Feb-20	100.0		100.0	4.5
CO77-3	CAD	3 BA - 0.175%	11-Feb-20	50.0		50.0	1.6
EM-2	USD	5.793%	15-Mar-20		150.0	163.5	9.5
CO32	USD	6.806%	2-Oct-20		47.0	51.2	3.5
FD	USD	6.766%	2-Oct-20		203.1	221.3	15.0
CO	USD	8.875%	15-Sep-21		300.0	327.0	29.0
4A	CAD	9.100%	31-Dec-21	3.5		3.5	0.3
FH-1	USD	6.405%	1-Feb-22		250.0	272.5	17.5
FH-2	USD	6.406%	1-Feb-22		100.0	109.0	7.0
FH-3	USD	6 LIBOR + 0.1295%	16-Sep-22		150.0	163.5	4.7
DT	CAD	7.750%	22-Dec-25	170.0		170.0	13.2
DT-2	CAD	7.750%	22-Dec-25	130.0		130.0	8.0
4M	CAD	5.900%	2-Feb-29	30.0		30.0	1.8
4N	CAD	5.900%	2-Feb-29	30.0		30.0	1.8
C108	CAD	6.150%	1-Sep-29	100.0		100.0	6.2
FM-1	CAD	6.634%	1-Sep-29	25.0		25.0	1.7
FM-2	CAD	6.734%	1-Sep-29	75.0		75.0	5.1
FM-3	CAD	6.689%	1-Sep-29	50.0		50.0	3.3
CL	CAD	10.500%	5-Mar-31	599.9		599.9	63.0
4B	CAD	5.840%	1-Apr-31	3.5		3.5	0.2
4C	CAD	5.840%	1-Apr-31	1.4		1.4	0.1
4Y	CAD	5.650%	1-May-31	4.2		4.2	0.2
FD1	CAD	5.289%	12-Apr-35	175.0		175.0	9.3
CO52X	CAD	6.300%	29-Oct-35	30.0		30.0	1.9
EZ2	CAD	4.774%	3-Dec-35	54.0		54.0	2.6
EZ5	CAD	4.774%	3-Dec-35	46.0		46.0	2.2
FA-4	CAD	4.505%	5-Mar-37	50.0		50.0	2.3
FA	CAD	4.687%	16-Jun-37	150.0		150.0	7.0

Manitoba Hydro
Calculation of Weighted Average Interest Rate
On Short and Long Term Debt
For the Year Ended March 31, 2012
CAC/MSOS/MH I - 21 (b) and (c)

Debt Series	Currency	Coupon Rate	Maturity Date	Principal Par Value	Principal Par Value	Principal Equivalent	Interest
				CAD \$CAD Millions	USD \$USD Millions	(CAD Pn) \$CAD Millions	\$CAD Millions
			(Note 1)			(Note 2)	
FJ	CAD	5.104%	22-Sep-37	250.0		250.0	12.8
PB-2	CAD	4.600%	5-Mar-38	300.0		300.0	13.8
C099-1	CAD	4.771%	1-Dec-38	50.0		50.0	2.4
C099-2	CAD	4.758%	1-Dec-38	25.0		25.0	1.2
C099-3A	CAD	4.758%	1-Dec-38	25.0		25.0	1.2
C099-3B	CAD	4.770%	1-Dec-38	15.0		15.0	0.7
C100-1	CAD	4.707%	1-Dec-38	85.0		85.0	4.0
C100-2	CAD	4.637%	1-Dec-38	100.0		100.0	4.6
C102	CAD	4.988%	1-Mar-39	100.0		100.0	5.0
NEW FEB 2010	CAD	4.600%	28-Feb-40	200.0		200.0	9.2
FK	CAD	4.650%	5-Mar-40	300.0		300.0	14.0
NEW MAR 2010	CAD	4.600%	31-Mar-40	200.0		200.0	9.2
NEW JUN 2010	CAD	4.650%	30-Jun-40	200.0		200.0	9.3
NEW AUG 2010	CAD	4.650%	31-Aug-40	200.0		200.0	9.3
NEW NOV2010	CAD	4.650%	30-Nov-40	200.0		200.0	9.3
NEW MAR 2011	CAD	4.650%	31-Mar-41	200.0		200.0	9.3
NEW SEP 2011	CAD	5.200%	30-Sep-41	200.0		99.7	5.2
NEW DEC 2011	CAD	5.200%	31-Dec-41	200.0		49.3	2.6
CO40	CAD	3 BA + 0.179%	5-Mar-42	50.0		50.0	1.7
NEWMAR 2012	CAD	5.200%	31-Mar-42	200.0		-	-
CO68	CAD	4.565%	5-Mar-44	50.0		50.0	2.3
4Z	CAD	7.100%	9-Jun-57	7.0		7.0	0.5
Sub Total - Pn and Interest on Long Term Debt						8,867.1	539.7
Wuskwatim Interest						151.5	8.4
Short Term Notes and Bank Overdraft						102.6	3.7
Interest on Temporary Investments						-	-
Foreign Exchange Gains/ Losses, and Other Interest Income/ Adjustments							1.1
Gross Interest (expense as per Schedule 4.6.0)						9,121.2	553.0
Provincial Guarantee Fee (expense as per Schedule 4.6.0)							82.9
Amortization of (Premiums) Discounts and Transaction Costs (expense as per Schedule 4.6.0)							2.3
Intercompany Interest Receivable (expense as per Schedule 4.6.0)						(479.3)	(25.0)
Total Pn and Interest on Short Term and Long Term Debt (expense as per Schedule 4.6.0)						8,641.9	613.2

Weighted Average Interest Rate on Short Term and Long Term Debt

7.10%

Note 1 The Maturity Date represents the maturity date of a physical debt issue or the maturity date of an interest rate derivative, whichever is later, in order to present the maturity of Manitoba Hydro's financial obligation.

Note 2 The Principal Equivalent (CAD Pn) represents the annualized amount of principal outstanding based on the number of days that the debt is outstanding during the year, and for USD issues also includes the impact of the foreign exchange rate used to record CAD equivalent periodic expenses.

CAC/MSOS/MH I-21

Subject: Financial Expense

Reference: Tab 4, pages 14-16

- d) Please provide the total cost of the Provincial Guarantee (applicable to Electric Operations) for each year 2007/08 to 2011/12 and provide a schedule setting out how it was calculated.**

ANSWER:

The fee calculation is based on ending debt balances at March 31 of the prior fiscal year. Manitoba Hydro is not assessed the debt guarantee fee on bonds issued for mitigation purposes. The long term debt balance presented in the attached schedule represents that amount of debt upon which the Provincial Debt Guarantee Fee was paid or is payable.

CAC/MSOS MH 1 - 21(d)

**Manitoba Hydro
Calculation of Provincial Debt Guarantee Fee
In \$000's**

	<u>2007/08 Actual</u>	<u>2008/09 Actual</u>	<u>2009/10 Actual</u>	<u>2010/11 Forecast</u>	<u>2011/12 Forecast</u>
Canadian Dollar Long Term Debt	\$ 4,356,340	\$ 4,780,779	\$ 5,125,915	\$ 5,837,458	\$ 6,548,749
Canadian Dollar Short Term Debt	148,000	-	100,000	48,050	39,731
Less Trust Investment from Pre-Financing		(122,000)	(166,000)		
Net Canadian Dollars Subject to PGF	<u>\$ 4,504,340</u>	<u>\$ 4,658,779</u>	<u>\$ 5,059,915</u>	<u>\$ 5,885,508</u>	<u>\$ 6,588,480</u>
PGF Rate	1.00%	1.00%	1.00%	1.00%	1.00%
Canadian Dollar PGF	\$ 45,043	\$ 46,588	\$ 50,599	\$ 58,855	\$ 65,885
US Dollar Long Term Debt	\$ 2,432,002	\$ 2,632,002	\$ 2,385,508	\$ 2,138,387	\$ 1,938,387
US Dollar Short Term Debt	-	-	-	-	-
Net US Dollars Subject to PGF	<u>\$ 2,432,002</u>	<u>\$ 2,632,002</u>	<u>\$ 2,385,508</u>	<u>\$ 2,138,387</u>	<u>\$ 1,938,387</u>
PGF Rate	1.00%	1.00%	1.00%	1.00%	1.00%
US Dollar PGF	\$ 24,320	\$ 26,320	\$ 23,855	\$ 21,384	\$ 19,384
Exchange Rate for PGF Expense	1.1529	1.0279	1.0504	1.0600	1.0700
US Dollar PGF in Canadian Dollars	28,039	27,054	25,056	22,667	20,741
TOTAL PGF Paid	<u>\$ 73,082</u>	<u>\$ 73,642</u>	<u>\$ 75,656</u>	<u>\$ 81,523</u>	<u>\$ 86,626</u>
Less:					
Charged to Centra:					
Long Term Debt	\$ 240,267	\$ 238,007	\$ 235,748	\$ 297,671	\$ 297,671
Short Term Debt	81,431	90,173	102,458	44,732	72,871
Total Debt	<u>\$ 321,698</u>	<u>\$ 328,180</u>	<u>\$ 338,206</u>	<u>\$ 342,403</u>	<u>\$ 370,542</u>
Rate	1.00%	1.00%	1.00%	1.00%	1.00%
PGF Charged to Centra	\$ 3,217	\$ 3,282	\$ 3,382	\$ 3,424	\$ 3,705
PGF Charged to Electric	<u>\$ 69,865</u>	<u>\$ 70,360</u>	<u>\$ 72,274</u>	<u>\$ 78,099</u>	<u>\$ 82,920</u>

CAC/MSOS/MH I-21

Subject: Financial Expense

Reference: Tab 4, pages 14-16

- e) **Do either the actual or forecast financial expenses reported include any financial expense associated with Manitoba Hydro's subsidiaries? If yes, please provide a schedule setting out the amounts included by year.**

ANSWER:

The finance expense in schedule 4.6.0 reflects the finance costs for the Manitoba Hydro Electric Operations. As Manitoba Hydro conducts all external borrowing for the consolidated corporate entry, finance expense includes all costs related to long term debt, short term debt, income from sinking funds and other finance revenues and expenses. Finance expense for electric operations is reduced by income charged to Centra Gas on intercompany advances for short term and long term financing.

The finance expense outlined in schedule 4.6.0 does include a small amount of interest income from other Manitoba Hydro subsidiaries in the amounts outlined in the following table:

Subsidiaries Finance Expense	
Year	Income in 4.6.0 \$000s
2007/08	(1.903)
2008/09	(39.806)
2009/10	(3.376)
2010/11	-
2011/12	-

CAC/MSOS/MH I-22

Subject: Depreciation Expense

Reference: Tab 4, pages 17-20

- a) **Please confirm that Manitoba Hydro's last depreciation study was completed in 2005 and indicate when Manitoba Hydro plans on undertaking its next depreciation study.**

ANSWER:

Manitoba Hydro's last depreciation study was based upon March 31st, 2005 year end values and its next study will be based upon March 31st, 2010 year end values.

CAC/MSOS/MH I-22

Subject: Depreciation Expense

Reference: Tab 4, pages 17-20

- b) **Starting with the 2006/2007 year end, please provide a year over year continuity schedule up to 2011/2012 year end for each asset group shown in Schedule 4.7.0. The schedule should show annual capital spending, annual additions, annual changes in construction work in progress, annual depreciation/amortization provisions and year end gross book values, accumulated depreciation and net book values.**

ANSWER:

Please see the following tables.

Fiscal Year 2007/08 (in millions of \$)

	Asset				Accumulated Depreciation				Net Book Value		Construction in Progress				
	Opening Balance	Add	Retire	Adj.*	Ending Balance	Opening Balance	Depr Exp	Retire	Ending Balance	Opening Balance	Ending Balance	Opening Balance	Add	Transf to PP&E	Ending Balance
Hydraulic Generating Stations	4 390.1	133.5	(0.2)	-	4 523.4	1 346.2	68.5	(1.1)	1 413.6	3 043.9	3 109.8	560.0	284.7	(51.9)	792.8
Thermal Generating Stations	463.2	2.6		2.5	468.3	206.2	17.1	(1.0)	222.3	257.0	246.0	3.4	2.8	(0.7)	5.5
Diesel Generating Stations	41.2	1.7	(0.1)	-	42.8	19.5	4.0	(3.8)	19.7	21.7	23.1	1.6	-	(1.6)	-
Generation	4 894.5	137.8	(0.3)	2.5	5 034.5	1 571.9	89.6	(5.9)	1 655.6	3 322.6	3 378.9	565.0	287.5	(54.2)	798.3
Transmission	781.5	17.4	(0.2)	-	798.7	237.0	14.1	(0.4)	250.7	544.5	548.0	51.6	44.2	(7.3)	88.5
Stations	2 173.9	97.4	(3.0)	-	2 268.3	900.0	74.3	(4.9)	969.4	1 273.9	1 298.9	81.6	40.7	(54.7)	67.6
Subtransmission Lines	243.0	8.5	(1.6)	-	249.9	73.1	8.9	(2.1)	79.9	169.9	170.0	3.1	3.1	(2.0)	4.2
Distribution Lines	1 775.2	130.3	(17.8)	19.8	1 907.5	680.7	72.4	(10.7)	742.4	1 094.5	1 165.1	26.3	28.7	(19.7)	35.3
Meters & Metering Trfrs	47.1	3.8	(1.3)	-	49.6	14.1	1.5	(1.2)	14.4	33.0	35.2	-	-	-	-
Distribution	2 065.3	142.6	(20.7)	19.8	2 207.0	767.9	82.8	(14.0)	836.7	1 297.4	1 370.3	29.4	31.8	(21.7)	39.5
Other	1 000.5	94.9	(49.5)		1 045.9	344.6	63.2	(48.0)	359.8	655.9	686.1	144.6	134.0	(36.8)	241.8
Total	10 915.7	490.1	(73.7)	22.3	11 354.4	3 821.4	324.0	(73.2)	4 072.2	7 094.3	7 282.2	872.2	538.2	(174.7)	1 235.7

*In accordance with CICA section 3031, certain inventory items are required to be recognized as Property, Plant and Equipment rather than as Inventory.

Fiscal Year 2008/09 (in millions of \$)

	Asset				Accumulated Depreciation				Net Book Value		Construction in Progress			
	Opening Balance	Add	Retire	Ending Balance	Opening Balance	Depr Exp	Retire	Ending Balance	Opening Balance	Ending Balance	Opening Balance	Add	Transf to PP&E	Ending Balance
Hydraulic Generating Stations	4 523.4	103.6	(0.6)	4 626.4	1 413.6	70.9	(0.4)	1 484.1	3 109.8	3 142.3	792.8	332.1	(41.2)	1 083.7
Thermal Generating Stations	468.3	7.2	-	475.5	222.3	16.2	-	238.5	246.0	237.0	5.5	1.8	(3.5)	3.8
Diesel Generating Stations	42.8	0.6	-	43.4	19.7	4.0	-	23.7	23.1	19.7	-	0.5	-	0.5
Generation	5 034.5	111.4	(0.6)	5 145.3	1 655.6	91.1	(0.4)	1 746.3	3 378.9	3 399.0	798.3	334.4	(44.7)	1 088.0
Transmission	798.7	6.3	-	805.0	250.7	14.2	-	264.9	548.0	540.1	88.5	57.4	(0.9)	145.0
Stations	2 268.3	56.4	(16.1)	2 308.6	969.4	70.6	(17.0)	1 023.0	1 298.9	1 285.6	67.6	77.9	(24.1)	121.4
Subtransmission Lines	249.9	7.7	(1.4)	256.2	79.9	9.2	(2.0)	87.1	170.0	169.1	4.2	1.1	(2.2)	3.1
Distribution Lines	1 907.5	156.5	(21.1)	2 042.9	742.4	77.7	(24.6)	795.5	1 165.1	1 247.4	35.3	28.1	(24.9)	38.5
Meters & Metering Trfrs	49.6	2.4	(2.2)	49.8	14.4	1.6	(1.7)	14.3	35.2	35.5	-	(0.1)	0.1	-
Distribution	2 207.0	166.6	(24.7)	2 348.9	836.7	88.5	(28.3)	896.9	1 370.3	1 452.0	39.5	29.1	(27.0)	41.6
Other	1 045.9	349.4	(45.7)	1 349.6	359.8	65.9	(45.4)	380.3	686.1	969.3	241.8	34.3	(225.4)	50.7
Total	11 354.4	690.1	(87.1)	11 957.4	4 072.2	330.3	(91.1)	4 311.4	7 282.2	7 646.0	1 235.7	533.1	(322.1)	1 446.7

Fiscal Year 2009/10 (in millions of \$)

Forecast

	Asset			Accumulated Depreciation			Net Book Value		Construction in Progress		
	Opening Balance	Net Change	Ending Balance	Opening Balance	Depr Exp	Ending Balance	Opening Balance	Ending Balance	Opening Balance	Net Change	Ending Balance
Hydraulic Generating Stations	4 626.4	168.4	4 794.8	1 484.1	75.7	1 559.8	3 142.3	3 235.0	1 083.7		
Thermal Generating Stations	475.5	15.6	491.1	238.5	17.7	256.2	237.0	234.9	3.8		
Diesel Generating Stations	43.4	0.1	43.5	23.7	3.5	27.2	19.7	16.4	0.5		
Generation	5 145.3	184.2	5 329.5	1 746.3	96.9	1 843.2	3 399.0	3 486.3	1 088.0		
Transmission	805.0	8.2	813.2	264.9	14.3	279.2	540.1	534.0	145.0		
Stations	2 308.6	101.3	2 409.9	1 023.0	75.8	1 098.8	1 285.6	1 311.1	121.4		
Subtransmission Lines	256.2	8.2	264.4	87.1	9.2	96.3	169.1	168.1	3.1		
Distribution Lines	2 042.9	166.5	2 209.4	795.5	80.9	876.4	1 247.4	1 333.0	38.5		
Meters & Metering Trfrs	49.8	2.4	52.2	14.3	2.0	16.3	35.5	35.9	-		
Distribution	2 348.9	177.0	2 525.9	896.9	92.0	988.9	1 452.0	1 537.0	41.6		
Other	1 349.6	99.2	1 448.8	380.3	72.5	452.8	969.3	996.0	50.7		
Total	11 957.4	569.9	12 527.3	4 311.4	351.6	4 663.0	7 646.0	7 864.4	1 446.7	500.0	1 946.7

Fiscal Year 2010/11 (in millions of \$)
Forecast

	Asset			Accumulated Depreciation			Net Book Value		Construction in Progress		
	Opening Balance	Net Change	Ending Balance	Opening Balance	Depr Exp	Ending Balance	Opening Balance	Ending Balance	Opening Balance	Net Change	Ending Balance
Hydraulic Generating Stations	4 794.8	134.4	4 929.2	1 559.8	78.3	1 638.1	3 235.0	3 291.1			-
Thermal Generating Stations	491.1	11.1	502.2	256.2	16.9	273.1	234.9	229.1			-
Diesel Generating Stations	43.5	8.5	52.0	27.2	3.6	30.7	16.4	21.3			-
Generation	5 329.5	154.0	5 483.5	1 843.2	98.8	1 942.0	3 486.3	3 541.5			-
Transmission	813.2	7.7	821.0	279.2	14.5	293.7	534.0	527.2			-
Stations	2 409.9	130.4	2 540.3	1 098.8	78.7	1 177.5	1 311.1	1 362.8			-
Subtransmission Lines	264.4	9.2	273.6	96.3	9.4	105.7	168.1	167.9			-
Distribution Lines	2 209.4	134.4	2 343.8	876.4	85.1	961.4	1 333.0	1 382.4			-
Meters & Metering Trfrs	52.2	6.4	58.6	16.3	1.6	17.9	35.9	40.7			-
Distribution	2 525.9	150.0	2 676.0	988.9	96.1	1 085.0	1 537.0	1 591.0			-
Other	1 448.8	64.1	1 512.9	452.8	67.0	519.8	996.0	993.1			-
Total	12 527.3	506.2	13 033.6	4 663.0	355.0	5 018.0	7 864.4	8 015.5	1 946.7	511.0	2 457.7

Fiscal Year 2011/12 (in millions of \$)

Forecast

	Asset			Accumulated Depreciation			Net Book Value		Construction in Progress		
	Opening Balance	Net Change	Ending Balance	Opening Balance	Depr Exp	Ending Balance	Opening Balance	Ending Balance	Opening Balance	Net Change	Ending Balance
Hydraulic Generating Stations	4 929.2	1 213.3	6 142.6	1 638.1	86.0	1 724.1	3 291.1	4 418.5			-
Thermal Generating Stations	502.2	13.6	515.8	273.1	17.2	290.4	229.1	225.4			-
Diesel Generating Stations	52.0	1.3	53.4	30.7	3.8	34.5	21.3	18.9			-
Generation	5 483.5	1 228.3	6 711.7	1 942.0	107.0	2 049.0	3 541.5	4 662.8			-
Transmission	821.0	204.0	1 024.9	293.7	16.1	309.8	527.2	715.1			-
Stations	2 540.3	408.4	2 948.7	1 177.5	85.5	1 263.0	1 362.8	1 685.7			-
Subtransmission Lines	273.6	6.9	280.5	105.7	9.7	115.4	167.9	165.0			-
Distribution Lines	2 343.8	153.1	2 496.9	961.4	90.1	1 051.5	1 382.4	1 445.4			-
Meters & Metering Trfrs	58.6	7.8	66.4	17.9	1.8	19.7	40.7	46.7			-
Distribution	2 676.0	167.7	2 843.7	1 085.0	101.6	1 186.6	1 591.0	1 657.1			-
Other	1 512.9	32.9	1 545.7	519.8	69.8	589.6	993.1	956.1			-
Total Electric	13 033.6	2 041.2	15 074.8	5 018.0	380.0	5 398.0	8 015.5	9 676.7	2 457.7	(1 117.0)	1 340.7

CAC/MSOS/MH I-22

Subject: Depreciation Expense

Reference: Tab 4, pages 17-20

- c) **Do either the actual or forecast depreciation/amortization amounts reported include depreciation associated with Manitoba Hydro's subsidiaries? If yes, please provide a schedule setting out the amount by year.**

ANSWER:

Neither the actual or forecast depreciation/ amortization amounts reported include depreciation associated with Manitoba Hydro's subsidiaries.

CAC/MSOS/MH I-23

Subject: Water Rentals and Assessments

Reference: Tab 4, pages 21-22

- a) **Are the year over year changes in water rentals reported in Schedule 4.8.0 all attributable to changes in water flows or is part due to changes in water rental rates? If the later, please identify the changes in water rental rates over the period shown.**

ANSWER:

The year over year changes in water rentals in schedule 4.8.0 are attributable to changes in water flows. There have been no changes in water rental rates.

CAC/MSOS/MH I-24

Subject: Fuel and Power Purchased

Reference: Tab 4, pages 23-24

- a) **Is Manitoba Hydro's purchase of the Wuskwatim output (starting in 2011/12) reported here as a "purchase"?**

ANSWER:

No. The purchase transactions between Manitoba Hydro and Wuskwatim Power Limited Partnership (WPLP) are initially recorded as power purchased by Manitoba Hydro and revenue by WPLP. The energy becomes part of Manitoba Hydro's integrated system and Manitoba Hydro ultimately records a sale of the energy. On consolidation, the initial intercompany transactions are eliminated and 100 percent of Wuskwatim project revenues are recognized as revenues on MH09-1 Electric Operations Projected Operating Statement. Nisichawayasihk Cree Nation's share is subsequently deducted from total net income in non-controlling interest.

CAC/MSOS/MH I-24

Subject: Fuel and Power Purchased

Reference: Tab 4, pages 23-24

- b) **Apart from St Joseph wind farm (and possibly Wuskwatim), are any of the power purchases during the period 2007/08 to 2011/12 long term (i.e., greater than one year) firm purchase commitments? If yes, please describe the commitments.**

ANSWER:

Manitoba Hydro does not have any commitments to purchase firm power other than the power purchase agreements associated with existing and potential wind farms.

CAC/MSOS/MH I-24

Subject: Fuel and Power Purchased

Reference: Tab 4, pages 23-24

- c) **Apart from any long term firm commitments identified in part (b), are there any purchases during the period which were/will be required to meet domestic load/firm export commitments or are they all related to purchases for resale into the export market? If some are required for domestic loads please provide details regarding the year, the reasons why and the amounts involved.**

ANSWER:

The reference in Tab 4, pages 23-24 relates to the period from 2007/08 to 2011/12. Purchases are expected to be made or were made in each year for efficient and economic operation of system resources and participation in the export market. These purchases are made to meet Manitoba Hydro's total commitments including exports and no differentiation is made as to whether the purchases were for domestic or export commitments.

Water conditions for the forecast year 2011/12 were uncertain at the time of preparation of the IFF09-1 and consequently the forecast is based on the possibility that any of the 94 flow years of record can occur. The IFF for this year is based on averaging the costs and revenues derived from the simulation of 94 years of possible flows. The lowest flow years in this evaluation would utilize power purchases to meet domestic load and firm export commitments. An estimate of specific quantities of purchases for domestic loads cannot be provided since such quantities are part of the average of 94 flow conditions.

CAC/MSOS/MH I-24

Subject: Fuel and Power Purchased

Reference: Tab 4, pages 23-24

- d) **Is all of the thermal generation reported for the period undertaken for export purposes or is some required to meet domestic loads/firm export commitments? If some is required for domestic loads please provide details regarding the year, the reasons why and the amounts involved.**

ANSWER:

Under normal energy supply conditions (i.e., not emergency or drought) Manitoba Hydro does not require the thermal plants for energy supply purposes. This has been the case since Manitoba Hydro became strongly interconnected with the US market, from which alternate supplies of energy and capacity were available. However, Brandon and Selkirk coal-fired generation have historically been economic supplies of electricity at times and have been operated to improve Manitoba Hydro net export revenues, especially in the last 15 years as market prices have risen relative to Manitoba Hydro's cost of coal-fired generation.

For 2007/08 and 2008/09 (actuals) the majority of coal-fired generation was used to maximize net export revenues. Projected coal-fired generation after January 1, 2010 is for emergency preparedness purposes only, as permitted under *The Climate Change and Emissions Reductions Act*.

Gas-fired generation is predominantly for Brandon area reliability and for testing. Gas-fired generation is rarely used to produce energy for exports because export prices are typically below Manitoba Hydro's variable cost of gas-fired generation (see PUB/MH I-138).

CAC/MSOS/MH I-24

Subject: Fuel and Power Purchased

Reference: Tab 4, pages 23-24

- e) Please provide a schedule that sets out the GWh of purchases, coal-fired, natural gas fired and wind-based generation for each year.

ANSWER:

Energy Source (GWh)	2007/08 Actual	2008/09 Actual	2009/10 Forecast	2010/11 Forecast	2011/12 Forecast
Purchases (Imports)	836	981	379	1138	1325
Wind	355	383	368	370	1341
Coal	434	315	107	125	127
Natural Gas Fired	22	20	45	33	304

CAC/MSOS/MH I-24

Subject: Fuel and Power Purchased

Reference: Tab 4, pages 23-24

- f) **Please report separately the cost of natural gas-based generation vs. other for each year.**

ANSWER:

The Natural Gas and Other line item of Tab 4, Schedule 4.9.0 is broken out in part (g) of the response to this information request.

CAC/MSOS/MH I-24

Subject: Fuel and Power Purchased

Reference: Tab 4, pages 23-24

- g) **If these three sources (wind, coal and natural gas) do not account for all of the volumes associate with the Total Fuel and Power Purchases costs shown, please indicate what other sources are included along with the associated volumes and costs.**

ANSWER:

The sources accounting for all volumes associated with the Total Fuel and Power Purchases cost as outlined in Tab 4, pages 23-24, of the 2010 GRA submission are coal, natural gas & other, power purchased and water flow costs. The 'other' component from 'natural gas & other' includes jet fuel, water and chemical supply, oil, and diesel.

Table 1: Natural Gas & Other Costs (000\$)

	2007/08 Actuals	2008/09 Actuals	2009/10 Forecast	2010/11 Forecast	2011/12 Forecast
Natural Gas and Jet	3477	3876	4249	3782	33760
Oil	1040	611	231	448	
Water & Chemical Supply	299	272	330	366	374
Diesel	2940	4265	4046	4246	4484

CAC/MSOS/MH I-24

Subject: Fuel and Power Purchased

Reference: Tab 4, pages 23-24

- h) For the period 2007/08 to 2011/12, what are the annual purchase volumes in each year that are associated with simultaneous back to back export sales?**

ANSWER:

The actual and forecasted net revenues associated with arbitrage merchant transactions are summarized in the following table where Net Revenues recognizes all revenues and associated costs.

Net Merchant Revenues (CAD\$)		
2007/08	\$7,136,715	Actual
2008/09	\$7,481,401	Actual
2009/10	\$4,413,000	Forecast
2010/11	\$3,816,000	Forecast
2011/12 and thereafter	\$0	Forecast

Manitoba Hydro enters into back to back arbitrage transactions when the market price differential is favorable. For the forecast period, Manitoba Hydro only forecasts the net revenues and doesn't forecast the volumes involved. Therefore, for comparability, only net revenues are shown for 2007/08 and 2008/09.

CAC/MSOS/MH I-25

Subject: Capital and Other Taxes

Reference: Tab 4, pages 25-26

- a) **Was the AOCI adjustment for 2008/09 a one-time adjustment or does it affect the capital taxes for subsequent years as well?**

ANSWER:

The retroactive adjustment made in 2008/09 with respect to the impact of the AOCI was a one-time adjustment.

Going forward, the annual year-end AOCI balances will be included in taxable paid up capital and therefore continue to impact the calculation of capital taxes as shown in the response to PUB/MH I-41.

CAC/MSOS/MH I-25

Subject: Capital and Other Taxes

Reference: Tab 4, pages 25-26

b) What are the total 2010/11 property taxes for the downtown head office?

ANSWER:

The 2010/11 property and business tax amount is currently forecast at \$4.9 million. Tax bills with respect to calendar year 2010 will not be received until May of 2010, at which time the property and business tax expense for the new building will be known.

CAC/MSOS/MH I-26

Subject: Non-Controlling Interest

Reference: Tab 4, page 29

- a) **Please confirm that the financial forecast included in Tab 4 (Schedule 4.1.0) includes 100% of the revenue and costs related to Wuskwatim.**

ANSWER:

Confirmed.

CAC/MSOS/MH I-26

Subject: Non-Controlling Interest

Reference: Tab 4, page 29

- b) Please provide a schedule that sets out the forecast operating statement for electric operations for 2011/12 and include another column showing the impact of Wuskwatim on each line item.

ANSWER:

	Manitoba Hydro Electric Excluding WPLP	WPLP	Eliminations	Manitoba Hydro Consolidated Electric
REVENUES				
General Consumers at approved rates	1,177			1,177
additional *	69			69
Extraprovincial	554			554
Investment Income	(3)		(3)	-
Other	13	44	49	8
	<u>1,810</u>	<u>44</u>	<u>47</u>	<u>1,808</u>
EXPENSES				
Operating and Administrative	402	6	5	403
Finance Expense	442	26	-	468
Depreciation and Amortization	392	14	-	407
Water Rentals and Assessments	109	2	-	111
Fuel and Power Purchased	293	-	44	248
Capital and Other Taxes	77	-	-	77
Corporate Allocation	9	-	-	9
	<u>1,723</u>	<u>49</u>	<u>49</u>	<u>1,723</u>
Non-controlling Interest	-	-	(1)	1
Net Income	<u>87</u>	<u>(4)</u>	<u>(4)</u>	<u>87</u>

CAC/MSOS/MH I-26

Subject: Non-Controlling Interest

Reference: Tab 4, page 29

- c) **Are the operating statements for the years prior to 2011/12 affected at all by Wuskwatim? If so, how? Please provide an explanation on a year by year basis.**

ANSWER:

There is no net impact on the Operating Statements prior to 2011/12. Increases in finance expense as a result of Wuskwatim construction and higher debt are offset by interest capitalized on the project.

CAC/MSOS/MH I-27

Subject: financial results and forecast

Reference: Tab 4, page 9

Please provide a brief outline of the Grand Rapids litigation, including a short explanation of its financial significance to the Corporation.

ANSWER:

Grand Rapids unit # 1 head cover failed in 1992 which also flooded the station. Manitoba Hydro was granted leave to pursue a legal action against the manufacturer. In settlement of this claim, Manitoba Hydro received \$21 million.

Of this \$21 million dollars, \$11.9 million was allocated to Grand Rapids Unit 1 overhaul, representing the residual net book value of the capitalized repair costs, and the remaining \$9.1 million was credited to Other Revenue.

CAC/MSOS/MH I-28

Subject: OM & A

Reference: Tab 4, page 11

Please provide a table similar to that found at lines 6 – 7, showing budgeted and actual amounts, and then forecast OM & A expenditures for 2007/08 through 2011/12, including the \$ and % change from budget to actual and year over year.

ANSWER:

Please see the following tables, which provide the data requested.

	2007/08	2008/09	2009/10	2010/11	2011/12
	Budget	Budget	Forecast	Forecast	Forecast
OM&A	\$ 340.2	\$ 349.0	\$ 371.5	\$ 379.7	\$ 403.4
\$ Change		\$ 8.8	\$ 22.5	\$ 8.2	\$ 23.7
% Change		2.6%	6.4%	2.2%	6.2%

	2007/08	2008/09	2009/10	2010/11	2011/12
	Actual	Actual	Forecast	Forecast	Forecast
OM&A	\$ 322.7	\$ 359.7	\$ 371.5	\$ 379.7	\$ 403.4
\$ Change		\$ 37.0	\$ 11.8	\$ 8.2	\$ 23.7
% Change		11.5%	3.3%	2.2%	6.2%

	2007/08	2008/09
	Actual vs	Actual vs
	Forecast	Forecast
\$ Change	\$ 17.5	\$ (10.7)
% Change	5.1%	-3.1%

CAC/MSOS/MH I-29

Subject: non-controlling interest

Reference: Tab 4, page 29

- a) **Please identify all subsidiaries of Manitoba Hydro, and please indicate whether each is wholly or partly owned by MH. Where the subsidiaries are only partly owned by MH, please identify who else owns these subsidiaries.**

ANSWER:

Please see Manitoba Hydro's response to PUB/MH I-3.

CAC/MSOS/MH I-29

Subject: non-controlling interest

Reference: Tab 4, page 29

b) Please explain the purpose for which each subsidiary exists.

ANSWER:

Please see Manitoba Hydro's response to PUB/MH I-3.

CAC/MSOS/MH I-30

Subject: Economic Outlook

Reference: Tab 5, pages 1-2

Appendix 5.1

Appendix 5.2, page 5

- a) **Does Manitoba Hydro rely on any externally produced economic forecasts to prepare in Economic Outlook? If so please, indicate what sources and/or publications are used.**

ANSWER:

Manitoba Hydro utilized economic forecasts from several external sources in its preparation of the 2009 Spring Economic Outlook for Canada and Manitoba economic and financial variables. Not all of the sources were available for each of the variables.

The sources included the following:

- BMO Nesbitt Burns
- CIBC
- National Bank
- Royal Bank
- Scotiabank
- TD Bank
- IHS Global Insight
- Conference Board of Canada
- Informetrica
- Spatial Economics
- Manitoba Bureau of Statistics
- Consensus Economics
- Province of BC
- Federal Finance

CAC/MSOS/MH I-30

Subject: Economic Outlook

Reference: Tab 5, pages 1-2

Appendix 5.1

Appendix 5.2, page 5

- b) **Please provide a revised version of Appendix 5.1, page 5 based on the July and October updates referenced at Tab 5, page 2 and Appendix 5.2, page 5.**

ANSWER:

Provided below is an updated version of the table of Manitoba/Canada Economic Statistics found on page 5 of the 2009 Spring Economic Outlook. The changes are based on the July and October updates referenced at Tab 5, page 2 and Appendix 5.2, page 5 and are highlighted in bold font.

Manitoba/Canada Economic Statistics

Year	Man. Real GDP %	Man. CPI %	Man. Population '000s	Man. Residential Customers '000s	Cdn. Real GDP %	Cdn. CPI %	90 Day T-Bill Rate %	GOC 10 Yr+ Rate %	C\$/US\$
1984/85	7.8	3.3	1,074	360	5.5	3.9	11.15	12.60	1.32
1985/86	4.8	4.5	1,085	364	4.2	4.1	9.52	10.58	1.38
1986/87	0.5	4.3	1,093	371	2.3	4.1	8.06	9.27	1.37
1987/88	1.0	4.1	1,099	378	5.0	4.4	8.47	10.16	1.31
1988/89	0.3	4.4	1,102	383	4.4	4.1	10.29	10.37	1.21
1989/90	2.6	4.7	1,104	386	2.2	5.2	12.37	9.95	1.18
1990/91	1.0	5.0	1,107	389	-1.0	5.0	12.07	10.72	1.16
1991/92	-2.3	3.8	1,110	391	-1.0	4.4	8.03	9.53	1.15
1992/93	0.9	1.9	1,114	393	1.1	1.6	6.25	8.60	1.23
1993/94	1.3	2.4	1,119	396	2.8	1.5	4.46	7.62	1.31
1994/95	3.0	1.6	1,125	398	5.1	0.4	6.46	9.01	1.38
1995/96	1.0	2.5	1,130	400	1.8	2.1	6.17	7.96	1.36
1996/97	3.2	2.5	1,135	402	2.4	1.7	3.67	7.31	1.36
1997/98	3.9	1.5	1,136	405	4.5	1.4	3.63	6.09	1.40
1998/99	3.6	1.5	1,139	406	4.1	0.9	4.81	5.37	1.50
1999/00	2.1	2.2	1,144	408	5.8	2.2	4.82	5.91	1.47
2000/01	3.3	2.5	1,148	410	4.6	2.7	5.42	5.78	1.50
2001/02	1.0	2.1	1,153	413	1.5	2.2	3.09	5.81	1.57
2002/03	1.4	2.3	1,158	415	3.1	3.0	2.79	5.58	1.55
2003/04	1.1	0.9	1,166	419	1.7	1.9	2.67	5.17	1.35
2004/05	2.3	2.7	1,175	422	3.5	2.2	2.31	5.00	1.28
2005/06	3.0	2.4	1,180	426	3.1	2.3	3.02	4.26	1.19
2006/07	3.7	2.0	1,186	430	2.7	1.9	4.16	4.29	1.14
2007/08	2.9	1.9	1,197	434	2.5	2.1	3.83	4.31	1.03
2008/09	1.5	2.2	1,210	440	0.0	2.2	1.84	3.94	1.13
Forecast									
2009/10	0.0	0.6	1,218	444	-0.9	0.6	0.25	3.70	1.11
2010/11	2.1	1.9	1,226	448	2.3	1.9	1.20	4.00	1.07
2011/12	2.7	2.0	1,234	452	3.1	2.0	3.40	4.60	1.09
2012/13	2.6	2.0	1,242	456	2.9	2.0	4.10	5.10	1.07
2013/14	2.4	2.0	1,250	460	2.7	2.0	4.25	5.50	1.11
2014/15	2.0	2.0	1,258	463	2.4	2.0	4.25	5.50	1.12
2015/16	2.0	2.0	1,266	467	2.3	2.0	4.25	5.50	1.13
2016/17	2.0	2.0	1,273	471	2.3	2.0	4.25	5.50	1.14
2017/18	2.0	2.0	1,281	475	2.3	2.0	4.25	5.50	1.14
2018/19	2.0	2.0	1,288	479	2.3	2.0	4.25	5.50	1.14
2019/20	2.0	2.0	1,296	483	2.3	2.0	4.25	5.50	1.14
2020/21	2.0	2.0	1,303	486	2.2	2.0	4.25	5.50	1.14
2021/22	1.9	2.0	1,310	490	2.0	2.0	4.25	5.50	1.14
2022/23	1.9	2.0	1,317	494	2.0	2.0	4.25	5.50	1.14
2023/24	1.8	2.0	1,324	497	2.0	2.0	4.25	5.50	1.15
2024/25	1.8	2.0	1,330	501	2.0	2.0	4.25	5.50	1.15
2025/26	1.8	2.0	1,337	505	2.0	2.0	4.25	5.50	1.15
2026/27	1.8	2.0	1,343	508	2.0	2.0	4.25	5.50	1.15
2027/28	1.8	2.0	1,349	512	2.0	2.0	4.25	5.50	1.15
2028/29	1.8	2.0	1,355	515	2.0	2.0	4.25	5.50	1.15
2029/30	1.8	2.0	1,361	519	2.0	2.0	4.25	5.50	1.15

CAC/MSOS/MH I-30

Subject: Economic Outlook

Reference: Tab 5, pages 1-2

Appendix 5.1

Appendix 5.2, page 5

c) **Using these sources noted in response to part (a), what are the most recent forecasts for the following economic variables for 2009/10; 2010/11 and 2011/12:**

- **T-Bill rates**
- **GOC 10 Yr + Rate**
- **Inflation Rate(Canada and Manitoba)**
- **Real GDP Growth (Canada and Manitoba)**
- **Canadian/US Exchange Rate**

ANSWER:

The following tables provide the most recent, available forecasts of the economic variables listed above from the sources noted in Manitoba Hydro's response to CAC/MSOS/MH I-30(a). This information is current as of February 19, 2010.

The most recent forecast of economic variables for the Manitoba Bureau of Statistics has not been updated since early 2009 and, therefore, has not been included in the tables.

The most recent forecasts for the sources Consensus Economics, Province of British Columbia and Federal Finance were also not included since they are not considered statistically independent.

Informetrica and Spatial Economics provide annual forecasts on a calendar year basis. For the purposes of Manitoba Hydro's response to this question, a fiscal year basis forecast was created for these two sources by using a 75%/25% ratio from one calendar year to the next. For Manitoba Hydro's October forecast of economic variables, the data from Informetrica and Spatial Economics were excluded in the first four years of the forecast as they do not provide quarterly forecast information.

Source	Date of Information	2009/10			2010/11			2011/12		
		90 Day T-Bill Rates	GOC 10 Yr+ Rates	CDN/US Exchange Rate	90 Day T-Bill Rates	GOC 10 Yr+ Rates	CDN/US Exchange Rate	90 Day T-Bill Rates	GOC 10 Yr+ Rates	CDN/US Exchange Rate
BMO Nesbitt Burns	Feb. 12, 2010	0.21	3.65	1.09	1.00	3.69	1.00	NA	NA	NA
CIBC	Feb. 11, 2010	0.22	3.75	1.09	0.87	4.08	1.02	NA	NA	NA
National Bank	February 2010	0.26	3.77	1.09	1.45	4.24	1.06	NA	NA	NA
Royal Bank	Feb. 5, 2010	0.23	3.72	1.09	1.04	4.13	1.01	NA	NA	NA
Scotiabank	Feb. 3, 2010	0.25	3.75	1.09	1.19	4.42	0.99	NA	NA	NA
TD Bank	Feb. 16, 2010	0.23	3.76	1.10	0.74	4.15	1.04	NA	NA	NA
IHS Global Insight	Feb. 12, 2010	0.22	3.79	1.10	0.42	4.11	1.09	2.02	4.52	1.08
Conference Board of Canada	Jan. 11, 2010	0.22	3.77	1.09	1.23	3.89	1.04	4.18	4.91	1.03
Informetrica	Jan. 26, 2010	0.23	3.73	1.09	0.27	3.78	1.02	0.60	3.80	0.99
Spatial Economics	Oct. 15, 2010	0.30	3.88	1.11	0.60	4.55	1.10	1.08	4.75	1.12

Source	Date of Information	2009/10		2010/11		2011/12	
		Inflation Rate, CPI (Can/Mb)	Real GDP (Can/Mb)	Inflation Rate, CPI (Can/Mb)	Real GDP (Can/Mb)	Inflation Rate, CPI (Can/Mb)	Real GDP (Can/Mb)
BMO Nesbitt Burns	Feb. 12, 2010	0.3 / 0.6	-1.2 / 0.4	1.8 / 1.4	2.9 / 2.6	NA	NA
CIBC	Feb. 11, 2010 (Can) Jan. 28 2010 (Mb)	0.4 / 0.7	-1.3 / 0.4	1.9 / 1.6	2.6 / 2.5	NA	NA
National Bank	Feb. 2010	0.4 / NA	-1.1 / NA	1.8 / NA	2.9 / NA	NA	NA
Royal Bank	Feb. 5, 2010 (Can) Jan. 2010 (Mb)	0.4 / 0.7	-1.2 / 1.00	1.8 / 1.9	3.1 / 3.4	NA	NA
Scotiabank	Feb. 3, 2010	0.4 / NA	-1.1 / 0.1	1.9 / NA	3.0 / 2.8	NA	NA
TD Bank	Dec. 17, 2010 (Can) Nov. 3, 2009 (Mb)	0.3 / 0.5	-1.2 / 0.2	1.3 / 0.8	2.8 / 2.3	1.8 / NA	2.9 / NA
IHS Global Insight	Feb. 12, 2010 (Can) Jan. 15, 2010 (Mb)	0.5 / 0.7	-1.2 / 0.9	1.5 / 1.7	2.8 / 2.7	2.1 / 2.0	3.5 / 3.0
Conference Board of Canada	Jan. 11, 2010 (Can) Jan. 27, 2010 (Mb)	0.4 / 0.8	-1.2 / -0.0	2.6 / 2.0	2.9 / 2.1	2.6 / 2.3	3.4 / 2.6
Informetrica	Jan. 26, 2010	0.4 / 0.7	-1.2 / 0.2	1.7 / 1.7	2.8 / 2.0	1.9 / 1.9	3.4 / 2.6
Spatial Economics	Oct. 15, 2010	0.1 / NA	-1.3 / NA	0.7 / NA	2.6 / NA	1.2 / NA	3.2 / NA

NA - not available

CAC/MSOS/MH I-31

Subject: Economic Outlook

Reference: Tab 5, page 2

Appendix 5.1, page 15

- a) **Please explain what is meant by “Cdn GOC 10 Yr+”. Is it meant to represent the forecast rate for 10 year Government of Canada debt or for GOC debt with a term of longer than 10 years?**

ANSWER:

The Cdn GOC 10 Yr+ is meant to represent GOC debt with a term of 10 years or longer. Refer to Manitoba Hydro’s response to PUB/MH I-46 (b) for the details of the term of long bond rates used from each forecaster.

CAC/MSOS/MH I-31

Subject: Economic Outlook

**Reference: Tab 5, page 2
Appendix 5.1, page 15**

- b) Both references state that the Manitoba Hydro cost of debt is based on forecast Canada long bond rates plus a borrowing spread to reflect the difference in the cost of borrowing for the two entities and the provincial guarantee fee. Please provide more information on precisely how the forecast spreads for 2009/10 to 2012/13 (Tab 5, page 2) were determined. Please also explain why the spreads vary from year to year (e.g., 1.9% in 2009/10 and 1.6% in 2012/13).

ANSWER:

To clarify, Manitoba Hydro's forecast cost of debt as described on Tab 5, page 2 is derived from the following components:

	<u>10 Year +</u>	<u>All-in Spread</u>	<u>PGF</u>	<u>MH Cost of Debt</u>
2009/10	3.70%	0.90%	1.00%	5.60%
2010/11	4.00%	0.65%	1.00%	5.65%
2011/12	4.60%	0.60%	1.00%	6.20%
2012/13	5.10%	0.60%	1.00%	6.70%

The credit spread incorporated into the forecasted long term MH Cost of Debt was calculated by taking an average of the 10 year and 30 year credit spreads and commissions.

For 2009/10 and 2010/11, yearly spread forecasts are arrived at as follows:

- Actual average quarterly results are utilized for Quarter 1 and Quarter 2 of 2009/10.
- A reversion to the historical spread (all-in including commissions) by the beginning of 2011/12 is assumed on the basis that the financial markets will return to a more normal environment in 2011/12.
- For the forecast quarters in 2009/10 and 2010/11, the assumption is an equal reduction in the spread by quarter based on a linear interpolation between the 0.75% all-in spread at the end of 2009/10 Quarter 2 and the historical all-in spread of 0.60%. A fiscal yearly rate is derived by averaging the quarters.

The mean of the historical all-in spread of 0.60% is utilized in 2011/12 and beyond in the forecast.

		All-in Spread (%)	
2009/10	Q1	1.25	Actual Average
	Q2	0.87	Actual Average
	Q3	0.72	
	Q4	0.70	
	Year	<u>0.88</u>	Rounded to 0.90%
2010/11	Q1	0.67	
	Q2	0.64	
	Q3	0.62	
	Q4	0.59	
	Year	<u>0.63</u>	Rounded to 0.65%
Historical All-in Spread		<u>0.59</u>	Rounded to 0.60%

Credit spreads have been tightening as the economy begins to strengthen and Manitoba Hydro assumes that credit spreads will return to historical levels when the interest rate environment returns to normal.

CAC/MSOS/MH I-31

Subject: Economic Outlook

Reference: Tab 5, page 2

Appendix 5.1, page 15

- c) **What were the spreads for each long-term Manitoba Hydro debt issue over the past four years (i.e. Actual cost of debt + provincial guarantee vs. GOC rate at time of issue)?**

ANSWER:

Please see the attached schedule.

Please note that the cost of fixed rate debt in this schedule is calculated based on the initial issuance of physical debt in the capital markets in order to illustrate the level of provincial spreads over Canadas at the time of debt issuance. In some instances, the debt issues were immediately swapped to floating rate debt in order to accommodate the cash flow structure for forward interest rate swaps which had been arranged prior to the debt issue.

CAC/MSOS I-31(c)

Spreads for Initial Issuance of Manitoba Hydro Fixed Rate Debt in Capital Markets over the Past Four Years

			a	b	a+b	c	a+b+c	d	a+b+c+d
	Issue	Maturity	GOC (%)	Spread	Yield to	Commissions	Cost to	PGF	MH Cost
	Date	Date	or US T (%)	(%)	Investor (%)	(%)	Borrower (%)	(%)	of Debt (%)
Canadian Fixed Rate									
FA-4	13-Dec-2006	5-Mar-2037	3.975	0.410	4.385	0.037	4.422	1.000	5.422
PB-2	30-May-2007	5-Mar-2038	4.325	0.390	4.715	0.044	4.759	1.000	5.759
CO77-2	11-Jun-2007	11-Feb-2020	4.513	0.335	4.848	0.010	4.858	1.000	5.858
FJ	12-Sep-2007	22-Sep-2017	4.375	0.375	4.750	0.076	4.826	1.000	5.826
FC-3	22-May-2008	2-Jun-2018	3.251	0.630	3.881	0.025	3.906	1.000	4.906
C101	21-Nov-2008	1-Mar-2010	1.862	0.420	2.282	0.020	2.302	1.000	3.302
FK-2	5-Jun-2009	5-Mar-2040	4.067	1.060	5.127	0.048	5.175	1.000	6.175
FM	3-Sep-2009	1-Sep-2014	2.536	0.520	3.056	0.087	3.143	1.000	4.143
FN	27-Oct-2009	5-Mar-2050	3.977	0.710	4.687	0.039	4.726	1.000	5.726
C109	13-Nov-2009	5-Mar-2063	4.020	0.605	4.625	0.013	4.638	1.000	5.638
C110	23-Nov-2009	5-Mar-2060	3.967	0.650	4.617	0.012	4.629	1.000	5.629
FP	19-Feb-2010	3-Jun-2020	3.591	0.580	4.171	0.073	4.244	1.000	5.244
US Fixed Rate									
FH	6-Dec-2006	6-Dec-2016	4.509	0.400	4.909	0.032	4.941	1.000	5.941
FO	21-Jan-2010	22-Apr-2013	1.538	0.627	2.165	0.040	2.205	1.000	3.205

CAC/MSOS/MH I-32

Subject: Financial Forecast

Reference: Tab 5, page 2

a) For purpose of the record, please provide a complete copy of MH08-1.

ANSWER:

Please see Appendix 21.

CAC/MSOS/MH I-32

Subject: Financial Forecast

Reference: Tab 5, page 2

- b) **Please confirm that MH08-1 was the financial forecast used to support the approval of the 2009 conditional rate increase. If not, please provide a copy of the relevant financial forecast.**

ANSWER:

Confirmed. MH08-1 was used to support the 2009 conditional rate increase.

CAC/MSOS/MH I-33

Subject: Financial Forecast – Load Forecast

Reference: Tab 5

Appendix 5.2, page 6

- a) **Was the Load Forecast used for MH09-1 (per Appendix 5.2, page 6) revised to reflect the July and October 2009 changes to the Economic Outlook or was it based on the Spring 2009 Economic Outlook (i.e., Appendix 5.1)?**

ANSWER:

The Load Forecast for MH09-1 was based on the Spring 2009 Economic Outlook.

CAC/MSOS/MH I-33

Subject: Financial Forecast – Load Forecast

Reference: Tab 5

Appendix 5.2, page 6

- b) **If the response to part (a) is no, please provide an assessment as to the “directional” impact on the Load Forecast of these economic updates.**

ANSWER:

The economic updates in July and October would have had no significant effect on the Load Forecast.

CAC/MSOS/MH I-34

Subject: Financial Forecast - Exports

Reference: Appendix 5.2, pages 6-7

- a) Please provide a schedule that sets out the export volumes assumed in MH07-1, MH08-1 and MH09-1 for the period 2006/07 to 2019/20 broken down between: i) Long Term (greater than one year) Contracts and ii) Short-Term Sales.

ANSWER:

The breakdown between long-term contracts and short-term sales that Manitoba Hydro forecasts is not being provided because it is commercially sensitive information. This information is confidential since it could harm the Corporation in negotiation of export contracts since the prices and volumes of individual counterparties could be determined.

Annual Export Volume (GWh/year)

<u>Forecast</u>	<u>2007/08</u>	<u>2008/09</u>	<u>2009/10</u>	<u>2010/11</u>	<u>2011/12</u>	<u>2012/13</u>
MH07-1	11152	7549	6608	6442	7066	7556
MH08-1	-	10279	7901	6243	6537	6958
MH09-1	-	-	9149	7122	7843	8152

<u>Forecast</u>	<u>2013/14</u>	<u>2014/15</u>	<u>2015/16</u>	<u>2016/17</u>	<u>2017/18</u>	<u>2018/19</u>	<u>2019/20</u>
MH07-1	7415	7324	7144	6913	6862	6575	5635
MH08-1	7127	6802	6660	6752	6608	7370	8833
MH09-1	8022	7432	7182	7084	7007	7747	9600

CAC/MSOS/MH I-34

Subject: Financial Forecast - Exports

Reference: Appendix 5.2, pages 6-7

b) Please respond to part (a) but provide the actual result for 2006/07 to 2008/09.

ANSWER:

Actual volume results are listed below for exports.

	2006/07	2007/08	2008/09
	GWh	GWh	GWh
Dependable Sales	3,654	3,921	4,087
Opportunity Sales	6,250	7,814	6,489

CAC/MSOS/MH I-34

Subject: Financial Forecast - Exports

Reference: Appendix 5.2, pages 6-7

- c) **Appendix 5.2 states that the export price forecast for post 2010/2011 is the same for both MH08-1 and MH09-1. Please discuss how this export price forecast compares with that underlying MH07-1 for the same period.**

ANSWER:

The specific details relating to Manitoba Hydro's forecast of export prices is commercially sensitive information and is confidential since it could harm the Corporation in its negotiation of contracts for export sales. As a general comment, the export price forecasts underlying MH08-1 and MH09-1 are approximately 13% higher in the on peak and 3% higher in the off peak in comparison with the similar forecast underlying MH07-1 in the period through 2030.

The increase in prices is attributed to a combination of the pricing factors discussed in response to PUB/MH I-156(a). The largest contributors are a higher projection of CO2 allowance prices that continue to have increasing recognition in comparison with the 2007 forecast as well as higher projected natural gas prices.

CAC/MSOS/MH I-34 (REVISED)

Subject: Financial Forecast - Exports

Reference: Appendix 5.2, pages 6-7

- d) **What is Manitoba Hydro's current forecast average price for exports for 2009/10, 2010/11 and 2011/12?**

ANSWER:

Please see Manitoba Hydro's response to PUB/MH I-45(b).

CAC/MSOS/MH I-34

Subject: Financial Forecast - Exports

Reference: Appendix 5.2, pages 6-7

- e) **In the 2008 GRA reference was made (CAC/MSOS (MH) 1 –2 h)) to additional export revenues from the sale of ancillary services starting in 2008/09. Please provide a schedule that sets out the actual revenues received from the sale of ancillary services in 2008/09 and the projected revenues per year in MH09-1. Please briefly describe the ancillary services Manitoba Hydro provides.**

ANSWER:

Actual Ancillary Service revenues are included in the table below for 2008/09. The remaining years reflect the projected Ancillary Service revenues per MH09-01.

Ancillary Services are needed with Transmission Service to maintain reliability and are comprised of Regulation Reserve service, Spinning Reserve service and Supplemental Reserve service.

Fiscal Year	ASM Revenue (M\$ Cdn)
2008/09	1.3
2009/10	2.6
2010/11	3.0
2011/12	3.4

CAC/MSOS/MH I-34

Subject: Financial Forecast - Exports

Reference: Appendix 5.2, pages 6-7

- f) Does MH09-1 include any purchases (from sources outside the province) that are associated with the simultaneous exports (i.e., linked sales or linked wheels)?**

ANSWER:

Manitoba Hydro has no linked sales or linked wheels in MH09-1 after the year 2011/12. The arbitrage merchant transactions in 2009/10 and 2010/11 can be considered to be such transactions. Please refer to the response to CAC/MSOS/MH I-24(h) for information on the net revenues associated with these arbitrage merchant transactions.

CAC/MSOS/MH I-35

Subject: Financial Forecast – Power Supply and DSM

Reference: Appendix 5.2, pages 7-8

a) Please provide a copy of Manitoba Hydro's 2009 Power Resources Report

ANSWER:

Excerpts from the 2009 Power Resource Plan have been used to create an external version of power resource plan. This external version of the 2009/10 power resource plan is provided in Appendix 47.

CAC/MSOS/MH I-35

Subject: Financial Forecast – Power Supply and DSM

Reference: Appendix 5.2, pages 7-8

b) Please provide a copy of the Power Resources Report underpinning MH08-1.

ANSWER:

The external version of the 2008 power resource plan is provided as Appendix 46.

CAC/MSOS/MH I-35

Subject: Financial Forecast – Power Supply and DSM

Reference: Appendix 5.2, pages 7-8

- c) **Please provide a schedule that sets out the actual DSM (electricity) savings achieved to-date for the years 2006/07 through 2008/09 – showing both annual and cumulative savings achieved.**

ANSWER:

The following table provides the energy savings achieved for the years 2006/07 through 2008/09. Non-persisting energy savings are achieved through short-term commitment initiatives and therefore, the energy savings are only claimed on a year by year basis (e.g. curtailable rates initiative).

Fiscal Year	Electricity (GW.h)			
	Non-Persisting Incremental GW.h	Other Incremental GW.h	Total Incremental GW.h	Total Annual GW.h
2006/07	132	114	246	1,271
2007/08	93	128	221	1,360
2008/09	103	139	242	1,510

Fiscal Year	Demand (Average Winter MW)			
	Non-Persisting Incremental MW	Other Incremental MW	Total Incremental MW	Total Annual MW
2006/07	218	21	239	465
2007/08	215	25	240	488
2008/09	206	29	235	509

Note: Figures may not add due to rounding

CAC/MSOS (MH) I-35

Subject: Financial Forecast – Power Supply and DSM

Reference: Appendix 5.2, pages 7-8

- d) Please provide a forecast – showing both annual and cumulative DSM (electricity) savings through to 2024/25 based on the 2009 Power Smart Plan.**

ANSWER:

Please refer to the 2009 Power Smart Plan which can be found in Appendix 9.1 of this Application. The winter capacity savings can be found in the report on page 138 and the energy savings can be found on page 140.

CAC/MSOS/MH I-35

Subject: Financial Forecast – Power Supply and DSM

Reference: Appendix 5.2, pages 7-8

- e) Please provide a schedule that contrasts the annual and cumulative DSM (electricity) savings underlying MH08-1 and MH07-1 with those in MH09-1.

ANSWER:

Annual Energy Savings (GW.h) @ Generation			
	MH07-1	MH08-1	MH09-1
	2007 Plan	2008 Plan	2009 Plan
2007/08	253		
2008/09	419	310	
2009/10	564	345	311
2010/11	719	509	561
2011/12	871	672	787
2012/13	1,024	834	959
2013/14	1,187	957	1,120
2014/15	1,332	1,075	1,202
2015/16	1,473	1,184	1,216
2016/17	1,616	1,293	1,298
2017/18	1,639	1,413	1,418
2018/19		1,504	1,537
2019/20		1,584	1,636
2020/21		1,663	1,732
2021/22		1,742	1,829
2022/23		1,818	1,912
2023/24		1,874	1,997
2024/25			2,053

Total Energy Savings (including persisting savings from previous years' activity) (GW.h) @ Generation			
	MH07-1	MH08-1	MH09-1
	2007 Plan	2008 Plan	2009 Plan
2007/08	1,406		
2008/09	1,572	1,569	
2009/10	1,708	1,595	1,753
2010/11	1,854	1,750	1,995
2011/12	1,998	1,907	2,214
2012/13	2,151	2,059	2,377
2013/14	2,312	2,180	2,497
2014/15	2,456	2,298	2,577
2015/16	2,596	2,408	2,592
2016/17	2,737	2,512	2,670
2017/18	2,759	2,628	2,787
2018/19		2,719	2,903
2019/20		2,798	3,001
2020/21		2,877	3,035
2021/22		2,955	3,131
2022/23		2,994	3,171
2023/24		3,048	3,231
2024/25			3,271

CAC/MSOS/MH I-36

Subject: Financial Forecast

Reference: Tab 5, pages 2-4

- a) **Please confirm that in Table 5.1.1 all of the variance in General Consumer Revenues at Projected Rates and at Approved Rates between MH09-1 and MH08-01 is due to load forecast differences.**

ANSWER:

The variance in total General Consumers Revenues at Projected Rates and at Approved Rates between MH09-1 and MH08-1 is not all due to load forecast differences. Different rate increases are used between the two forecasts causing rate and load variances. Please see table below for details.

**General Consumer Revenues at Projected Rates Variance
Increase/(Decrease)
(millions of \$)**

	2010 - 2012					2010 - 2019				
	MH09-1	MH08-1	Rate Variance	Load Variance	Total Variance	MH09-1	MH08-1	Rate Variance	Load Variance	Total Variance
General Consumers at projected rates	3,599	3,810	(13)	(199)	(212)	14,179	14,709	206	(736)	(530)
Cumulative Rate Increases	8.95%*	10.12%				38.62%*	34.52%			

* includes 2.9% approved rate increase in 08/09

CAC/MSOS/MH I-36

Subject: Financial Forecast

Reference: Tab 5, pages 2-4

- b) **What were the amounts included in Depreciation and Amortization for each year of MH08-1 for IFRS and Canadian Accounting Standard changes? Is the same amount now included in the MH09-1 OM&A for each year? If not, what are the differences by year?**

ANSWER:

IFF08 incorporated a \$10 million provision for CICA accounting changes commencing in 2009/10, and a further \$15 million provision for IFRS changes commencing in 2011/12.

IFF09 has incorporated an \$11 million increase to OM&A as a result of CICA changes commencing in 2009/10 and a further \$15 million provision for IFRS changes commencing in 2011/12.

CAC/MSOS/MH I-36

Subject: Financial Forecast

Reference: Tab 5, pages 2-4

- c) **Are there actual costs associated with IFRS in 2006/07 up to 2008/09? If so, how much was incurred each year and was it reported under OM&A or Depreciation (per Manitoba Hydro's Annual Report for Year Ended March 31, 2009, Note 22) for these years?**

ANSWER:

Please see Manitoba Hydro's response to PUB/MH I-175(c).

CAC/MSOS/MH I-36

Subject: Financial Forecast

Reference: Tab 5, pages 2-4

- d) For the period beyond 2011/12, please indicate the assumption Manitoba Hydro has used regarding the annual reduction attributable to cost savings measures and productivity.

ANSWER:

The forecast allows for a productivity improvement factor of approximately 1% annually.

CAC/MSOS/MH I-37

Subject: Financial Forecast – Wuskwatim

Reference: Appendix 5.1, page 9

- a) **Please confirm if the in-service date for the first unit is still expected to be September 2011. If not, please indicate what the new date is and the reason for the change.**

ANSWER:

Confirmed.

CAC/MSOS/MH I-37

Subject: Financial Forecast – Wuskwatim

Reference: Appendix 5.1, page 9

- b) Please provide the financial projection for the Wuskwatim Partnership up to 2019/2020 underpinning MH09-1.**

ANSWER:

Please see Manitoba Hydro's response to PUB/MH I-42(b).

CAC/MSOS/MH I-37

Subject: Financial Forecast – Wuskwatim

Reference: Appendix 5.1, page 9

- c) **Please provide the financial projection for the Wuskwatim Partnership up to 2019/2020 underpinning MH08-1.**

ANSWER:

Please see the IFF08-1 WPLP operating statement on the following page.

Wuskwatim Power Limited Partnership (IFF08)

Projected Income Statement

For the fiscal years ending March 31

thousands of dollars

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Revenues	-	-	-	44,208	108,296	113,033	118,228	125,277	130,993	135,417	142,616	144,984
Expenses												
Operating & administrative	-	-	-	6,231	6,345	6,458	6,716	6,837	6,960	7,086	7,215	7,346
Depreciation	-	-	-	13,832	26,146	26,146	26,146	26,146	26,148	26,148	26,148	26,148
Water rentals	-	-	-	2,185	5,062	5,062	5,062	5,062	5,062	5,062	5,062	5,062
	-	-	-	22,249	37,553	37,666	37,924	38,046	38,171	38,297	38,426	38,557
Income/(loss) before finance expense	-	-	-	21,959	70,744	75,366	80,304	87,232	92,822	97,119	104,190	106,428
Finance expense	-	-	-	28,810	75,975	74,881	73,395	71,971	70,591	69,238	67,817	66,492
Net Income/(Loss)	-	-	-	(6,851)	(5,232)	485	6,909	15,260	22,230	27,881	36,373	39,936

CAC/MSOS/MH I-38

Subject: Financial Forecast – OM&A

Reference: Appendix 5.1, pages 11-12

- a) **Please provide a schedule that shows the calculation of the reported increases in OM&A for 2009/10, 2010/11 and 2011/12 – after adjustments.**

ANSWER:

The following table, based on Consolidated OM&A, provides the details requested.

Reconciliation of OM&A Costs

	<u>2008/09</u>	<u>2009/10</u>	<u>2010/11</u>	<u>2011/12</u>
Actual/Approved OM&A costs	\$ 436	\$ 446	\$ 456	\$ 482
<u>Adjustments</u>				
CICA adjustment reducing stores overhead capitalized				<i>Changed in 2008/09</i>
CICA adjustment reducing capitalization of intangibles		(4)	(4)	(4)
CICA adjustment reducing A&G capitalized		(2)	(2)	(2)
Waterways mgmt program reclassification to OM&A				(5)
Funding agreement reclassification to Capital & Other Taxes		5	5	5
Accounting change re transfer of wire & telecom to subsidiaries				<i>Changed in 2008/09</i>
IFRS reduction to overhead capitalized				(15)
Adjusted OM&A costs	\$ 436	\$ 445	\$ 455	\$ 461
% Increase		1.9%	2.2%	1.3%

CAC/MSOS/MH I-38

Subject: Financial Forecast – OM&A

Reference: Appendix 5.1, pages 11-12

b) With respect to the cost savings measures referenced on page 11:

- **Please indicate the total dollars savings resulting for each year**
- **Please indicate which of the measures are considered to be short-term reductions that can not be maintained over the long term as opposed to measures that will lead to permanent savings.**
- **Please quantify the level of permanent savings associated with the measures listed.**

ANSWER:

As shown in the Table on page 3 of Appendix 4.4, Manitoba Hydro has forecast to introduce measures that will result in permanent net OM&A reductions of approximately \$10 million annually by 2011/12.

CAC/MSOS/MH I-38

Subject: Financial Forecast – OM&A

Reference: Appendix 5.1, pages 11-12

- c) **Please update CAC/MSOS (MH) 1 –35 a) {from the 2008 GRA} for the period 2006/07 to 2019/20 based on MH09-1.**

ANSWER:

Please see the following table for the data requested.

(in millions of dollars)	Actual		Forecast - IFF09									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
OM&A expense electric & subsidiary operations	335	377	386	395	419	428	436	445	454	463	485	497
OM&A expense for subsidiaries	12	17	14	15	16	16	17	17	17	18	18	18
OM&A expense 'electric only'	323	360	372	380	403	411	420	428	437	445	467	478
# of Customers	521,599	527,472	531,804	536,267	540,756	545,215	549,623	553,968	558,286	562,580	566,841	571,081
OM&A (electric only) per customer (in dollars)	619	682	699	708	746	755	764	773	782	792	824	837

CAC/MSOS/MH I-38

Subject: Financial Forecast – OM&A

Reference: Appendix 5.1, pages 11-12

d) Please provide a response to part (c) based on MH08-1.

ANSWER:

Please see the following table for the data requested.

(in millions of dollars)	Actual		Forecast - IFF08									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
OM&A expense electric & subsidiary operations	335	377	369	376	391	398	406	414	423	431	453	463
OM&A expense for subsidiaries	12	17	11	11	12	12	12	12	13	13	13	13
OM&A expense 'electric only'	323	360	358	365	379	386	394	402	410	418	439	450
# of Customers	521,599	527,472	532,391	534,772	539,125	543,453	547,752	552,022	556,265	560,476	564,661	568,817
OM&A (electric only) per customer (in dollars)	619	682	673	683	703	711	719	728	737	746	778	791

CAC/MSOS/MH I-38

Subject: Financial Forecast – OM&A

Reference: Appendix 5.1, pages 11-12

- e) **How much of the OM&A incorporated in MH09-1 for each year is associated with the operating cost of new facilities?**

ANSWER:

The only specifically identified OM&A amount for new facilities in MH09-1 is that for the Wuskwatim Generating and Transmission facilities which totals \$6 million commencing in 2011/12.

CAC/MSOS/MH I-39

Subject: Financial Forecast – Capital Expenditures

Reference: Appendix 5.2, page 13 and pages 27-32

- a) Please provide the annual actual capital spending for 2006/07 through 2008/09 broken down to a level of detail consistent with pages 27-32.

ANSWER:

Please see the following tables for actual capital spending for 2006/07 through 2008/09.

CAPITAL EXPENDITURES
(in millions of dollars)

	2007	2008	2009
Major New Generation & Transmission			
Wuskwatim Generation	62.6	148.9	174.6
Wuskwatim Transmission	14.7	57.6	79.4
Herblet Lake - The Pas 230 kV Transmission	0.2	4.4	9.7
Keeyask Generating Station	36.1	43.1	54.3
Conawapa Generating Station	32.6	34.0	33.4
Kelsey Improvements & Upgrades	29.7	31.1	44.5
Kettle Improvements & Upgrades	-	-	0.8
Pointe du Bois Rebuild	0.3	9.3	13.3
Pointe du Bois & Slave Falls Transmission	0.0	0.8	1.7
Planning Study Costs	5.5	4.7	2.7
Bipole 3	1.5	2.0	17.9
Riel 230/ 500 kV Station	0.2	2.3	2.0
Northern AC Transmission System Requirements	4.0	0.4	-
MB- ON Clean Energy Transfer Init- Phase I	-	-	-
Demand Side Management	37.0	37.1	35.2
	224.6	375.7	469.5
New Head Office			
New Head Office	54.7	97.1	69.3
Corporate Relations			
Waterways Management Programs	4.3	4.6	4.7

CAPITAL EXPENDITURES
(in millions of dollars)

	2007	2008	2009
Power Supply			
Bipole 1 Thyristor Valve Upgrade Project	2.3	-	-
Converter Transformer Bushing Replacement	0.1	0.3	0.0
HVDC Auxiliary Power Supply Upgrades	0.8	0.3	0.2
Dorsey Synchronous Condenser Refurbishment	1.7	1.6	5.4
Bipole 1 Chiller Replacement	4.5	0.7	0.0
Dorsey ASEA Synchronous Condenser Cooler Upgrade	0.4	0.5	0.4
HVDC Bipole 1 Roof Replacement	1.0	0.9	0.3
HVDC Sys. Transformer and Reactor Fire Protection & Prevention	1.5	0.2	0.9
HVDC AC Filter PCB Capacitor Replacement	7.4	4.5	4.7
HVDC Transformer Replacement Program	10.4	3.7	0.7
Dorsey 230 kV Relay Building Upgrade	0.2	0.3	0.5
Dorsey EE Synch Condenser Glycol Cooler Upgrade	0.6	0.5	-
HVDC Stations Ground Grid Refurbishment	1.0	0.2	0.1
HVDC Bipole 2 230 kV HLR Circuit Breaker Replacements	1.6	0.3	2.3
HVDC Bipole 1 By-Pass Vacuum Switch Removal	-	0.1	0.3
HVDC Bipole 1 Smoothing Reactor Replacement	-	-	0.0
HVDC BP1 Converter Station, P1 & P2 Battery Bank Separation	-	-	0.0
HVDC Bipole 2 Thyristor Module Cooling Refurbishment	-	-	0.4
Great Falls Generating Station Rehabilitation	2.9	0.6	0.1
Pine Falls Generating Station Rehabilitation	1.0	0.5	0.6
Laurie River Generating Station Plant 1 and 2 Rehabilitation	3.3	0.1	-
Jenpeg Generating Station Unit Overhauls	0.2	1.4	0.1
Power Supply Dam Safety Upgrades	5.4	4.5	2.4
Winnipeg River Control System	0.1	0.8	0.4
Winnipeg River Riverbank Protection Program	0.7	1.0	0.9
Power Supply Hydraulic Controls	-	1.0	2.8
Slave Falls G.S. Rehabilitation	0.9	4.1	-
Slave Falls Generating Station Rehabilitation	-	-	5.8
Generating Station Roof Replacements	2.6	3.0	2.7
Great Falls Generating Station Unit 4 Overhaul	0.3	0.4	1.2
Great Falls 115 kV Indoor Station Safety Improvements	1.3	6.4	1.9
Generation South Transformer Refurbish & Spares	-	-	0.1
Water Licenses & Renewals	0.9	1.1	1.9
Kettle Transformer Overhaul Program	-	-	0.1
Generation South Breaker Replacement	-	-	-
Seven Sister Generating Station Upgrades	-	-	0.1
Brandon Generating Station Unit 5 License Review	2.7	0.9	0.4
Selkirk Generating Station Enhancements	0.3	0.2	1.7
Power Supply Security Installations/ Upgrades	0.5	0.9	1.3
PS Sewer & Domestic Water System Install & Upgrades	0.5	1.2	1.8
Site Remediation of Contaminated Corporate Facilities	4.9	5.7	1.2
High Voltage Test Facility	0.2	0.7	0.8
Oil Containment - Power Supply	0.7	0.7	6.9
Fire Protection Projects - HVDC	0.2	0.5	0.3
Halon Replacement Project	0.2	0.7	4.9
Generation Townsite Infrastructure	5.3	1.2	3.8
Power Supply Fall Protection Program	4.0	3.7	2.5
Power Supply Emergencies/ Equipment Failures	4.7	11.7	9.2
Power Supply Domestic	18.1	19.8	20.9
	<u>95.2</u>	<u>86.7</u>	<u>92.9</u>

CAPITAL EXPENDITURES

(in millions of dollars)

	2007	2008	2009
Transmission			
Winnipeg-Brandon Transmission Improvements	-	0.2	1.3
Transcona New 230 - 66 kV Station	-	0.3	0.2
Rosser - Silver 230 kV Transmission	1.8	-	-
Neepawa New 230 - 66kV Station	-	-	0.2
Richer South 230 - 66kV Transformer Addition	5.5	2.5	-
Transmission Line Re-Rating	7.4	1.0	2.0
Dorsey 230 kV Bus Enhancements	2.4	1.9	0.7
Pine Falls - Great Falls 115 - 66kV Supply	0.0	-	(0.1)
Flin Flon Area Transmission Improvements Phase II	2.1	3.1	0.0
Rosser Station 230 - 115 kV Bank 3 Replacement	0.1	0.4	2.7
Rosser - Inkster 115 kV Transmission	-	0.1	0.3
Transcona Station 66 kV Breaker Replacement	-	-	0.1
Transcona & Ridgeway Station 66kV Bus Upgrades	-	-	0.3
Dorsey 500 kV R502 Breaker Replacement	-	-	0.1
St. Boniface - Plessis Rd Bank 2 Addition	0.4	-	-
Portage South 230- 66 kV Transformer Addition	3.0	0.8	-
Winnipeg Central 66 kV Breaker Replacement	2.4	2.4	0.7
St. Boniface 66 kV Line Burial & Salvage	4.5	-	-
Stanley Station 230-66kV Hot Standby	-	-	0.1
Virден Area Distribution Changes	0.6	-	-
Holland Conversion & DSC	2.9	0.8	0.1
35MVA Mobile Transformer Purchase	0.2	2.8	0.1
Ness Station Feeder Conversions	0.7	2.8	0.4
Transcona Area Distribution Conversion	1.1	2.6	1.0
Communications	3.0	0.9	-
System Control Centres Improvements & Upgrades	2.4	1.9	0.1
Microwave Frequency Displacement	0.1	0.6	-
Interlake Digital Microwave Replacement	0.1	8.3	7.4
Communication System - Southern MB (Great Plains)	7.0	5.4	3.2
Communications Upgrade Winnipeg Area	1.3	1.9	1.2
Pilot Wire Replacement	0.9	1.5	1.2
Transmission Line Protection & Teleprotection Replacement	0.1	1.3	1.9
Winnipeg Central Protection Wireline Replacement	0.6	1.3	3.0
Mobile Radio System Modernization	-	-	-
Cyber Security Systems	-	2.2	3.4
Site Remediation	0.7	1.0	0.3
Oil Containment	0.6	0.7	1.7
Station Battery Bank Capacity & System Reliability Increase	1.5	4.1	3.9
Red River Floodway Expansion Project	0.6	0.7	0.3
T&D System Emergencies/ Equipment Failures	1.4	0.4	3.7
Transmission Domestic	28.5	29.8	24.2
	83.6	83.7	65.7
Customer Service & Distribution			
Winnipeg Distribution Infrastructure Requirements	2.2	2.3	2.1
Defective RINJ Cable Replacement	0.5	-	-
Brereton Lake Station Area	-	0.9	0.9
Stony Mountain New 115-12kV Station	3.4	0.2	0.5
Rover Substation Replace 4 kV Switchgear	0.3	0.1	-
Martin New Outdoor Station	0.3	0.1	0.1
Frobisher Station Upgrade	0.3	3.6	6.0
Burrows New 66 - 12 kV Station	0.1	0.5	1.6
Winnipeg Central District Oil Switch Project	1.4	2.1	1.5
William New 66 kV/ 12 kV Station	-	-	-
Waverley West Sub Division Supply - Stage 1	1.1	0.8	0.2
St James 24 kV System Refurbishment	-	0.5	0.0
Shoal Lake New 33 - 12.47 kV DSC	-	-	0.2
York Station Bank & Switchgear Addition	-	-	-
Cromer North Station & Reston RE12-4 25kV Conversion	-	-	-
Brandon Crocus Plains 115 - 25kV Bank Addition	-	-	-
Winkler Market Feeder WM25-13 Conversion	-	-	2.1
Neepawa North Feeder NN12-2 & Line 57 Rebuild	-	-	-
Gas SCADA Replacement	-	-	0.1
Distribution PCB Testing & Transformer Replacement	3.2	1.1	0.5
Wpg Central District Underground Network Asbestos Removal	0.6	0.6	0.8
Customer Service & Distribution Domestic	105.7	120.1	124.4
	119.3	132.9	141.3

CAPITAL EXPENDITURES
(in millions of dollars)

	2007	2008	2009
Customer Care & Marketing			
Automatic Meter Reading Implementation	0.2	1.5	0.2
Customer Care & Marketing Domestic	4.2	3.9	2.6
	4.4	5.4	2.8
Finance & Administration			
Corporate Buildings	5.0	5.0	9.0
Customer Information System	1.5	-	-
Enterprise GIS Project	4.9	3.1	1.1
Workforce Management (Phase 1 to 4)	1.4	3.2	1.9
WorkSmart	1.2	3.3	1.5
Fleet Acquisitions	12.6	15.1	13.4
Domestic Item - Finance & Administration	20.8	19.1	19.6
	47.3	48.9	46.3
Electric Capital Subtotal	633.4	834.9	892.5

CAC/MSOS/MH I-39

Subject: Financial Forecast – Capital Expenditures

Reference: Appendix 5.2, page 13 and pages 27-32

- b) Please provide a schedule that sets out all capital projects completed and placed in-service in 2006/07 to 2008/09 with a total cost of more than \$5 million and set out both the actual total capital spending and that forecast in MH07-1. Please provide variance explanation for any differences of more than 5%.

ANSWER:

Please see the following table for the information requested.

Project Name	Placed In-Service	Total Project Cost	Final In-Service Cost	Variance \$	Variance %
Power Supply					
Generating Station Roof Replacements	2007/08	9.2	8.3	0.8	9%
Transmission & Distribution					
Flin Flon Area Transmission Improvements Phase 2	2008/09	13.2	14.4	(1.2)	-9%
Winnipeg Central District 66 kV Breaker Replacement	2008/09	6.1	6.4	(0.3)	-6%
Pine Falls - Great Falls 115 - 66 kV Supply	2008/09	12.1	8.8	3.3	27%
Finance & Administration					
WorkSmart	2008/09	5.4	5.9	(0.5)	-10%

Note: MH07-1 was finalized/approved in fiscal 2007/08; therefore, projects placed in-service in fiscal 2006/07 would not be included in MH07-1.

Variance Explanations:

Generating Station Roof Replacements

The \$0.8 million variance was due to more favorable contractor pricing for the replacement of the Limestone Generating Station roof.

Flin Flon Area Transmission Improvements Phase 2

The \$1.2 million variance pertains to the Herblet Lake-Chisel Lake 115 kV Tap Line project and was primarily due to unforeseen geotechnical site conditions which contributed to

additional rock set installations. Extended extreme cold weather conditions also contributed to the unfavorable variance due to work slow downs and machinery breakdowns.

Winnipeg Central District 66 kV Breaker Replacement

The \$0.3 million variance was due to unexpected site conditions that required further design and constructions additions at both Amy Station and Jessie Station.

WorkSmart

The \$0.5 million variance was due to greater internal labour costs than initially anticipated as a result of technical issues associated with the vendor-delivered software, which delayed the first in-service date from April 2008 to February 2009.

CAC/MSOS/MH I-39

Subject: Financial Forecast – Capital Expenditures

Reference: Appendix 5.2, page 13 and pages 27-32

c) Please provide a copy of CEF08-1.

ANSWER:

Please see Appendix 22.

CAC/MSOS/MH I-40

Subject: Financial Forecast - Capital Expenditures

Reference: Appendix 6.1 page 9

- a) **What is the required first power in-service date for Keeyask if it were based solely on meeting domestic load requirements?**

ANSWER:

Under the assumptions in the 2009/10 power resource plan, new resources to meet Manitoba load would be required by 2022/23, regardless of the specific supply option.

CAC/MSOS/MH I-40

Subject: Financial Forecast - Capital Expenditures

Reference: Appendix 6.1 page 9

- b) **What is the levelized unit energy cost for the output from Keeyask? Please indicate the discount and inflation rates used and provide the supporting analysis.**

ANSWER:

Manitoba Hydro has not made a commitment to develop Keeyask but is working to protect a potential in-service-date. Current plans that include Keeyask as the next plant are based on the successful conclusion of the sales with Wisconsin Public Service and Minnesota Power. Any commitment to Keeyask will depend on the prevailing circumstances at the time. Keeyask will be subject to a full examination when the “needs for and alternatives to” process is initiated.

CAC/MSOS/MH I-40

Subject: Financial Forecast - Capital Expenditures

Reference: Appendix 6.1 page 9

- c) **Are there any transmission projects in the Capital Spending Plan that are required in order to integrate the output from Keeyask into the Manitoba Hydro grid and deliver it to export markets. If so, please identify the projects and their costs.**

ANSWER:

Keeyask G.S. will require sufficient transmission to connect it to the Northern AC system, and the costs of that transmission have been included in the cost estimate. The Capital Expenditure Forecast Summary on page 9 includes \$140.7 M for transmission (including interest and escalation).

An interconnection to the U.S. is required if the MP and WPS sales materialize. The “Dorsey - U.S. Border New 500 kV Transmission Upgrade” project on page 14 of the CEF09-1 provides capital costs for this interconnection that will be used to transmit surplus power including that from Keeyask G.S. and Conawapa G.S. to the U.S. export market.

CAC/MSOS/MH I-41

Subject: Financial Forecast – Capital Expenditures

Reference: Appendix 6.1, page 10

- a) **Please explain more fully the current market conditions that contributed to the 27% increase in the cost for Conawapa.**

ANSWER:

Please see Manitoba Hydro's response to PUB/MH I-52(b).

CAC/MSOS/MH I-41

Subject: Financial Forecast – Capital Expenditures

Reference: Appendix 6.1, page 10

b) How much of the increase is due to the addition of access roadway improvements?

ANSWER:

Please see Manitoba Hydro's response to PUB/MH I-52(a).

CAC/MSOS/MH I-41

Subject: Financial Forecast – Capital Expenditures

Reference: Appendix 6.1, page 10

- c) **What is the levelized unit energy cost for output from Conawapa? Please confirm the inflation and discount rates used and provide the supporting analysis.**

ANSWER:

Manitoba Hydro has not made a commitment to develop the Conawapa project but is working to protect a potential in-service-date. Current plans that include Conawapa G.S. as the next plant are based on the successful conclusion of the sales with Wisconsin Public Service and Minnesota Power. Any commitment to the Conawapa project will depend on the prevailing circumstances at the time. The Conawapa project will be subject to a full examination when the “needs for and alternatives to” process is initiated.

CAC/MSOS/MH I-41

Subject: Financial Forecast – Capital Expenditures

Reference: Appendix 6.1, page 10

- d) **What is the required in-service date for Conawapa based solely of Manitoba Hydro's domestic needs?**

ANSWER:

Under the assumptions in the 2009/10 power resource plan, new resources to meet Manitoba load would be required by 2022/23, regardless of the specific supply option.

CAC/MSOS/MH I-41

Subject: Financial Forecast – Capital Expenditures

Reference: Appendix 6.1, page 10

- e) **Is the overhaul of the Kelsey generating station units being undertaken solely to increase the capacity output or is an overhaul of the existing units required in any event to maintain the station’s existing capability?**

ANSWER:

The Kelsey generating station did not require an immediate overhaul to maintain the existing capability. The upgrade was based on increasing the plant capacity and generation by using water that would otherwise have been spilled. However the facility is nearly 50 years old, and the overhaul provides an opportunity to advance a number of maintenance items in order to avoid the cost of taking the units out of service again.

CAC/MSOS/MH I-41

Subject: Financial Forecast – Capital Expenditures

Reference: Appendix 6.1, page 10

- f) **How does Manitoba Hydro determine the “value” of investments such as the Kelsey Improvement where there is increased capacity but no increase in energy output?**

ANSWER:

The Kelsey Improvements & Upgrades project is not expected to provide any additional dependable energy which corresponds to lowest flow on record. However, this project will provide significant increased generation under moderate to high flow conditions. The Kelsey plant spills water under most flow conditions. With this project, instead of being spilled, this water can now be used to generate energy, offsetting more expensive generation or imports, or providing increased export opportunities.

CAC/MSOS/MH I-42

Subject: Financial Forecast – Capital Spending

Reference: Appendix 6.1, page 11

- a) **What was the basis for determining that a new four unit powerhouse would not be constructed?**

ANSWER:

The primary driver for modernization of Pointe du Bois is to meet Canadian Dam Association guidelines related to spillway capacity. As a result of the change in the economic climate and rising construction costs, the decision was made that the Pointe du Bois Modernization Project will now take the form of a new spillway and new concrete and earth dams. The existing powerhouse can continue to operate, and the decision to rebuild, renew or decommission it is being deferred to a later period.

CAC/MSOS/MH I-42

Subject: Financial Forecast – Capital Spending

Reference: Appendix 6.1, page 11

- b) Was the in-service dated advanced three years as a result of the reduced scope of the project?**

ANSWER:

It is confirmed that the proposed in-service date for the spillway and dam at Pointe du Bois was able to be advanced due to the reduced scope of work.

CAC/MSOS/MH I-43

Subject: Financial Forecast – Capital Spending

Reference: Appendix 6.1, page 12

- a) **Is the scope of the current Pointe du Bois project the same as that of the Pointe du Bois and Slave Falls Transmission project described in CEF07-1 (page 11)? If not, please describe the difference and explain why the cost is virtually unchanged.**

ANSWER:

The scope for the current (CEF09-1) Pointe du Bois - Transmission Project (name change) is the same as the CEF07-1 Pointe du Bois and Slave Falls Transmission project. The cost in CEF07-1 of \$82.5M increased to \$85.9M in CEF09-1 due to several small changes in detailed work scope. The project is a reliability enhancement which integrates the Pointe du Bois and Slave Falls transmission into the Manitoba Hydro transmission system, and allows for the salvage of the four Pointe du Bois to Rover 66 kV lines which are well beyond their useful life.

CAC/MSOS/MH I-44

Subject: Financial Forecast – Capital Spending

Reference: Appendix 6.1, page 13

- a) **Please explain the more than doubling of the Riel 230/500 kV Station project cost from CEF07-1 to the current CEF.**

ANSWER:

The latest Riel 230/500 kV Station project budget, approved October 2008 by the Executive Committee, requested an increase of \$162.2M, from \$105.4M to \$267.6M. The major contributors to this cost increase were associated with the site and station development (\$102.0M), due to site expansion and higher market pricing both for apparatus and for construction material and labour. The site expansion was necessary to provide for system reliability requirements consistent with the Dorsey Station, and to allow for appropriate access for major equipment installation from a new spur line. In addition, forecast interest and escalation (\$38.7M) and the addition of project contingency (\$12.8M), additional protection changes required at other stations affected by the Riel 230/500 kV Station project (\$4.7M), provision of Construction Insurance (\$2.4M) and Licensing & Environmental Assessment (\$1.6M) were added to the budget.

CAC/MSOS/MH I-45

Subject: Financial Forecast – Capital Spending

Reference: Appendix 6.1, page 14

- a) **Please provide a schedule setting out the level of firm (i.e., dependable) contracts for export to the US by year from 2006/07 to 2019/20. For purposes of the schedule please only include completed contracts (i.e., exclude those where only terms sheets have been signed) and breakdown the MWs by contracting party.**

ANSWER:

Please see the next page for a table of dependable contracts for the period from 2006/07 to 2019/20.

**Long-Term Export Sales
Nominal Capacity (MWs)
Signed Contracts**

	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Northern States Power	500	500	500	500	500	500	500	500	500					
Northern States Power Diversity Export - Summer only	350	350	350	350	350	350	350	350	350					
Northern States Power Diversity Import - Winter only	-350	-350	-350	-350	-350	-350	-350	-350	-350	-600	-400	-400	-200	
Great River Energy	50	50												
Great River Energy Diversity Export Summer only	150	150	150	150	150	150	150	150	150					
Great River Energy Diversity Import Winter only	-150	-150	-150	-150	-150	-150	-150	-150	-150					
Minnesota Municipal Power Agency	60	60	30	30	30	30								
Minnesota Power	100	100	50	50	50	50	50	50	50					
Otter Tail Power	50	50	50	50										
Wisconsin Public Service	100													

CAC/MSOS/MH I-45

Subject: Financial Forecast – Capital Spending

Reference: Appendix 6.1, page 14

- b) What is the capability of the current interties with the US for purposes of exporting power during the peak period?**

ANSWER:

Up to 1950 MW can be exported on the US interface during the peak period. Under emergency conditions an additional 150 MW can be supplied to the US under the existing reserve sharing agreement for a maximum total export of 2100 MW.

CAC/MSOS/MH I-45

Subject: Financial Forecast – Capital Spending

Reference: Appendix 6.1, page 14

- c) **Based on recent history and the current Load Forecast and Power Resources Report, please provide a schedule that sets out the average MWs of hydro output available for export in the peak period for each year from 2006/07 to 2019/2020. For purposes of the longer term forecast please use the average flows.**

ANSWER:

Because export energy is sourced from the integrated Manitoba Hydro generation system, it is not possible to isolate the hydro energy from the total export energy sales. The following chart lists the availability of export energy on an annual basis for the period 2006/07 to 2019/20. The tabulated power quantity (MWc) represents the average (MW) if all export energy is delivered in only the (5x16) on-peak period.

Fiscal Year	Total Export Energy		Notes
	(GWh/yr)	(MWc)	
2006/07	11060	2650	Historic
2007/08	11789	2824	Historic
2008/09	10007	2397	Historic
2009/10	9150	2192	Median Flow
2010/11	7122	1706	Median Flow
2011/12	8628	2067	Average Flows
2012/13	8967	2148	Average Flows
2013/14	8825	2114	Average Flows
2014/15	8176	1959	Average Flows
2015/16	7900	1893	Average Flows
2016/17	7792	1867	Average Flows
2017/18	7708	1847	Average Flows
2018/19	8522	2042	Average Flows
2019/20	10561	2530	Average Flows

Note: MWc refers to average MW if all export energy is marketed in the (5x16) on-peak period.

CAC/MSOS/MH I-45

Subject: Financial Forecast – Capital Spending

Reference: Appendix 6.1, page 14

- d) Is the Brandon Combustion Turbine Pipeline Upgrade an Electric operations or Gas operations project? If Electric, please explain why.**

ANSWER:

The Brandon Combustion Turbine (BCT) Pipeline Upgrade is an electric operations project. After the BCT project, mainline TCPL pressures were observed lower than those assumed as the design pressure for the project. As a result, until an upgrade to the pipeline was made, the capacity of the BCT was derated in non-emergency conditions in deference to pre-existing customers in the Brandon area. The upgrade project was necessary to remove the derate for the BCT.

CAC/MSOS/MH I-46

Subject: Financial Forecast – Capital Spending

Reference: Appendix 6.1, page 15

a) Please provide the levelized value assigned to a peak period kWh of DSM savings (at the point of generation) based on the ten year period 2009/2010 to 2018/19 as used to determine cost-effectiveness in:

- **The current Power Smart Plan underlying CEF09-1**
- **The Power Smart Plan underlying CEF07-1.**

ANSWER:

The levelized value assigned to a peak period kWh of DSM savings (at the point of generation) based on the ten year period 2009/2010 to 2018/19:

2009 Power Smart Plan (CEF09-1) - 5.53 cents per kilowatt hour.

2007 Power Smart Plan (CEF07-1) - 5.59 cents per kilowatt hour.

CAC/MSOS/MH I-47

Subject: Financial Forecast – Capital Spending

Reference: Appendix 6.1, page 16

- a) **Please explain the \$14.8 M of capital spending for the New Head Office in 2010 when the in-service date was May 2008.**

ANSWER:

The new building was placed into service when the base structure was complete and ready for initial occupancy. Subsequent capital spending related to the outfitting of floors for further staged occupancy and for final completion of the building.

CAC/MSOS/MH I-48

Subject: Financial Forecast – Capital Spending

Reference: Appendix 6.1, page 20

- a) **Please explain the reason for the increased cost of the Dorsey 230 kV Relay Building Upgrade from \$9.1 M in CEF07-1 to \$73.8 M in CEF09-1.**

ANSWER:

The increase reflects the addition of the Dorsey 230 kV Phase II Zone Building Implementation project to separate the existing 230 kV Switchyard functionality into three separate zones; each served by its own zone relay building. This will be achieved by constructing and installing equipment for two new hardened zone buildings, and refurbishing the existing relay building to the same standards as the new hardened zone buildings.

CAC/MSOS/MH I-49

Subject: Financial Forecast – Capital Spending

Reference: Appendix 6.1, page 2

- a) **Please explain the increase in the cost of the HVDC Bipole 1 By-Pass Vacuum Switch Removal from \$15.1 M in CEF07-1 to \$20.4 M in CEF09-1.**

ANSWER:

The increase reflects higher costs for the replacement of 12 specially designed bypass switches, four spare switches, and associated equipment.

CAC/MSOS/MH I-50

Subject: Financial Forecast – Capital Spending

Reference: Appendix 6.1, page 27

- a) **If the HVDC Bipole 1 Transformer Marshalling Kiosk Replacement is considered necessary for worker safety, why is it not planned to be in-service prior to November 2014?**

ANSWER:

The Marshalling Kiosk Replacement has both reliability and safety implications. We endeavor to implement such projects as quickly as possible but are limited by resource availability, time necessary to complete the design, time necessary for material procurement and the availability/timing of outages. In the interim we manage any risks by implementing appropriate operating and maintenance procedures.

There are 12 marshalling kiosks required for Bipole 1; six in the north at the Radisson Station and six in the south at the Dorsey Station. Three kiosks have already been placed in service at Radisson, and the remaining nine will be installed over the next four years, one at a time, during the spring and fall maintenance sessions.

This particular project requires valve group outages for installation. The installation is to be completed during planned maintenance outages to avoid additional outage costs.

CAC/MSOS/MH I-51

Subject: Financial Forecast – Capital Spending

Reference: Appendix 6.1, page 28

- a) **Please explain the increase in the cost of the Jenpeg Unit Overhauls from \$35.3 M in CEF07-1 to \$128.1 in CEF09-1.**

ANSWER:

The increase in the cost of the Jenpeg Unit Overhauls from \$35.3 M in CEF07-1 to \$128.1 in CEF09-1 reflects a more comprehensive scope of work (new runners, generator rewinds, wicket gate and seal upgrades, water passage concrete modifications, modernization of components, upgrades of station auxiliary systems, and new intake gates and hoists), in addition to escalation increases resulting from the project timeline spanning from 2015 to 2022 as compared to the CEF07-1 projected completion by 2019.

CAC/MSOS/MH I-52

Subject: Financial Forecast – Capital Spending

Reference: CEF07-1

- a) **With respect to page 30, please explain why the Laurie River Plants 1 and 2 Rehabilitation project is not in CEF09-1.**

ANSWER:

A review of this project indicated that the benefits associated with building the new roads did not out weigh the costs and therefore the project was cancelled.

CAC/MSOS/MH I-52

Subject: Financial Forecast – Capital Spending

Reference: CEF07-1

- b) **With respect to page 46, what is the current status of the Ridgeway – Selkirk 230 kV Transmission project?**

ANSWER:

The Ridgeway-Selkirk 230 kV Transmission project was cancelled pending review of other options to support the Rosser-Parkdale-Selkirk 115 kV system.

CAC/MSOS/MH I-52

Subject: Financial Forecast – Capital Spending

Reference: CEF07-1

- c) **With respect to page 60, what is the status of the St. James 24 kV System Refurbishment?**

ANSWER:

The project has been deferred pending a review of alternative courses of action.

CAC/MSOS/MH I-52

Subject: Financial Forecast – Capital Spending

Reference: CEF07-1

- d) Please provide a schedule of those projects from the CEF07-1 (with a cost of \$5 M or more) that were originally scheduled to be in-service in 2007/08 or 2008/09 and are not included in the current CEF09-1. In each case please indicate the final in-service cost of the project and explain any variances of more than 5%.

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-39(b).

CAC/MSOS/MH I-53

Subject: Financial Forecast – Capital Spending

Reference: Appendix 6.1, page 30

- a) **If the Power Supply Hydraulic Controls project is not scheduled to be in-service until 2020, what is the capital spending in 2010-2012 for?**

ANSWER:

The Power Supply Hydraulic Controls project included subprojects with various in-service dates. Only the latest date is referenced in the CEF.

The capital spending in 2010-2012 relates to the following three subprojects:

1. Long Spruce Unit Control & Monitoring System (UCMS),
2. Seven Sisters UCMS; and
3. Kettle Remote Control & Monitoring.

CAC/MSOS/MH I-54

Subject: Financial Forecast – Capital Spending

Reference: Appendix 6.1, page 40

- a) **Please explain the increase in the Generation Townsite Infrastructure project from \$34.4 M in CEF07-1 to \$52.1 M in CEF09-1.**

ANSWER:

The increase is due various factors, including:

- A specification change from Ready-To-Move homes to on-site built homes
- An increase in the number of homes to be constructed as some of the homes to be renovated were in poorer condition that initially assessed.
- More extensive renovation requirements than planned.
- Increases in material and contractor costs.

CAC/MSOS/MH I-55

Subject: Financial Forecast – Capital Spending

Reference: Appendix 6.1, page 45

- a) **Please explain the reason for the increase in the Neepawa 230-66 kV Station from \$20.9 M in CEF-7-1 to \$30.0 M in CEF09-1.**

ANSWER:

The increase was due to a re-estimate of material prices and contractor charges to reflect market conditions.

CAC/MSOS/MH I-56

Subject: Financial Forecast – Capital Spending

Reference: Appendix 6.1, page 71

- a) **With respect to page 71, please the almost doubling of annual spending on Customer Service and Distribution Domestic projects between CEF07-1 and CEF09-1 when the basis load growth assumption is the same in both (i.e., 1.5% per annum).**

ANSWER:

Manitoba Hydro realigned business units in February, 2009. A new Customer Service & Distribution Business Unit was created consisting of the Customer Service Operation Divisions that were previously part of the Customer Service & Marketing and the Distribution Divisions that were previously part of the Transmission & Distribution Business Units.

The increase from CEF07-1 to CEF09-1 is a result of this new organization structure.

CAPITAL EXPENDITURE FORECAST SUMMARY TABLE

(in millions of dollars)

	CEF07		CEF09
	2010 Before Org. Structure Change	2010 After Org. Structure Change	2010
ELECTRIC			
Power Supply			
Power Supply Domestic	19.4	19.4	19.1
Transmission			
Transmission Domestic	90.7	29.9	29.6
Customer Service & Distribution			
Customer Service & Distribution Domestic	61.4	117.1	115.9
Customer Care & Marketing			
Customer Care & Marketing Domestic	-	2.6	2.5
Finance & Administration			
Finance & Administration Domestic	21.8	24.3	24.1
	193.3	193.3	191.2

Note: Fiscal year 2010 is lower in CEF09 than CEF07, as the escalation rate was lowered to 0.4% for 2010 in CEF09, to reflect market conditions.

CAC/MSOS/MH I-57

Subject: Financial Forecast – Capital Spending

Reference: Appendix 6.1, page 72

2008 GRA, CAC/MSOS (MH) 1 –41 c)

- a) **In response to the above 2008 GRA reference, Manitoba Hydro indicated there was an AMI pilot underway. Please provide any reports regarding the results of the pilot.**

ANSWER:

On February 2, 2010, the AMI Status Report was filed with PUB in response to Order 128/09 of Centra's 2009/10 and 2010/11 Natural Gas General Rate Application. As Manitoba Hydro's AMI pilot project investigated AMI for both electricity and natural gas, this report provides a current status for AMI in Manitoba. This report is provided as Appendix 24.

CAC/MSOS/MH I-57

Subject: Financial Forecast – Capital Spending

**Reference: Appendix 6.1, page 72
2008 GRA, CAC/MSOS (MH) 1 –41 c)**

- b) **The same 2008 GRA reference indicated that a business case was expected to be completed by mid-2008. Please provide.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-57(a) for the AMI Status Report.

CAC/MSOS/MH I-57

Subject: Financial Forecast – Capital Spending

**Reference: Appendix 6.1, page 72
2008 GRA, CAC/MSOS (MH) 1 –41 c)**

- c) **Please provide more details regarding the current AMI project, particularly what customer classes will be targeted for the advanced meters and how many in each class over what period.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-57(a) for the AMI Status Report.

CAC/MSOS/MH I-57

Subject: Financial Forecast – Capital Spending

**Reference: Appendix 6.1, page 72
2008 GRA, CAC/MSOS (MH) 1 –41 c)**

d) Is there a business case demonstrating the cost and benefits of the current AMI project? If yes, please provide.

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-57(a) for the AMI Status Report.

CAC/MSOS/MH I-58

Subject: Load Forecast

Reference: Appendix 7.1

- a) **Please confirm that Manitoba Hydro Sales Excl Diesel (per Table 3) are equal to Manitoba Hydro Load at the Common Bus (per Table 4) less (Const. Power & Dist. Losses).**

ANSWER:

Confirmed.

CAC/MSOS/MH I-58

Subject: Load Forecast

Reference: Appendix 7.1

- b) **Please confirm that the Residential sales forecast set out on page 12 includes 2/3's of the Electricity for Electric Cars forecast discussed on page 29.**

ANSWER:

Confirmed.

CAC/MSOS/MH I-58

Subject: Load Forecast

Reference: Appendix 7.1

- c) **Per page 13, please clarify whether customers that use electricity for water heating but some other source of energy for space heating are considered “All-Electric” or “Standard”. What percentage of Manitoba Hydro’s Residential Basic customers currently use electricity for water heating but not space heating?**

ANSWER:

The “All-Electric” category represents customers capable of heating the premises with electricity. Whether or not the customer uses electricity for water heating has no bearing on this classification.

Currently 19.2% of Manitoba Hydro’s Residential Basic customers use electricity for water heating but not space heating. That represents 28.1% of Standard (non-electric heat) customers.

CAC/MSOS/MH I-58

Subject: Load Forecast

Reference: Appendix 7.1

- d) Please confirm that Figure 2 shows the All-Electric Market share of Residential Basic customers.

ANSWER:

Confirmed.

CAC/MSOS/MH I-58

Subject: Load Forecast

Reference: Appendix 7.1

- e) **With respect to page 17, please explain more fully how the total usage for non space heating appliances is projected for All Electric Usages and for Standard Usage. In particular, how does the analysis account for the likelihood that the penetration of electric water heating will be higher in the All Electric Usage category?**

ANSWER:

The equations provided on page 17 were simplified. The detailed calculations are as follows:

Forecast All-Electric Usage (GW.h)

$$\begin{aligned} &= \text{Forecast Total Electric Space Heating Appliance Usage} \\ &+ \text{All-Electric Usage for Non Space Heating Appliances in 2008/09} \\ &\quad / \text{Total Usage for Non Space Heating Appliances in 2008/09} \\ &\quad \times \text{Forecast All-Electric Market Share} / \text{All-Electric Market Share in 2008/09} \\ &\quad \times \text{Forecast Total Usage for Non Space Heating Appliances} \end{aligned}$$

Forecast Standard Usage (GW.h)

$$\begin{aligned} &= \text{Forecast Total Usage for Non Space Heating Appliances} \\ &\quad \times (1 - \text{All-Electric Usage for Non Space Heating Appliances in 2008/09}) \\ &\quad / \text{Total Usage for Non Space Heating Appliances in 2008/09} \\ &\quad \times \text{Forecast All-Electric Market Share} / \text{All-Electric Market Share in 2008/09} \end{aligned}$$

The penetration of electric water heating is explicitly included in the usage for non space heating appliances.

CAC/MSOS/MH I-58

Subject: Load Forecast

Reference: Appendix 7.1

f) Please re-do Table 6 but excluding the effect of Electric Vehicles.

ANSWER:

BASIC RESIDENTIAL SALES (Excluding Electric Vehicles)										
Base Forecast										
1998/99 - 2029/30										
Fiscal Year	Basic Standard			Basic All-Electric			Total Basic			MSE
	(Mtrs.)	(GW.h)	(Avg.)	(Mtrs.)	(GW.h)	(Avg.)	(Mtrs.)	(GW.h)	(Avg.)	
1998/99	287368	2609	9079	117110	2774	23691	404478	5384	13310	29.0%
1999/00	289419	2607	9008	117506	2757	23460	406925	5364	13181	28.9%
2000/01	290679	2736	9413	118411	3001	25346	409090	5737	14025	28.9%
2001/02	291371	2771	9512	120285	2902	24128	411656	5674	13783	29.2%
2002/03	292032	2977	10193	121780	3289	27011	413812	6266	15142	29.4%
2003/04	293020	3019	10304	123671	3151	25481	416691	6170	14808	29.7%
2004/05	294108	2991	10171	126027	3283	26053	420135	6275	14935	30.0%
2005/06	295733	3045	10295	128009	3126	24419	423742	6171	14562	30.2%
2006/07	297137	3167	10660	130749	3275	25050	427886	6443	15057	30.6%
2007/08	298287	3237	10852	133858	3499	26139	432145	6736	15587	31.0%
2008/09	299852	3243	10815	137410	3604	26231	437262	6847	15659	31.4%
2009/10	301627	3249	10772	139847	3505	25061	441474	6754	15299	31.7%
2010/11	303313	3271	10783	142204	3563	25053	445517	6833	15338	31.9%
2011/12	304912	3293	10799	144622	3623	25051	449534	6916	15384	32.2%
2012/13	306459	3316	10820	147064	3685	25056	453523	7001	15436	32.4%
2013/14	307982	3340	10843	149504	3747	25063	457486	7087	15490	32.7%
2014/15	309491	3364	10868	151929	3809	25072	461420	7173	15545	32.9%
2015/16	310995	3388	10895	154331	3871	25084	465326	7260	15601	33.2%
2016/17	312502	3414	10925	156700	3933	25100	469202	7347	15659	33.4%
2017/18	314016	3440	10956	159035	3995	25118	473051	7435	15717	33.6%
2018/19	315533	3467	10989	161336	4056	25138	476869	7523	15776	33.8%
2019/20	317055	3495	11023	163604	4116	25160	480659	7611	15835	34.0%
2020/21	318585	3523	11058	165836	4176	25183	484421	7699	15894	34.2%
2021/22	320124	3552	11095	168030	4236	25209	488154	7788	15953	34.4%
2022/23	321672	3582	11134	170184	4295	25236	491856	7876	16014	34.6%
2023/24	323230	3612	11174	172301	4353	25266	495531	7965	16074	34.8%
2024/25	324796	3643	11217	174380	4412	25298	499176	8055	16136	34.9%
2025/26	326371	3675	11260	176421	4469	25332	502792	8144	16198	35.1%
2026/27	327954	3708	11306	178425	4526	25368	506379	8234	16261	35.2%
2027/28	329546	3741	11353	180392	4583	25406	509938	8324	16324	35.4%
2028/29	331147	3775	11401	182321	4639	25445	513468	8415	16388	35.5%
2029/30	332760	3810	11450	184218	4695	25486	516978	8505	16452	35.6%

CAC/MSOS/MH I-58

Subject: Load Forecast

Reference: Appendix 7.1

g) Please re-do Table 6, excluding the effect of Electric Vehicles but also including the impact of DSM.

ANSWER:

BASIC RESIDENTIAL SALES (Excluding Electric Vehicles and including the impact of DSM) Base Forecast 1998/99 - 2029/30										
Fiscal Year	Basic Standard			Basic All-Electric			Total Basic			MSE
	(Mtrs.)	(GW.h)	(Avg.)	(Mtrs.)	(GW.h)	(Avg.)	(Mtrs.)	(GW.h)	(Avg.)	
1998/99	287368	2609	9079	117110	2774	23691	404478	5384	13310	29.0%
1999/00	289419	2607	9008	117506	2757	23460	406925	5364	13181	28.9%
2000/01	290679	2736	9413	118411	3001	25346	409090	5737	14025	28.9%
2001/02	291371	2771	9512	120285	2902	24128	411656	5674	13783	29.2%
2002/03	292032	2977	10193	121780	3289	27011	413812	6266	15142	29.4%
2003/04	293020	3019	10304	123671	3151	25481	416691	6170	14808	29.7%
2004/05	294108	2991	10171	126027	3283	26053	420135	6275	14935	30.0%
2005/06	295733	3045	10295	128009	3126	24419	423742	6171	14562	30.2%
2006/07	297137	3167	10660	130749	3275	25050	427886	6443	15057	30.6%
2007/08	298287	3237	10852	133858	3499	26139	432145	6736	15587	31.0%
2008/09	299852	3243	10815	137410	3604	26231	437262	6847	15659	31.4%
2009/10	301627	3214	10656	139847	3463	24763	441474	6677	15125	31.7%
2010/11	303313	3198	10543	142204	3476	24442	445517	6674	14980	31.9%
2011/12	304912	3182	10437	144622	3501	24211	449534	6684	14868	32.2%
2012/13	306459	3199	10438	147064	3555	24171	453523	6754	14891	32.4%
2013/14	307982	3216	10443	149504	3609	24138	457486	6825	14918	32.7%
2014/15	309491	3258	10526	151929	3689	24284	461420	6947	15056	32.9%
2015/16	310995	3301	10613	154331	3771	24436	465326	7072	15197	33.2%
2016/17	312502	3342	10695	156700	3850	24572	469202	7193	15329	33.4%
2017/18	314016	3367	10723	159035	3910	24585	473051	7277	15383	33.6%
2018/19	315533	3394	10758	161336	3971	24610	476869	7365	15444	33.8%
2019/20	317055	3423	10795	163604	4031	24641	480659	7454	15507	34.0%
2020/21	318585	3451	10832	165836	4091	24669	484421	7542	15569	34.2%
2021/22	320124	3480	10870	168030	4150	24698	488154	7630	15630	34.4%
2022/23	321672	3515	10926	170184	4215	24767	491856	7730	15715	34.6%
2023/24	323230	3550	10984	172301	4280	24839	495531	7830	15802	34.8%
2024/25	324796	3588	11046	174380	4345	24917	499176	7933	15892	34.9%
2025/26	326371	3623	11102	176421	4407	24979	502792	8030	15971	35.1%
2026/27	327954	3661	11163	178425	4470	25050	506379	8130	16056	35.2%
2027/28	329546	3698	11221	180392	4530	25114	509938	8228	16136	35.4%
2028/29	331147	3736	11281	182321	4591	25179	513468	8326	16216	35.5%
2029/30	332760	3771	11331	184218	4647	25224	516978	8417	16282	35.6%

CAC/MSOS/MH I-59

Subject: Load Forecast

Reference: Appendix 7.1

a) Please re-do Table 8 but excluding the effect of Electric Vehicles.

ANSWER:

BASIC GENERAL SERVICE SALES (Excluding Electric Cars)									
Base Forecast									
1998/99 - 2029/30									
Fiscal Year	Mass Market			Top Consumers			Total Basic		
	(Mtrs.)	(GW.h)	(Avg.)	(Mtrs.)	(GW.h)	(Avg.)	(Mtrs.)	(GW.h)	(Avg.)
1998/99	59040	6668	112943	34	4632	136243341	59074	11300	191293
1999/00	59494	6796	114232	35	4299	122833677	59529	11095	186385
2000/01	59759	7110	118970	31	4515	145639850	59790	11624	194420
2001/02	60086	7084	117902	25	4818	192739001	60111	11903	198013
2002/03	60265	7467	123900	26	5282	203139444	60291	12748	211449
2003/04	60672	7460	122955	27	5423	200857671	60699	12883	212245
2004/05	60924	7516	123362	26	5714	219774330	60950	13230	217060
2005/06	61491	7587	123380	26	5948	228753323	61517	13534	220009
2006/07	63596	7839	123269	26	5989	230346465	63622	13828	217353
2007/08	63855	8006	125382	26	6075	233643398	63881	14081	220425
2008/09	64140	8049	125485	26	6065	233277664	64166	14114	219958
2009/10	64519	8059	124916	25	5956	238256000	64544	14016	217152
2010/11	64761	8183	126355	25	6196	247840000	64786	14379	221944
2011/12	65117	8315	127687	25	6482	259280000	65142	14797	227143
2012/13	65498	8445	128930	25	6657	266280000	65523	15102	230479
2013/14	65888	8584	130285	26	6795	261346154	65914	15379	233323
2014/15	66227	8701	131376	26	7126	274076923	66253	15827	238882
2015/16	66552	8818	132494	26	7226	277923077	66578	16044	240977
2016/17	66881	8936	133608	26	7326	281769231	66907	16262	243052
2017/18	67210	9055	134724	26	7386	284076923	67236	16441	244524
2018/19	67540	9175	135842	26	7413	285115385	67566	16588	245505
2019/20	67873	9296	136957	26	7513	288961538	67899	16809	247554
2020/21	68206	9417	138064	26	7613	292807692	68232	17030	249586
2021/22	68537	9537	139151	26	7713	296653846	68563	17250	251593
2022/23	68863	9658	140242	26	7813	300500000	68889	17471	253604
2023/24	69186	9777	141315	26	7913	304346154	69212	17690	255592
2024/25	69510	9898	142390	26	8013	308192308	69536	17911	257572
2025/26	69834	10023	143521	26	8113	312038462	69860	18136	259600
2026/27	70160	10149	144651	26	8213	315884615	70186	18362	261615
2027/28	70488	10277	145794	26	8313	319730769	70514	18590	263631
2028/29	70815	10406	146941	26	8413	323576923	70841	18819	265646
2029/30	71145	10536	148086	26	8513	327423077	71171	19049	267646

CAC/MSOS/MH I-59

Subject: Load Forecast

Reference: Appendix 7.1

- b) Please re-do Table 8, excluding the effect of Electric Vehicles but also including the impact of DSM.

ANSWER:

**BASIC GENERAL SERVICE SALES (Excluding Electric Cars & Including DSM)
Base Forecast
1998/99 - 2029/30**

Fiscal Year	Mass Market			Top Consumers			Total Basic		
	(Mtrs.)	(GW.h)	(Avg.)	(Mtrs.)	(GW.h)	(Avg.)	(Mtrs.)	(GW.h)	(Avg.)
1998/99	59040	6668	112943	34	4632	136243341	59074	11300	191293
1999/00	59494	6796	114232	35	4299	122833677	59529	11095	186385
2000/01	59759	7110	118970	31	4515	145639850	59790	11624	194420
2001/02	60086	7084	117902	25	4818	192739001	60111	11903	198013
2002/03	60265	7467	123900	26	5282	203139444	60291	12748	211449
2003/04	60672	7460	122955	27	5423	200857671	60699	12883	212245
2004/05	60924	7516	123362	26	5714	219774330	60950	13230	217060
2005/06	61491	7587	123380	26	5948	228753323	61517	13534	220009
2006/07	63596	7839	123269	26	5989	230346465	63622	13828	217353
2007/08	63855	8006	125382	26	6075	233643398	63881	14081	220425
2008/09	64140	8049	125485	26	6065	233277664	64166	14114	219958
2009/10	64519	7989	123826	25	5956	238256000	64544	13946	216062
2010/11	64761	8040	124156	25	6196	247840000	64786	14236	219746
2011/12	65117	8104	124458	25	6482	259280000	65142	14586	223916
2012/13	65498	8163	124637	25	6657	266280000	65523	14820	226187
2013/14	65888	8245	125143	26	6795	261346154	65914	15040	228183
2014/15	66227	8313	125527	26	7126	274076923	66253	15439	233035
2015/16	66552	8382	125941	26	7226	277923077	66578	15608	234427
2016/17	66881	8448	126315	26	7326	281769231	66907	15774	235761
2017/18	67210	8516	126713	26	7386	284076923	67236	15902	236516
2018/19	67540	8587	127139	26	7413	285115385	67566	16000	236805
2019/20	67873	8667	127696	26	7513	288961538	67899	16180	238297
2020/21	68206	8750	128282	26	7613	292807692	68232	16363	239808
2021/22	68537	8830	128840	26	7713	296653846	68563	16543	241286
2022/23	68863	8910	129390	26	7813	300500000	68889	16723	242756
2023/24	69186	8985	129873	26	7913	304346154	69212	16898	244154
2024/25	69510	9086	130714	26	8013	308192308	69536	17099	245900
2025/26	69834	9226	132111	26	8113	312038462	69860	17339	248195
2026/27	70160	9371	133573	26	8213	315884615	70186	17584	250541
2027/28	70488	9522	135093	26	8313	319730769	70514	17835	252935
2028/29	70815	9641	136144	26	8413	323576923	70841	18054	254853
2029/30	71145	9792	137640	26	8513	327423077	71171	18305	257203

CAC/MSOS/MH I-59

Subject: Load Forecast

Reference: Appendix 7.1

- c) Please provide a version of Table 8 that separates out the forecast sales attributable to “Potential Large Industrial Loads” per page 24.

ANSWER:

BASIC GENERAL SERVICE SALES (Excluding Electric Cars)										
Base Forecast										
1998/99 - 2029/30										
Fiscal Year	Mass Market			Top Consumers			PLIL (GW.h)	Total Basic		
	(Mtrs.)	(GW.h)	(Avg.)	(Mtrs.)	(GW.h)	(Avg.)		(Mtrs.)	(GW.h)	(Avg.)
1998/99	59040	6668	112943	34	4632	136243341		59074	11300	191293
1999/00	59494	6796	114232	35	4299	122833677		59529	11095	186385
2000/01	59759	7110	118970	31	4515	145639850		59790	11624	194420
2001/02	60086	7084	117902	25	4818	192739001		60111	11903	198013
2002/03	60265	7467	123900	26	5282	203139444		60291	12748	211449
2003/04	60672	7460	122955	27	5423	200857671		60699	12883	212245
2004/05	60924	7516	123362	26	5714	219774330		60950	13230	217060
2005/06	61491	7587	123380	26	5948	228753323		61517	13534	220009
2006/07	63596	7839	123269	26	5989	230346465		63622	13828	217353
2007/08	63855	8006	125382	26	6075	233643398		63881	14081	220425
2008/09	64140	8049	125485	26	6065	233277664		64166	14114	219958
2009/10	64519	8059	124916	25	5956	238256000	0	64544	14016	217152
2010/11	64761	8183	126361	25	6196	247840000	0	64786	14379	221951
2011/12	65117	8316	127703	25	6482	259280000	0	65142	14798	227160
2012/13	65498	8447	128961	25	6557	262280000	100	65523	15104	230510
2013/14	65888	8587	130334	26	6595	253653846	200	65914	15382	233372
2014/15	66227	8705	131447	26	6826	262538462	300	66253	15831	238953
2015/16	66552	8824	132589	26	6826	262538462	400	66578	16050	241072
2016/17	66881	8944	133730	26	6826	262538462	500	66907	16270	243174
2017/18	67210	9065	134874	26	6786	261000000	600	67236	16451	244674
2018/19	67540	9187	136029	26	6713	258192308	700	67566	16600	245692
2019/20	67873	9311	137182	26	6713	258192308	800	67899	16824	247779
2020/21	68206	9435	138332	26	6713	258192308	900	68232	17048	249855
2021/22	68537	9559	139469	26	6713	258192308	1000	68563	17272	251911
2022/23	68863	9684	140621	26	6713	258192308	1100	68889	17497	253982
2023/24	69186	9808	141762	26	6713	258192308	1200	69212	17721	256038
2024/25	69510	9933	142905	26	6713	258192308	1300	69536	17946	258087
2025/26	69834	10064	144109	26	6713	258192308	1400	69860	18177	260188
2026/27	70160	10195	145315	26	6713	258192308	1500	70186	18408	262279
2027/28	70488	10329	146538	26	6713	258192308	1600	70514	18642	264376
2028/29	70815	10464	147769	26	6713	258192308	1700	70841	18877	266474
2029/30	71145	10601	149003	26	6713	258192308	1800	71171	19114	268562

CAC/MSOS/MH I-60

Subject: Load Forecast

Reference: Appendix 7.1

- a) **With respect to page 47, the first two paragraphs suggest that space heating with natural gas is marginally cheaper than with electricity and that this advantage is forecast to slowly increase. Page 11 indicates that the price of electricity is projected to increase at 0.9% in real terms. This suggests that natural gas prices are forecast to increase at less than 0.9% in real terms. Please demonstrate that this is a reasonable expectation for future natural gas prices.**

ANSWER:

Manitoba Hydro considers its natural gas price forecast a key driver of its electricity export price forecast and assumptions, and as such is considered commercially sensitive. Therefore the specific information cannot be publicly disclosed. However in order to provide a general indication of its forecast for natural gas prices, it can be stated that Manitoba Hydro expects long-term natural gas prices to follow the general trend outlined by publicly available natural gas price forecasts such as the U.S. Energy Information Administration's *Annual Energy Outlook 2010* and the Canadian National Energy Board's *Energy Market Assessment - July 2009*. These publicly available forecasts do not show a significant increase in the next five to ten years.

CAC/MSOS/MH I-60

Subject: Load Forecast

Reference: Appendix 7.1

- b) Please re-do Table 3 but include DSM savings such that the results will show the billed energy sales to customers.

ANSWER:

ENERGY SALES TO MANITOBA HYDRO CUSTOMERS (GW.h)							
Base Forecast Including DSM							
2008/09 - 2029/30							
Fiscal Year	Residential	General Service	Area & Roadway Lighting	Manitoba Hydro Sales Incl Diesel		Total Diesel	Manitoba Hydro Sales Excl Diesel
2008/09 Actual	6954	14154	102	21210	0.7%	13	21198
2009/10	6787	13986	103	20876	-1.6%	13	20862
2010/11	6787	14270	103	21160	1.4%	14	21146
2011/12	6799	14620	104	21523	1.7%	14	21509
2012/13	6872	14855	105	21832	1.4%	14	21818
2013/14	6946	15061	106	22113	1.3%	14	22099
2014/15	7073	15461	107	22640	2.4%	15	22626
2015/16	7201	15631	108	22940	1.3%	15	22925
2016/17	7327	15799	108	23235	1.3%	15	23219
2017/18	7417	15929	109	23455	0.9%	15	23439
2018/19	7511	16029	110	23650	0.8%	16	23634
2019/20	7606	16212	111	23929	1.2%	16	23913
2020/21	7702	16397	112	24211	1.2%	16	24195
2021/22	7798	16581	112	24492	1.2%	17	24475
2022/23	7908	16765	113	24787	1.2%	17	24770
2023/24	8020	16945	114	25079	1.2%	17	25062
2024/25	8134	17151	115	25400	1.3%	17	25382
2025/26	8244	17396	116	25755	1.4%	18	25738
2026/27	8357	17647	116	26120	1.4%	18	26102
2027/28	8468	17904	117	26489	1.4%	18	26471
2028/29	8580	18129	118	26826	1.3%	18	26808
2029/30	8686	18387	119	27191	1.4%	19	27173

CAC/MSOS/MH I-60

Subject: Load Forecast

Reference: Appendix 7.1

- c) **How does Manitoba Hydro define “normal weather” for purposes of weather normalization?**

ANSWER:

With respect to Appendix 7.1, normal weather was based upon the average of the last ten years of historical weather.

CAC/MSOS/MH I-60

Subject: Load Forecast

Reference: Appendix 7.1

- d) Please provide a Table setting out the total number of Residential and Mass Market customers for each year from 2006/07 to 2019/20.**

ANSWER:

Please see the "Mtrs." column in Table 6, page 18 of Appendix 7.1 for the Residential customers, and Table 8, page 27 of Appendix 7.1 for the Mass Market customers. For the Residential and Mass Market groups, meters and customers are the same.

CAC/MSOS/MH I-61

Subject: Financial Forecast – Power Supply

Reference: Appendix 5.2, page 8

- a) **Please outline the current status of the additional wind purchases planned for 2010/11 to 2011/12.**

ANSWER:

Negotiations are continuing for the purchase of wind energy from the proposed St. Joseph Wind farm.

CAC/MSOS/MH I-61

Subject: Financial Forecast – Power Supply

Reference: Appendix 5.2, page 8

b) Please outline the operation restrictions on Brandon #5.

ANSWER:

The Climate Change and Emissions Reductions Act (C.C.S.M. c. C135) states:

16 Despite any provision of The Manitoba Hydro Act, after December 31, 2009, Manitoba Hydro must not use coal to generate power, except to support emergency operations.

The Regulations under that Act (*Coal-Fired Emergency Operations Regulation, Regulation 186/2009*) provide as follows:

Emergency operations defined

1(1) In section 16 of The Climate Change and Emissions Reductions Act, "emergency operations" means operations using coal to generate or prepare to generate power in Manitoba that, in the opinion of Manitoba Hydro, are necessary to

(a) prevent or minimize the impact of a system or local emergency or any other condition that may

(i) jeopardize the continuous supply of power, at acceptable voltage and frequency, or

(ii) cause or contribute to instability, uncontrolled separation or cascading failures, or to uncontrolled electricity flows, within Manitoba or an integrated regional power grid;

(b) provide power if, due to forecasted water supply conditions in Manitoba, demand for power is expected to exceed aggregate supply; or

(c) maintain coal-fired generating facilities in a state of readiness to respond to an emergency or other condition.

CAC/MSOS/MH I-61

Subject: Financial Forecast – Power Supply

Reference: Appendix 5.2, page 8

- c) Please provide a schedule that sets out actual hydro generation for 2008/09 and the forecast of hydro electric generation for 2009/10 through 2019/11 and contrast it with forecast from MH07-1. Please identify those variances that are due to water flow conditions versus those that are due to changes in plant in-service.

ANSWER:

The following table lists hydro generation from MH07-1 and MH09-1. The “average” forecast of hydraulic generation is derived from computer simulation models which average the generation derived from 94 years of water conditions. These generation levels are influenced by the monthly pattern of load and export requirements. The different domestic load forecasts between the two cases results in small differences in hydraulic generation levels for the same plant in-service.

Fiscal Year	Actual Hydro Generation (GWh/yr)	MH07-1			MH09-1		
		Hydro Generation (GWh/yr)	Water Flow Conditions	Plant In-Service	Hydro Generation (GWh/yr)	Water Flow Conditions	Plant In-Service
2007/08	34897	33979	Expected		-	-	
2008/09	34193	30930	Median		-	-	
2009/10	-	29050	Average		33124	Expected	
2010/11	-	29156	Average		30525	Median	
2011/12	-	30014	Average		30067	Average	Wuskwatim
2012/13	-	30607	Average	Wuskwatim	30789	Average	
2013/14	-	30583	Average		30989	Average	
2014/15	-	30792	Average		30913	Average	
2015/16	-	30987	Average		30929	Average	
2016/17	-	30984	Average		31078	Average	
2017/18	-	31048	Average		30812	Average	
2018/19	-	31053	Average		30755	Average	Keeyask
2019/20	-	30773	Average		33518	Average	

CAC/MSOS/MH I-62

Subject: Financial Forecast – Risk Analysis

Reference: Appendix 5.2, pages 20-22

- a) **Please provide details regarding Manitoba Hydro’s Low Export Price and High Export Price forecasts through to 2019/20.**

ANSWER:

Please refer to the Low Export and High Export Price scenarios provided in Appendix 14.

CAC/MSOS/MH I-62

Subject: Financial Forecast – Risk Analysis

Reference: Appendix 5.2, pages 20-22

- b) Please explain why a +1% change in interest rates leads to higher retained earnings in 2011/12 but lower retained earnings in 2015/16.**

ANSWER:

Finance expense decreases in 2011/12 due to higher interest capitalization and gross interest expense has not increased correspondingly due to the timing of new debt issues. By 2015/16, the increase in gross interest expense and higher debt as a result of increased cash requirements more than outweighs the increase in the interest capitalization.

CAC/MSOS/MH I-62

Subject: Financial Forecast – Risk Analysis

Reference: Appendix 5.2, pages 20-22

- c) **Please explain why a Medium High Electric Load Forecast leads to higher retained earnings in 2011/12 but lower retained earnings in 2015/16.**

ANSWER:

The Median High Electric Load Forecast scenario has been revised as it was not correct. The risk analysis should have been stated as follows:

	2011/12	2015/16	2019/20	Incremental Annual Rate Increase/(Decrease) *	
	Incremental Increase/(Decrease) in Retained Earnings (in millions of dollars)			Electric	Gas
IFF09-1 Baseline	2,396	2,997	4,059	-	-
Medium High Electric Load Forecast	0	(74)	(167)	0.19%	N/A

CAC/MSOS/MH I-62

Subject: Financial Forecast – Risk Analysis

Reference: Appendix 5.2, pages 20-22

- d) **Please provide a forecast for 2008/09 through to 2019/20 of the marginal domestic energy price for each customer class based on the current MH09-1. Note: For purposes of the response assume the average rate increase is applied to all customer classes.**

ANSWER:

The table on the following page depicts the marginal domestic energy price for each customer class for the period 2009/10 to 2019/20. The 2009/10 and 2010/11 figures are based on approved rates, whereas 2011/12 figures are based on rates proposed as part of the current General Rate Application for rates effective April 1, 2011. All prices thereafter assume that IFF09 rate increases are applied across-the-board.

FISCAL YEAR:	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Rate Increase per IFF09		2.90%	2.90%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
Residential											
1st block: 53%	6.25	6.38	6.47	6.70	6.93	7.17	7.42	7.68	7.95	8.23	8.52
Run-off: 47%	6.30	6.57	7.23	7.48	7.74	8.01	8.29	8.58	8.88	9.19	9.51
GS Small:											
1st Block: 87% of bills	6.66	6.84	7.03	7.28	7.53	7.79	8.06	8.34	8.63	8.93	9.24
2nd Block: 6% of bills	4.48	4.69	4.88	5.05	5.23	5.41	5.60	5.80	6.00	6.21	6.43
Run-Off: 7% of bills	2.86	3.05	3.20	3.31	3.43	3.55	3.67	3.80	3.93	4.07	4.21
GS Medium:	2.86	3.05	3.20	3.31	3.43	3.55	3.67	3.80	3.93	4.07	4.21
GS Lrg 750-30	2.73	2.88	3.01	3.12	3.23	3.34	3.46	3.58	3.71	3.84	3.97
GS Lrg 30-100	2.58	2.69	2.81	2.91	3.01	3.12	3.23	3.34	3.46	3.58	3.71
GS Lrg >100	2.52	2.62	2.73	2.83	2.93	3.03	3.14	3.25	3.36	3.48	3.60

CAC/MSOS/MH I-62

Subject: Financial Forecast – Risk Analysis

Reference: Appendix 5.2, pages 20-22

e) Please provide a copy of the MH09-1 – based on the five year drought scenario.

ANSWER:

Please refer to the attached schedules.

**ELECTRIC OPERATIONS (MH09-1)
PROJECTED OPERATING STATEMENT
5 YEAR DROUGHT SCENARIO
(In Millions of Dollars)**

For the year ended March 31

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
REVENUES											
General Consumers											
at approved rates	1,160	1,159	1,177	1,191	1,204	1,229	1,244	1,260	1,272	1,283	1,297
additional *	-	33	69	113	161	212	266	322	381	442	508
Extraprovincial	414	383	334	288	429	365	502	729	742	894	1,093
Other	7	7	8	8	8	8	8	9	9	9	9
	<u>1,581</u>	<u>1,584</u>	<u>1,588</u>	<u>1,600</u>	<u>1,801</u>	<u>1,814</u>	<u>2,021</u>	<u>2,320</u>	<u>2,404</u>	<u>2,628</u>	<u>2,907</u>
EXPENSES											
Operating and Administrative	372	380	403	411	420	428	437	445	467	478	497
Finance Expense	417	413	477	571	615	659	674	713	766	865	1,084
Depreciation and Amortization	368	386	407	435	446	466	476	481	501	532	566
Water Rentals and Assessments	120	110	87	77	97	95	99	115	115	115	124
Fuel and Power Purchased	103	132	472	733	340	383	386	341	363	441	419
Capital and Other Taxes	73	76	77	80	85	92	100	109	115	121	124
Corporate Allocation	8	9	9	9	9	9	9	9	9	9	9
	<u>1,460</u>	<u>1,505</u>	<u>1,932</u>	<u>2,317</u>	<u>2,011</u>	<u>2,131</u>	<u>2,180</u>	<u>2,213</u>	<u>2,335</u>	<u>2,560</u>	<u>2,823</u>
Non-controlling Interest	-	-	1	1	(2)	(5)	(9)	(11)	(12)	(15)	(14)
Net Income	<u>121</u>	<u>78</u>	<u>(342)</u>	<u>(716)</u>	<u>(212)</u>	<u>(322)</u>	<u>(168)</u>	<u>96</u>	<u>56</u>	<u>53</u>	<u>70</u>
*Additional General Consumers Revenue											
Percent Increase		2.90%	2.90%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
Cumulative Percent Increase		2.90%	5.88%	9.59%	13.43%	17.40%	21.50%	25.76%	30.16%	34.71%	39.43%

CAC/MSOS-MH-I-62 (e)

**ELECTRIC OPERATIONS (MH09-1)
PROJECTED BALANCE SHEET
5 YEAR DROUGHT SCENARIO
(In Millions of Dollars)**

For the year ended March 31

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ASSETS											
Plant in Service	12,527	13,034	15,075	15,566	15,982	16,691	17,127	17,837	20,301	21,599	25,001
Accumulated Depreciation	(4,663)	(5,018)	(5,398)	(5,805)	(6,216)	(6,649)	(7,091)	(7,540)	(8,010)	(8,514)	(9,052)
Net Plant in Service	7,865	8,015	9,677	9,761	9,765	10,042	10,035	10,297	12,292	13,085	15,950
Construction in Progress	1,947	2,458	1,341	1,818	2,838	3,854	5,532	6,948	6,159	6,446	4,168
Current and Other Assets	2,767	2,735	2,871	2,930	2,666	2,825	3,047	3,304	3,538	3,378	3,781
Goodwill	42	42	42	42	42	42	42	42	42	42	42
	12,621	13,251	13,931	14,551	15,312	16,762	18,656	20,590	22,030	22,951	23,941
LIABILITIES AND EQUITY											
Long-Term Debt	7,800	8,596	9,454	9,969	11,749	13,305	15,523	17,012	17,946	19,429	17,347
Current and Other Liabilities	2,156	1,926	2,148	2,937	2,218	2,460	2,338	2,709	3,169	2,558	5,560
Contributions in Aid of Construction	290	288	284	280	276	275	274	273	272	271	271
Retained Earnings	2,183	2,261	1,902	1,187	974	652	484	581	637	690	760
Accumulated Other Comprehensive Income	192	178	143	178	94	71	38	17	6	3	3
	12,621	13,251	13,931	14,551	15,312	16,762	18,656	20,590	22,030	22,951	23,941

ELECTRIC OPERATIONS (MH09-1)
PROJECTED CASH FLOW STATEMENT
5 YEAR DROUGHT SCENARIO
(In Millions of Dollars)

For the year ended March 31

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
OPERATING ACTIVITIES											
Cash Receipts from Customers	1,581	1,584	1,588	1,600	1,801	1,814	2,021	2,320	2,404	2,628	2,907
Cash Paid to Suppliers and Employees	(646)	(690)	(1,027)	(1,292)	(935)	(993)	(1,019)	(1,010)	(1,059)	(1,155)	(1,167)
Interest Paid	(453)	(423)	(485)	(577)	(636)	(656)	(690)	(729)	(812)	(913)	(1,119)
Interest Received	29	22	14	16	14	4	15	26	37	39	34
	511	493	91	(253)	245	170	328	606	569	599	655
FINANCING ACTIVITIES											
Proceeds from Long-Term Debt	745	800	1,000	1,340	1,800	1,800	2,400	2,000	1,800	1,800	1,200
Sinking Fund Withdrawals	262	227	27	103	487	-	18	-	13	456	189
Retirement of Long-Term Debt	(355)	(304)	(27)	(121)	(849)	(100)	(262)	(201)	(530)	(869)	(321)
Other	(35)	(10)	19	(10)	(14)	(12)	(13)	(14)	(15)	(26)	(15)
	618	713	1,019	1,312	1,424	1,688	2,144	1,785	1,268	1,361	1,053
INVESTING ACTIVITIES											
Property, Plant and Equipment, net of contributions	(1,113)	(1,079)	(1,004)	(989)	(1,457)	(1,737)	(2,125)	(2,135)	(1,685)	(1,619)	(1,259)
Sinking Fund Payment	(94)	(99)	(98)	(121)	(176)	(123)	(201)	(172)	(242)	(218)	(256)
Other	(36)	(20)	(16)	(17)	(15)	(31)	(29)	(40)	(28)	(27)	(27)
	(1,243)	(1,198)	(1,118)	(1,127)	(1,648)	(1,891)	(2,355)	(2,348)	(1,954)	(1,864)	(1,543)
Net Increase (Decrease) in Cash	(114)	8	(9)	(68)	21	(33)	117	44	(116)	96	166
Cash at Beginning of Year	66	(48)	(40)	(48)	(116)	(96)	(129)	(12)	32	(84)	11
Cash at End of Year	(48)	(40)	(48)	(116)	(96)	(129)	(12)	32	(84)	11	178

CAC/MSOS/MH I-62

Subject: Financial Forecast – Risk Analysis

Reference: Appendix 5.2, pages 20-22

f) Please provide a schedule that sets out the following consistent with both MH07-1 and the response to part (e) for 2009/10 to 2019/2020:

- **Export Volumes**
- **Export Revenues**
- **Outside Manitoba Purchase Volumes**
- **Cost of Outside Manitoba Purchases**
- **Thermal Generation Volume**
- **Thermal Generation Costs**
- **Purchase Volumes – from inside Manitoba**
- **Cost of Purchases form inside Manitoba**
- **Annual Hydraulic Production**

ANSWER:

See the following tables:

IFF09 Five Year Drought Export Revenue Assumptions

(in GWh)	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
MH Hydraulic Generation	33,124	30,525	22,950	20,083	25,929	25,329	26,150	31,078	30,812	30,755	33,518
MH Thermal Generation	152	159	1,403	3,567	256	447	426	531	580	591	521
Import Energy	365	1,138	3,324	3,763	2,927	3,011	2,789	1,375	1,453	2,448	2,118
Wind Energy	368	370	1,341	1,341	1,341	1,341	1,341	1,341	1,341	1,341	1,341
Import Energy (including Wind)	733	1,508	4,665	5,104	4,268	4,352	4,130	2,717	2,794	3,789	3,459
Manitoba Domestic Energy Sales	23,968	24,346	24,728	25,075	25,413	26,030	26,439	26,790	26,743	26,929	27,229
Total Export Sales	9,149	7,122	4,302	3,962	4,860	4,024	4,166	7,082	7,006	7,746	9,598
(in Millions of Dollars)	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
MH Hydraulic Generation	\$ 111	\$ 102	\$ 77	\$ 67	\$ 87	\$ 85	\$ 87	\$ 104	\$ 103	\$ 103	\$ 112
MH Thermal Generation	8	8	145	358	24	46	49	61	70	75	77
Import Energy	16	35	193	240	178	196	188	103	113	184	158
Wind Energy	21	21	98	99	100	101	102	103	104	105	106
Import Energy (including Wind)	36	56	291	339	277	297	290	206	217	289	264
Other Costs	3	2	3	4	4	4	4	4	4	4	4
Total Manitoba Domestic Energy Sales	1,160	1,193	1,246	1,305	1,365	1,441	1,510	1,582	1,653	1,725	1,805
Total Export Sales	332	292	297	251	389	324	454	654	665	816	1,013
Other Export Sales	23	23	-	-	-	-	-	-	-	-	-

IFF07 Five Year Drought Export Revenue Assumptions

(in GWh)	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
MH Hydraulic Generation	34,162	31,021	21,089	19,716	24,277	25,205	25,898	30,792	30,987	30,984	31,048
MH Thermal Generation	318	203	2,818	3,928	835	1,366	835	888	863	860	839
Import Energy	1,333	1,360	3,888	4,101	3,687	3,560	3,140	1,708	1,665	1,667	1,536
Wind Energy	-	-	342	486	816	1,136	1,312	1,312	1,312	1,312	1,312
Import Energy (including Wind)	1,333	1,360	4,230	4,587	4,503	4,696	4,452	3,020	2,977	2,979	2,848
Manitoba Domestic Energy Sales	23,615	24,277	25,066	25,517	25,845	26,187	26,489	26,794	27,093	27,339	27,283
Total Export Sales	11,219	7,466	3,257	3,055	3,745	5,007	4,607	7,464	7,304	7,078	7,039
(in Millions of Dollars)	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
MH Hydraulic Generation	114	\$ 103	\$ 70	\$ 66	\$ 81	\$ 84	\$ 87	\$ 103	\$ 104	\$ 104	\$ 104
MH Thermal Generation	14	12	250	360	42	94	45	63	64	67	69
Import Energy	46	70	165	200	169	177	154	98	99	102	98
Wind Energy	18	19	19	32	61	91	109	112	114	117	119
Import Energy (including Wind)	64	89	184	232	230	268	263	210	213	219	217
Other Costs	2	3	3	3	3	3	3	3	3	4	4
Total Manitoba Domestic Energy Sales	1,057	1,118	1,194	1,254	1,305	1,358	1,412	1,469	1,527	1,586	1,653
Total Export Sales	520	413	200	185	245	360	346	543	592	599	629
Other Export Sales	8	12	-	-	-	-	-	-	-	-	-

CAC/MSOS/MH I-62

Subject: Financial Forecast – Risk Analysis

Reference: Appendix 5.2, pages 20-22

- g) Page 21 states that the impact of the drought was calculated using import costs based on expected market conditions. Please explain the extent to which a drought on Manitoba Hydro's system is expected to impact market conditions for purchases in MISO.**

ANSWER:

There are two types of pricing effects related to market conditions - shortage pricing and congestion pricing. Shortage pricing can occur during tighter supply and demand situations when there is a premium over normal prices. There was the potential for shortage pricing prior to 2005 when there was no central market in the MISO footprint. During this time Manitoba Hydro was obligated to transact directly with counterparties for the purchase of power. These counterparties could extract a premium price once Manitoba Hydro was in severe drought and required large quantities of purchased power. Shortage pricing occurred during the 2003/04 drought when large quantities of purchases were required by Manitoba Hydro.

Since the establishment of a central market in MISO in 2005, the issue of shortage pricing has been mitigated to a large degree since purchases can now be made from the market at a transparent market clearing price. The MISO footprint, consisting of approximately 138,000 MW of generation capacity owned by many suppliers, is currently very large relative to the Manitoba Hydro system. Manitoba Hydro's firm transmission import capacity of about 700 MW from the MISO market represents less than 1% of the peak MISO market load. Hence, in most hours up to 700 MW of imports from the MISO market has a relatively minor effect on the MISO market, assuming no transmission constraints within the market.

The second type of pricing effect related to market conditions is called congestion pricing. Under most system conditions, when no transmission limits (called constraints) are binding, there is said to be no congestion on the system and the market price at each location (node) is the same except for transmission loss charges. In any given hour, a transmission outage (a constraint), or a forced generation outage can alter the local supply versus demand situation and create temporary congestion pricing. The degree of congestion can be aggravated during

severe drought in the Manitoba Hydro system when large quantities of imports are required. Congestion pricing is expected to have less of an effect on Manitoba Hydro import prices compared to shortage pricing prior to 2005.

CAC/MSOS/MH I-62

Subject: Financial Forecast – Risk Analysis

Reference: Appendix 5.2, pages 20-22

- h) Please re-do the response to part (e) but assume import prices are unchanged from those used in MH09-1.**

ANSWER:

Manitoba Hydro is unable to understand the intent of this information request and is therefore unable to respond with an alternative analysis. The import pricing structure used in the response to part (e) is identical to that used in MH09-1. Manitoba Hydro does not utilize a different import price structure in the base case analysis of the financial consequences of extended drought. The pricing of import energy is defined by a structure in which the cost of import energy increases as the volume increases. This represents the reality that as the volume of import energy increases significantly due to severe drought it will be required to be purchased during peak hours when it has higher associated costs.

CAC/MSOS/MH I-62

Subject: Financial Forecast – Risk Analysis

Reference: Appendix 5.2, pages 20-22

- i) Is the probability of a severe drought still as described in the 2008 GRA response to CAC/MSOS (MH) 1 - 43 e)? If not, please update.**

ANSWER:

It is confirmed that the probability of a severe drought is still as described in the 2008 GRA response to COALITION/MH I-43(e).

CAC/MSOS/MH I-63

Subject: Energy Supply

Reference: Tab 8, Tables 1 & 2

- a) **The Table shows DSM contributions to Manitoba Hydro’s resources. Are these values based on the cumulative effect of all Manitoba Hydro’s historic DSM initiatives or are DSM savings up to a certain point in time captured in the load forecast?**

ANSWER:

The load forecast contains future DSM savings at the minimum level of DSM services and activity that Manitoba Hydro will provide to customers in the future. The load forecast also includes savings that are a result of changes to codes and standards (such as minimum efficiency requirements for refrigerators and freezers). The above described DSM savings are referred to as “Basic Customer Information and Service” in the load forecast. Beyond 2008/09, the incremental savings associated with DSM are treated as supply-side resources and these are summarized in Tables 1 and 2.

CAC/MSOS/MH I-63

Subject: Energy Supply

Reference: Tab 8, Tables 1 & 2

- b) Please explain why the contracted GWhs of imports increase towards the end of the forecast period but the contracted MWs decline to zero.**

ANSWER:

The contracted imports during this period relate to the proposed Minnesota Power and Wisconsin Public Service Term Sheets. The proposed imports are for energy only to be provided in off-peak periods. As these imports are not contracted for peak periods, there is no contracted capacity (MW). It is noted that the capacity table applies to the winter peak period.

CAC/MSOS/MH I-63

Subject: Energy Supply

Reference: Tab 8, Tables 1 & 2

- c) **Please explain the difference between “Surplus” and “Exportable Surplus” as shown at the bottom of Table 2.**

ANSWER:

The difference between Surplus and Exportable Surplus is the amount of dependable energy generated by Brandon Unit 5.

Manitoba’s *Climate Change and Emissions Reductions Act* was given assent on June 12, 2008 and restricts coal-fired power generation to only the support of emergency operations starting January 1, 2010. As of that date power generation from coal at Brandon Generating Station Unit 5 is allowed to maintain system reliability and for the mitigation of system drought impacts. After December 31, 2009 Manitoba Hydro will not negotiate new forward firm export sales that require the use of dependable energy from Unit 5.

CAC/MSOS/MH I-63

Subject: Energy Supply

Reference: Tab 8, Tables 1 & 2

- d) **What is the current limit on Manitoba Hydro’s capability to export power during the peak period (i.e., weekly 5x16) expressed in terms of MW’s and annual GWH? Please provide separate estimates for US exports vs. exports to other Canadian provinces.**

ANSWER:

The current transfer limits on Manitoba Hydro’s interconnections during system intact conditions are as follows:

Interconnection	Maximum Export Capability	Firm Export Schedule Limit	Potential maximum annual on-peak export based on Firm Limit
US	2175 MW	1950 MW	8,112 GWh/ yr
Ontario	300 MW	150 MW	624 GWh/ yr
Saskatchewan	450 MW	125 MW	520 Gwh/ yr

The MW limits apply to both the peak and off-peak periods. Note that transmission capability is affected by many factors and hence these values change from time to time. They change over the long term as the transmission system evolves and in the short term due to issues such as outages of individual transmission lines. A portion of the maximum capability is reserved for transmission reliability purposes, which includes the delivery of operating reserves. Also note that the limits are not additive in that even if supply were available, exports could not be maximized in all three directions at one time due to transmission reliability considerations. For planning studies that require the capability over the period of a month, Manitoba Hydro utilizes lower limits corresponding to 1850 MW for U.S. transfer capability and a total of 250 MW for Canadian transfer capability.

Transmission limits are one of three key limits or constraints on the Manitoba Hydro system. Two other key limits which also affect and limit exports are availability of supply (i.e. water conditions), and the availability of surplus generation capacity beyond the Manitoba load. In winter, when the Manitoba load is higher, Manitoba Hydro has reduced surplus capacity, and exports are significantly limited by this factor in comparison with the summer period.

CAC/MSOS/MH I-63

Subject: Energy Supply

Reference: Tab 8, Tables 1 & 2

- e) **Does this export limit change over the forecast period? If so, please indicate when and how and the related transmission investments that permit the change.**

ANSWER:

The export limit is not assumed to change over the forecast period until new investment is made to build a new transmission interconnection or upgrade the capability of existing interconnections. The proposed Wisconsin Public Service and Minnesota Power export sales are contingent on having a new transmission interconnection. Detailed design of the line, including route location, voltage, and line capability has not yet begun. For planning purposes, new interconnection capability of 1000 MW for export has been assumed with an in-service date of 2018/19. A cost of \$300 million has been assigned to a new interconnection as a preliminary estimate of the cost of investing in the line within Manitoba to the US border.

CAC/MSOS/MH I-64

Subject: Energy Supply

Reference: Tab 8, page 9

a) Under what circumstances would Keeyask not be the next plant to be developed?

ANSWER:

Manitoba Hydro has not made a commitment to develop Keeyask but is working to protect a potential in-service-date. Current plans that include Keeyask as the next plant are based on the successful conclusion of the sales with Wisconsin Public Service and Minnesota Power. Any commitment to Keeyask will depend on the prevailing circumstances at the time.

CAC/MSOS/MH I-65

Subject: Export Markets and Export Sales

Reference: Tab 8, pages 11-15

- a) Please confirm that the prices reported in Figure 8.5.1 are effectively spot market prices.

ANSWER:

Yes, these are spot market prices within the MISO market at the MHEB pricing node.

CAC/MSOS/MH I-65

Subject: Export Markets and Export Sales

Reference: Tab 8, pages 11-15

b) Please provide a schedule setting out the actual values for the prices shown in Figure 8.5.1

ANSWER:

Actual values for the MHEB node for on and off peak are shown below.

	On Peak	Off Peak		On Peak	Off Peak
	CDN\$/MWh	CDN\$/MWh		CDN\$/MWh	CDN\$/MWh
Apr-05	62.31	29.29	Aug-07	65.02	21.65
May-05	46.67	20.61	Sep-07	45.33	18.52
Jun-05	75.46	24.41	Oct-07	49.78	17.42
Jul-05	91.02	36.32	Nov-07	60.59	25.50
Aug-05	86.92	19.73	Dec-07	71.17	41.17
Sep-05	78.96	16.25	Jan-08	66.54	36.25
Oct-05	83.46	19.13	Feb-08	73.95	42.69
Nov-05	68.24	20.65	Mar-08	78.78	48.33
Dec-05	107.35	48.96	Apr-08	66.40	31.62
Jan-06	54.76	25.92	May-08	51.27	20.02
Feb-06	53.40	28.79	Jun-08	57.19	16.45
Mar-06	51.13	22.08	Jul-08	78.97	19.99
Apr-06	50.61	17.20	Aug-08	65.54	21.43
May-06	51.38	19.69	Sep-08	46.67	16.50
Jun-06	58.01	18.13	Oct-08	51.86	20.91
Jul-06	94.85	35.60	Nov-08	54.49	26.92
Aug-06	71.32	27.17	Dec-08	72.07	40.09
Sep-06	44.04	22.88	Jan-09	58.60	36.03
Oct-06	66.95	42.63	Feb-09	45.78	28.99
Nov-06	76.93	45.49	Mar-09	36.53	21.34
Dec-06	76.08	43.14	Apr-09	30.71	15.53
Jan-07	70.81	45.50	May-09	24.75	10.71

	On Peak	Off Peak		On Peak	Off Peak
	CDN\$/MWh	CDN\$/MWh		CDN\$/MWh	CDN\$/MWh
Feb-07	110.35	67.23	Jun-09	26.55	10.86
Mar-07	70.73	43.89	Jul-09	24.96	10.44
Apr-07	78.40	44.25	Aug-09	27.91	11.48
May-07	62.17	23.80	Sep-09	25.38	11.39
Jun-07	62.77	22.21	Oct-09	33.42	15.99
Jul-07	70.49	24.51			

CAC/MSOS/MH I-65

Subject: Export Markets and Export Sales

Reference: Tab 8, pages 11-15

c) Please provide a schedule setting out the values for the prices shown in Figure 8.5.2

ANSWER:

Dependable and Opportunity on peak prices are shown below.

	Dependable On Peak	Opportunity On Peak		Dependable On Peak	Opportunity On Peak
Apr-05	66.61	61.60	Aug-07	52.22	71.42
May-05	69.22	54.42	Sep-07	50.30	58.12
Jun-05	61.27	68.73	Oct-07	49.73	58.03
Jul-05	60.47	80.75	Nov-07	55.15	59.91
Aug-05	54.74	76.33	Dec-07	56.42	73.13
Sep-05	56.92	85.42	Jan-08	49.09	57.27
Oct-05	60.06	85.74	Feb-08	54.06	65.78
Nov-05	60.73	66.34	Mar-08	58.63	82.30
Dec-05	60.66	86.84	Apr-08	56.12	71.82
Jan-06	59.48	62.18	May-08	54.04	62.76
Feb-06	60.05	61.68	Jun-08	54.37	72.29
Mar-06	59.30	50.46	Jul-08	55.92	94.62
Apr-06	60.40	53.59	Aug-08	54.62	87.78
May-06	59.42	55.09	Sep-08	53.70	51.26
Jun-06	56.88	55.57	Oct-08	61.55	61.78
Jul-06	59.41	74.47	Nov-08	69.43	62.75
Aug-06	53.66	72.85	Dec-08	66.43	83.22
Sep-06	59.46	52.22	Jan-09	66.93	65.93
Oct-06	60.32	70.21	Feb-09	68.28	54.54
Nov-06	62.22	79.75	Mar-09	65.22	57.15
Dec-06	64.47	58.10	Apr-09	61.22	30.93
Jan-07	63.36	65.03	May-09	55.02	26.86

	Dependable On Peak	Opportunity On Peak		Dependable On Peak	Opportunity On Peak
Feb-07	65.09	85.21	Jun-09	60.22	26.83
Mar-07	61.96	80.78	Jul-09	54.43	24.52
Apr-07	60.32	74.23	Aug-09	56.57	27.12
May-07	59.22	65.49	Sep-09	58.88	26.83
Jun-07	56.25	61.19	Oct-09	55.59	31.74
Jul-07	53.22	69.37			

CAC/MSOS/MH I-65

Subject: Export Markets and Export Sales

Reference: Tab 8, pages 11-15

- d) **Please confirm that the dependable sales prices reported in Figure 8.5.2 are based on variety contracts that have been established over the past years.**

ANSWER:

Yes, the Dependable sales prices reported include all sales under Dependable contracts in the years reported.

CAC/MSOS/MH I-65

Subject: Export Markets and Export Sales

Reference: Tab 8, pages 11-15

- e) **Please provide a break down of Schedule that separates the Dependable On-Peak and Opportunity On-Peak sales price between sales to Canadian and US markets.**

ANSWER:

Manitoba Hydro had no Canadian dependable sale contracts during this period. Opportunity on peak sale prices are listed below for sales to Canadian and US markets.

	Dependable On Peak CDN\$/MWh	Opportunity On Peak CDN\$/MWh	
	US Sales	CDN Sales	US Sales
Apr-05	66.61	75.78	58.23
May-05	69.22	67.06	51.77
Jun-05	61.27	82.01	65.74
Jul-05	60.47	105.27	75.27
Aug-05	54.74	113.12	67.30
Sep-05	56.92	155.25	72.70
Oct-05	60.06	167.55	75.56
Nov-05	60.73	82.29	63.08
Dec-05	60.66	91.53	85.78
Jan-06	59.48	74.33	59.20
Feb-06	60.05	82.74	59.17
Mar-06	59.30	66.83	47.22
Apr-06	60.40	109.85	47.90
May-06	59.42	62.80	54.40
Jun-06	56.88	72.53	53.89
Jul-06	59.41	72.77	74.64
Aug-06	53.66	73.03	72.83
Sep-06	59.46	55.00	51.90

	Dependable On Peak CDN\$/MWh US Sales	Opportunity On Peak CDN\$/MWh CDN Sales US Sales
Oct-06	60.32	66.79 70.53
Nov-06	62.22	453.65 71.26
Dec-06	64.47	75.13 56.73
Jan-07	63.36	66.89 64.86
Feb-07	65.09	149.08 81.65
Mar-07	61.96	135.52 79.46
Apr-07	60.32	67.28 74.33
May-07	59.22	57.32 65.83
Jun-07	56.25	67.39 60.48
Jul-07	53.22	68.33 69.53
Aug-07	52.22	122.53 67.75
Sep-07	50.30	159.70 53.43
Oct-07	49.73	183.92 51.33
Nov-07	55.15	73.92 57.72
Dec-07	56.42	267.16 65.59
Jan-08	49.09	143.71 47.01
Feb-08	54.06	204.73 58.80
Mar-08	58.63	252.54 76.89
Apr-08	56.12	101.03 69.18
May-08	54.04	73.23 62.14
Jun-08	54.37	233.86 65.51
Jul-08	55.92	408.07 83.55
Aug-08	54.62	319.22 78.42
Sep-08	53.70	100.24 46.44
Oct-08	61.55	120.48 53.18
Nov-08	69.43	122.25 55.24
Dec-08	66.43	92.44 82.18
Jan-09	66.93	72.00 64.96
Feb-09	68.28	53.17 54.70
Mar-09	65.22	56.52 57.20
Apr-09	61.22	34.61 30.61
May-09	55.02	37.22 26.25

	Dependable On Peak CDN\$/MWh US Sales	Opportunity On Peak CDN\$/MWh CDN Sales US Sales	
Jun-09	60.22	36.90	25.95
Jul-09	54.43	36.96	23.03
Aug-09	56.57	30.26	26.98
Sep-09	58.88	26.82	26.83
Oct-09	55.59	31.58	31.77

CAC/MSOS/MH I-65

Subject: Export Markets and Export Sales

Reference: Tab 8, pages 11-15

f) For the US market data provided in response to part (e), please re-state the values in US dollars.

ANSWER:

Dependable and Opportunity on peak US sales in US average prices are listed below.

	Dependable	Opportunity		Dependable	Opportunity
Apr-05	83.72	73.19	Aug-07	55.17	71.57
May-05	86.59	64.76	Sep-07	50.11	53.23
Jun-05	75.09	80.57	Oct-07	47.24	48.76
Jul-05	74.13	92.27	Nov-07	55.19	57.77
Aug-05	65.08	80.01	Dec-07	55.75	64.81
Sep-05	66.09	84.41	Jan-08	49.20	47.11
Oct-05	70.88	89.17	Feb-08	52.97	57.61
Nov-05	70.90	73.64	Mar-08	60.27	79.04
Dec-05	70.72	100.01	Apr-08	56.65	69.84
Jan-06	68.04	67.72	May-08	53.73	61.78
Feb-06	68.34	67.34	Jun-08	55.38	66.73
Mar-06	69.21	55.11	Jul-08	57.36	85.70
Apr-06	67.67	53.66	Aug-08	58.04	83.33
May-06	65.53	59.99	Sep-08	56.92	49.22
Jun-06	63.42	60.09	Oct-08	74.88	64.69
Jul-06	67.19	84.41	Nov-08	85.90	68.34
Aug-06	59.38	80.59	Dec-08	81.35	100.64
Sep-06	66.32	57.88	Jan-09	82.63	80.20
Oct-06	67.72	79.18	Feb-09	86.76	69.51
Nov-06	71.02	81.34	Mar-09	82.19	72.08
Dec-06	75.13	66.11	Apr-09	73.10	36.55
Jan-07	74.71	76.48	May-09	60.31	28.77
Feb-07	76.16	95.53	Jun-09	70.01	30.17
Mar-07	71.43	91.61	Jul-09	58.73	24.85
Apr-07	66.76	82.26	Aug-09	62.04	29.59
May-07	63.36	70.43	Sep-09	63.13	28.77
Jun-07	59.82	64.31	Oct-09	59.89	34.23
Jul-07	56.72	74.10			

CAC/MSOS/MH I-65

Subject: Export Markets and Export Sales

Reference: Tab 8, pages 11-15

- g) To what extent, if any, are each of the LT Sales Under Negotiation described on pages 13-15 included in Tables 1 and 2?**

ANSWER:

All of the LT Sales Under Negotiation described on pages 13-15 are included in Tables 1 and 2.

CAC/MSOS/MH I-66

Subject: Proposed Rates and Customer Impacts

Reference: Tab 10 and related Appendices

a) With respect to Appendix 10.5, page 1 – please indicate the number of residential customers’ monthly bills (over a recent 12 month period) that fall into each of the following consumption categories:

- Less than 250 kWh
- 250 to less than 750 kWh
- 750 kWh to less than 1,000 kWh
- 1,000 kWh to less than 2,000 kWh
- 2,000 kWh to less than 5,000 kWh
- 5,000 kWh or more

ANSWER:

The number of monthly bills shown in the following table is based on bill frequency data for the 2008/09 fiscal year.

kW.h Range	Residential Basic		Residential Seasonal		Residential Diesel	
	Bills	%	Bills	%	Bills	%
≤ 250	598,567	11.5	11,452	46.4	374	5.8
251 - 750	1,717,675	33.0	9,267	37.6	1,326	20.6
751 -1000	690,607	13.3	1,088	4.4	1,111	17.3
1001 - 2000	1,250,947	24.0	1,639	6.6	3,023	47.0
2001 - 5000	774,843	14.9	1,133	4.6	592	9.2
> 5000	169,156	3.3	76	0.3	4	0.1

CAC/MSOS/MH I-66

Subject: Proposed Rates and Customer Impacts

Reference: Tab 10 and related Appendices

- b) Please provide a schedule that compares the proposed Residential monthly customer charge for 2010/2011 with the unit customer related cost from the PCOSS (Appendix 11.1).

ANSWER:

The following schedule compares the proposed Residential monthly customer charge for rates proposed effective April 1, 2010 and April 1, 2011 to the unit customer related cost from PCOSS 2010.

April 1, 2010	\$5.85 (filed) \$6.85 (interim approved)
April 1, 2011	\$4.85 (filed)
PCOSS 2010	\$20.38

CAC/MSOS/MH I-66

Subject: Proposed Rates and Customer Impacts

Reference: Tab 10 and related Appendices

- c) **Please provide a schedule that for each customer class compares the proposed 2010/2011 energy rate with the marginal cost of supply for the class. Please provide in a format similar to that used in CAC/MSOS / MH I – 51 a) from the 2008 GRA.**

ANSWER:

Forecast marginal cost to serve a domestic customer, using Manitoba Hydro established methodology and averaged over the year is 7.79 cents per kW.h. This includes all generation costs and all capital costs associated with transmission and distribution.

2009/10 average marginal cost per kW.h is made up of the following components:

Generation	6.47 ¢
Transmission	0.82 ¢
Distribution	0.50 ¢

By comparison the average revenue (¢/kW.h) calculated using the proposed interim rates effective April 1, 2010 are:

Residential	7.03
GSS	6.66
GSM	5.10
GSL 0 - 30kV	4.53
GSL 30 - 100 kV	3.89
GSL > 100kV	3.53

CAC/MSOS/MH I-67

Subject: Cost of Service Study

Reference: Tab 11, page 4

Appendix 11.3, page 6

- a) **The comments in Appendix 11.3 appear to support the use of actual export prices in the PCOSS whereas the comments in Tab 11 do not. Please reconcile.**

ANSWER:

The comments in Appendix 11.3 were not intended to support the use of actual export prices in the PCOSS. The comments were meant to state that it is possible to have export revenues in the PCOSS that do not match those in the IFF, without affecting the usefulness of the PCOSS results. The comments state the results will still be valid for minor changes in export revenue, but that there is a risk that a dramatic reduction in revenues will distort results.

*“Manitoba Hydro does not believe that the fact that PCOSS revenues do not match Manitoba Hydro’s projected revenue requirement necessarily reduces the usefulness of the PCOSS results....The purpose of the COSS is to determine a fair sharing of revenue requirement among the customer classes and **with minor changes in export revenue the apportionment of the revenue requirement is still valid**, regardless of the precise amount of revenue required. **The risk is that a dramatic reduction in export revenue requires adjustments to the PCOSS that imply a considerably lower cost for Manitoba Hydro’s plant, even though the Corporation’s revenue requirement as identified in the IFF does not change.**”*

Appendix 11.3, page 6

The limitations raised in Appendix 11.3 are expanded upon in Tab 11 to include concerns relating to matching revenues to costs, and particularly that the parameters used in creating the revised export forecast must comport with those underlying the forecast generation costs included within the study.

“Since the PCOSS is based on median flows, it is incorrect to apply lower average unit prices from a year of above average flows, with predominantly opportunity sales, against sales volumes under median flow conditions.”

Tab 11, page 4

CAC/MSOS/MH I-67

Subject: Cost of Service Study

**Reference: Tab 11, page 4
Appendix 11.3, page 6**

- b) **Please confirm that the power purchases include in the PCOSS 2010 are also based on current IFF forecast.**

ANSWER:

PCOSS10 includes revenue and costs, including power purchases, based on IFF08.

CAC/MSOS/MH I-68

Subject: Cost of Service Study

Reference: Tab 11, page 2

- a) **Please file the Terms of Reference for the external contract to review Manitoba Hydro's cost of service methodology.**

ANSWER:

Manitoba Hydro is in the process of drafting the Terms of Reference for the external review of its cost of service methodology. It will file the Terms of Reference with the PUB when complete. It is Manitoba Hydro's intention to have a complete independent evaluation of cost of service methodology (appropriate for both electric and gas operations) and not to be constrained to only those aspects which Manitoba Hydro considers to be contentious.

CAC/MSOS/MH I-68

Subject: Cost of Service Study

Reference: Tab 11, page 2

- b) **If not clear from the Terms of Reference, please indicate whether the scope of contract is to just review those areas that Manitoba Hydro considers to be of contention or to review the entire methodology.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-68(a).

CAC/MSOS/MH I-69

Subject: Cost of Service Study

Reference: Tab 11, page 4

Appendix 11.1, pages 26-27

a) **Please confirm if the following understanding regarding the treatment of DSM costs and savings in PCOSS2010 is correct:**

- **The forecast loads for each customer class are reduced by the DSM savings estimated for the class. Please clarify whether the impact of the programs under the Affordable Energy Fund have also been assigned to classes.**
- **The revenue for each class is reduced by the impact of the DSM savings estimated for each class.**
- **The costs of the DSM programs (with the exception of the programs funded by the Affordable Energy Fund) are assigned to the customer classes that benefit**
- **The demand and energy allocators used in the PCOSS for each class have been reduced to account for the DSM savings estimated for each class. Again, please confirm whether this also includes the savings from programs under the Affordable Energy Fund.**

ANSWER:

Confirmed. The forecast loads for each customer class are reduced by the DSM savings estimated for the class including the savings relating to the programs under the Affordable Energy Fund.

Confirmed. The revenue for each class is reduced by the related DSM savings estimated for each class.

Confirmed. The costs of the DSM programs, with the exception of the programs funded by the Affordable Energy Fund, are assigned to the customer classes that benefit.

Confirmed. The demand and energy allocators used in the PCOSS for each class have been reduced to account for the DSM savings estimated for each class, including the savings relating to the programs under the Affordable Energy Fund.

CAC/MSOS/MH I-69

Subject: Cost of Service Study

Reference: Tab 11, page 4

Appendix 11.1, pages 26-27

- b) Please provide a schedule that sets out the allocation of DSM costs by customer classes and the assignment of DSM savings (kWh) by customer class.

ANSWER:

In PCOSS10, DSM costs and savings are allocated to customer classes as follows:

	Forecast DSM Costs			
	(\$000s)			
	Interest	Depreciation	Misc Revenue	Total
Residential	2,565	3,959		\$ 6,524
GSS ND	1,913	2,848		\$ 4,761
GSS D	2,174	3,513		\$ 5,687
GSM	2,657	4,000		\$ 6,657
GSL 0-30KV	1,306	1,970		\$ 3,276
GSL 30-100kV	145	262		\$ 407
GSL >100kV	419	845		\$ 1,265
Lighting	2	6		\$ 8
Curtail GSL 30-100KV	310	531	(576)	\$ 265
Curtail GSL >100	3,190	5,543	(5,819)	\$ 2,914
	\$ 14,682	\$ 23,477	\$ (6,395)	\$ 31,764

	Forecast DSM Savings	
	Energy (GWh)	Demand (MW)
Residential	42.5	8.4
GSS ND	23.6	8.4
GSS D	37.6	13.2
GSM	43.8	12.8
GSL 0-30KV	24.2	5.9
GSL 30-100kV	2.4	0.9
GSL >100kV	7.1	1.2
Lighting	-	-
	181.3	50.8

CAC/MSOS/MH I-70

Subject: Cost of Service

Reference: Appendix 11.1, pages 73 to 78

- a) **Please indicate how recently the weightings used for each of the allocation factors (C10, C11, C12, C13, C14 and C15) were reviewed and updated.**

ANSWER:

All weightings used to create the customer related allocation factors are reviewed during the preparation of each study. The factors are reviewed to ensure there have been no significant changes that will compromise the validity of the weighting factors.

The “C10 Customer Service General” allocator is based on an analysis of the estimated time various departments devote to each customer class, which is then weighted by the budget for each department. The allocator was updated to use 2010 forecast costs, while the estimate of time devoted to each class was last updated for PCOSS08. The previous estimates were reviewed by line staff for PCOSS10, and were deemed largely consistent with current efforts.

The “C11 Billing” and “C12 Collections” allocator includes weightings based upon a 1991 study of the cost of providing Billing and Collection services to each customer class. These weightings are applied to 2010 forecast customer counts.

The “C13 Customer Count R&D” is unweighted, with the exception of Flat Rate Water Heating customers and Area and Roadway Lighting fixtures, which are reduced by a factor of ten. This reduction has been used since PCOSS91.

The forecast costs used as weightings in “C14 Electrical Inspections” were updated for PCOSS10.

Meter reading frequency weightings used in “C15 Meter Reading” were updated for PCOSS08.

CAC/MSOS/MH I-71

Subject: Cost of Service

Reference: Appendix 11.1, pages 10-11

- a) For each customer class, please provide the historic CP-LFs and and CFs that were averaged to establish the NCP and CP allocators used in the PCOSS.

ANSWER:

**Calculation of Average Load Factors and NCP Coincidence Factors
from Multi-Year Sample of Available Load Research Studies**

		CP Load Factor	Overall CF
02/03	Residential	52.0%	91.6%
03/04	Residential	51.6%	93.9%
04/05	Residential	49.0%	91.7%
05/06	Residential	53.6%	87.8%
07/08	Residential	51.4%	89.6%
	Average Residential	51.5%	90.9%
02/03	GS Small Non Demand	60.2%	87.3%
03/04	GS Small Non Demand	62.7%	87.4%
04/05	GS Small Non Demand	64.4%	84.1%
05/06	GS Small Non Demand	61.6%	83.0%
07/08	GS Small Non Demand	61.1%	88.7%
	Average GSS Non Demand	62.0%	86.1%
02/03	GS Small Demand	63.9%	88.7%
03/04	GS Small Demand	65.7%	81.8%
04/05	GS Small Demand	60.8%	88.7%
05/06	GS Small Demand	68.1%	87.2%
07/08	GS Small Demand	65.4%	92.5%
	Average GSS Demand	64.8%	87.8%
02/03	GS Medium	67.3%	91.8%
03/04	GS Medium	72.5%	92.0%
04/05	GS Medium	70.1%	92.7%
05/06	GS Medium	73.6%	90.6%
07/08	GS Medium	73.0%	92.8%
	Average GSM	71.3%	92.0%
02/03	GS Large 750-30 kV	72.8%	84.2%
03/04	GS Large 750-30 kV	79.4%	96.2%
04/05	GS Large 750-30 kV	78.4%	87.8%
05/06	GS Large 750-30 kV	81.2%	84.2%
07/08	GS Large 750-30 kV	80.3%	88.7%
	Average GSL 0-30kV	78.4%	88.2%

02/03	GS Large 30-100kV	89.0%	77.5%
03/04	GS Large 30-100kV	89.8%	77.1%
04/05	GS Large 30-100kV	96.1%	71.8%
05/06	GS Large 30-100kV	83.2%	77.7%
07/08	GS Large 30-100 kV	92.4%	72.4%
Average GSL 30-100		90.1%	75.3%
02/03	GS Curtailable 30-100kV	91.3%	76.1%
03/04	GS Curtailable 30-100kV	117.8%	79.4%
04/05	GS Curtailable 30-100kV	101.4%	91.6%
05/06	GS Curtailable 30-100kV	98.0%	94.1%
07/08	GS Curtailable 30-100kV	96.6%	96.3%
Average GSL 30-100 Curtailable		101.0%	87.5%
02/03	GS Large > 100kV	92.0%	87.7%
03/04	GS Large > 100kV	89.5%	88.6%
04/05	GS Large > 100kV	90.2%	90.7%
05/06	GS Large > 100kV	87.0%	91.8%
07/08	GS Large > 100 kV	93.2%	90.6%
Average GSL >100		90.4%	89.9%
02/03	GS Curtailable >100kV	95.5%	95.0%
03/04	GS Curtailable >100kV	105.4%	84.5%
04/05	GS Curtailable >100kV	100.4%	83.3%
05/06	GS Curtailable >100kV	97.3%	95.8%
07/08	GS Curtailable >100kV	98.6%	84.4%
Average GSL >100 Curtailable		99.4%	88.6%
02/03	GS Medium SEP	68.2%	51.9%
03/04	GS Medium SEP	64.6%	40.4%
04/05	GS Medium SEP	51.3%	78.6%
05/06	GS Medium SEP	44.8%	78.7%
07/08	GS Medium SEP	43.1%	81.6%
Average SEP - GSM		54.4%	66.2%
02/03	GS Large 750-30 kV SEP	142.8%	16.3%
03/04	GS Large 750-30 kV SEP	129.1%	12.3%
04/05	GS Large 750-30 kV SEP	70.5%	21.3%
05/06	GS Large 750-30 kV SEP	88.8%	18.0%
07/08	GS Large 750-30 kV SEP	88.5%	17.6%
Average SEP - GSL		103.9%	17.1%

**Calculation of Average Seasonal CP Load Factors from Multi-Year Sample of Available Load Research Studies
Corresponding to Highest 50 Winter & Summer Generation Peaks**

		Winter CP LF	Winter CP LF (as if not curtailed)	Summer CP LF	Summer CP LF (as if not curtailed)
05/06	Residential	84.6%		88.0%	
07/08	Residential	78.4%		78.1%	
	Average Residential	81.5%		83.0%	
05/06	GS Small Non Demand	72.3%		73.1%	
07/08	GS Small Non Demand	86.9%		72.8%	
	Average GS Small Non Demand	79.6%		73.0%	
05/06	GS Small Demand	81.3%		82.6%	
07/08	GS Small Demand	88.3%		80.9%	
	Average GS Small Demand	84.8%		81.7%	
05/06	GS Medium	82.1%		81.7%	
07/08	GS Medium	92.1%		80.3%	
	Average GS Medium	87.1%		81.0%	
05/06	GS Large 750-30 kV	80.9%		84.4%	
07/08	GS Large 750-30 kV	96.7%		81.4%	
	Average GS Large 750-30 kV	88.8%		82.9%	
05/06	GS Large 30-100kV	86.8%		98.8%	
07/08	GS Large 30-100 kV	94.0%		104.6%	
	Average GS Large 30-100 kV	90.4%		101.7%	
05/06	GS Curtailable 30-100kV	111.8%	111.8%	98.9%	98.9%
07/08	GS Curtailable 30-100kV	97.1%	97.1%	114.2%	114.2%
	Average GS Curtailable 30-100kV	104.4%	104.4%	106.6%	106.6%
05/06	GS Large > 100kV	98.1%		110.2%	
07/08	GS Large > 100 kV	98.8%		107.0%	
	Average GS Large > 100 kV	98.4%		108.6%	
05/06	GS Curtailable >100kV	99.1%	99.1%	98.3%	98.3%
07/08	GS Curtailable >100kV	99.9%	99.9%	101.6%	101.6%
	Average GS Curtailable > 100 kV	99.5%	99.5%	100.0%	100.0%
05/06	GS Medium SEP	91.2%		507.9%	
07/08	GS Medium SEP	80.2%		295.8%	
	Average GS Medium SEP	85.7%		401.9%	
05/06	GS Large 750-30 kV SEP	60.2%		47.9%	
07/08	GS Large 750-30 kV SEP	132.0%		47.9%	
	Average GS Large 750-30kV SEP	96.1%		47.9%	
05/06	Exports	94.5%		89.4%	
07/08	Exports	83.4%		86.9%	
	Average Exports	88.9%		88.2%	

CAC/MSOS/MH I-71

Subject: Cost of Service

Reference: Appendix 11.1, pages 10-11

- b) **In the case of the 5-years of data used to determine the NCP values, please comment as to whether there are any discernable trends over time.**

ANSWER:

There do not appear to be any discernable trends over the five year period.

CAC/MSOS/MH I-72

Subject: Cost of Service

Reference: Tab 11.1, pages 11-12 and 15

- a) **Please explain how the contributed capital received from third parties as a result of the pending Diesel Funding Agreement has been incorporated in the PCOSS and whether it leads to a reduction in total costs allocated to Diesel (per page 15).**

ANSWER:

The contributions received from governments in respect of the pending Diesel Funding Agreement, or approximately \$23 million, have not been included in the PCOSS. As the PCOSS allocates net export revenue based on total cost, to incorporate contributions would reduce the cost incurred in the Diesel Zone (interest and depreciation expense) and hence reduce allocated net export revenue. The 2004 settlement agreement requires that net export revenues to the Diesel Zone be allocated on the basis of total cost not including the reduction in cost resulting from Contributions received. As a result no Contribution from this agreement is included in the PCOSS and interest and depreciation expense allocated to the Diesel Zone is unreduced by amortization of Contributions.

In the separate Diesel Cost of Service the Revenue Requirement is based on variable cost only, without any recovery of the capital cost of infrastructure in place as at March 31, 2004 for which Contributions were received. The Diesel Cost of Service Study is used to develop rates in the Diesel Zone; capital costs and offsetting Contributions are excluded.

CAC/MSOS/MH I-72

Subject: Cost of Service

Reference: Tab 11.1, pages 11-12 and 15

- b) Is there any recognition in the PCOSS of the capital contribution Manitoba Hydro is making to the Diesel Communities under the Funding Agreement on behalf of non-Government customers? If yes, please indicate how it is incorporated.**

ANSWER:

In the Agreement government customers were responsible for 79% for the net capital value as of March 31, 2004. The remaining 21%, for which no contribution was received, was assumed by Manitoba Hydro in respect of non-treaty residential and general service customers.

CAC/MSOS/MH I-73

Subject: Power Smart

- a) **Please provide a copy of any reports received by Manitoba Hydro in the past 12 months evaluating any portion of the existing Power Smart Plan.**

ANSWER:

Please see Appendix 25 - "Leadership in Energy Efficiency", Comparing Manitoba Hydro's Power Smart with Leading North American Strategies, prepared by Dunsky Energy Consulting.

CAC/MSOS/MH I-73

Subject: Power Smart

b) In what areas does Manitoba Hydro feel its Power Smart programs could use improvements, and why?

ANSWER:

With an objective to identifying opportunities for improvements in the Corporation's Power Smart initiative, Manitoba Hydro contracted Dunsky Energy Consulting to review its energy conservation program. As part of this process, Manitoba Hydro held discussions with the consultant's team and opportunities for pursuing additional energy efficiencies were discussed. To assist the Dunsky team with the project, Manitoba Hydro's staff worked in a collaborative manner in identifying initiatives, which included:

- those opportunities that were already being pursued (e.g. refrigerator recycling program, water and energy saver program, targeted sales in hard to reach market sectors such as small commercial buildings, etc.); and
- potential opportunities which would require additional assessment.

A complete list of opportunities which are either currently being pursued or are being investigated are provided in the Dunsky report. Please see Manitoba Hydro's response to CAC/MSOS/MH I-73(a).

CAC/MSOS/MH I-73

Subject: Power Smart

c) What plans does Manitoba Hydro have to improve its Power Smart programs?

ANSWER:

In addition to ongoing efforts to improve the Corporation's Power Smart programs, Manitoba Hydro contracted Dunskey Energy Consulting to review its energy conservation program. Manitoba Hydro is currently developing an action plan to address the recommendations made in the Dunskey Energy Consulting report. This action plan is not complete at this time.

CAC/MSOS/MH I-73

Subject: Power Smart

- d) **Please provide a copy of the report and “Leadership in Energy Efficiency: Comparing Manitoba Hydro's Power Smart with Leading North American Strategies” prepared by Dunsky Energy and Optimal Energy (circa. October 2009).**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-73(a).

CAC/MSOS/MH I-74

Please provide a copy of any reports received by Manitoba Hydro in the past 12 months proposing any changes or enhancements to the Power Smart Plan.

ANSWER:

Please see Manitoba Hydro's response to question CAC/MSOS/MH I-73(a).

CAC/MSOS/MH I-75

Subject: Power Smart Plan 2009/2010

Reference: Tab 9 Section 9.3

Preamble: The energy savings realized during 2008/09 is currently being evaluated with the report expected to be finalized in late 2009.

a) Provide a copy of the 2008/2009 evaluation report

ANSWER:

Please see Manitoba Hydro's response to PUB/MH I-101.

CAC/MSOS/MH I-75

Subject: Power Smart Plan 2009/2010

Reference: Tab 9 Section 9.3

Preamble: The energy savings realized during 2008/09 is currently being evaluated with the report expected to be finalized in late 2009.

b) If not available, provide an estimate of the 2008/2009 savings by program and rate class

ANSWER:

Please refer to the 2008/09 Power Smart Annual Review which can be found in the response to PUB/MH I-101. Annual GW.h savings by program can be found in Exhibit 4.4.1.1 - B on page 59 of the report and average winter MW savings can be found in Exhibit 4.4.1.2 - B on page 61 of the report.

Manitoba Hydro does not have an allocation of savings by rate class for the year 2008/09. For a forecast of savings by rate class, please see Manitoba Hydro's response to PUB/MH I-100(b)

CAC/MSOS/MH I-75

Subject: Power Smart Plan 2009/2010

Reference: Tab 9 Section 9.3

Preamble: The energy savings realized during 2008/09 is currently being evaluated with the report expected to be finalized in late 2009.

c) Compare the 2008/2009 results to the cumulative savings and bill reductions to the end of 2007/2008

ANSWER:

The following table provides the comparison of energy savings and bill reductions which have been achieved during 2008/09 and which have been achieved to the end of 2007/08.

	2007/08	2008/09
Energy (GW.h at generation)		
Annual Savings	221	242
Annual + Persisting Savings	1,360	1,510
Demand (MW at generation)		
Annual Savings	241	235
Annual + Persisting Savings	488	509
Bill Reduction (millions)		
Annual Reductions	\$ 40	\$ 46
Cumulative Reductions	\$ 300	\$ 352

CAC/MSOS/MH I-75

Subject: Power Smart Plan 2009/2010

Reference: Tab 9 Section 9.3

Preamble: The energy savings realized during 2008/09 is currently being evaluated with the report expected to be finalized in late 2009.

- d) Provide an estimate of the cost to date of the Power Smart and if applicable, other DSM programs, by rate class, including the amount paid by ratepayers and the leveraging provided by Federal and/or provincial programs**

ANSWER:

Annual DSM expenditures are forecast and tracked on an aggregate basis by sector and program in the Power Smart Annual Review and Power Smart Plan. DSM expenditures are not tracked by customer class; rather Power Smart spending is capitalized based on expenditures by program.

The amortization and interest costs related to the DSM expenditures are only allocated to the customer classes during the preparation of a Prospective Cost of Service Study (PCOSS). For the 2010 PCOSS forecast amortization and interest costs were calculated on the unamortized balance of all DSM programs completed to 2007/08, as well as the forecast spending to the end of 2009/10, and then assigned to the customer classes. Please see the response to PUB/MH I-127 for the amounts allocated to rate classes in the 2010 PCOSS.

All costs incurred by Manitoba Hydro related to the Corporation's DSM programs are paid by ratepayers. See response to PUB/MH I-101 for all costs incurred by Manitoba Hydro related to the Corporation's Power Smart initiative.

Manitoba Hydro does not track nor does the Corporation have access to information on all funding provided by the Federal and Provincial governments. The following table provides the funding provided from the Federal and Provincial governments towards the ecoENERGY program.

The Federal grants are rebates paid to customers after they install energy efficient technologies. The first column outlines the grants that are paid directly to customers and the

second column outlines the grants that are paid directly to Manitoba Hydro on behalf of participants of the Lower Income Energy Efficiency Program. The Provincial subsidy is a per audit amount provided by the Provincial government to assist in offsetting Manitoba Hydro's cost of providing home audit services. The funding in the table supports both natural gas and electrically heated residential customers.

Fiscal Year	Federal Grants Paid to Customers	Federal Grants Paid to Manitoba Hydro	Provincial Subsidy Paid to Manitoba Hydro	Total
2007/08	\$648,385	\$0	\$165,650	\$814,035
2008/09	\$1,960,958	\$9,657	\$301,150	\$2,271,765
Total	\$2,609,343	\$9,657	\$466,800	\$3,085,800

CAC/MSOS/MH I-75

Subject: Power Smart Plan 2009/2010

Reference: Tab 9 Section 9.3

Preamble: The energy savings realized during 2008/09 is currently being evaluated with the report expected to be finalized in late 2009.

e) Provide the 2008/2009 savings by class and the cost/benefit ratio.

ANSWER:

The following table provides the energy and demand savings and cost/benefit ratios for each class in 2008/09.

	2008/09 Savings (at Generation)		2008/09 Cost/Benefit Ratios	
	GW.h	Avg. Winter MW	TRC	RIM
Residential				
Incentive	40.0	9.6	2.1	1.1
Customer Service Initiatives	2.3	0.8	n/a	n/a
Codes and Standards	29.4	7.3	n/a	n/a
Commercial				
Incentive	46.7	9.0	2.8	1.3
Customer Service Initiatives	-	-	n/a	n/a
Codes and Standards	0.4	0.1	n/a	n/a
Industrial				
Incentive	123.7	208.5	2.7	1.4
Customer Service Initiatives	-	-	n/a	n/a
Codes and Standards	-	-	n/a	n/a
Overall*	242.5	235.3	2.1	1.1

*Includes support costs

CAC/MSOS/MH I-76

Subject: Power Smart Plan 2009/2010

Reference: Tab 9 Appendix (1) Power Smart Plan 2009 Page 39 Electricity Programs

Preamble: As a result of Incentive-Based Programs, the 2009 Power Smart Residential Plan forecasts achieving capacity savings of 28.6 MW and energy savings of 108.5 GW.h annually by 2024/25 at a total utility investment of \$33.4 million. As a result of these savings, a greenhouse gas emissions reduction of 73,264 tonnes is expected by 2024/25.

- a) **Provide a Schedule that shows the breakdown of Savings and utility costs to date (end of 2009) for incentive based residential programs and the projection for 2009/2010.**

ANSWER:

RESIDENTIAL	Winter Capacity Savings (MW) @generation		Annual Energy Savings (GW.h) @generation		Annual Utility Cost (Thousands)		GHG Reductions (tonnes CO2)	
	Total to 2008/09	2009/10 Forecast	Total to 2008/09	2009/10 Forecast	Total to 2008/09	2009/10 Forecast	Total to 2008/09	2009/10 Forecast
Incentive Based								
New Home Program	1.0	0.7	3.7	1.9	\$4,411	\$538	7,032	1,308
Home Insulation Program	10.7	2.4	22.1	5.0	\$8,741	\$1,429	42,553	3,386
Water and Energy Saver Program	0.0	0.5	0.0	2.5	\$97	\$451	0	1,693
Residential CFL Program	10.2	12.5	49.9	50.6	\$4,805	\$1,631	93,965	34,166
Residential Appliance Program	1.6	0.5	12.1	2.3	\$5,312	\$198	17,871	1,539
Lower Income Energy Efficiency Program	0.4	1.9	1.1	8.6	\$1,490	\$651	1,275	5,771
EE Light Fixtures	0.3	0.1	2.1	0.7	\$1,024	\$400	2,550	462
Residential HE Furnace & Boiler Program	0.0	0.2	0.0	0.7	\$3	\$0	0	462
Fridge Recycling Program	n/a	1.3	0.0	14.4	\$3	\$3,637	0	9,696
Discontinued Programs	2.7	n/a	41.0	n/a	\$3,786	n/a	484,636	n/a
Total	26.8	20.1	132.0	86.6	\$29,673	\$8,935	649,882	58,482

CAC/MSOS/MH I-77

Subject: Power Smart Plan 2009/2010

Reference: Tab 9 Appendix (1) Power Smart Plan 2009 Page 43 Natural Gas Programs

Preamble: As a result of Incentive Based Programs, the 2009 Power Smart Residential Plan forecasts achieving natural gas savings of 23.1 million cubic meters annually by 2024/25 at a total utility investment of \$30.3 million.

a) Provide a Schedule that shows the Savings and costs to date for incentive based residential programs and the projection for 2009/2010

ANSWER:

Natural gas activity is outside of the scope of this hearing.

CAC/MSOS/MH I-78

Subject: Power Smart Plan 2009/2010

Reference: Tab 9 Appendix (1) Power Smart Plan 2009 Page 43

Preamble: The Lower Income Energy Efficiency Program (LIEEP) is designed to bring Power Smart and energy efficient measures to qualifying Manitoba lower income households. By March 2011, the program is expected to assist an estimated 5,650 lower income households (gas and electric).

- a) Provide details of the LIEEP Program plan for 2009/2010 and 2010/2011:**
- i. Budgets Gas and Electric**
 - ii. List of Measures**
 - iii. Forecasts of participants for each measure**
 - iv. Forecast Annual Gas and Electric Savings**

ANSWER:

- i. See Manitoba Hydro's response to PUB/MH I-111(b) for LIEEP electric budgets. Manitoba Hydro respectfully declines to provide information on Centra Gas budgets which are outside the scope of this hearing.**
- ii. The measures included under the LIEEP program are as follows:**
 - Compact Fluorescent Light's
 - Low flow showerhead
 - Faucet aerator
 - Hot water tank set back
 - Pipe wrap insulation
 - Dranjer
 - Draftproofing
 - Insulation (attic, basement, crawlspace, and wall)
 - Fridges

iii. the following table provides a summary of the forecast participation for each electric measure:

Electric Measure	Participants		
	2009/10	2010/11	Total
Electric Measures for all Fuel Heated Homes*			
CFLs for all Fuel Homes	2,358	2,476	4,834
Fridges for all Fuel Homes**	743	785	1,527
Electric Measures for Electric Heated Homes			
Basic Energy Efficiency Items (excluding CFLs)	804	963	1,767
Insulation - Attic	523	626	1,149
Insulation - Basement/Crawl	458	567	1,025
Insulation - Wall	322	385	707
Total Electric Heated Homes Participating	804	963	1,767
* Note that CFLs and fridges are accounted in electric budget for electric, gas and other fuel source homes.			
** Fridges were a high level estimate as there is no Fridge Replacement Program at this time			

iv. The following table provides a forecast for the annual electric savings.

LIEEP Planned Savings - From 2009 Power Smart Plan								
Annual Savings from 2009/10 Onward (including persisting savings)								
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Winter MW	1.70	3.70	3.70	3.70	3.70	3.41	3.11	3.11
Summer MW	0.21	0.43	0.43	0.43	0.43	0.36	0.29	0.29
GWh	7.47	16.22	16.22	16.22	16.22	15.01	13.74	13.74

	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Winter MW	3.11	3.11	3.11	3.11	3.11	3.06	2.95	2.88
Summer MW	0.29	0.29	0.29	0.29	0.29	0.18	0.04	0.00
GWh	13.74	13.74	13.36	12.89	12.89	12.30	11.37	11.03

CAC/MSOS/MH I-78

Subject: Power Smart Plan 2009/2010

Reference: Tab 9 Appendix (1) Power Smart Plan 2009 Page 43

Preamble: The Lower Income Energy Efficiency Program (LIEEP) is designed to bring Power Smart and energy efficient measures to qualifying Manitoba lower income households. By March 2011, the program is expected to assist an estimated 5,650 lower income households (gas and electric).

b) Provide details of the multi residential Building Sector programs targeted at Lower Income Families

ANSWER:

Manitoba Hydro does not have a specific program targeting the lower income units of the multi residential buildings similar to the Corporation's Lower Income Program which targets single detached or semi-detached homes. Unlike this latter housing stock, there is limited economic energy efficient opportunities within the multi residential building stock which would directly benefit lower income tenants. Therefore, a comparable program to the Corporation's Lower Income Program could not be designed and justified for this building sector.

Manitoba Hydro's strategy within this sector involves targeting all economic energy efficient opportunities regardless of a tenant's income and regardless of whether the owner or the tenant benefits. By pursuing this strategy, the energy efficiency of the building stock within the multi residential buildings will be improved and the operating costs will be lower for the building owners.

Manitoba Hydro offers several programs targeted to building operators and owners, including the following:

- Commercial Building Envelope (windows and insulation);
- Commercial HVAC (boilers and chillers);
- Commercial Lighting;
- Commercial Parking Lot Controllers;
- Commercial Clothes Washers;

- Building Owner/Operator Bulk CFL (Compact Fluorescent Light) Purchase Program; and
- Energy & Water Saver Program (launch planned for summer of 2010).

Within the multi residential building sector, the economic opportunities for capturing energy efficiencies which would directly benefit a tenant are generally restricted to plug loads located within the suite (e.g. televisions, lighting and appliances). Manitoba Hydro is aggressively pursuing the lighting opportunities through a Bulk CFL Purchase program which is a subset of the Corporation's Power Smart Residential CFL Program. As of January 2010, penetration of CFL's has reached 46% of all rental suites in Manitoba. With pending regulation planned for 2012 which sets a minimum performance standard that will result in most incandescent bulbs becoming obsolete for distribution in Canada, all lighting opportunities associated with CFL's will soon be captured. At that time, Manitoba Hydro will no longer be offering a program that will incent the use of CFL's. With respect to other economic energy efficient opportunities which may benefit tenants directly, Manitoba Hydro is currently assessing the economics of offering a refrigerator recycling program.

CAC/MSOS/MH I-79

Subject: Power Smart Plan 2009/2010

Reference: Tab 9 Appendix (1) Power Smart Plan 2009 Appendix E2

- a) **Provide a schedule that lists all of the Input assumptions and estimated Annual unit gas and electric savings for each Residential program and measure**

ANSWER:

Residential Program or Measure	Input Assumptions	Annual Electric Savings (kWh)
New Homes Program - Building Envelope	<ul style="list-style-type: none">▪ Average House size - 1300 square feet▪ Attic insulation upgrade from R40 to R50▪ Basement wall and joist header insulation upgrade from R20 to R24▪ Exterior above grade wall insulation upgrade from R20 to R22▪ Windows upgrade from triple pane clear to triple pane with one Low E coating▪ Air tightness maximum 1.5 ACH	3,779
New Home Program - Permanently wired car plug timer	<ul style="list-style-type: none">▪ Based on savings between 500 hours per year of block heater use without a timer and 200 hours of block heater use with a timer.	150
New Home Program - Heat Recovery Ventilator (HRV)	<ul style="list-style-type: none">▪ Upgrade over central exhaust system▪ Average House size 1300 square feet	2,296
New Home Program - Energy efficient lighting Compact Fluorescent Lamps (CFLs) in 10 sockets	<ul style="list-style-type: none">▪ Annual savings based on product mix used for the CFL Program	587
New Home Program - Drain Water Heat Recovery System	<ul style="list-style-type: none">▪ Average occupancy of 2.5 people per home.	825

Residential Program or Measure	Input Assumptions	Annual Electric Savings (kWh)
Home Insulation Program - Attic Insulation - upgrade to R50	<ul style="list-style-type: none"> ▪ Average area insulated: 1050 sq ft ▪ Starting R value: R0 - 5%; R10 - 47%; R20 - 37%; R30-11% ▪ Customer distribution: South 95%; North 5% 	3,094
Home Insulation Program - Wall Insulation - fill uninsulated cavities to minimum R10 and/or add minimum R2.75 exterior when residing	<ul style="list-style-type: none"> ▪ Average area insulated: 1200 sq ft exterior when residing; 900 sq ft cavities ▪ Starting R value: R8 - 18%; R12 - 75%; R20 - 7%; R30-11% ▪ Customer distribution: South 89%; North 11% 	3,249
Home Insulation Program - Basement Wall Insulation - upgrade uninsulated wall to R24	<ul style="list-style-type: none"> ▪ Average area insulated: 840 sq ft ▪ Customer distribution: South 90%; North 10% 	7,880
Home Insulation Program - Crawlspace Wall Insulation - upgrade uninsulated wall to R24	<ul style="list-style-type: none"> ▪ Average area insulated: 350 sq ft ▪ Customer distribution: South 70%; North 30% 	5,662
Water and Energy Saver Program - Showerhead	<ul style="list-style-type: none"> ▪ Average water pressure: 50 PSI urban, 40 PSI rural ▪ Average water temperature increase for washing: 47.8°F urban, 57.8°F rural ▪ Customer distribution: urban 79%; Rural 21% ▪ Average number of people per household: 2.4 ▪ likelihood that unit will be used for entire product life 84% ▪ Replace 2.5 GPM unit ▪ Actual tested flow rate of a 1.5 GPM showerhead at 40 PSI is 1.87 GPM ▪ Actual tested flow rate of a 1.5 GPM showerhead at 50 PSI is 2.01 GPM ▪ gallons (US) used per household per day base technology: 17.5 urban, 15 rural 	219

Residential Program or Measure	Input Assumptions	Annual Electric Savings (kWh)
	<ul style="list-style-type: none"> ▪ gallons (US) used per household per day low flow technology: 14.6 urban, 13.75 rural 	
Water and Energy Saver Program - Bathroom Faucet	<ul style="list-style-type: none"> ▪ Average water pressure: 50 PSI urban, 40 PSI rural ▪ Average water temperature increase for washing: 47.8°F urban, 57.8°F rural ▪ Customer distribution: urban 79%; Rural 21% ▪ Average number of people per household: 2.4 ▪ likelihood that unit will be used for entire product life 84% ▪ Replace 2.25 GPM unit ▪ Actual flow rate of a 1.0 GPM aerator is average 0.81 GPM ▪ gallons (US) used per household per day base technology: 7.7 average ▪ gallons (US) used per household per day low flow technology: 3.6 average 	143
Water and Energy Saver Program - Kitchen Faucet	<ul style="list-style-type: none"> ▪ Average water pressure: 50 PSI urban, 40 PSI rural ▪ Average water temperature increase for washing: 47.8°F urban, 57.8°F rural ▪ Customer distribution: urban 79%; Rural 21% ▪ Average number of people per household: 2.4 ▪ likelihood that unit will be used for entire product life 84% ▪ Actual flow rate of a 1.5 GPM aerator is average 1.66 GPM ▪ gallons (US) used per household per day base technology: 8.0 average ▪ gallons (US) used per household per day low flow technology: 7.5 average 	19

Residential Program or Measure	Input Assumptions	Annual Electric Savings (kWh)
Residential Lighting - CFL Program - replace one incandescent lamp with an Energy Star-qualified compact fluorescent lamp (CFL)	<ul style="list-style-type: none"> ▪ Average savings per lamp replaced is based on the following product mix: ▪ 40 watt incandescent to 9 watt CFL - 9% ▪ 60 watt incandescent to 13 watt CFL - 38% ▪ 60 watt incandescent to 15 watt CFL - 17% ▪ 100 watt incandescent to 23 watt CFL - 32% ▪ 100 watt dimmable incandescent to 26 watt dimmable CFL - 1% ▪ 100 watt flood to 25 watt CFL flood - 2% ▪ incandescent trilight to CFL trilight- 1% 	59
Residential Lighting - EE Light Fixtures Program - Replace one standard screw-based light fixture using incandescent lamps with an Energy Star-qualified light fixture using pin-based compact fluorescent lamps (CFLs)	<ul style="list-style-type: none"> ▪ Average savings per fixture replaced is based on the following product mix: ▪ 60 watt incandescent to 13 watt CFL - 70% ▪ 100 watt incandescent to 26 watt CFL - 70% ▪ 300 watt halogen torchiere to 55 watt CFL - 6% ▪ Chandeliers, 60-watt incandescent to 13 watt CFL - 3% 	204
Residential High Efficiency Furnace/Boiler Program (ECM) - replace permanent split capacitor (PSC) fan motor with dc variable speed (ECM) motor	<ul style="list-style-type: none"> ▪ Average savings is highly dependent upon customer choice of furnace motor operation: ▪ 30% of participants will continue to run their furnace motor on a continuous basis ▪ 30% of participants will continue to run their furnace motor intermittently (ie. only when the furnace is in heating mode) ▪ 40% of participants will switch their furnace motor operation from intermittent to continuous operation. 	310
Fridge/Freezer Recycling Program - Removal of older (15 years old or more) refrigerator from home	<ul style="list-style-type: none"> ▪ Removal of an older refrigerator results in annual savings per unit of 1126 kWh ▪ 23% of refrigerators removed will be replaced with a new non-Energy Star unit ▪ 22% of refrigerators removed will be replaced with an Energy Star unit 	969

Residential Program or Measure	Input Assumptions	Annual Electric Savings (kWh)
Fridge/Freezer Recycling Program - Removal of older (15 years old or more) freezer from home	<ul style="list-style-type: none"> ▪ Removal of an older freezer results in annual savings per unit of 701 kWh ▪ 10% of freezers removed will be replaced with a new non-Energy Star chest freezer ▪ 10% of freezers removed will be replaced with an Energy Star chest freezer ▪ 10% of freezers removed will be replaced with a new non-Energy Star upright freezer ▪ 10% of freezers removed will be replaced with an Energy Star upright freezer 	563

CAC/MSOS/MH I-79

Subject: Power Smart Plan 2009/2010

Reference: Tab 9 Appendix (1) Power Smart Plan 2009 Appendix E2

- b) **List the sources and details of the calculation of Annual Energy Savings for each measure**

ANSWER:

New Home Program - Building Envelope Measures

Annual energy savings for building envelope measures were calculated by using Natural Resource Canada's HOT2000 building energy simulation software. Two models were developed for a new home in Manitoba- one with the characteristics of common building practice, and one with the requirements of the Power Smart Gold prescriptive standard. The energy consumption of the two model homes was compared to derive energy savings. A home size of 1,300 square feet was used based on historical participation in the Program.

New Home Program - Permanently wired car plug timer

Average annual savings were calculated based on savings between 500 hours per year of block heater use without a timer and 200 hours of block heater use with a timer. Average block heater wattage was estimated to be 500 watts based on the availability of 400 watt and 600 watt heaters in the Manitoba market. Hours of use were based on data collected through Manitoba Hydro's 2003 Residential Energy Use Survey.

New Home Program - Heat Recovery Ventilator (HRV)

Annual energy savings for an HRV as compared to a central ventilation system were calculated by using Natural Resource Canada's HOT2000 building energy simulation software. Two models were compared, one with a central ventilation system and one with an HRV, to derive energy savings. A home size of 1,300 square feet was used based on historical participation in the Program.

New Home Program - Energy efficient lighting Compact Fluorescent Lamps (CFLs) in 10 sockets

Savings were calculated as follows:

Wattage of base incandescent lamp - wattage of CFL X annual hours of use

Hours of use were estimated to be 1,500 hours per year based on data collected from a Manitoba Hydro 2006/07 CFL customer follow-up survey.

New Home Program - Drain Water Heat Recovery System

Annual savings per home were calculated using Natural Resources Canada's Drain Water Heat Recovery Energy Savings Calculator (<http://www.ceati.com/calculator/>) Based on average occupancy of 2.5 people per home.

Home Insulation Program

For all insulation measures, annual electricity savings were calculated using the ASHRAE calculation known as the 'modified degree day method' that takes into account the location of the home (south or north of the 53rd parallel) the insulation levels before and after upgrade, and the square footage of the area insulated. The square footage used for calculations for all measures is based on historical participation in the Program.

Water and Energy Saver Program

For all technologies, Annual energy savings per customer were calculated as follows:

(US gallons of water consumed X density of water in lbs X temperature rise of water in °Fahrenheit) / BTU's per energy source / efficiency percentage

Inputs:

- Gallons of water consumed - based on field testing conducted by Manitoba Hydro for the base device and the water-saving device
- Density of water - 8.33 lbs. per US gallon
- Temperature Rise - 57.8 Fahrenheit for rural customers and 47.8 F for urban customers, based on an average hot water tank setting of 130°F.
- Efficiency - 100% (estimated efficiency of electric hot water as most of energy that is used goes to heating the water)
- BTU's per KW.h - 3 413

Energy use was calculated for both the base and the efficient technologies and the results compared to derive savings.

Residential CFL Program

Savings were calculated as follows:

Wattage of base incandescent lamp - wattage of CFL X annual hours of use

Hours of use were estimated to be 1,500 hours per year based on data collected from a Manitoba Hydro 2006/07 CFL customer follow-up survey.

EE Light Fixtures Program

Savings were calculated as follows:

Wattage of base incandescent fixture - wattage of CFL fixture X annual hours of use

Hours of use were estimated to be 1,500 hours per year based on data collected from a Manitoba Hydro 2006/07 CFL customer follow-up survey.

Residential High Efficiency Furnace/Boiler Program (ECM)

Savings were determined using the following calculation:

Motor watts per hour X hours of operation for PSC motor less motor watts per hour for ECM motor

The motor watts per hour of 423 and 246 for PSC motors and ECM motors respectively is based on the National Research Council's Canadian Centre For Housing Technology's Report on the Effects of ECM Furnace Motors on Electricity and Gas Use (NRCC-38500). Hours of operation for motors that run only with the furnace is 1,000 based on annual average natural gas consumption for an average 60,000 BTU high-efficiency furnace. The homeowner furnace motor operation assumptions were based on extrapolating trend data from past Manitoba Hydro Residential Energy Use Surveys.

Fridge/Freezer Recycling Program

Annual energy savings were calculated by averaging the consumption of older refrigerators and freezers still in use. The 2008 Major Appliance Industry Trends and Forecast report produced by the Canadian Appliance Manufacturers Association was utilized to obtain the consumption number for older units and Manitoba Hydro's Residential Energy Use Survey was utilized to determine the vintage of units operating in residences. Energy savings were discounted based on the likelihood that the removed refrigerator or freezer would be replaced

by a new unit, and the energy efficiency of the replacement unit. Natural Resource Canada's web site was utilized to obtain the annual energy consumption of new refrigerators and freezers.

CAC/MSOS/MH I-79

Subject: Power Smart Plan 2009/2010

Reference: Tab 9 Appendix (1) Power Smart Plan 2009 Appendix E2

- c) **Provide a Comparison Table that compares MH input assumptions for the following mass market and residential measures to those of the Ontario Power Authority Mass Market Measures and Assumptions list (Available on the OPA Web site):**
- i. CFL- Screw in Energy Star 13/15W**
 - ii. Seasonal LEDs**
 - iii. Low flow Showerheads**
 - iv. Faucet aerators**
 - v. Programmable thermostat electric heat**
 - vi. Programmable Thermostat Gas Heat**
 - vii. Refrigerator retirement**
 - viii. Attic Insulation**
 - ix. Basement Insulation**
 - x. Weatherization**

ANSWER:

Manitoba Hydro has reviewed three versions of the referenced document found on the Ontario Power Authority (OPA) web site and for comparison purposes has utilized the latest version that was issued February 1, 2010. Comparison data has been provided for technologies included in current or potential programs.

i. CFL- Screw in Energy Star 13/15W

Small 15 W General Service Lamp, Screw-In

Manitoba Hydro

Ontario Power Authority

Efficient Equipment and Technologies Description	
15 W CFL, Screw-In	15 W CFL, Screw-In
Base Equipment and Technologies Description	
60 W Incandescent Lamp	60 W Incandescent Lamp
Decision Type	
New / Retrofit / Replacement	New / Retrofit / Replacement
Target Market	
Residential existing homes, single-family / multi-family	Existing Homes / Multi-Family / New Homes / Residential / Single-Family / Small Commercial
Resource Savings	
Effective useful life: 4.5 years	Effective useful life: 8 years
Annual unit savings: 55 kWh	Annual unit savings: 44.4 kWh
Total unit savings: 247.5 kWh	Total unit savings: 354.8 kWh
Summer demand savings: 0.005 kW	Summer demand savings: 0.001 kW
Winter demand savings: 0.012 kW	Winter demand savings: 0.012 kW
Incremental Equipment & O&M Costs of Conservation Measure	
\$0.37	\$0.00 (see details below)

Manitoba Hydro Resource Savings Assumptions

Annual Electricity Savings
Annual electric savings are calculated by subtracting the wattage of a CFL from the wattage of the base incandescent lamp, multiplying by annual hours of use. The end result is adjusted for interactive effects with heating and cooling systems. A persistence factor of 92% is used to discount savings, based on Manitoba Hydro CFL customer surveys from past years.

Peak Demand Savings
Energy Distributions and Load Factors were developed from an end use model developed by another utility, which was modified to incorporate daylight hours experienced in Manitoba regions. This data was analyzed and summarized to produce the tables.
Effective Useful Life
A Manitoba Hydro 2006/07 CFL Customer Follow-Up Survey found that customers leave their lights on for an average of 4.4 hours per day or 1,606 hours per year. Manitoba Hydro has assumed a slightly more conservative 1,500 hours of use per year. Internal testing in Manitoba Hydro's lighting laboratory in March 2007 indicated the actual life of a CFL is about 6,500 hours. A CFL is therefore assumed to have an effective useful life of 4.5 years.
Base & Conservation Measure Equipment and O&M Costs
Based on retailer pricing surveys conducted by Manitoba Hydro staff in 2008, the average cost of a 60 watt incandescent bulb is \$0.64. Assuming that 4.5 incandescent bulbs would need to be purchased over time to equal the life of a CFL, Manitoba Hydro concluded through a Net Present Value calculation that the total cost to use an incandescent bulb is \$2.45. Based on the same retailer survey, Manitoba Hydro determined that the average price of CFLs that replace 60 watt incandescent bulbs is \$2.82.

ii. **Seasonal LEDs**

C-7 Seasonal LED Light Strings

Manitoba Hydro

Ontario Power Authority

Efficient Equipment and Technologies Description	
C-7 Seasonal LED Light String (70 bulbs / string)	C-7 Seasonal LED Lights (25 bulbs / string)
Base Equipment and Technologies Description	
C-7 Incandescent Light String (25 bulbs / string, 5 watts ea)	C-7 Incandescent Light String (25 bulbs / string)

Decision Type	
Retirement / Replacement	New / Retrofit / Replacement
Target Market	
Residential / Existing Homes / New Homes / Multi-Family / Single-Family	Existing Homes / Multi-Family / New Homes / Residential / Single-Family / Small Commercial
Resource Savings	
Effective useful life: 20 years	Effective useful life: 5 years
Annual unit savings: 30.1 kWh	Annual unit savings: 13.5 kWh
Total unit savings: 602 kWh	Total unit savings: 67.5 kWh
Summer demand savings: 0.00 kW	Summer demand savings: 0.00 kW
Winter demand savings: 0.002 kW	Winter demand savings: 0.006 kW
Incremental Equipment & O&M Costs of Conservation Measure	
\$-33.53	\$1.59

Manitoba Hydro Resource Savings Assumptions

Annual Electricity Savings
<p>Energy savings are calculated by taking the wattage of the base incandescent light and subtracting the wattage of the LED light string.</p> <p>As different colours of LED light strings have different wattages, a product mix that reflects the variety available in retailers was used to calculate an average.</p> <p>Hours of use are 262 hours per year based on a customer survey conducted in 2005.</p> <p>Note: The Seasonal LED Program ended in 2008. Assumptions have not been updated since the program ended.</p>
Peak Demand Savings
<p>Energy Distributions and Load Factors were developed from an end use model developed by another utility, which was modified to incorporate daylight hours experienced in Manitoba regions. This data was analyzed and summarized to produce the tables.</p>

Effective Useful Life
ENERGY STAR qualified SLEDs last up to 10 times longer than incandescent bulbs. (www.energystar.gc.ca) An incandescent bulb has a life of approximately 750 hours, therefore it is assumed SLEDs will last 7,500 hours. With an annual use of only 262 hours, SLEDs could last almost 30 years. However, Manitoba Hydro uses a conservative estimate of 20 years.
Base & Conservation Measure Equipment and O&M Costs
According to a product survey conducted in 2006, the majority of C7 LED products for sale in Manitoba had 70 lights per string. Incremental pricing and energy savings are based on replacing the average C7 25-light incandescent light string with a C7 LED 70-light string.

iii. Low flow Showerheads

Low Flow Showerhead - Electric Water Heat

Manitoba Hydro

Ontario Power Authority

Efficient Equipment and Technologies Description	
1.5 GPM low flow showerhead	1.25 GPM low flow showerhead
Base Equipment and Technologies Description	
2.5 GPM	2.5 GPM
Decision Type	
Retrofit	Retrofit
Target Market	
Residential - Existing Home / Single Family / Multi-family	Existing Home / Multi-family / New Homes / Residential / Single-Family / Small Commercial
Resource Savings	
Effective useful life: 15 years	Effective useful life: 10 years
Annual unit savings: 219 kWh	Annual unit savings: 377 kWh
Total unit savings: 3,285 kWh	Total unit savings: 3,770 kWh

Summer demand savings: 0.02 kW	Summer demand savings: 0.029 kW
Winter demand savings: 0.03 kW	Winter demand savings: 0.07 kW
Incremental Equipment & O&M Costs of Conservation Measure	
\$0	\$7.00

Manitoba Hydro Resource Savings Assumptions

Annual Electricity Savings
Savings are calculated using the following formula: (US gallons of water consumed X density of water in lbs X temperature rise of water in Fahrenheit / BTU's per energy source / efficiency percentage.
<ul style="list-style-type: none"> • Average water pressure is 40 to 50- PSI • 2.3 Showers/day/household • Average showering time of 7.57 minutes • Average hot water tank setting is 130°F
Peak Demand Savings
Energy Distributions and Load Factors were developed from a Manitoba Hydro Residential End Use Study project. Hourly metered data of hot water tanks at 81 residences were analyzed and summarized to produce the tables
Effective Useful Life
Manitoba Hydro's effective useful life of 15 years is based on informal surveys of various product suppliers and looking at the water quality in Manitoba. Experience has been that showerheads in Manitoba are not replaced regularly due to water quality issues but rather are replaced for aesthetic reasons during a home renovation, which does not occur on a frequent basis.
Base & Conservation Measure Equipment and O&M Costs
Based on market research, Manitoba Hydro did not find a product cost premium for low flow showerhead models. A wide range of price points occur in the market, based on aesthetics.

iv. **Faucet aerators**

Bathroom Aerator - Electric Water Heat

Manitoba Hydro

Ontario Power Authority

Efficient Equipment and Technologies Description	
1.0 GPM Aerator	1.5 GPM Aerator
Base Equipment and Technologies Description	
2.25 GPM	2.2 GPM
Decision Type	
Retrofit	Retrofit
Target Market	
Residential - Existing Home / Single Family / Multi-family	Existing Home / Multi-family / New Homes / Residential / Single-Family / Small Commercial
Resource Savings	
Effective useful life: 15 years	Effective useful life: 10 years
Annual unit savings: 143 kWh	Annual unit savings: 176 kWh
Total unit savings: 2,145 kWh	Total unit savings: 1,763 kWh
Summer demand savings: 0.01 kW	Summer demand savings: 0.014 kW
Winter demand savings: 0.02 kW	Winter demand savings: 0.033 kW
Incremental Equipment & O&M Costs of Conservation Measure	
\$0	\$5.00

Manitoba Hydro Resource Savings Assumptions

Annual Electricity Savings
<p>Savings are calculated using the following formula: (US gallons of water consumed X density of water in lbs X temperature rise of water in Fahrenheit / BTU's per energy source / efficiency percentage.</p> <ul style="list-style-type: none"> • Average water pressure is 40 to 50- PSI • Water temperature rise is 57.8°F rural, 47.8°F urban

<ul style="list-style-type: none"> • Average water consumption of base bathroom faucet is 29 litres per day • Average water consumption of efficient bathroom faucet is 13.8 litres per day • Average hot water tank setting is 130°F.
Peak Demand Savings
Energy Distributions and Load Factors were developed from a Manitoba Hydro Residential End Use Study project. Hourly metered data of hot water tanks at 81 residences were analyzed and summarized to produce the tables.
Effective Useful Life
Manitoba Hydro's effective useful life of 15 years is based on informal surveys of various product suppliers and looking at the water quality in Manitoba. Experience has been that showerheads in Manitoba are not replaced regularly due to water quality issues but rather are replaced for aesthetic reasons during a home renovation, which does not occur on a frequent basis.
Base & Conservation Measure Equipment and O&M Costs
Based on market research, Manitoba Hydro did not find a product cost premium for low flow showerhead models. A wide range of price points occur in the market, based on aesthetics.

Kitchen Aerator - Electric Water Heat

Manitoba Hydro

Ontario Power Authority

Efficient Equipment and Technologies Description	
1.5 GPM Aerator	1.5 GPM Aerator
Base Equipment and Technologies Description	
2.25 GPM	2.2 GPM
Decision Type	
Retrofit	Retrofit
Target Market	
Residential - Existing Home / Single Family / Multi-family	Existing Home / Multi-family / New Homes / Residential / Single-Family / Small Commercial

Resource Savings	
Effective useful life: 15 years	Effective useful life: 10 years
Annual unit savings: 19 kWh	Annual unit savings: 176 kWh
Total unit savings: 285 kWh	Total unit savings: 1,763 kWh
Summer demand savings: 0.002 kW	Summer demand savings: 0.014 kW
Winter demand savings: 0.003 kW	Winter demand savings: 0.033 kW
Incremental Equipment & O&M Costs of Conservation Measure	
\$0	\$5.00

Manitoba Hydro Resource Savings Assumptions

Annual Electricity Savings
<p>Savings are calculated using the following formula: (US gallons of water consumed X density of water in lbs X temperature rise of water in Fahrenheit /BTU's per energy source / efficiency percentage.</p> <ul style="list-style-type: none"> • Average water pressure is 40 to 50- PSI • Water temperature rise is 57.8°F rural, 47.8°F urban • Average water consumption of base kitchen faucet is 30.3 litres per day • Average water consumption of efficient kitchen faucet is 28.2 litres per day • Average hot water tank setting is 130°F.
Peak Demand Savings
<p>Energy Distributions and Load Factors were developed from a Manitoba Hydro Residential End Use Study project. Hourly metered data of hot water tanks at 81 residences were analyzed and summarized to produce the tables</p>
Effective Useful Life
<p>Manitoba Hydro's effective useful life of 15 years is based on informal surveys of various product suppliers and looking at the water quality in Manitoba. Experience has been that showerheads in Manitoba are not replaced regularly due to water quality issues but rather are replaced for aesthetic reasons during a home renovation, which does not occur on a frequent basis.</p>
Base & Conservation Measure Equipment and O&M Costs
<p>Based on market research, Manitoba Hydro did not find a product cost premium for low flow showerhead models. A wide range of price points occur in the market, based on aesthetics</p>

v. Programmable thermostat electric heat

Manitoba Hydro’s programmable thermostat program ended March 31, 2008. Manitoba Hydro has not updated savings assumptions since this time. Due to the fact that the Energy Star technical specifications for thermostats have been rescinded and energy savings are based on consumer behaviour with respect to programming, a program is not planned at this time.

vi. Programmable Thermostat Gas Heat

Natural Gas technologies are outside the scope of this hearing.

vii. Refrigerator retirement

Refrigerator Retirement

Manitoba Hydro

Ontario Power Authority

Efficient Equipment and Technologies Description	
Retirement of Refrigerator	Retirement of Refrigerator
Base Equipment and Technologies Description	
Existing Stock greater than 15 years old	Average Existing Stock
Decision Type	
Retirement	Retirement
Target Market	
Residential existing homes, Single-Family/multi-family	Residential / Small Commercial, Existing Homes, Single-Family/Multi-Family
Resource Savings	
Effective useful life: 13 years	Effective useful life: 9 years
Annual unit savings: 968.5 kWh	Annual unit savings: 1,227.9 kWh
Total unit savings: 12,545 kWh	Total unit savings: 11,050.7 kWh
Winter demand savings: 0.09 kW	Winter demand savings: 0.152 kW
Summer demand savings: 0.18 kW	Summer demand savings: 0.171 kW

Incremental Equipment & O&M Costs of Conservation Measure	
\$209.25	\$100.00

Manitoba Hydro Resource Savings Assumptions

Annual Electricity Savings
Per unit savings before any adjustments were estimated at 1,350 kWh. After interactive effects, savings were estimated as follows: <ul style="list-style-type: none"> • If the unit is not replaced: 1,126 kWh • If the unit is replaced with an Energy Star unit: 806 kWh • If the unit is replaced with a standard unit: 746 kWh
Peak Demand Savings
Energy Distributions and Load Factors were developed from a Manitoba Hydro Residential End Use Study. Hourly metered data of 34 statistically sampled appliances from 8-channel recorders at 113 residences were analyzed and summarized to produce the tables.
Effective Useful Life
Remaining useful life of a unit to be retired is estimated to be 13 years.
Base & Conservation Measure Equipment and O&M Costs
Average incremental cost to the consumer is estimated to be \$209.25 based on the following assumptions: If the customer removed the unit but does not replace it, there is no cost to the consumer. This situation applies to 55% of participants. If the customer replaces their removed fridge with a current model, the estimated cost is \$450 for a standard fridge and \$480 an Energy Star fridge. It is estimated that 45% of the removed units will be replaced. Within this group, 50% will purchase a standard model, and 50% will purchase an Energy Star model. The base case cost is estimated to be zero. It is assumed that if a program did not exist, the consumer would not incur any additional cost as they would take no action.

viii. Attic Insulation

Attic Insulation, Electric Heat

Manitoba Hydro

Ontario Power Authority

Efficient Equipment and Technologies Description	
Attic insulation to R50	Attic insulation to R40
Base Equipment and Technologies Description	
Existing attic insulation R30 or less	Attic insulation R10
Decision Type	
Retrofit	Retrofit
Target Market	
Existing residential homes built 1999 or earlier: single detached, duplex, row housing,	Existing homes / residential / single-family
Resource Savings	
Effective useful life: 30 years	Effective useful life: 20 years
Annual unit savings: 3,094 kWh	Annual unit savings: 3,937.5 kWh
Total unit savings: 92,820 kWh	Total unit savings: 78,750 kWh
Summer demand savings: 0 kW	Summer demand savings: 0.130 kW
Winter demand savings: 1.52 kW	Winter demand savings: 1.13 kW
Incremental Equipment & O&M Costs of Conservation Measure	
\$901.58	\$1,000.00

Manitoba Hydro Resource Savings Assumptions

Annual Electricity Savings
Annual electricity savings are calculated using the ASHRAE calculation known as the 'modified degree day method' that takes into account the location of the home (south or north of the 53 rd Parallel), attic insulation levels (before and after), and the square foot area insulated. Based on an estimated customer mix of existing attic insulation levels (R0/R10/R20/R30 to R50), the average savings for a customer insulating an attic is 3,094

kWh. The average attic area insulated is assumed to be 1,050 square feet based on an average of past participants.
Peak Demand Savings
Peak demand savings are calculated using the ASHRAE calculation known as the ‘modified degree day method’ that takes into account the location of the home (south or north of the 53 rd Parallel), attic insulation levels (before and after), and the square foot area insulated. Based on an estimated customer mix of existing attic insulation levels (R0/R10/R20/R30 to R50), the average savings for a customer insulating an attic is 1.52 kW Winter Peak and 0 kW Summer Peak. Note: Manitoba Hydro does not claim summer energy and demand savings related to air conditioner usage from increased insulation levels. Due to the short cooling season in Manitoba and relatively high variable nature of internal heat gains and household behavior (opening and closing windows), summer energy and demand savings are not claimed to be conservative.
Effective Useful Life
The effective useful life of insulation is estimated to be the term of the planning horizon, which is 30 years. In reality, insulation upgrades have an average effective useful life of 50 years as in the majority of cases the insulation measure is installed for the remaining life of the home.
Base & Conservation Measure Equipment and O&M Costs
Costs for upgrading insulation levels are calculated based on receipts from contractors and retailers. Based on past program participation, it is assumed that 50% of participants will incur labour costs as part of their insulation upgrade.

ix. Basement Insulation

Basement Wall Insulation, Electric Heat

Manitoba Hydro

Ontario Power Authority

Efficient Equipment and Technologies Description	
Basement walls to R24	Basement walls to R22
Base Equipment and Technologies Description	
Uninsulated basement walls	Uninsulated basement walls
Decision Type	
Retrofit	Retrofit

Target Market	
Existing residential homes built 1999 or earlier: single detached, duplex, row housing	Existing homes / residential / single-family
Resource Savings	
Effective useful life: 30 years	Effective useful life: 20 years
Annual unit savings: 7,880 kWh	Annual unit savings: 1,218.1 kWh
Total unit savings: 236,400 kWh	Total unit savings: 24,362.8 kWh
Summer demand savings: 0 kW	Summer demand savings: 0.116 kW
Winter demand savings: 3.80 kW	Winter demand savings: 0.325 kW
Incremental Equipment & O&M Costs of Conservation Measure	
\$1,225.14	\$134.00

Manitoba Hydro Resource Savings Assumptions

Annual Electricity Savings
Annual electricity savings are calculated using the ASHRAE calculation known as the ‘modified degree day method’ that takes into account the location of the home (south or north of the 53 rd Parallel), basement wall insulation levels (before and after), and the square foot area insulated. The average savings for a customer insulating their basement walls is 7,880 kWh. The average basement wall area is 840 square feet.
Peak Demand Savings
Peak demand savings are calculated using the ASHRAE calculation known as the ‘modified degree day method’ that takes into account the location of the home (south or north of the 53 rd Parallel), basement wall insulation levels (before and after), and the square foot area insulated. The average savings for a customer insulating their basement walls is: 3.8 kW Winter Peak and 0 kW Summer Peak Note: Manitoba Hydro does not claim summer energy and demand savings related to air conditioner usage from increased insulation levels. Due to the short cooling season in Manitoba and relatively high variable nature of both internal heat gains and household behavior (opening and closing windows), summer energy and demand savings are not claimed to be conservative.

Effective Useful Life
The effective useful life of insulation is estimated to be the term of the planning horizon, which is 30 years. In reality, insulation upgrades have an average effective useful life of 50 years.
Base & Conservation Measure Equipment and O&M Costs
Costs for upgrading insulation levels are calculated based on receipts from contractors and retailers. Based on past program participation, it is assumed that 50% of participants will incur labour costs as part of their insulation upgrade.

x. Weatherization

Manitoba Hydro does not currently offer a weatherization program therefore formal assumptions have not been developed for weatherization technologies.

CAC/MSOS/MH I-79

Subject: Power Smart Plan 2009/2010

Reference: Tab 9 Appendix (1) Power Smart Plan 2009 Appendix E2

- d) **Comment on any material differences between MH and OPA assumptions and the reasons why MH believes its assumptions are the most appropriate.**

ANSWER:

- i. **CFL- Screw in Energy Star 13/15W**

Effective Useful Life

OPA assumes an average rated life of 8,000 hours and operating hours of 985.5 hours per year to yield a useful life of 8 years. Manitoba Hydro's internal testing laboratory results in March 2007 determined that CFLs last approximately 6,500 hours. Based on the 2006-07 CFL customer follow-up survey, Manitoba Hydro assumes lights are operated for 1,500 hours per year, therefore a CFL will last approximately 4.5 years (rounded to the nearest half year).

- ii. **Seasonal LEDs (SLEDs)**

Efficient Technology

Manitoba Hydro has selected a 70-bulb string as the efficient technology as compared to the 25-bulb string used for OPA calculations.

Effective Useful Life

Manitoba Hydro assumes an effective useful life of 20 years while OPA assumes 5 years. Industry data shows that LED products can last well over 10,000 hours. Based on 262 hours of use per year, Manitoba Hydro assumes that a customer would reasonably keep their SLEDs for 20 years before replacing them.

Annual Unit Savings

Manitoba Hydro's energy savings are higher than those of the OPA based on the difference in hours of operation and the selected energy efficient technology of a 70-bulb string compared to the 25-bulb string used for OPA calculations.

Hours of Operation

Manitoba Hydro savings are calculated using 262 hours per season as per a 2005 SLED Customer Follow-Up Survey. OPA assumes 150 hours per season. Manitoba Hydro's data is based on surveys of Manitoba customers.

Base & Conservation Measure Equipment and O&M Costs

Manitoba Hydro assumes a net benefit to the customer of \$33.53 over the life of the energy efficient product, based on the assumption that bulbs in an incandescent light string have an effective life of 5 years and an LED string has an effective life of 20 years. OPA assumes a net cost based on an effective useful life of 5 years for both the base and energy efficient product.

iii. Low flow Showerheads

Efficient Technology

Manitoba Hydro has chosen the 1.5 GPM showerhead based on field testing. Feedback from potential customers indicated that the 1.25 GPM showerhead did not provide a satisfactory shower experience. The selected showerhead has been utilized for Manitoba Hydro programs such as the WISE and the Lower Income Energy Efficiency Programs with positive customer acceptance.

Effective Useful Life

Manitoba Hydro assumes an effective useful life of 15 years based on informal surveys of local product wholesalers and distributors. Feedback obtained indicated that showerheads are replaced primarily due to aesthetic reasons as part of a renovation, as opposed to functional issues. OPA assumes a useful life of 10 years however acknowledges that little research has been completed in this area.

iv. Faucet aerators

OPA has assumed the same operating characteristics, savings, and equipment availability for both bathroom and kitchen faucet aerators. Manitoba Hydro assumes that there are differences between the two applications, based on field testing.

Bathroom Aerators

Efficient Technology

Manitoba Hydro has selected a 1.0 GPM aerator in the bathroom as the efficient technology of choice as research has indicated that this level of efficiency is readily available and acceptable to customers.

Effective Useful Life

Manitoba Hydro assumes an effective useful life of 15 years based on informal surveys of local product wholesalers and distributors. Feedback obtained indicated that faucets are replaced primarily due to aesthetic reasons as part of a renovation, as opposed to functional issues. OPA assumes a useful life of 10 years however acknowledges that little research has been completed in this area.

Kitchen Aerators

Effective Useful Life

Manitoba Hydro assumes an effective useful life of 15 years based on informal surveys of local product wholesalers and distributors. Feedback obtained indicated that faucets are replaced primarily due to aesthetic reasons as part of a renovation, as opposed to functional issues. OPA assumes a useful life of 10 years however acknowledges that little research has been completed in this area.

Annual Unit Savings

Manitoba Hydro's annual savings are lower than those stated by the OPA as a result of the method used to calculate water savings. The volume of water used for showering by the OPA is based on theoretical flow rates that are rated at 80 PSI as per the CSA test standard. In Manitoba water pressures as tested are in the range of 40-50 PSI. Lower water pressure equates to a lower flow rate, which equates to lower annual volume of water saved, and lower volume of water heated. Manitoba Hydro states water savings of 762 litres annually for a kitchen aerator in comparison to the OPA's 3,281 litres.

- v. **Programmable thermostat electric heat**
Not applicable.

- vi. **Programmable Thermostat Gas Heat**
Not applicable.

vii. Refrigerator retirement

End of Useful Life

Manitoba Hydro assumes a remaining useful life of 13 years, while the OPA has assumed a 9-year remaining life. Manitoba Hydro's remaining useful life is an educated estimate based on the average age of refrigerators remaining in the residential market.

Annual Unit Savings

Manitoba Hydro's energy savings per unit are lower than those of the OPA as the savings are calculated using a blend of scenarios that take into account the likelihood that the unit will be replaced. Manitoba Hydro also adjusts energy savings to take into account interactive effects with home heating and cooling systems while the OPA does not.

Base & Conservation Measure Equipment and O&M Costs

Manitoba Hydro's incremental costs take into account the likelihood that the refrigerator will be replaced, while the OPA does not. If a unit is not being replaced, Manitoba Hydro assumes the incremental cost is zero, as it is assumed that no action will be taken in the absence of a program.

viii. Attic Insulation

Effective Useful Life

Manitoba Hydro assumes a longer effective useful life of 30 years compared to the OPA assumption of 20 years. The life expectancy of a home in Manitoba is an average of 80 years. Based on past experience, it is assumed that in the majority of cases once insulation is added to a home it will not be removed.

Annual Unit Savings

Manitoba Hydro's energy savings per home are lower than those of the OPA as the savings are calculated on a blend of attics with starting insulation levels ranging from R0 to R30. OPA assumes an existing insulation level of R10. Manitoba Hydro assumes an average of 1,050 square feet to be insulated, OPA assumes 1,500 square feet. Manitoba Hydro's assumptions are based on actual participation in the Program and are an accurate reflection of current market activity. Manitoba Hydro uses the ASHRAE calculation known as the 'modified degree day method' to calculate energy

savings. Manitoba Hydro has cross-referenced and confirmed the ASHRAE 'modified degree day method' provides very similar results to HOT2000 simulation software.

ix. Basement Insulation

Effective Useful Life

Manitoba Hydro assumes a longer effective useful life of 30 years compared to the OPA assumption of 20 years. The life expectancy of a home in Manitoba is an average of 80 years. Based on past experience, it is assumed that in the majority of cases once insulation is added to a home it will not be removed.

Annual Unit Savings

Manitoba Hydro's energy savings per home are higher than those of the OPA as the savings are calculated based on an average of 840 square feet to be insulated, OPA assumes 100 square feet. Manitoba Hydro's assumptions are based on actual participation in the Program. Manitoba Hydro uses the ASHRAE calculation known as the 'modified degree day method' to calculate energy savings. Manitoba Hydro has cross-referenced and confirmed the ASHRAE 'modified degree day method' provides very similar results to HOT2000 simulation software.

Base & Conservation Measure Equipment and O&M Costs

Manitoba Hydro's incremental cost for installing basement insulation is \$1,225 compared to \$134 used by the OPA. Manitoba Hydro's costs are based on insulating 840 square feet compared to the OPA assumption of 100 square feet. OPA assumes \$0.88 per square foot material and \$0.46 per square foot for installation. Manitoba Hydro's costs for upgrading insulation levels are calculated based on actual results experienced with the Program.

x. Weatherization

Not applicable.

CAC/MSOS/MH I-80

Subject: Power Smart Review 2007/2008

Reference: Tab 9 Appendix (2) Page 17: Energy Efficient Light Fixtures Mail-In Rebate Program

- a) Provide complete details of the Lighting Rebate program for the residential sector by year for CFLs and (separately) SLEDs:
- i. Coupons/participants
 - ii. Cost to utility per coupon/participant
 - iii. Assumptions about lifetime, hours of use, for CFLs and SLEDS
 - iv. Assumed Savings kwh/unit and total
 - v. Indicate how much of the Residential kwh savings for each year are claimed under the Lighting Rebate Programs and the % that this represents of the Total

ANSWER:

CFL Program:

		2004/2005	2005/2006	2006/2007	2007/2008
i)	# of Rebated Participants	21 633	26 623	17 296	28 933
ii)	Cost to Utility per Rebated Participant	\$35	\$37	\$46	\$31
iii)	Lifetime of CFL	4.5 years	4.5 years	4.5 years	4.5 years
	Hours of Use per CFL	6 500 hours	6 500 hours	6 500 hours	6 500 hours
iv)	Energy Savings per CFL	64 kW.h	58 kW.h	59 kW.h	64 kW.h
v)	Total CFL Program Savings	8.1 GW.h	7.3 GW.h	5.2 GW.h	7.5 GW.h
	Total Residential Savings	9.9 GW.h	10.5 GW.h	18.1 GW.h	20.8 GW.h
	% of Total Residential Savings	82%	70%	29%	36%

SLED Program:

		2005/2006	2006/2007	2007/2008
i)	# of Rebated Participants	1 900	10 880	8 144
ii)	Cost to Utility per Rebated Participant	\$43	\$35	\$43
iii)	Lifetime of SLED Light String	20 years	20 years	20 years
	Hours of Use per SLED Light String (Outdoor)	262 hours	262 hours	262 hours
	Hours of Use per SLED Light String (Indoor)	80 hours	80 hours	80 hours
iv)	Energy Savings per SLED String	28 kW.h	28 kW.h	28 kW.h
v)	Total SLED Program Savings	0.1 GW.h	1.3 GW.h	1.0 GW.h
	Total Residential Savings	10.5 GW.h	18.1 GW.h	20.8 GW.h
	% of Total Residential Savings	1%	7%	5%

CAC/MSOS/MH I-81

Subject: Power Smart Review 2007/2008

**Reference: Tab 9 Appendix (2) Exhibit 4.1.3 – C Annual m3 Savings - Natural Gas
Customer Service Initiatives & Cost Recovery Programs**

- a) **Provide details of funding sources, participants and m3 savings for the
2006/2007 and 2007/2008 Residential Earth Power Program**

ANSWER:

Exhibit 4.1.3 - C references natural gas savings which is outside the scope of this hearing.

CAC/MSOS/MH I-81

Subject: Power Smart Review 2007/2008

**Reference: Tab 9 Appendix (2) Exhibit 4.1.3 – C Annual m3 Savings - Natural Gas
Customer Service Initiatives & Cost Recovery Programs**

**b) Provide the total Average cost/unit and the cost to the utility and to other
government sources**

ANSWER:

Exhibit 4.1.3 - C references natural gas savings and is therefore outside the scope of this hearing.

CAC/MSOS/MH I-81

Subject: Power Smart Review 2007/2008

**Reference: Tab 9 Appendix (2) Exhibit 4.1.3 – C Annual m3 Savings - Natural Gas
Customer Service Initiatives & Cost Recovery Programs**

- c) **Provide a calculation of the cost/benefit of the program to**
 - i. **The homeowner**
 - ii. **The utility/ratepayers**

ANSWER:

Exhibit 4.1.3 - C references natural gas savings and is therefore outside the scope of this hearing.

CAC/MSOS/MH I-81

Subject: Power Smart Review 2007/2008

**Reference: Tab 9 Appendix (2) Exhibit 4.1.3 – C Annual m3 Savings - Natural Gas
Customer Service Initiatives & Cost Recovery Programs**

d) Compare the cost/benefit to that of the Residential Loan Program

ANSWER:

Exhibit 4.1.3 - C references natural gas savings and is therefore outside the scope of this hearing.

CAC/MSOS/MH I-82

Subject: Power Smart Review 2007/2008

References: Tab 9 Appendix (2) Exhibit 4.3.2.1 – B Annual GW.h Savings - Electric Incentive Based Programs; Exhibit 4.3.2.3 – B Total Resource Cost Benefit/Cost Analysis - Electric Incentive Based Programs

For the Residential Sector

a) Provide a GWh Variance Report actual –plan

ANSWER:

Please refer to the 2007/08 Power Smart Annual Review which can be found in Appendix 9.2 of this Application. The GW.h variance report showing actual versus planned savings can be found in the report on page 44.

CAC/MSOS/MH I-82

Subject: Power Smart Review 2007/2008

References: Tab 9 Appendix (2) Exhibit 4.3.2.1 – B Annual GW.h Savings - Electric Incentive Based Programs; Exhibit 4.3.2.3 – B Total Resource Cost Benefit/Cost Analysis - Electric Incentive Based Programs

For the Residential Sector

b) In particular explain in detail why there are lower or zero results for Low income and other programs

ANSWER:

Planned energy savings for 2007/08 shown in Exhibit 4.3.2.1 - B are from the 2006 Power Smart Plan.

For the Lower Income Energy Efficiency Program (LIEEP), energy savings were lower due to a delay in the planned program launch and the planned savings being based on a preliminary program design.

The Seasonal LED Lighting and Thermostats programs achieved lower energy savings due to lower participation than planned.

The other residential programs that show zero energy savings were due to the programs not being launched as originally contemplated when developing the 2006 Power Smart Plan.

CAC/MSOS/MH I-82

Subject: Power Smart Review 2007/2008

References: Tab 9 Appendix (2) Exhibit 4.3.2.1 – B Annual GW.h Savings - Electric Incentive Based Programs; Exhibit 4.3.2.3 – B Total Resource Cost Benefit/Cost Analysis - Electric Incentive Based Programs

For the Residential Sector

c) Provide the projected plan savings for 2009/2010

ANSWER:

Please refer to the 2009 Power Smart Plan which can be found in Appendix 9.1 of this Application. The projected savings for incentive based programs in the residential sector can be found in the report on page 39.

CAC/MSOS/MH I-82

Subject: Power Smart Review 2007/2008

References: Tab 9 Appendix (2) Exhibit 4.3.2.1 – B Annual GW.h Savings - Electric Incentive Based Programs; Exhibit 4.3.2.3 – B Total Resource Cost Benefit/Cost Analysis - Electric Incentive Based Programs

For the Residential Sector

d) Provide details of the Residential TRC calculation

ANSWER:

Residential Programs	TRC Benefits	TRC Costs	Apportioned Startup Costs	Adjusted TRC Costs	Adjusted TRC Benefit/Cost Ratio
Home Insulation Program	\$ 10,886,566	\$ 1,945,360	\$ 167,399	\$ 2,112,759	5.2
Thermostat	\$ 102,129	\$ 37,798	\$ 19,711	\$ 57,509	1.8
New Homes	\$ 1,580,495	\$ 845,851	\$ 136,197	\$ 982,048	1.6
Torchiere	\$ 892,527	\$ 509,195		\$ 509,195	1.8
Appliances	\$ 3,475,106	\$ 3,971,084	\$ 55,648	\$ 4,026,732	0.9
CFL	\$ 2,869,581	\$ 935,081		\$ 935,081	3.1
LED	\$ 800,876	\$ 241,252		\$ 241,252	3.3
Low Income (Including External Funding, without Bill 11)**	\$ 689,027	\$ 759,306	\$ 16,850	\$ 776,156	0.9
Sub-Total Electric Residential Programs	\$ 21,296,307	\$ 9,244,927	\$ 395,805	\$ 9,640,732	2.2
Low Income (Including External Funding and with Bill 11)***	\$ 689,027	\$ 826,428	\$ 16,850	\$ 843,278	0.8
Sub-Total Electric Residential Programs w/o Bill 11 (Low Income)	\$ 21,296,307	\$ 9,312,049	\$ 395,805	\$ 9,707,854	2.2

CAC/MSOS/MH I-82

Subject: Power Smart Review 2007/2008

References: Tab 9 Appendix (2) Exhibit 4.3.2.1 – B Annual GW.h Savings - Electric Incentive Based Programs; Exhibit 4.3.2.3 – B Total Resource Cost Benefit/Cost Analysis - Electric Incentive Based Programs

For the Residential Sector

e) Provide a Variance Report actual –plan

ANSWER:

Please refer to the 2007/08 Power Smart Annual Review which can be found in Appendix 9.2 of this Application. The variance of actual to planned Total Resource Cost Benefit/Cost ratios for residential incentive based programs can be found in the report on page 50.

CAC/MSOS/MH I-82

Subject: Power Smart Review 2007/2008

References: Tab 9 Appendix (2) Exhibit 4.3.2.1 – B Annual GW.h Savings - Electric Incentive Based Programs; Exhibit 4.3.2.3 – B Total Resource Cost Benefit/Cost Analysis - Electric Incentive Based Programs

For the Residential Sector

- f) Break out the Lower Income Program savings and TRC associated with the AEP and explain how these are attributed relative to the total and other funding sources**

ANSWER:

When there are multiple sources of funding, Manitoba Hydro does not attempt to attribute the energy savings which are being achieved through an initiative to the various funding sources. Energy savings from the Lower Income program are simply attributed to the Power Smart Lower Income Program.

CAC/MSOS/MH I-83

Subject: Power Smart Review 2007/2008

References: Tab 9 Appendix (2) Exhibit 4.3.3.1 – B Annual Natural Gas Savings - Incentive-Based Programs; Exhibit 4.3.3.2 – B Total Resource Cost Benefit/Cost Analysis - Natural Gas Incentive-Based Programs

For the Residential Sector

a) Provide a Savings (m3) variance report actual-plan

ANSWER:

Natural gas activity is outside of the scope of this hearing.

CAC/MSOS/MH I-83

Subject: Power Smart Review 2007/2008

References: Tab 9 Appendix (2) Exhibit 4.3.3.1 – B Annual Natural Gas Savings - Incentive-Based Programs; Exhibit 4.3.3.2 – B Total Resource Cost Benefit/Cost Analysis - Natural Gas Incentive-Based Programs

For the Residential Sector

b) Provide detailed explanation of the zero savings for Lower Income programs

ANSWER:

Natural gas activity is outside of the scope of this hearing.

CAC/MSOS/MH I-83

Subject: Power Smart Review 2007/2008

References: Tab 9 Appendix (2) Exhibit 4.3.3.1 – B Annual Natural Gas Savings - Incentive-Based Programs; Exhibit 4.3.3.2 – B Total Resource Cost Benefit/Cost Analysis - Natural Gas Incentive-Based Programs

For the Residential Sector

c) Provide details of the Residential TRC calculation

ANSWER:

Natural gas activity is outside of the scope of this hearing.

CAC/MSOS/MH I-83

Subject: Power Smart Review 2007/2008

References: Tab 9 Appendix (2) Exhibit 4.3.3.1 – B Annual Natural Gas Savings - Incentive-Based Programs; Exhibit 4.3.3.2 – B Total Resource Cost Benefit/Cost Analysis - Natural Gas Incentive-Based Programs

For the Residential Sector

d) Provide a Variance Report actual -plan

ANSWER:

Natural gas activity is outside of the scope of this hearing.

CAC/MSOS/MH I-84

Subject: Power Smart

- a) Which Power Smart programs are available in remote communities and First Nations, including the diesel communities?**

ANSWER:

All Power Smart Programs are available to First Nation and diesel communities.

CAC/MSOS/MH I-84

Subject: Power Smart

b) Which Power Smart programs are directed specifically at remote Northern customers?

ANSWER:

All Power Smart Programs are available across the entire province. Local conditions and opportunities influence up-take and promotion.

CAC/MSOS/MH I-84

Subject: Power Smart

- c) **Please describe how Power Smart information is provided and how Power Smart programs are promoted in remote communities and First Nations, including the diesel communities.**

ANSWER:

Manitoba Hydro uses several marketing channels to provide information and promote Power Smart programs in remote communities, First Nations, and diesel communities. They include the following:

- television ads - CBC ema, CKY ema, GLOBAL ema, CITY TV ema, CIYY (Joy) ema, CKX Brandon;
- newspaper ads - The Drum (Aboriginal), Grassroots News, Cottage Northern (targets homeowners in Northern Manitoba), North Roots Magazine, Flin Flon Reminder, Snow Lake Underground Press, Thompson Citizen, Thompson Nickelbelt News (targets remote communities surrounding Thompson);
- editorials in Community Contact;
- radio ads - CKJS ethnic station, NCI Radio (Aboriginal), Flin Flon CFAR, The Pas CJAR, Thompson CHTM;
- Power Smart program Guides through district offices and participating retailers;
- visits to the communities;
- community meetings;
- word of mouth;
- our internet website; and
- information in Manitoba Hydro energy bills.

CAC/MSOS/MH I-84

Subject: Power Smart

- d) Are any Power Smart programs specifically targeted to diesel generated power?
If so, please describe.**

ANSWER:

Manitoba Hydro does not have Power Smart programs specifically targeted to diesel generated Power. Customers in diesel communities can participate in Manitoba Hydro's portfolio of programs offered through the Corporation's Power Smart initiative.

CAC/MSOS/MH I-84

Subject: Power Smart

- e) **What is the uptake of Power Smart programs in remote communities and First Nations, including the diesel communities? How does that uptake level compare to uptake in other parts of the province? Can Manitoba Hydro offer any explanation for any differences in uptake?**

ANSWER:

Specific uptake levels of Power Smart Programs by area of the Province are not available. Calculating an exact participation rate is made difficult by programs that involve point of sale incentives as detailed customer information, including community of residence of the purchasing customer, is not collected by the retailers (i.e. A First Nations community member may participate in the Residential CFL program at a retailer in Winnipeg and not be counted in a community participation number).

For those programs that do require customer address information, the rate of participation is approximately 10% of the estimated 16 000 residential customers living in First Nation communities (including diesel communities). This participation rate does not however include participants in the CFL program for the past two years, as rebates were offered at point of sale. In addition, the Lower Income Energy Efficiency Program's targeted approach to First Nations was initiated in early 2009 and would not be reflected in the participation numbers. See response to PUB/MH I-111(c) for recent activity on First Nations related to this program.

In comparison, Manitoba Hydro has approximately 425 000 residential customers that do not live in a First Nations community and of these customers approximately 35% have participated in at least one Power Smart program.

Beyond the remoteness and accessibility issues faced by diesel communities and a large number of First Nations communities, there are other factors that could explain the relative participation with First Nations communities. For example, a large majority of homes on First Nations are owned by the Band Council and not the residents who live in them and as a result, there may be a lack of interest from the occupant to invest in energy efficient upgrades to these homes. Similarly, a large number First Nation individuals are on social assistance

where the Band pays the utility bills which means the occupant would not realize the benefit of reduced energy bills from making energy efficient retrofits to the home.

CAC/MSOS/MH I-84

Subject: Power Smart

f) What is the uptake level for the LIEEP?

ANSWER:

Please see Manitoba Hydro's response to PUB/MH I-111(c).

CAC/MSOS/MH I-84

Subject: Power Smart

- g) Are basic materials for participating in Power Smart programs (such as CFLs, SLEDs, high efficiency furnace filters, etc) available in remote communities and First Nations, including the diesel communities? How do the costs of these materials compare to the costs of the same materials in urban centres?**

ANSWER:

It is understood that basic materials for participating in Power Smart programs are available in most remote communities and First Nations, including the diesel communities. The cost of the materials is generally more expensive due to shipping and handling costs.

CAC/MSOS/MH I-85

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

- a) **What is the total (or estimated) amount of diesel fuel that has leaked or spilled in each of the four diesel communities?**

ANSWER:

Diesel fuel in the referenced communities is brought in by a number of parties, and as such Manitoba Hydro is unable to provide the requested information.

CAC/MSOS/MH I-85

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

- b) How much Reserve land has been affected by diesel fuel contamination in all (past and current) diesel communities in Manitoba?**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-85(a).

CAC/MSOS/MH I-85

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

- c) **What are the potential health and environmental effects of diesel fuel contamination?**

ANSWER:

Manitoba Hydro is not qualified to comment on the potential health effects of diesel fuel contamination. Environmental effects of diesel fuel contamination include potential soil contamination and potential impacts to groundwater and waterways.

CAC/MSOS/MH I-85

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

- d) What are the known or suspected effects of diesel fuel contamination in the 4 diesel communities?**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-85(a).

CAC/MSOS/MH I-85

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

e) **Please describe the process for soil remediation from diesel fuel contamination.**

ANSWER:

If soil remediation is determined to be necessary, it is typically accomplished through the removal of impacted soil from the site and placement of impacted soil in an engineered land farm where the soil is treated until the level of impacts is below existing criteria or at a point that it can be used as land fill cover.

CAC/MSOS/MH I-85

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

- f) What are the capital costs associated to soil remediation for the last 10 years and projected for the next 10 years for the diesel communities?**

ANSWER:

Manitoba Hydro's portion of the capital costs associated with the remediation of the diesel site communities for the last 10 years (1999/2009) is approximately \$15.5 million. The capital costs projected for the next 10 years for the remediation of diesel sites is estimated at \$6.8 million.

CAC/MSOS/MH I-86

Subject: diesel

Reference: Appendix 13.9 (Report on Recommendations for Reducing or Eliminating the Use of Diesel Fuel to Supply Power in Off-Grid Communities)

- a) **Please provide details of proposal to the Federal Green Infrastructure fund, and an update on the current status of the proposal.**

ANSWER:

The Provincial Government submitted a proposal to the Federal Government under the Green Infrastructure Fund requesting 75% of the costs to build transmission lines to connect the four off-grid communities.

At this time, no commitment to transmission lines has been made.

CAC/MSOS/MH I-86

Subject: diesel

Reference: Appendix 13.9 (Report on Recommendations for Reducing or Eliminating the Use of Diesel Fuel to Supply Power in Off-Grid Communities)

b) What is the status of implementation of the “efficiency improvements in the generation facilities, investigation into the use of biodiesel and inclusion of these communities in Power Smart programming”, as referred to at p. i of the report?

ANSWER:

The report identified two potential efficiency improvements in the generation facilities - the first a new technology and the second a reduction in station service load.

The proponents of the new technology were unable to demonstrate their claims and hence the proposed research has been abandoned.

Regarding the second initiative of reducing station service load, Manitoba Hydro continues to pursue opportunities to reduce the station service load at our diesel sites. Manitoba Hydro is monitoring the success of the use of variable frequency drives for plant motor loads through participation in COGUA (Canadian Off Grid Utilities Association). Present information indicates the results have not met expectations, but Manitoba Hydro will continue to monitor the progress for future opportunities.

Investigation of the use of biodiesel continues in Brochet. A cautious test plan is being carried out to ensure no damage to the generating units and to ensure continued reliable generation of electricity. Detailed monitoring of the fuel usability and potential degradation continues as well a test grade of biodiesel is being used between January and May 2010.

Regarding inclusion of these communities in Power Smart programming, please see CAC/MSOS/MH I-95(a), (b) and (c).

CAC/MSOS/MH I-86

Subject: diesel

Reference: Appendix 13.9 (Report on Recommendations for Reducing or Eliminating the Use of Diesel Fuel to Supply Power in Off-Grid Communities)

- c) **What is the status of recommendations in the report, including the continued discussion with the communities and INAC with respect to supply of electricity in these communities. (p.14 – Recommendations)?**

ANSWER:

Further discussions will take place after a decision is received regarding the proposal to the Green Infrastructure Fund.

CAC/MSOS/MH I-86

Subject: diesel

Reference: Appendix 13.9 (Report on Recommendations for Reducing or Eliminating the Use of Diesel Fuel to Supply Power in Off-Grid Communities)

d) What is the status of the “report on demand side management potential in the diesel communities” (as referred to in the report at p.13)?

ANSWER:

The market potential study of energy efficient opportunities within diesel communities was based on high level account information and general assumptions on technologies used within each community. The report has not been finalized as it was decided that more accurate information would be obtained through specific site visits which have taken place at two communities and trips are currently planned for the other two communities.

CAC/MSOS/MH I-86

Subject: diesel

Reference: Appendix 13.9 (Report on Recommendations for Reducing or Eliminating the Use of Diesel Fuel to Supply Power in Off-Grid Communities)

- e) **What is Manitoba Hydro's preferred option for reducing or eliminating the use of diesel fuel in remote communities, and why?**

ANSWER:

In accordance with the report to the Manitoba Government, Manitoba Hydro recommended continuing with the biodiesel test with a goal of maximizing the use of biodiesel without jeopardizing the current level of reliability and continuing to pursue supply efficiency improvements.

CAC/MSOS/MH I-86

Subject: diesel

Reference: Appendix 13.9 (Report on Recommendations for Reducing or Eliminating the Use of Diesel Fuel to Supply Power in Off-Grid Communities)

f) What does Manitoba Hydro foresee for the diesel communities in terms of power supply in the future?

ANSWER:

Providing the benefits of grid service will require substantial capital contributions from the Federal Government. Pending a decision by the Federal Government to provide such contributions, Manitoba Hydro will continue to focus on reliability of diesel service with continued emphasis on efficiency improvements where possible. Manitoba Hydro will also continue to consult with the diesel-served communities in ongoing efforts to meet their needs and expectations.

CAC/MSOS/MH I-87

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

- a) Please indicate the number of customers in each class, for each diesel community.

ANSWER:

As at January 2010 the customer counts are as follows:

Customer Class	Brochet	Lac Brochet	Shamattawa	Tadoule Lake
Residential	119	137	172	108
General Service	21	27	35	28
Provincial Government	17	2	1	1
Federal Government	4	22	5	12

CAC/MSOS/MH I-87

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

- b) What are Manitoba Hydro's projections regarding the cost of diesel fuel over the next 5 years?**

ANSWER:

Please see Manitoba Hydro's response to PUB/MH I-188(a).

CAC/MSOS/MH I-88

Subject: diesel

What decision was made by the Manitoba Hydro Electric Board (MHEB) at its January 21, 2010 meeting with respect to rates in the diesel zone?

ANSWER:

Manitoba Hydro expects to file an Application for new Diesel Zone rates soon which will incorporate the decisions made by the MHEB at its January, 2010, meeting. The Rate Application will also reflect recent consultations with INAC and the four First Nation communities.

CAC/MSOS/MH I-89

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

Please file the following documents on the record of this proceeding:

- a) **the 2010 Update of Diesel Community Costs and Rates filed with the Board at the November 2009 Diesel Update Hearing;**

ANSWER:

Please see Appendix 18. Manitoba Hydro intends to file an Application for new Diesel rates based on updated information when available.

CAC/MSOS/MH I-89

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

Please file the following documents on the record of this proceeding:

- b) the most recent cost of service study for the diesel zone; in the event that the most recent study is that which was filed with the Board in November, 2009, please indicate when Manitoba Hydro anticipates preparing an updated cost of service study for the diesel zone;**

ANSWER:

Please see Appendix 19. Manitoba Hydro intends to file an Application for new Diesel rates based on updated information when available.

CAC/MSOS/MH I-89

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

Please file the following documents on the record of this proceeding:

- c) Manitoba Hydro Undertakings #1 – 5, filed following the Diesel Update Hearing in November, 2009.**

ANSWER:

Please see the attached documents which were filed with the Public Utilities Board on January 21, 2010.

Exhibit #MH-_____

Manitoba Hydro Undertaking #1

Transcript Page #92

Manitoba Hydro to indicate how often disconnections are occurring in the diesel zone communities.

Manitoba Hydro Undertaking #3

Transcript Page #97

Manitoba Hydro to indicate the number of accounts in the diesel communities that are currently disconnected.

See attached table for arrears and disconnections.

As of November 1, 2009						
Band & Location	>60 day Arrears	Total Accounts Receivables	No. of Accounts > 60	Total No. of Accts	# of Accounts Disconnected Jan - Nov 2009	# of Accounts still Disconnected
Residential						
Barren Lands First Nation (Brochet)	\$17,691	\$46,671	29	113	3	0
Northlands Dene First Nation (Lac Brochet)	\$1,994	\$4,562	11	111	3	0
Sayisi Dene First Nation (Tadoule)	\$2,485	\$12,101	30	114	0	0
Shamattawa First Nation	\$3,281	\$15,536	13	148	0	0
Commercial						
Barren Lands First Nation (Brochet)	\$6,657	\$50,766	5	43	0	0
Northlands Dene First Nation (Lac Brochet)	\$107,040	\$136,733	14	39	0	0
Sayisi Dene First Nation (Tadoule)	-\$3,618	\$54,625	5	38	1	0
Shamattawa First Nation	\$458	\$50,774	4	50	2	0
Total						
Barren Lands First Nation (Brochet)	\$24,348	\$97,437	34	156	3	0
Northlands Dene First Nation (Lac Brochet)	\$109,034	\$141,295	25	150	3	0
Sayisi Dene First Nation (Tadoule)	-\$1,133	\$66,726	35	152	1	0
Shamattawa First Nation	\$3,739	\$66,310	17	198	2	0
COMBINED TOTAL	\$135,988	\$371,768	111	656	9	0

Exhibit #MH-_____

Manitoba Hydro Undertaking #2

Transcript Page #94

To indicate the date of the report of recommendations for reducing or eliminating the use of diesel fuel to supply power to off-grid communities.

The report in question was bound and available for public release June 5, 2009.

Manitoba Hydro Undertaking #4

Transcript Page #99

Manitoba Hydro to indicate if aware of any fires caused by space heaters, and deaths or injuries, of any nature, as a result

Manitoba is unaware of any official reports as to injury or death as a result of space heaters.

Manitoba Hydro Undertaking #5

Transcript Page #142

Manitoba Hydro to prepare a summary of initiatives being applied in the diesel First Nations, along with Manitoba Hydro's estimate of the kilowatt hours expected to be conserved through these measures and the cost savings for each project.

Manitoba Hydro, through its Power Smart and other customer service initiatives assists customers in reducing their energy usage. These services are available to all Manitoba Hydro customers, including those in the Diesel communities.

Most recently customer service representatives assisted Chief and Council in the communities of Lac Brochet and Shamattawa to perform an Energy Walk through to assess potential energy savings at those facilities managed by the Band such as schools, other community buildings and public infrastructure. Similar energy audits are scheduled to be done in the other two Diesel zone communities of Brochet and Tadoule Lake this winter. The table below highlights the potential savings identified by Manitoba Hydro's Energy Services & Sales representatives.

To date Shamattawa has switched to energy efficient lighting in the school, which is the largest consumer of electricity in the community as well as in the Band office. In addition 17 oil furnace fans have been retrofitted with energy efficient ECM motors which use half the energy of a conventional fan. With the measured implemented the savings in Shamattawa are expected to be 31,500 kW.h/year, which at currently approved rates indicates a saving of \$39,000 and an approximated reduction of diesel fuel of 9,000 litres per annum. A rebate of \$9,780 has been provided through Power Smart initiatives. Lac Brochet to date has not implemented any of the savings identified by Manitoba Hydro.

	Lac Brochet	Shamattawa
kW.h Savings identified	35,521	52,546
Electricity cost savings	\$39,646	\$55,690
Power Smart Rebate	\$14,984	\$21,142
Diesel fuel est. savings	10,157 litres	15,298 litres

CAC/MSOS/MH I-90

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

Please provide any updated information that is available, over and above what is provided in response to CAC/MSOS/MH 1- 89, above, with respect to:

a) the full-cost rate calculation for the diesel zone;

ANSWER:

Manitoba Hydro intends to file an Application for new Diesel rates based on updated information when available.

CAC/MSOS/MH I-90

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

Please provide any updated information that is available, over and above what is provided in response to CAC/MSOS/MH 1- 89, above, with respect to:

b) the government and First Nations Education rate calculation for the diesel zone;

ANSWER:

Manitoba Hydro intends to file an Application for new Diesel rates based on updated information when available.

CAC/MSOS/MH I-90

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

Please provide any updated information that is available, over and above what is provided in response to CAC/MSOS/MH 1- 89, above, with respect to:

c) the pre-2004 accumulated deficit for the diesel zone;

ANSWER:

The pre-2004 accumulated deficit for the diesel zone was \$16.9 million at March 31, 2004 and is being amortized over a ten-year period.

CAC/MSOS/MH I-90

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

Please provide any updated information that is available, over and above what is provided in response to CAC/MSOS/MH 1- 89, above, with respect to:

d) the annual deficit or shortfall for the diesel zone;

ANSWER:

Manitoba Hydro intends to file an Application for new Diesel rates based on updated information when available.

CAC/MSOS/MH I-90

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

Please provide any updated information that is available, over and above what is provided in response to CAC/MSOS/MH 1- 89, above, with respect to:

e) the cumulative deficit for the diesel zone;

ANSWER:

Manitoba Hydro intends to file an Application for new Diesel rates based on updated information when available.

CAC/MSOS/MH I-90

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

Please provide any updated information that is available, over and above what is provided in response to CAC/MSOS/MH 1- 89, above, with respect to:

f) past and future capital expenditures for the diesel zone;

ANSWER:

No further updated information is available.

CAC/MSOS/MH I-90

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

Please provide any updated information that is available, over and above what is provided in response to CAC/MSOS/MH 1- 89, above, with respect to:

- g) Manitoba Hydro's efforts (and success) in collecting contributions towards capital expenditures for the diesel zone.**

ANSWER:

Manitoba Hydro has had meetings with Federal officials on several occasions with the most recent being February 19, 2010. Based on recent discussions, Manitoba Hydro is optimistic that contributions related to previous capital expenditures will be made soon. To date the only contribution received was \$1.2 million in respect of the new generating set in Tadoule Lake.

CAC/MSOS/MH I-91

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

- a) **Please provide an update on the status of the Settlement Agreement between Manitoba Hydro, INAC and MKO. Please provide copies of any documents or correspondence which can be shared publicly.**

ANSWER:

The tentative Settlement Agreement has not yet been signed.

Subsequent to the November Diesel Update Hearing, Manitoba Hydro attended meetings with representatives of INAC, MKO and several of the Chiefs of the Diesel First Nations and believes positive progress was made towards resolving outstanding issues.

CAC/MSOS/MH I-92

Subject: diesel

Reference: 2010 Update of Diesel Community Costs and Rates (filed at the Diesel Update Hearing, November, 2009), page 4

Please provide a detailed explanation of the options for re-structuring diesel rates considered by Manitoba Hydro, as well as Manitoba Hydro's view of the advantages and disadvantages of each option, and an update on the status of Hydro's considerations.

ANSWER:

The alternatives that have been considered are listed in the document “2010 Update of Diesel Community Costs and Rates” which was filed with the PUB for the November 16, 2009, Diesel hearing, and on the record of this proceeding in Manitoba Hydro’s response to CAC/MSOS/MH I-89(a). The principal advantages and disadvantages are summarized as follows:

- 1) No rate increase: Advantage; Customer sensitivity. - Disadvantage: These rates are approximately 3 years old and do not recover current costs to serve.
- 2) Fuel rate increase only: Advantage: Customer Sensitivity. Disadvantage: Other operating costs that would not be recovered if only fuel increases were included in the rate calculation.
- 3) Rate increases based on recent past practices: Advantage: Recovers calculated forecast costs, Disadvantage: Less customer sensitive than 1) or 2).
- 4) Provide grid rates for all consumption: Advantage: Very customer sensitive. Disadvantage: Grid rates recover only about 15% of the currently approved variable full cost rate. In the absence of other funding this deficit would have to be borne by all Manitoba Hydro customers. This deficit would be severely aggravated by load increases driven by the open-ended access to grid rates and the resulting infrastructure upgrades required to serve this increased load.

- 5) Residential rebate. Advantage: Assists residential customers while maintaining current rate structure. Disadvantage: As with any rebate initiative customers tend not to notice the rebate and only focus on the payment due, also additional administrative burden and expense.

- 6) Four Block Rate. This rate would more gradually increase the price signal at different levels of monthly consumption. Such a rate structure may provide some customer benefits; however depending on the structure of the blocks would still require subsidies on some portion of monthly consumption which must still be recovered in the surcharge or from other ratepayers.

Manitoba Hydro intends shortly to file a Diesel Rate Application with the PUB.

CAC/MSOS/MH I-93

Subject: diesel

Reference: Manitoba Hydro Undertakings #1 – 2, filed following the Diesel Update Hearing, November, 2009

- a) **Does Manitoba Hydro have any information to explain why there appear to be greater numbers of residential accounts in arrears in the Barren Lands First Nation (Brochet) and the Sayisi Dene First Nation (Tadoule), as compared to the other diesel communities?**

ANSWER:

As of November 1, 2009, the average percentage of active residential accounts in arrears for all four diesel communities is 17%. Both Barren Lands and Sayisi Dene First Nation appear above this average.

Community	% of Residential Accounts in Arrears
Barren Lands First Nation	26%
Northlands Dene First Nation	10%
Sayisi Dene First Nation	26%
Shamattawa First Nation	7%

When customer service staff visit these remote communities to respond to service requests and perform maintenance on the distribution system, attempts are made to discuss accounts with residents as time allows. Factors, such as adverse weather, dated or changing customer information, and political intervention, can influence staff's ability to effectively perform customer service activities in these communities. Manitoba Hydro continues to work with the customers and with the Bands to resolve outstanding accounts.

CAC/MSOS/MH I-93

Subject: diesel

Reference: Manitoba Hydro Undertakings #1 – 2, filed following the Diesel Update Hearing, November, 2009

b) Does Manitoba Hydro have any information to explain why for residential customers, the amounts in arrears and total accounts receivables appear to be higher in the Barren Lands First Nation (Brochet), as compared to the other diesel communities?

ANSWER:

The arrears for residential customers in Barren Lands First Nation appear high compared to the total accounts receivable due to the influence of nine accounts that are in arrears > \$1,000. Due to the small number of accounts in arrears, the influence of these individual accounts is disproportionately high.

Band & Location	>60 Arrears	Total Accounts Receivables	% of Dollars>60	No. of Accounts>60	Total No. of Accounts	% of Accounts>60
Barren Lands First Nation	33,740	47,177	72%	30	107	28%
Excluding 9 accounts > \$1000	6,902	16,006	43%	21	98	21%

For the accounts mentioned, some customers with past arrears moved to income assistance with the Band making payments for current charges, some customers have exceeded the monthly 2000 kW.h rate threshold resulting in higher monthly charges, and, for one customer, incorrect move information was provided resulting in a substantial adjusted billing once corrected. In all cases, Manitoba Hydro continues to work with the customers and with the Band to resolve the accounts.

CAC/MSOS/MH I-93

Subject: diesel

Reference: Manitoba Hydro Undertakings #1 – 2, filed following the Diesel Update Hearing, November, 2009

- c) **Does Manitoba Hydro have any information to explain why the commercial arrears and total accounts receivables appear to be materially higher in the Northlands Dene First Nation (Lac Brochet), as compared to the other diesel communities?**

ANSWER:

As of November 1, 2009, Northlands Denesuline First Nation Band (commercial) arrears greater than 60 days appeared to be materially higher due to timing of payments and credits under the Equal Payment Plan. The community's Band responsibility accounts were on the Equal Payment Plan. The Band was late in paying their accounts in July, 2009; however, in August, the Band received a substantial credit reflecting that the payments made to that date under the EPP were greater than the energy charges billed to that date. The credit received in July reduced the greater than 60 day arrears to approximately \$4,000.

On November 1, 2009, the total accounts receivables (current charges plus all arrears) for Northlands Denesuline First Nation Band responsibility accounts were higher than the other diesel communities primarily due to missing the previous month's billing (September).

CAC/MSOS/MH I-93

Subject: diesel

Reference: Manitoba Hydro Undertakings #1 – 2, filed following the Diesel Update Hearing, November, 2009

d) What proportion of the arrears for the commercial customer class are associated with First Nation owned (or band owned) commercial accounts?

ANSWER:

Both band owned and non-band owned commercial accounts are present in the diesel communities. As of February 1, 2010, the commercial accounts which were in arrears in the diesel communities were all band owned accounts.

CAC/MSOS/MH I-93

Subject: diesel

Reference: Manitoba Hydro Undertakings #1 – 2, filed following the Diesel Update Hearing, November, 2009

- e) **What steps are Manitoba Hydro planning to take to recoup the arrears detailed in the Undertaking?**

ANSWER:

Manitoba Hydro continues to work with communities to encourage consistent payments.

In regards to Band responsibility accounts, Manitoba Hydro works through a centralized contact with the Band representatives to ensure consistent, timely payments, offering options such as equal payment plan for all Band responsibility accounts, electronic payment alternatives, etc. Although this centralized approach was previously available for a number of communities, this approach was recently expanded to include a centralized contact for Band responsibility accounts in all 63 First Nation communities.

For residential accounts, Manitoba Hydro continues to work with customers in these communities to establish a mutually agreed upon payment arrangement in order to resolve outstanding accounts. Manitoba Hydro also works closely with the Band Income Assistance Administrators, through the above mentioned centralized contact, to ensure that the energy bills for individuals on Income Assistance accurately reflect these payments.

CAC/MSOS/MH I-94

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

- a) Please indicate how many residential accounts in the diesel zone occasionally exceed the 2000 kWh monthly limit.

ANSWER:

Table 1 examines how many times an account exceeded the 2,000 limit during the fiscal year. Table 2 provides the number of bills, by month, which exceeded the limit.

TABLE 1:

# Times Acct Billed >2000 kW.h	# Accounts				
	Lac		Shamattawa	Tadoules	
	Brochet	Brochet		Lake	Total
1	26	13	30	14	83
2	9	10	10	3	32
3	6	7	13	0	26
4	1	3	7	0	11
5	2	2	3	0	7
6	2	1	9	0	12
7	0	0	4	0	4
8	0	0	2	0	2
9	0	0	1	0	1
10	0	0	2	0	2
11	0	1	0	0	1
12	0	0	0	0	0
Total Accts >2000	46	37	81	17	181
Total Accts Billed	120	137	170	109	536
% Accts >2000	38.3%	27.0%	47.6%	15.6%	33.8%

TABLE 2:

Month	# Bills > 2000 kW.h per Month				Total
	Lac		Shamattawa	Tadoules	
	Brochet	Brochet			Lake
April	21	9	18	3	51
May	13	7	12	0	32
June	1	10	10	0	21
July	2	3	7	1	13
August	0	4	11	0	15
September	2	5	3	1	11
October	5	6	8	0	19
November	6	6	47	2	61
December	6	5	20	3	34
January	13	24	47	6	90
February	10	2	41	3	56
March	9	12	35	1	57
Total Bills					
>2000	88	93	259	20	460
# Bills Issued	1439	1623	1950	1285	6297
% Bills >2000	6.1%	5.7%	13.3%	1.6%	7.3%

CAC/MSOS/MH I-94

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

- b) Please indicate how many residential accounts in the diesel zone regularly exceed the 2000 kWh monthly limit.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-94(a).

CAC/MSOS/MH I-94

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

- c) **How often, and by how much, on average, do residential accounts in the diesel zone exceed the 2000 kWh monthly limit? Has Manitoba Hydro observed a seasonal or other pattern?**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-94(a).

CAC/MSOS/MH I-94

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

- d) Has Manitoba Hydro enquired into the reasons why these residential customers exceed 2000 kWh per month, and if so, what are the results of those enquiries?**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS I-94(e).

CAC/MSOS/MH I-94

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

- e) **What attempts have been made by Manitoba Hydro over the last 10 years to address these high levels of residential consumption?**

ANSWER:

Community meetings have been held in each diesel community to discuss energy basics and management of energy consumption, and how this consumption is billed. Manitoba Hydro has also provided two free compact fluorescent bulbs to those customers that attended these meetings. Shamattawa also participated in its own CFL program whereby purchasing two CFL's, Manitoba Hydro provided two additional CFL's at no cost per household.

In addition since the present rate structure was implemented where the customer is exposed to the full cost rate when consumption exceeds 2,000 kWh per month, Manitoba Hydro staff met with those customers that exceeded the 2,000 and explained how the billing changed for this additional consumption. In several cases customers exceeded the 2,000 kWh per month threshold because they were using their electric range or electric heaters to help heat the house up in the mornings until the wood stove provided sufficient heat (electric space heating is not allowed in diesel communities).

CAC/MSOS/MH I-94

Subject: diesel

Reference: Diesel Update Hearing, November, 2009

- f) So far, during the 2009-10 winter months – how many residential customers have exceeded 2000kWh per month?

ANSWER:

The data is not yet available for the 2009-10 winter months.

CAC/MSOS/MH I-95

Subject: diesel

Reference: Manitoba Hydro Undertaking #5, filed following the Diesel Update Hearing, November, 2009

- a) **Please file copies of the documents or reports relating to the Energy Walk through of facilities managed by the Bands.**

ANSWER:

Manitoba Hydro has been working with both Shamattawa First Nation and Lac Brochet First Nation since the energy walk throughs. Any reports and measures implemented are customer specific information and as such, Manitoba Hydro respectfully declines to file this information.

CAC/MSOS/MH I-95

Subject: diesel

Reference: Manitoba Hydro Undertaking #5, filed following the Diesel Update Hearing, November, 2009

- b) Please describe any assistance provided to the First Nations or follow-up measures taken to implement the recommendations following the Energy Walk through.**

ANSWER:

Manitoba Hydro continues to work with both Shamattawa First Nation and Lac Brochet First Nation since the energy walk throughs. Please also see Manitoba Hydro's response to CAC/MSOS/MH I-95(a).

CAC/MSOS/MH I-95

Subject: diesel

Reference: Manitoba Hydro Undertaking #5, filed following the Diesel Update Hearing, November, 2009

- c) **Are Energy Walk throughs available for residential customers in the diesel First Nations? If so, how many have been done, what were the results, and what follow-up has taken place?**

ANSWER:

As part of Manitoba Hydro's efforts to achieve energy efficiency in First Nation Communities and to increase participation in this market sector, the Corporation will offer to undertake "walk throughs" of residential homes. The objective of this effort is to work with the First Nation community in identifying homes which would be suitable for participation in the LIEEP. These "walk throughs" are generally only carried out during the initial phase of a First Nation Community initiative. Through these initial "walk throughs", the First Nation Community becomes educated on what types of homes are suitable for participation in the LIEEP. Subsequently, it is envisioned the First Nation community will be informed on how to select homes and subsequent "walk throughs" may no longer be required by Manitoba Hydro's staff.

This strategy is also practiced in Diesel First Nation Communities. To date, Manitoba Hydro has worked with both Shamattawa First Nation and Lac Brochet First Nation where ten energy "walk throughs" have been undertaken in each community. Subsequent to the "walk throughs" progress has been made towards the First Nation communities participating in Manitoba Hydro's LIEEP (e.g. a material list has been developed and Manitoba Hydro is currently working with the communities to coordinate the delivery of the materials to their respective communities).

CAC/MSOS/MH I-96

Subject: risk review

Reference: Board Order 32/09, Directive 5; letter from Manitoba Hydro to the Board, dated November 6, 2009

Please provide copies of all documents and reports provided to the Board pursuant to Board Order 32/09.

ANSWER:

Manitoba Hydro provided its response to this request by letter dated February 26, 2010.

CAC/MSOS/MH I-97

Subject: risk review

Please file copies of the CVs of the individuals at KPMG who are preparing the report on corporate risk.

ANSWER:

The CVs of the individuals at KPMG responsible for preparation of the referenced report are attached to the retainer letter, a copy of which was filed on February 26, 2010. Please see Appendix 37 for copies of the CVs.

CAC/MSOS/MH I-98

Subject: risk review

Reference: Letter from Manitoba Hydro to the Board, dated January 7, 2010

With respect to the former consultant referred to in this letter, please provide the following:

- a) a breakdown of all money paid to the former consultant and/or any corporations of which the consultant was or is a director, officer, employee or agent, including an indication of how much was paid, when, and for what purpose;**

ANSWER:

The requested documentation is the subject of litigation in Manitoba Court of Queen's Bench Docket No. CI09-01-64372. Manitoba Hydro therefore respectfully declines to provide the requested information at this time.

CAC/MSOS/MH I-98

Subject: risk review

Reference: Letter from Manitoba Hydro to the Board, dated January 7, 2010

With respect to the former consultant referred to in this letter, please provide the following:

- b) copies of all documents relating to the nature and scope of the former consultant's retainer, including correspondence, emails, memoranda, notes to file, etc;**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-98(a).

CAC/MSOS/MH I-98

Subject: risk review

Reference: Letter from Manitoba Hydro to the Board, dated January 7, 2010

With respect to the former consultant referred to in this letter, please provide the following:

- c) particulars of any other facts relating to the nature and scope of the former consultant's retainer which are not disclosed in the documents referred to in (a);**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-98(a).

CAC/MSOS/MH I-98

Subject: risk review

Reference: Letter from Manitoba Hydro to the Board, dated January 7, 2010

With respect to the former consultant referred to in this letter, please provide the following:

- d) copies of all documents in the Corporation's possession relating to the expertise or qualifications of the former consultant and/or any corporations of which the consultant was or is a director, officer, employee or agent;**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-98(a).

CAC/MSOS/MH I-98

Subject: risk review

Reference: Letter from Manitoba Hydro to the Board, dated January 7, 2010

With respect to the former consultant referred to in this letter, please provide the following:

- e) particulars of when, how and why the former consultant's retainer was terminated, including copies of all documents relating to the termination of the consultant's retainer;**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-98(a).

CAC/MSOS/MH I-98

Subject: risk review

Reference: Letter from Manitoba Hydro to the Board, dated January 7, 2010

With respect to the former consultant referred to in this letter, please provide the following:

- f) copies of all reports, opinions or other documents prepared for or provided to the Corporation by the former consultant and/or any corporations of which the consultant was or is a director, officer, employee or agent;**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-98(a).

CAC/MSOS/MH I-98

Subject: risk review

Reference: Letter from Manitoba Hydro to the Board, dated January 7, 2010

With respect to the former consultant referred to in this letter, please provide the following:

- g) particulars of all other opinions or advice provided to the Corporation by the former consultant and/or any corporations of which the former consultant was or is a director, officer, employee or agent which are not included in (f), and copies of any related documents.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-98(a).

CAC/MSOS/MH I-99

Subject: disclosure pursuant to The Public Interest Disclosure (Whistleblower Protection) Act

Please advise how much the Corporation has spent to date, and anticipates spending in the future, with respect to the disclosure pursuant to the Public Interest Disclosure (Whistleblower Protection) Act, on

- a) legal fees and disbursements related to any process through the offices of the Ombudsman or the Auditor General of Manitoba;**

ANSWER:

Legal fees and disbursements associated with processes through the offices of the Ombudsman or the Auditor General of Manitoba have not been recorded separately from legal fees and disbursements associated with the ongoing litigation matters.

CAC/MSOS/MH I-99

Subject: disclosure pursuant to The Public Interest Disclosure (Whistleblower Protection) Act

Please advise how much the Corporation has spent to date, and anticipates spending in the future, with respect to the disclosure pursuant to the Public Interest Disclosure (Whistleblower Protection) Act, on

b) legal fees and disbursements related to the Corporation's Notice of Application in the Court of Queen's Bench File No. CI 09-01-64372;

ANSWER:

Manitoba Hydro respectfully declines to provide the requested information as this information request relates to an ongoing litigation matter.

CAC/MSOS/MH I-99

Subject: disclosure pursuant to The Public Interest Disclosure (Whistleblower Protection) Act

Please advise how much the Corporation has spent to date, and anticipates spending in the future, with respect to the disclosure pursuant to the Public Interest Disclosure (Whistleblower Protection) Act, on

c) legal fees and disbursements for counsel retained in the United States with respect to any matter related to this disclosure; and

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-99(b).

CAC/MSOS/MH I-99

Subject: disclosure pursuant to The Public Interest Disclosure (Whistleblower Protection) Act

Please advise how much the Corporation has spent to date, and anticipates spending in the future, with respect to the disclosure pursuant to the Public Interest Disclosure (Whistleblower Protection) Act, on

d) any other legal fees and disbursements in any way related to this disclosure.

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-99(b).

CAC/MSOS/MH I-100

Subject: Disconnection and Arrears

a) What proportion of Manitoba Hydro's residential customers are low income?

ANSWER:

Using the LICO Standard definition, 17% of Manitoba Hydro residential basic customers are low income.

Using the LICO-125 definition, 24% of Manitoba Hydro residential basic customers are low income.

CAC/MSOS/MH I-100

Subject: Disconnection and Arrears

- b) **What proportion of Manitoba Hydro's residential customers in the diesel zone are low income?**

ANSWER:

The Corporation's data base can not be used to provide a response to this question as the Diesel and Seasonal rate groups were not included in Manitoba Hydro's 2009 Residential Survey,. To provide some insight to the question, the 2006 Canadian Census gives a median income of \$26,496 for Brochet and Lac Brochet with 3.8 people per family. Using the low LICO income cutoffs for 4 people families in rural communities of \$28,361 and \$35,450 for LICO-125, the data indicates that over 50% of the residents in Brochet and Lac Brochet would be considered low income.

CAC/MSOS/MH I-100

Subject: Disconnection and Arrears

- c) **How many residential accounts are in arrears, and what is the magnitude and of the arrears?**

ANSWER:

As of February 5, 2010, 74,407 residential accounts were in arrears with the amount outstanding totalling \$31,027,000.

CAC/MSOS/MH I-100

Subject: Disconnection and Arrears

d) What steps does Manitoba Hydro take when residential accounts are in arrears?

ANSWER:

Manitoba Hydro works with the customer to establish a mutually agreed upon payment arrangement that is both manageable for the customer and ensures the customer does not fall further behind on their energy bill. Payment arrangement guidelines encourage flexibility in working around the customer's paydays, child tax benefits, pension income, etc., and allows for changes to the previously agreed upon payment arrangement. Staff work within the customer's ability to pay, taking into consideration family circumstances such as unexpected health concerns, economic changes or family emergencies. The customer is asked to call back if the terms of the arrangement need to be altered to accommodate their specific circumstances.

Customers experiencing financial difficulties are also advised of the various social agencies that might be able to help, including Neighbours Helping Neighbours, Employment and Income Assistance or Community Financial Counselling Services. Customers are also informed of the Low Income Energy Efficiency Home Program (LIEEHP) and, if interest is expressed, a package of information is sent to customers who may qualify for the program.

The following steps are taken on residential accounts in arrears:

Day 1:

Monthly energy bill due date. The monthly bill is due approximately 15 days after issue for energy consumed in the month leading up to the billing date.

Day 30:

Manitoba Hydro attempts to initiate contact with the customer by printing a "Friendly Reminder" message on their bill when there is a minimum of \$20 in 30 day arrears. The purpose of the reminder is to prompt the customer to pay their bill or to contact Manitoba Hydro to make payment arrangements.

A "Social Services" Insert is sent to residential combined gas/electric accounts when there is a minimum of \$50 in 30 day arrears as per PUB Order 14/08. A Social Services message

is also printed on the bill along with the inclusion of a bill insert identifying where to obtain financial assistance, if required. The Social Services insert advises that, in the absence of a payment arrangement, their services could be subject to collection activity.

Day 60:

Without an active payment arrangement at 60 days, the “Important Past Due” message is printed on the bill when there is a minimum of \$100 in 60 day arrears (\$50 for apartments). The Important Past Due message advises the customer to pay their arrears or contact Manitoba Hydro to make a payment arrangement by the due date of the bill or their account will be subject to further collection action.

For electrically heated houses, the “Important Past Due” message is not printed during the voluntary weather moratorium period. Instead, the “Legal” bill message is printed. (See Below.)

Day 76:

Residential accounts without payment arrangements are listed in the Electronic Work Queue (EWQ) for outbound telephone follow-up at Day 76 (one day past the due date of the 60 Day bill) if there is a minimum of \$100 in 60 day arrears (\$50 for apartments).

If contact can not be made with the customer by phone then the Hand Delivered Disconnection/Load Limiting Notice will be issued and delivered to the property. This notice advises the customer that unless payment or payment arrangements are made their services will be subject to collection activity.

Day 83:

A Disconnection for Non-Payment (DNP)/Load Limiting Service Order will print if: records indicate contact was made with the customer within the last 60 days; if there is a minimum of \$100 in 60 day arrears (\$50 for apartments); and, there is a minimum account balance of \$100.

The DNP/Load Limiting service order will print at Day 83 if the account cannot be resolved. During the heating season, load limiter service orders are manually generated for residential gas & combined gas/electric accounts.

Manitoba Hydro requires that customer contact be made prior to disconnection of service. The customer contact requirement is satisfied when the account is discussed with the customer over the phone, in person or when a hand delivered disconnection or load limiter notice is delivered to the residence.

Day 90:

Without an active payment arrangement at 90 days, the “Urgent Notice of Disconnection” message is printed on the bill when there is a minimum of \$100 in 90 day arrears (\$50 for apartments). The “Urgent Notice of Disconnection” advises the customer that their service is subject to collection activity. The customer must have received the 60 day arrears message to receive the 90 day message. Customers are listed in the EWQ and Manitoba Hydro staff attempt to make contact for the purpose of establishing a payment arrangement.

For electrically heated houses, the “Urgent Notice of Disconnection” message is not printed during the voluntary weather moratorium period. Instead, the “Legal” bill message is printed (see below).

Day 97:

DNP/Load Limiting Service Order will print if: records indicate contact was made with the customer within the last 60 days; if there is a minimum of \$100 in 90 day arrears (\$50 for apartments); and, there is a minimum account balance of \$100.

The DNP/Load Limiting service order will print at Day 97 if the account cannot be resolved. During the heating season, load limiter service orders are manually generated for residential gas & combined gas/electric accounts.

Manitoba Hydro requires that customer contact be made prior to disconnection of service. The customer contact requirement is satisfied when the account is discussed with the customer over the phone, in person or when a hand delivered disconnection or load limiter notice is delivered to the residence.

After Disconnection:

“Legal” bill message will print on Disconnected or Load Limited accounts. This bill message advises the customer that their account is subject to legal action.

CAC/MSOS/MH I-100

Subject: Disconnection and Arrears

e) **Please provide copies of Manitoba Hydro's disconnection policies.**

ANSWER:

Attached is a copy of Manitoba Hydro's Disconnection & Reconnection Policy for electric service customers and a copy of the PUB Order 14/08 related to natural gas and combined natural gas/electric services.

Residential Services - Electricity Billing (2105v)

20. Reconnection of the Same Customer

20.1 - General

A service will be reconnected preferably in the presence of the customer to avoid or minimize damage to appliances or other equipment.

A service that was disconnected for non-payment will be reconnected for the same customer when all overdue amounts owing on the electricity account are paid as follows (in order of preference):

- a) in full;
- b) by short-term payment arrangement if there are extenuating circumstances; or
- c) by other payment arrangements (see Corporate Policy G1-4, Ref. 144 regarding approval).

20.2 - Reconnection Fee

A reconnection fee will be required as follows unless approval is obtained to waive the charge (see Corporate Policy G1-4, Ref. 144 regarding approval).

A reconnection fee (and appropriate GST) will be required:

- when a customer's electrical service has been reconnected after being disconnected for non-payment, or
- when a customer's electrical service has been previously disconnected and is being reconnected with a load restrictor device installed during the non-heating season, May 15th to September 14th, or
- when a load restrictor device has been removed from the electrical service and the customer has been restored to full service.

A reconnection fee is not to be applied:

- when a customer with both natural gas and electric service at the same premise has a load restrictor device installed on their electrical service during the period of September 15th to May 14th

Effective April 1, 2000 the reconnection fee will be as follows:

- a) during normal working hours - \$50;
- b) outside normal working hours - \$65; or
- c) If special conditions exist, such as travel to a remote area or repeated reconnection of the same service for the same customer, the full cost of reconnection will be charged to the customer (see Corporate Policy G1-4, Ref. 144 regarding approval)

21. Collection Action

21.1 - General

Outstanding accounts will be subject to collection action in accordance with CPA2105, V Appendix 'A' Collection Procedures.

21.2 - Late Payment Charge

The Corporation may charge a late payment charge on an outstanding balance equal to or greater than \$21 on a customer's account.

The late payment charge is calculated and compounded monthly on the outstanding balance at a rate of 1.25% per month (nominal rate of 15% per annum). This equates to an effective rate of 16.08% per annum.

21.3 - NSF Cheque Fee

The Corporation will charge a fee of \$20 on cheques returned by the bank for non-sufficient funds.

21.4 - Disconnection of Service

If a customer's account becomes delinquent, the Corporation may at its option, disconnect the service in accordance with the Manitoba Hydro Act. Disconnection procedures will normally be applied to accounts exceeding \$100 and will usually commence the due date of the third unpaid bill for residential accounts.

Prior to starting disconnection procedures, the Corporation may review the following:

- a) alternate payment arrangements;
- b) conditions for deferring disconnection; or

c) installation of load restricting device.

21.5 - Alternate Payment Arrangements

Prior to disconnecting a delinquent account, the Corporation will consider alternate payment arrangements as follows (see Corporate Policy G1-4, Ref. 144 regarding approval):

a) if there are conditions for deferring disconnection (see CPA2105,V Collection Action; Conditions for Deferring Disconnection for details), the following alternate payment arrangements should be considered:

i) payment of current bill plus arrangements equivalent to the amount required to pay arrears over 4 equal bi-weekly installments; or

ii) in special circumstances a reasonable initial payment with arrangements for the orderly repayment of arrears plus full payment of current bills (not normally exceeding 5 months).

b) Customers who fail to keep their previously agreed upon payment arrangements should be contacted for the missed payment. In the case of repeat offenders who fail to keep their arrangements, disconnect action may be implemented even though the account is less than 90 days in arrears;

c) if there are no extenuating circumstances, advise customer to pursue other financial arrangements immediately and suspend further action for a reasonable time, (not normally exceeding 5 business days) if customer agrees to do so.

Note: Advise Credit & Collections Section of Residential customers in bankruptcy.

21.6 - Conditions for Deferring Disconnection

Conditions for deferring disconnection include, but are NOT necessarily limited to, the following situations:

a) young children, senior citizens or mentally or physically disabled persons occupying residence;

b) occupant uses life supporting apparatus, (rocking bed, iron lung resuscitator, kidney dialysis machine etc.);

c) outside temperature is near or below freezing and there is no other source of heating;

d) a reasonable billing dispute between the customer and the Corporation exists;

- e) the Rentalsman's office is involved;
- f) temporary unemployment, temporary financial distress, or other extenuating circumstances.

21.7 - Load-Restriction Device

A load-restriction device may be installed to minimize service capacity for a delinquent account customer unless primary electric space heating is required. The customer must be advised on its purpose and how it can be reset. The load-restriction device may be removed as follows:

- a) upon payment of account, to restore full service capacity; or
- b) upon failure of customer to make suitable payment arrangement, to fully disconnect the service.

21.8 - Disconnection Procedures

If the decision is made to disconnect a service for non-payment the following factors must be considered:

- a) ensure notice has been given to the customer by one of the following methods in order of preference:
 - i) by telephone;
 - ii) in person;
 - iii) in writing (disconnection notification sent to the customer); or
 - iv) by traceable mail, in order of preference;
 - express post;
 - certified mail;
 - registered mail
- b) ensure that the customer has been allowed time to prepare against loss of perishable food and damage to water pipes which would result from service disconnection in the winter;
- c) whenever possible, arrange disconnection of the service;
 - i) in the customer's presence;

ii) normally from Monday to Thursday; and

iii) before noon.

NOTE: If heating is affected, only upon approval (see Corporate Policy G1-4, Ref. 144 regarding approval) will disconnection of a service occur.

Residential Services
 Appendix A - Collection Procedures (2105 V-A)

Functional Responsibilities for Collection Procedures		
Type of Account	Criteria	Responsibility
Active Accounts	Delinquent Account: a) Residential Service-Three bills past due; b) EPP accounts with arrears ratio 2.0 or greater.	District Operator or Operating Supervisor
Final Accounts	Until district collection action is complete up to 149 days after the final bill is issued unless payments are being received. Responsibility includes: a) contacting customer by telephone b) collection letters c) skip tracing activity	District Operator or Operating Supervisor
	Once district collection activity is complete or 149 days after the final bill is issued	Credit and Collections Supervisor

<p>Special Electricity Accounts</p>	<p>If classified as special accounts for any of the following reasons:</p> <ul style="list-style-type: none"> a) government or welfare accounts; b) in bankruptcy or proposals; c) in receivership; d) bailiff action is warranted; e) legal action is warranted; f) collection agency involvement; g) subject of confidential credit report which indicates that immediate collection is warranted; h) requires Rentalsman's office involvement; i) all loan programs; j) designated as Head Office responsibility including Bad and Doubtful and Write-Off account k) builders liens 	<p>Credit and Collections Supervisor</p>
<p>Non-electricity Accounts</p>	<p>Miscellaneous Billings</p>	<p>Credit and Collections Supervisor</p>

Last Revised: 2000 03 28

MANITOBA) Order No. 14/08
)
THE PUBLIC UTILITIES BOARD ACT) February 29, 2008

BEFORE: Graham F. J. Lane, CA, Chairman
Len Evans, LLD, Member
Monica Girouard, CGA, Member

CENTRA GAS MANITOBA INC. - AN ORDER
APPROVING GAS AND COMBINED GAS/ELECTRIC
SERVICES DISCONNECTION AND RECONNECTION
POLICY AND PROCEDURES

The Public Utilities Board (Board) in Order No. 13/04 dated February 13, 2004, approved the conditions precedent and procedures of Centra Gas Manitoba Inc. (Centra) known as Service Disconnection and Reconnection Policy and Procedures for the discontinuance of service as set out in Section 104.1(6) of *The Public Utilities Board Act*.

In Order No. 131/04 dated October 28, 2004, the Board allowed *inter alia* Manitoba Hydro to provide a single bill to customers reflecting the combined cost of receiving gas and electric services.

The current Service Disconnection and Reconnection Policy and Procedures as approved is designed to meet the conditions applicable to gas customers who receive their gas bills separate from their electric bills. The introduction of a single bill from Manitoba Hydro reflecting both gas and electricity charges prompted a review of these Procedures and Policies.

The Disconnection and Reconnection Policy and Procedures approved in this Order now includes all customers who have both gas and electric service and applies to arrears in both the gas and electric accounts as reflected in a single bill. This Order allows for the installation of an electrical load limiter at any time of the year where the customer's bill is in arrears. Centra is also required to reconnect the gas service by October 1 of each year thereby eliminating the potential risk of harm to a customer because of a lack of heat. Customers will have the

right to appeal to the Board the disconnection and reconnection of service including the installation of the load limiter.

Centra is obligated to conduct an assessment of a customer's ability to reset the electrical load limiter as well as other risks to the customer. A risk assessment is also required for all disconnected customers. In the circumstance where a customer poses a threat to the safety or well-being of Centra's employees or agents, Centra will need to take all the necessary precautions for the protection of its staff and agents when visiting the premises for the purpose of reconnection.

IT IS THEREFORE ORDERED THAT:

1. The Service Disconnection and Reconnection Policy and Procedures attached as Appendix "A" and effective February 29, 2008 BE AND IS HEREBY APPROVED.

THE PUBLIC UTILITIES BOARD

"GRAHAM F. J. LANE, CA"
Chairman

"H. M. SINGH"
Acting Secretary

Certified a true copy of
Order No. 14/08 issued by The
Public Utilities Board

Acting Secretary

**Manitoba Hydro/Centra Gas
Gas and Combined Gas/Electric Services Disconnection and Reconnection
Policy and Procedures**

(This document replaces Board Order No. 13/04 pursuant to Sec. 104 of The Public Utilities Board Act.)

POLICY AND PROCEDURES

1.0 PURPOSE:

The purpose of this document is to outline and define the disconnection and reconnection policies and procedures for customers with gas or combined gas/electric services.

Disconnection, in accordance with the steps outlined in the following policy and procedures, will occur if a customer is in arrears and full payment or payment arrangements suitable to the Company have not been made.

Reconnection, in accordance with the following policy and procedures, will occur as soon as it is reasonably possible after the account returns to good standing.

2.0 Scope:

The policy and procedures apply to customers with gas or combined gas/electric services. Procedures are detailed to reflect the variety of situations that may occur for each of the following customer segments as a result of the introduction of the consolidated billing statement. The policy and procedures that follow do not apply to customers with electric only service.

Customer segments include:

2.1 Residential owners and tenants responsible for gas and combined gas/electric services

2.2 Residential landlords responsible for providing tenant gas and combined gas/electric services covered under *The Residential Tenancies Act* (C.C.S.M. c R119)

2.3 Mixed Use Residential/Non-residential

For purposes of this Policy and Procedures, "mixed use residential/non-residential premises" is defined as all premises in which there is a mix of residential and non-residential uses, where the person occupying the premises is billed for provision of the gas or combined gas/electric services.

2.4 Commercial Customers

Commercial customers will receive notice prior to disconnection and actual disconnections will occur throughout the year. In exceptional circumstances these procedures may be varied by the Company for Commercial premises where, in its opinion, the Company is at substantial risk regarding the collection of outstanding arrears.

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3.0 POLICY:

3.1 The consolidated billing statement may include any individual product or service (gas, electric, loans or other charges) on separate billing statements or any combination of products and services on a single billing statement submitted to the customer by Centra Gas and/or Manitoba Hydro or by Manitoba Hydro on behalf of Centra Gas.

3.2 The Company will normally confine collection activity to the person(s) identified on the account who requested the service(s) with an implied agreement to pay or the person or agency who has agreed to pay for the service(s), with the following exception: where a reasonable person would expect that a customer not named on the bill is implicitly responsible for the service(s), i.e. husband or wife (legal or common-law), that person will also be presumed to have liability for the outstanding balance.

3.3 The Manitoba Hydro/Centra Gas, Gas and Combined Gas/Electric Services Disconnection and Reconnection Policy and Procedures are subject to the Public Utilities Board's (Board) review, approval and supervision. The Company agrees that the Board act as a review body with respect to combined gas/electric service(s) disconnection or reconnection policy and procedures. The Board may, on its own initiative, or at the request of a customer, review the Company's actions and make recommendations with respect to same.

3.4 Every effort will be made by the Company to resolve outstanding accounts, disconnection and reconnection issues directly with its customers. If a solution cannot be reached on a gas or combined gas/electric service(s) disconnection or reconnection, the customer may apply to the Board for dispute resolution.

3.5 Customers may direct payment application to any individual product or service on their consolidated billing statement; however, failure to bring the account to good standing will result in applicable disconnection procedures for gas and/or electric services from May 15 to September 30, or electric limited service at any time during the year.

3.6 Disconnection for non-payment can only occur from May 15 to September 30 on gas and combined gas/electric services in arrears. Disconnection will not occur on gas or combined gas/electric services for occupied residential premises from October 1 to May 14. A "Load Limiter" may be installed at any time except where there is no access or for safety or technical reasons.

3.7 By September 30, where gas is the heat source, gas and combined gas/electric services disconnected for non-payment will be reconnected and the electric service shall be load limited except as provided for in clauses 3.6 and 3.13.

3.8 Load limiters may be maintained until the account returns to good standing. If the customer's consolidated billing statement remains in arrears after May 14 the load limiter may be removed and the gas and/or electric service(s) will be subject to disconnection.

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<p>3.9 Up to September 30, gas disconnection will occur Mondays to Thursdays and is permissible on Fridays on condition that the Company provides the identical level of customer service between the hours of 9 a.m. and 2 p.m. on the Saturday following any Friday on which disconnection was completed. Customer service shall include responding to telephone inquiries, bill payment services, an opportunity to make payment arrangements and reconnection services.</p>
<p>3.10 If a customer has one billing statement for one or more products or services, arrears will be based on the outstanding account balance regardless of which product or service is in arrears. The gas or combined gas/electric services will be subject to the applicable disconnection procedures.</p>
<p>3.11 If a customer has separate billing statements for a single premise, and one billing statement is in arrears, all services will be subject to applicable disconnection procedures regardless of which billing statement is in arrears.</p>
<p>3.12 If a landlord is responsible for the provision of gas or combined gas/electric services to tenant occupied premises, arrears will be based on the outstanding account balance and will be subject to Residential Tenancy Branch (RTB) procedures at the tenant occupied premises. Landlords failing to bring their outstanding account balance to good standing will be subject to disconnection of services at their personal residence and any vacant premises under the same name.</p>
<p>3.13 At confirmed vacant premises, gas and combined gas/electric services may be disconnected during the heating season. The Company will keep records of all notification efforts and rationale for conclusion that the premises are vacant.</p>
<p>3.14 At suspected vacant premises, where gas or combined gas/electric services have been disconnected for non-payment, the Company will attempt to contact owners or landlords and keep records of all notification efforts. Such premises will be considered occupied until vacancy is confirmed.</p>
<p>3.15 This policy does not affect the Company's right to disconnect in times of emergency and/or for reasons of safety.</p>
<p>3.16 The Company will attempt to notify disconnected gas and combined gas/electric customers in writing or by phone, to advise if full payment or payment arrangements suitable to the Company are not made, electrical service may be load limited by the start of the next heating season.</p>
<p>3.17 Where the customer or any of the permanent residents of the premises appear to be physically incapable of resetting the load limiter or where the Company does not reasonably believe that the customer or any of the other permanent residents notified fully understands the consequences of load limited or disconnected service, the Company will fully reconnect service(s) and contact the appropriate social agency.</p>

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3.18 The Company will keep current data of all disconnected gas, combined gas/electric and load limited residential customers in accordance with the following procedures.

3.19 The Company may seek Board exemption from full disconnection procedures when faced with customers who consistently and deliberately show patterns of payment avoidance and who clearly understand the consequences of their actions.

4.0 PROCEDURES

4.1 DISCONNECTION PROCEDURE

Steps 1, 2 and 3 must be followed on gas and combined gas/electric services in arrears after which gas and electric disconnection may occur from May 15 to September 30. A load limiter may be installed at any time of the year where the account is in arrears and notice has been provided.

Step 1

Customers shall receive a billing statement each month (first in sequence) for products and services from the previous billing period. The due date which appears on the bill shall be no less than 14 days after the billing date.

Step 2

If payment is not received prior to the next month's bill preparation (second in sequence), a message similar to the following and developed in collaboration with staff of the Board and Manitoba Hydro shall appear on the billing statement:

“Our records indicate your account is past due. Please give this your prompt attention. If payment or payment arrangements have been made, kindly disregard this notice.

[The following is applicable to residential premises including the mixed use residential/non-residential segment.]

“Information on service disconnection, limited electric service, payment arrangements and financial assistance is enclosed.”

The Company shall inform the customers about those social service agencies which may be in a position to offer assistance.

Step 3

If payment is not received prior to the preparation of the next month's bill (third in sequence), a message similar to the following and developed in collaboration with staff of the Board and Manitoba Hydro shall appear on the billing statement. Reconnection fees will be charged as approved by the Board from time to time:

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IMPORTANT PAST DUE NOTICE

Your **account** is past due. If suitable payment arrangements or full payment of the arrears are not made on or before (enter Date {14 calendar days from date of issue}) your account will be subject to collection action which may include limited electric service or full disconnection of service(s). Please call the phone number on the front of your billing statement or pay in person at a Manitoba Hydro Office. If payment of the arrears has already been made, please notify Manitoba Hydro immediately. If payment arrangements have already been made kindly disregard this notice.

If your energy service(s) are limited or disconnected, full payment of the arrears balance plus a reconnect fee for each service will be required before service(s) are fully restored. A security deposit may also be required.

Customers may appeal the Company's action by contacting the Public Utilities Board.

Manitoba Hydro is not responsible for any damages or losses that may occur as a result of energy services which are limited or disconnected for non-payment. Please ensure you protect people, animals and property that may be impacted.

Reconnect Fees will range from \$XX to \$XX plus GST.

4.2 Following completion of Steps 1, 2 and 3, disconnection may occur on gas and combined gas/electric services in arrears between May 15 and September 30. A load limiter may be installed once the Company has made contact with the customer to explain the load limiter and how to reset it. Contact may include in person or by telephone.

4.3 The following are exceptions to the above notice requirements before disconnection:

- (a) Where the customer's account was past due and where a payment arrangement was made and subsequently broken, the Company may load limit or disconnect the customer's service with 7 calendar days notice.
- (b) Where the customer's account was past due for products and services billed at a previous premise, the Company may, with 10 days notice, load limit or disconnect the customer's service at the new premise if the customer fails to make a payment arrangement.

4.4 A message similar to the following and developed in collaboration with staff of the Board and Manitoba Hydro shall appear on the billing statement where services have been load limited or fully disconnected:

Your account remains outstanding despite previous requests for payment. Failure to pay the outstanding account balance can jeopardize your credit rating and subject your account to legal action. If your electric service is currently load limited, your service(s) will be subject to full disconnection on or after May 15. Please call the phone number on the front of your billing statement or pay in person at a Manitoba Hydro Office. If payment of the arrears has already been made, please notify Manitoba Hydro immediately. If payment arrangements have already been made kindly disregard this notice.

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4.5 The load limiter will be removed when the account returns to good standing. If full payment of the arrears or payment arrangements, suitable to the Company, are not made the load limiter may be removed after May 14 and the gas and/or electric service(s) will be subject to disconnection.

4.6 Where the Company discovers unauthorized use of a disconnected or load limited service, the Company may re-establish the load limiter or disconnect the service and install an anti-tampering device, within the terms of this policy and procedures. If the disconnection between October 1 and May 14, the Company will contact the customer prior to full disconnection.

4.7 RECONNECTION PROCEDURE

No reconnection of service(s) shall occur unless full payment of the arrears or payment arrangements are made suitable to the Company including a reconnection fee. Reconnection terms may also include the payment of a security deposit.

For accounts that remain outstanding, where gas is the heat source, gas and electric services which had been disconnected for non-payment will be reconnected by September 30 and the electric service will be restricted with a load limiter.

A reconnection fee will be charged when service(s) are fully reconnected.

Gas and combined gas/electric service(s) will remain disconnected and a load limiter will not be installed under the following conditions:

- (a) Where the Company has attempted reconnection and is not allowed or unable to gain access to the premises; or
- (b) Where the property has been deemed vacant; or
- (c) For safety reasons including threats to the safety or well-being of the Company, its employees or agents; or
- (d) For technical reasons; e.g. A-base meters and the housing of certain meters are not compatible with load limiters.

4.8 The Company will attempt to notify all disconnected gas and combined gas/electric customers in writing or by phone, to advise if full payment or payment arrangements suitable to the Company are not made, electrical service may be load limited by the start of the next heating season.

Where contact occurs the Company must:

- (a) advise that electric service will be limited over the heating season to 15 amps and the consequences of the limited service, and

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- (b) advise that there is no requirement to maintain limited service at the end of the heating season and both gas and electric service may be fully disconnected, and
- (c) attempt to determine the customer's ability to understand the consequences with respect to load limited service, and
- (d) make a note on the Company record when the Company's representative believes that the customer has understood the consequences, and
- (e) If a load limiter is installed, the Company will provide the customer with a bilingual card explaining the maximum capacity of the load limited service and how to reset the load limiter if the maximum capacity is exceeded. Information provided to the customer will include a contact phone number.

REPORTING REQUIREMENTS

4.9 LOAD LIMITED SERVICE

The Company shall maintain a record of load limited services which will be made available to the Board upon request.

4.10 DISCONNECTED COMBINED GAS/ELECTRIC SERVICE

The Company shall correspond with the Board on or about September 15th and 30th, October 15th and 30th, November 30th and December 31st. The correspondence shall be in the form of a report entitled "Disconnected Residential Service Report" and will include all residential customers who remain disconnected, indicating:

- (a) Customer Name
- (b) Customer Number
- (c) Premise Number
- (d) Address
- (e) Employer Name
- (f) Total number of occupants on the premises, including persons under the age of 18, and persons who are disabled or elderly
- (g) Home and Work Phone Numbers
- (h) Current Account Balance
- (i) Referral to Social Service Agency
- (j) Referral to Child and Family Services
- (k) Owner/Tenant Code
- (l) Consequences Explained and Understood
- (m) Financial Difficulty
- (n) Disconnection Date Gas
- (o) Disconnection Date Electric

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- (p) Reconnection Date Gas
- (q) Reconnection Date Electric
- (r) Pending Reconnection Date Gas
- (s) Pending Reconnection Date Electric
- (t) Pending Load Limited Date
- (u) Vacant Date
- (v) Intentional Avoidance Date
- (w) Unavailable Date
- (x) Alternate Heating and Type
- (y) Safety Reasons
- (z) Technical Reasons

4.11 Additionally, the Company shall record the following information which the Board may request at any time:

- (a) payment arrangement details;
- (b) efforts made by the Company to contact the customer (bill messages, letters, telephone calls, personal visits) and the results of such efforts;
- (c) any evidence of customer either contacting, or being encouraged to contact an appropriate social agency;
- (d) if known, details of any follow-up action being undertaken by a social agency;
- (e) information indicating the presence of children, the elderly and the disabled;
- (f) results of title search where done.

Where there are children 12 and under, the matter will be referred in writing to Child and Family Services by September 15 or as soon as the facts are known.

4.12 The Company shall correspond with the Board on a weekly basis from May 15 to December 31, by providing statistical data for disconnected gas and combined gas/electric services. The correspondence shall include:

- (a) Total Disconnected To Date
- (b) Total Reconnected To Date
- (c) Current Week Disconnects
- (d) Current Week Reconnects
- (e) Remaining Disconnected
- (f) Pending Reconnections
- (g) Vacant
- (h) Intentional Avoidance
- (i) Remaining Disconnected
- (j) Face-to-Face Completed

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4.13 Meetings can be held as needed with the Board and the Company's Credit and Recovery Services Manager or delegate. The purpose of these meetings would be to review specific accounts to ensure that customers' concerns (e.g. health, safety and financial interests) have been considered. The Board may conduct audits on these customers as they deem appropriate.

4.14 The above Policies and Procedures come into effect on February 29, 2008.

CAC/MSOS/MH I-100

Subject: Disconnection and Arrears

f) How many accounts were disconnected 2009? For how long did they remain disconnected? Please distinguish between accounts in remote or First Nations Communities, and accounts in urban centres.

ANSWER:

For the calendar year of 2009, a total of 9,755 accounts were disconnected. The average time an occupied property stays disconnected is for a duration of approximately 1 to 3 days. If properties are vacant, the number of days the property remains disconnected increases drastically.

The following table presents the number of accounts disconnected in 2009 by area of the Province and presents a comparison to First Nation communities and examples of activity in urban centres from the various regions of the Province.

Region	Accounts Disconnected	First Nation Communities	Accounts Disconnected	Example of an Urban Centre (City/Town)	Accounts Disconnected
Eastman	479	Black River, Buffalo Point, Hollow Water, Roseau River, Sagkeeng, Swan Lake,	47	Steinbach	130
Interlake	578	Berens River, Bloodvein, Dakota Plains, Dakota Tipi, Dauphin River, Kinonjeoshtegon, Lake Manitoba, Lake St Martin, Little Grand Rapids, Little Saskatchewan, Long Plain, Pauingassi, Peguis, Pinaymootang, Poplar River,	130	Portage la Prairie	155

Region	Accounts Disconnected	First Nation Communities	Accounts Disconnected	Example of an Urban Centre (City/Town)	Accounts Disconnected
Parkland	279	Birdtail Sioux, Ebb & Flow, Fisher River, Gamblers, Keeseekoowenin, O-Chi-Chak-Ko-Sipi, Pine Creek, Rolling River, Sandy Bay, Sapotaweyak, Skownan, Tootinaowaziibeengm, Waywayseecappo, Wuskwi Sipihk,	141	Dauphin	27
Westman	443	Canupawkpa, Sioux Valley,	69	Brandon	239
Northman	1 060	Barren Lands, Bunibonibee, Chemanwawin, Cross Lake, Fox Lake, Garden Hill, God's Lake, Grand Rapids, Manto Sipi, Mathias Colomb, Marcel Colomb, Mosakahiken, Nisichawayasihk, Northlands, Norway House, Okawamithikani, Opaskwayak, O-Pipon-Na-Piwin, Red Sucker Lake, Sayisi Dene, Shamattawa, St Theresa Point, Tataskweyak, War Lake, Wasagamack, York Factory	740	Thompson	195
Winnipeg	6 916	n/a	0	Winnipeg	6 916
Total	9 755		1 127		

CAC/MSOS/MH I-100

Subject: Disconnection and Arrears

g) What procedural steps are required for disconnection?

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-100(d).

CAC/MSOS/MH I-100

Subject: Disconnection and Arrears

h) How do the frequency and magnitude of account arrears in the diesel zone compare to levels in grid communities?

ANSWER:

There are a total of 5,561 accounts in arrears for all First Nation communities across Manitoba. The following table presents the arrears by responsibility and identified as a diesel or grid connected community. The frequency and magnitude of arrears in diesel communities is lower than that experienced in grid communities.

	Arrears > 60 days	# of Accounts in Arrears	Average Arrears \$/Account in Arrears	Total # of Accounts
Overall	\$19,498,734	5,561	\$3,506	1,9723
Diesel Communities	\$47,101	146	\$323	758
Grid Communities	\$7,693,265	5,415	\$1,421	18965
Band Agreements*	\$11,758,368	10	\$1,175,837	10
Band Responsibility Accounts	\$12,660,257	523	\$24,207	2,553
Diesel Communities	\$3,107	18	\$173	131
Grid Communities	\$898,782	495	\$1,816	2,412
Band Agreements*	\$11,758,368	10	\$1,175,837	10
Residential / Commercial Accounts	\$6,838,477	5,038	\$1,357	17,170
Diesel Communities	\$43,994	122	\$361	627
Grid Communities	\$6,794,483	4,916	\$1,382	16,543

*Payment Agreements for significant community arrears, as identified above, are with First Nation Bands in grid connected communities only.

CAC/MSOS/MH I-100

Subject: Disconnection and Arrears

- i) **How does the number of disconnections in the diesel zone compare to the number in grid communities?**

ANSWER:

In 2009, 21 accounts were disconnected due to outstanding arrears in the four diesel communities, representing 3% of accounts. In 2009, a total of 1,127 accounts were disconnected due to outstanding arrears in the 59 First Nation communities connected to the Manitoba Hydro transmission/distribution grid, representing 6% of accounts.

CAC/MSOS/MH I-101

Subject: Disconnection and Arrears

Please complete the following table, indicating the number of electricity-only accounts that were subject to disconnection in the specified months and communities:

	Community	Numbers of electricity-only accounts subject to disconnection			
		July 1, 2008	January 1, 2009	July 1, 2009	January 1, 2010
1	Barren Lands				
2	Berens River				
3	Birdtail Sioux				
4	Black River				
5	Bloodvein				
6	Buffalo Point				
7	Bunibonibee				
8	Canupawakpa				
9	Chemawawin				
10	Cross Lake				
11	Dakota Plains				
12	Dakota Tipi				
13	Dauphin River				
14	Ebb & Flow				
15	Fisher River				
16	Fox Lake				
17	Gamblers				
18	Garden Hill				
19	God's Lake				
20	Grand Rapids				
21	Hollow Water				
22	Keeseekoowenin				

	Community	Numbers of electricity-only accounts subject to disconnection			
		July 1, 2008	January 1, 2009	July 1, 2009	January 1, 2010
23	Kinonjeoshtegon				
24	Lake Manitoba				
25	Lake St. Martin				
26	Little Grand Rapids				
27	Little Saskatchewan				
28	Long Plain				
29	Manto Sipi				
30	Marcel Colomb				
31	Mathias Colomb				
32	Mosakahiken				
33	Nisichawayasihk				
34	Northlands				
35	Norway House				
36	O-Chi-Chak-Ko-Sipi				
37	Okawamithikani				
38	Opaskwayak				
39	O-Pipon-Na-Piwin				
40	Pauingassi				
41	Peguis				
42	Pinaymootang				
43	Pine Creek				
44	Poplar River				
45	Red Sucker Lake				
46	Rolling River				
47	Roseau River				
48	Sagkeeng				
49	Sandy Bay				
50	Sapotaweyak				

	Community	Numbers of electricity-only accounts subject to disconnection			
		July 1, 2008	January 1, 2009	July 1, 2009	January 1, 2010
51	Sayisi Dene				
52	Shamattawa				
53	Sioux Valley				
54	Skownan				
55	St. Theresa Point				
56	Swan Lake				
57	Tataskweyak				
58	Tootinaowaziibeeng				
59	War Lake				
60	Wasagamack				
61	Waywayseecappo				
62	Wuskwi Sipiik				
63	York Factory				
Total					

ANSWER:

As outlined in the response to CAC/MSOS/MH I-100(d), Manitoba Hydro requires that customer contact be made prior to disconnection of service. The customer contact requirement is satisfied when the account is discussed with the customer over the phone, in person or when a hand delivered disconnection notice is delivered to the residence. The account is updated within the customer billing system with a customer contact code which expires after 60 days. If an active code is not present a disconnection service order will not be generated regardless of the delinquency status of the account. Manitoba Hydro does not archive this account status information and therefore cannot provide the number of accounts technically eligible for disconnection in the past.

The following table presents the number of accounts in First Nation communities with arrears greater than 60 days and with an account balance greater than \$100. If no customer contact had occurred within the preceding 60 days or if the customer had entered into

payment arrangements, these accounts would not have been subject to immediate disconnection.

Numbers of electricity-only Accounts in Arrears > 60 days with a Balance > \$100

	Community	July 1, 2008	January 1, 2009	July 1, 2009	January 1, 2010
1	Barren Lands	28	30	26	36
2	Berens River	112	115	110	98
3	Birdtail Sioux	97	87	87	19
4	Black River	34	20	24	27
5	Bloodvein	51	46	63	31
6	Brokenhead	38	15	30	21
7	Buffalo Point	21	4	21	1
8	Bunibonibee	249	232	257	245
9	Canupawakpa	42	8	61	8
10	Chemawawin	111	170	81	71
11	Cross Lake	566	373	538	452
12	Dakota Plains	6	1	5	6
13	Dakota Tipi	25	0	34	1
14	Dauphin River	23	22	12	14
15	Ebb & Flow	55	11	54	8
16	Fisher River	58	49	58	43
17	Fox Lake	20	29	19	10
18	Gamblers	9	10	9	1
19	Garden Hill	246	345	268	292
20	God's Lake	196	187	191	32
21	Grand Rapids	132	132	98	79
22	Hollow Water	52	31	75	51
23	Keeseekoowenin	40	33	73	35
24	Kinonjeoshtegon	39	34	32	21
25	Lake Manitoba	73	47	86	74

	Community	July 1, 2008	January 1, 2009	July 1, 2009	January 1, 2010
26	Lake St. Martin	108	107	102	120
27	Little Grand Rapids	142	144	146	142
28	Little Saskatchewan	90	22	91	90
29	Long Plain	52	22	48	15
30	Manto Sipi	74	76	75	70
31	Marcel Colomb				1
32	Mathias Colomb	125	54	128	65
33	Mosakahiken	125	133	124	88
34	Nisichawayasihk	143	66	140	78
35	Northlands	58	44	77	22
36	Norway House	729	516	682	535
37	O-Chi-Chak-Ko-Sipi	27	29	23	51
38	Opaskwayak	267	149	250	196
39	O-Pipon-Na-Piwin	63	69	71	69
40	Pauingassi	54	43	51	70
41	Peguis	170	90	126	77
42	Pinaymootang	45	60	52	56
43	Pine Creek	60	75	64	11
44	Poplar River	114	120	113	98
45	Red Sucker Lake	88	86	76	63
46	Rolling River	69	60	73	30
47	Roseau River	74	64	62	129
48	Sagkeeng	227	124	231	155
49	Sandy Bay	100	34	105	68
50	Sapotaweyak	25	5	24	1
51	Sayisi Dene	32	57	27	16
52	Shamattawa	33	20	23	22
53	Sioux Valley	110	94	123	101

	Community	July 1, 2008	January 1, 2009	July 1, 2009	January 1, 2010
54	Skownan	27	14	28	26
55	St. Theresa Point	317	288	308	240
56	Swan Lake	39	17	33	17
57	Tataskweyak	177	80	146	94
58	Tootinaowaziibeeng	28	45	27	17
59	War Lake	6	3	6	2
60	Wasagamack	131	141	129	126
61	Waywayseecappo	29	8	34	11
62	Wuskwi Sipihk	4	1	4	4
63	York Factory	103	66	103	29
Total		6,388	5,057	6,240	4,684

CAC/MSOS/MH I-102

Subject: Letter of Application

Reference: Volume 1, Tab 1, page 2 of 3, item 2.

The CEA COPE study states:

This report provides information on the results from the Committee on Corporate Performance and Productivity Evaluation (COPE) Program. The report is intended as a high level illustration of utility performance that is available to participating companies. Composite data has been used to provide context for performance indicators. Due to the differences in companies, further understanding of the information and processes is required in order to make any meaningful comparison. As a result, conclusions based on the performance indicators included in this report are not recommended.

- a) Please confirm that the underlying details regarding rate increases of other utilities would have to be examined to provide a proper comparison and they may be very different to the circumstances giving rise to the currently proposed rate increase or prior rate increase. If not confirmed please reconcile the comparison of rates provided by MH and the comments in the CEA COPE study.**

ANSWER:

Rate increases are not one of the performance indicators included in the referenced COPE Report. The 'comparison of rates provided by Manitoba Hydro' referred to in the question is not clear, with no reference provided. On page Tab 1, page 2 of its filing, Manitoba Hydro presents rate increases of other utilities compiled from web sites of those utilities but does not draw conclusions from the data presented, clearly stating that the data presented is 'for information.' That said, Manitoba Hydro believes that the rate increases over time of other utilities can be generally compared to those of Manitoba Hydro as part of the justification for why Manitoba Hydro's proposed rate increases are reasonable.

CAC/MSOS/MH I-103

Subject: Summary and Reasons for Application

Reference: PUB/MH I-73

Volume 1, Tab 2, page 2 of 4

Volume 1, Tab 5, page 3 of 9

Volume 2, Appendix 5.2, page 2

MH makes numerous references to an economic downturn, both with respect to the domestic and export electricity markets. For example, MH states:

Projected Manitoba load requirements are lower compared to MH08-1 as a result of the economic downturn.

And,

This year's IFF reflects the impacts of the economic downturn on short-term financial results and the consequential impacts over the 10-year forecast period. A comparison of MH09-1 with MH08-1 in Table 5.1.1 shows a significant decline in net income due

And,

The decrease in net income is mainly attributable to lower domestic and net export revenues due to the current economic downturn. This reduction to net income is partially offset by lower finance expense due to favourable interest rates.[emphasis added]

- a) Please detail how MH converted its assumptions regarding economic downturn into changes in forecast revenues.**

ANSWER:

The economic downturn is reflected through the whole IFF process.

In the 2008 Economic Outlook, a real GDP growth of 2.6% was predicted for 2008/09 and that decreased slightly each year until reaching 1.8% throughout the 2015/16 to 2028/29 period. The 2009 Economic Outlook revised this to be 0.0% in 2009/10, 2.1% in 2010/11, 2.7% in 2011/12 and then declined to 1.8% by 2023/24 throughout 2029/30.

The load forecast models take into consideration the economic downturn specified in the Economic Outlook. The GDP growth drives the general service forecast. The general service forecast is reduced the first few years due to the lowering of the GDP forecast. The forecast of top consumers are also adjusted to take into account the downturn.

These reductions in the load forecast in turn result in changes in the revenue forecast.

CAC/MSOS/MH I-103

Subject: Summary and Reasons for Application

Reference: PUB/MH I-73

Volume 1, Tab 2, page 2 of 4

Volume 1, Tab 5, page 3 of 9

Volume 2, Appendix 5.2, page 2

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And,

The decrease in net income is mainly attributable to lower domestic and net export revenues due to the current economic downturn. This reduction to net income is partially offset by lower finance expense due to favourable interest rates.[emphasis added]

- b) Please confirm that MH forecast expenses should likewise decrease as a result of an economic downturn. If not confirmed, please explain and provide references to demonstrate otherwise.**

ANSWER:

Manitoba Hydro is cognisant of the economic environment and is implementing cost savings measures where they are available and do not negatively impact the safety, reliability, or customer service requirements of the Corporation. This is illustrated by its moderate increase

in operating expense forecasts of 2.3% and 0.9% (after considering accounting changes) for its test years.

It is not necessarily in the best interests of customers for Manitoba Hydro to decrease its expenditures during an economic downturn. Fundamentally, the requirement for customer service does not change, the requirement to perform maintenance does not change, and unless the economic downturn is so substantial that it causes deflation, the costs for inputs are not reduced. As well, other circumstances that have prevailed during this economic downturn are causing substantial cost pressures. These additional cost pressures are mainly associated with the requirement of additional trainees so that the company can continue to be operated effectively in the future, to accounting changes which are forecast to increase costs by approximately \$30 million since 2007/08 and to the placing into service of a new generation station. The cost pressures and cost savings measures are outlined in Appendix 4.4 of the Application.

CAC/MSOS/MH I-103

Subject: Summary and Reasons for Application

Reference: PUB/MH I-73

Volume 1, Tab 2, page 2 of 4

Volume 1, Tab 5, page 3 of 9

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And,

The decrease in net income is mainly attributable to lower domestic and net export revenues due to the current economic downturn. This reduction to net income is partially offset by lower finance expense due to favourable interest rates.[emphasis added]

- c) In response to MH expectations of reduced revenues due to economic downturn, please describe how Hydro responded to the forecast lower revenues by reducing forecast expenses.**

ANSWER:

Please see the response to part (b) of this question and refer to Appendix 4.4 of this application which outlines the cost pressures being experienced and the cost savings measures being undertaken by Manitoba Hydro.

CAC/MSOS/MH I-103

Subject: Summary and Reasons for Application

Reference: PUB/MH I-73

Volume 1, Tab 2, page 2 of 4

Volume 1, Tab 5, page 3 of 9

Volume 2, Appendix 5.2, page 2

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And,

The decrease in net income is mainly attributable to lower domestic and net export revenues due to the current economic downturn. This reduction to net income is partially offset by lower finance expense due to favourable interest rates.[emphasis added]

- d) Please describe which expenses are controllable in an economic downturn and which expenses are not.**

ANSWER:

With the exception of those costs related to fixed assets and fixed rate long term debt, all expenses have some element of controllability whether there is an economic downturn, economic upturn, or whether there is a period of relative stability.

The most controllable expense components during a short term recession are those that relate to the operating and capital programs of the organization. The reductions to these components as a result of exercising such controls are outlined in the responses to CAC/MSOS/MH I-38(b) and CAC/MSOS/MH I-11(a) respectively.

Other items, such as fuel and power purchased and short term interest costs are influenced substantially by the economic downturn and have some controllability. However, the controllability of these cost components is influenced predominantly by other factors such as water levels and cash requirements.

The remainder of the expense line items have less relative controllability and any influences of the economic downturn cannot be isolated.

CAC/MSOS/MH I-103

Subject: Summary and Reasons for Application

Reference: PUB/MH I-73

Volume 1, Tab 2, page 2 of 4

Volume 1, Tab 5, page 3 of 9

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And,

The decrease in net income is mainly attributable to lower domestic and net export revenues due to the current economic downturn. This reduction to net income is partially offset by lower finance expense due to favourable interest rates.[emphasis added]

- e) Please provide a table showing each of the noted line item costs in Tab 4, from Tables 4.5.0, 4.5.1, 4.6.0, 4.7.0, 4.8.0, 4.9.0, 4.10.0, 4.11.0 and the Non-Controlling interest with an indicator as to whether the line item is controllable during the economic downturn described in the GRA filing and the extent to which it is controllable and the reduction to the line item as a result of the economic downturn.**

ANSWER

Please see Manitoba Hydro's response to part (d) of this question.

CAC/MSOS/MH I-103

Subject: Summary and Reasons for Application

Reference: PUB/MH I-73

Volume 1, Tab 2, page 2 of 4

Volume 1, Tab 5, page 3 of 9

Volume 2, Appendix 5.2, page 2

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And,

The decrease in net income is mainly attributable to lower domestic and net export revenues due to the current economic downturn. This reduction to net income is partially offset by lower finance expense due to favourable interest rates.[emphasis added]

- f) Please provide the dollar cost reduction for each cost saving measure noted on pages 11 and 12 of Appendix 5.2 (IFF09-1).**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-38(b).

CAC/MSOS/MH I-103

Subject: Summary and Reasons for Application

Reference: PUB/MH I-73

Volume 1, Tab 2, page 2 of 4

Volume 1, Tab 5, page 3 of 9

Volume 2, Appendix 5.2, page 2

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And,

The decrease in net income is mainly attributable to lower domestic and net export revenues due to the current economic downturn. This reduction to net income is partially offset by lower finance expense due to favourable interest rates.[emphasis added]

- g) If the reduced forecast revenues are not inducing reduced forecast expenses, please explain.**

ANSWER:

Please see Manitoba Hydro's response to part (b) of this question.

CAC/MSOS/MH I-103

Subject: Summary and Reasons for Application

Reference: PUB/MH I-73

Volume 1, Tab 2, page 2 of 4

Volume 1, Tab 5, page 3 of 9

Volume 2, Appendix 5.2, page 2

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And,

The decrease in net income is mainly attributable to lower domestic and net export revenues due to the current economic downturn. This reduction to net income is partially offset by lower finance expense due to favourable interest rates.[emphasis added]

- h) Please detail how MH converted its assumptions regarding the economic downturn into changes in forecast expenses.**

ANSWER:

Please see Manitoba Hydro' response to part (b) of this question.

CAC/MSOS/MH I-103

Subject: Summary and Reasons for Application

Reference: PUB/MH I-73

Volume 1, Tab 2, page 2 of 4

Volume 1, Tab 5, page 3 of 9

Volume 2, Appendix 5.2, page 2

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And,

The decrease in net income is mainly attributable to lower domestic and net export revenues due to the current economic downturn. This reduction to net income is partially offset by lower finance expense due to favourable interest rates.[emphasis added]

- i) In response to MH expectations of reduced revenues due to economic downturn, please describe how Hydro responded to the forecast lower revenues by reducing forecast capital expenditures.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-11(b).

CAC/MSOS/MH I-103

Subject: Summary and Reasons for Application

Reference: PUB/MH I-73

Volume 1, Tab 2, page 2 of 4

Volume 1, Tab 5, page 3 of 9

Volume 2, Appendix 5.2, page 2

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And,

The decrease in net income is mainly attributable to lower domestic and net export revenues due to the current economic downturn. This reduction to net income is partially offset by lower finance expense due to favourable interest rates.[emphasis added]

- j) Please detail how MH converted its assumptions regarding economic downturn into changes in forecast capital expenditures.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-11(b).

CAC/MSOS/MH I-103

Subject: Summary and Reasons for Application

Reference: PUB/MH I-73

Volume 1, Tab 2, page 2 of 4

Volume 1, Tab 5, page 3 of 9

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And,

The decrease in net income is mainly attributable to lower domestic and net export revenues due to the current economic downturn. This reduction to net income is partially offset by lower finance expense due to favourable interest rates.[emphasis added]

- k) Please describe each of the risks and changes to those risks as a result of an economic downturn, such as the one described by MH in this GRA.**

ANSWER:

The economic downturn has served to highlight two risks which Manitoba Hydro must manage. Notably the economic downturn has impacted Manitoba Hydro by reducing domestic requirements for electricity, primarily in the general service class. It has also

reduced the prices received for power in the export market due to lower fuel prices. These lower prices and lower domestic demand have also reduced the cost for power and fuel purchases.

CAC/MSOS/MH I-103

Subject: Summary and Reasons for Application

Reference: PUB/MH I-73

Volume 1, Tab 2, page 2 of 4

Volume 1, Tab 5, page 3 of 9

Volume 2, Appendix 5.2, page 2

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And,

The decrease in net income is mainly attributable to lower domestic and net export revenues due to the current economic downturn. This reduction to net income is partially offset by lower finance expense due to favourable interest rates.[emphasis added]

- l) Please describe each of the risks and changes to those risks as a result of an economic upturn.**

ANSWER:

In the case of an economic upturn the corporation would expect the opposite to that described in the response to CAC/MSOS/MH I-103 (k) to occur. Domestic requirements for electricity would likely increase. The reduction in electricity available for export due to the increase in

domestic demand would likely be offset by higher fuel prices with an overall increase in export revenues. Fuel and power purchases would likely increase due to price and an increase in domestic demand. Interest rates would likely rise which would result in higher financing costs. Inflation may also become a factor which would put upward pressure on labour and material costs which was occurring prior to the downturn.

CAC/MSOS/MH I-104

Subject: Corporate Strategic Plan

**Reference: Volume 2, Appendix 3.1, The Corporate Strategic Plan 2009/10, page 10
The Corporate Strategic Plan 2006/07, page 5**

- a) **Why did MH eliminate the reference to benchmark against other recognized service leaders?**

ANSWER:

The last reference to a benchmarking strategy was in the 2006/07 Corporate Strategic Plan. At the 2008/09 General Rate Application, testimony by Mr. Warden, in response to CAC/MSOS' counsel, confirmed the CSP no longer includes a strategy of benchmarking. At these hearings, it was explained that benchmarking can consume significant time and resources, when done properly can be very expensive, and often is based on the misguided notion that there are pre-existing appropriate benchmarks. It was also noted that it is also difficult to find comparable utilities. In its closing comments, Manitoba Hydro stated "due to difficulties and high costs associated with performing detailed benchmarking studies, further formal benchmarking initiatives are not warranted at this time."

CAC/MSOS/MH I-104

Subject: Corporate Strategic Plan

**Reference: Volume 2, Appendix 3.1, The Corporate Strategic Plan 2009/10, page 10
The Corporate Strategic Plan 2006/07, page 5**

b) Please explain what it means to “develop corporate and business unit performance measures”

ANSWER:

The development of corporate and business unit performance measures means the identification, definition and reporting of information to enable Manitoba Hydro to determine progress towards achievement of Manitoba Hydro’s goals as set out in the CSP.

CAC/MSOS/MH I-104

Subject: Corporate Strategic Plan

**Reference: Volume 2, Appendix 3.1, The Corporate Strategic Plan 2009/10, page 10
The Corporate Strategic Plan 2006/07, page 5**

- c) **Were these performance measures not previously developed in years prior to 2009 and prior to the 2009/10 Strategic Plan?**

ANSWER:

Performance measures have been included in the CSP beginning with the 2000-2001 CSP and have continued to be refined since then.

CAC/MSOS/MH I-104

Subject: Corporate Strategic Plan

**Reference: Volume 2, Appendix 3.1, The Corporate Strategic Plan 2009/10, page 10
The Corporate Strategic Plan 2006/07, page 5**

d) If not developed in years prior to 2009, what performance measures were used in their place?

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-104(c).

CAC/MSOS/MH I-105

Subject: Integrated Financial Forecast

Reference: Volume 2, Appendix 5.2, IFF09-1, page 22

MH stated:

From a financial perspective, Manitoba Hydro's best risk protection is achieved through adequate levels of equity (retained earnings). Equity provides a buffer to absorb adverse events so that compensating rate increases can be smoothed out over a period of time.

a) What did MH rely on or use to determine the target debt equity of 75:25?

ANSWER:

The 75:25 target debt/equity was first approved by the Manitoba Hydro-Electric Board in September 1995 based on analysis conducted by corporation. This matter was reviewed at the 2002 Status Update Hearing and the General Rate Applications of 2004 and 2008 before the Public Utilities Board. In 2002, the target achievement date was revised from 2005/06 to 2011/12 to allow for a more gradual progression towards target achievement. To reflect the achievement of 75:25 in 2009, the target was revised to maintain 75:25, except during years of major investment in the generation and transmission system.

CAC/MSOS/MH I-105

Subject: Integrated Financial Forecast

Reference: Volume 2, Appendix 5.2, IFF09-1, page 22

MH stated:

From a financial perspective, Manitoba Hydro's best risk protection is achieved through adequate levels of equity (retained earnings). Equity provides a buffer to absorb adverse events so that compensating rate increases can be smoothed out over a period of time.

- b) For the record of this proceeding, please provide a copy of each internal or external study, work paper or other analysis used or relied on by MH to determine the target debt equity of 75:25.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-105(a).

CAC/MSOS/MH I-106

Subject: Integrated Financial Forecast

Reference: Volume 2, Appendix 5.2

Volume 4, Appendix 12.1

2008 GRA, Coalition/MH I-82

- a) **Please advise whether the document provided in Appendix 12.1 constitutes the entirety of Manitoba Hydro's Corporate Risk Management Report that is used for internal purposes.**

ANSWER:

The report provided in Appendix 12.1 is not the entire document used for internal purposes. Appendix A and C were not filed for confidentiality reasons, however a redacted version was circulated to Parties on March 8, 2010.

CAC/MSOS/MH I-106

Subject: Integrated Financial Forecast

Reference: Volume 2, Appendix 5.2

Volume 4, Appendix 12.1

2008 GRA, Coalition/MH I-82

- b) **Please provide each of the underlying scenarios from the IFF which support the risk analyses presented in Appendix 12.1 in the current GRA filing.**

ANSWER:

The scenarios supporting the drought, interest rate, and foreign exchange rate risk analyses presented in Appendix 12.1 are based on the scenarios in IFF07-1 (page 20) and filed in the 2008 GRA, COALITION/MH I-82(d), pages 2, 4, and 10. For the purposes of record for these proceedings, a copy is attached.

The quantification of infrastructure and loss of export market risks do not reflect costs including financing or impacts to retained earnings. Please see the response to CAC/MSOS/MH I-114(a) for an explanation of the quantification of these risks.

COALITION/MH I-82

Subject: Debt and Debt Management

Reference: Manitoba Hydro 2008/09 GRA, Tab 2, “Summary and Reasons For Application”, page 2 of 3, Table 2.1.1 and Appendix 5.2, pages 16 - 17

Manitoba Hydro makes a number of references to net income affecting the debt/equity ratio. As well, Manitoba Hydro provides a graphical representation of results of a risk analysis.

- d) For the purpose of the record of this proceeding, please provide a copy of the report and/or underlying analysis which led to the conclusions provided on pages 16 and 17 of Appendix 5.2.**

ANSWER:

Please see the following tables, which support the risk analysis performed on pages 17, 18 and 19 in the IFF07-1 document.

CONSOLIDATED PROJECTED OPERATING STATEMENT (IFF07-1)

(In millions of Dollars)

\$Cdn +\$0.10 US

For year ending March 31:

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
REVENUES											
General Consumers Revenue	1,572	1,672	1,750	1,816	1,872	1,929	1,982	2,037	2,100	2,158	2,225
Extraprovincial	582	428	381	381	432	493	505	527	586	594	625
Other	23	24	25	25	26	26	26	27	27	28	28
	<u>2,177</u>	<u>2,125</u>	<u>2,156</u>	<u>2,222</u>	<u>2,330</u>	<u>2,448</u>	<u>2,514</u>	<u>2,592</u>	<u>2,713</u>	<u>2,780</u>	<u>2,878</u>
EXPENSES											
Finance Expense	438	435	458	466	511	565	558	565	576	598	638
Operating & Administrative	408	418	429	437	451	461	470	480	489	499	522
Depreciation & Amortization	355	372	386	404	433	461	470	481	496	507	520
Water Rentals & Assessments	121	111	106	107	111	113	114	115	116	116	116
Fuel & Power Purchased	131	134	171	190	215	254	278	290	307	317	322
Capital & Other Taxes	80	86	89	92	94	96	101	105	111	116	120
Cost of Gas Sold	379	413	406	407	405	404	403	402	400	399	398
	<u>1,911</u>	<u>1,970</u>	<u>2,046</u>	<u>2,104</u>	<u>2,220</u>	<u>2,354</u>	<u>2,394</u>	<u>2,438</u>	<u>2,495</u>	<u>2,552</u>	<u>2,637</u>
Noncontrolling Interest	0	0	0	0	7	8	6	4	2	1	(2)
Net Income (Loss)	<u>266</u>	<u>155</u>	<u>110</u>	<u>118</u>	<u>117</u>	<u>102</u>	<u>126</u>	<u>158</u>	<u>220</u>	<u>229</u>	<u>239</u>
Additional General Consumers Revenue											
General electricity rate increases	0.00%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
General gas rate increases	0.00%	0.00%	1.50%	1.00%	1.00%	1.00%	0.00%	0.00%	1.00%	0.00%	0.00%
Financial Ratios											
Debt	78%	78%	78%	78%	78%	78%	79%	79%	78%	78%	78%
Interest Coverage	1.53	1.29	1.19	1.19	1.18	1.15	1.18	1.20	1.27	1.26	1.26
Capital Coverage (excl Major Gen.)	1.64	1.05	0.73	0.80	0.88	1.11	1.03	1.09	1.20	1.16	1.33

CONSOLIDATED PROJECTED OPERATING STATEMENT (IFF07-1)

(In millions of Dollars)

\$Cdn -\$0.10 US

For year ending March 31:

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
REVENUES											
General Consumers Revenue	1,572	1,672	1,750	1,816	1,872	1,929	1,982	2,037	2,100	2,158	2,225
Extraprovincial	582	509	451	450	511	581	594	618	687	696	733
Other	23	24	25	25	26	26	26	27	27	28	28
	<u>2,177</u>	<u>2,205</u>	<u>2,226</u>	<u>2,292</u>	<u>2,408</u>	<u>2,536</u>	<u>2,603</u>	<u>2,683</u>	<u>2,815</u>	<u>2,882</u>	<u>2,986</u>
EXPENSES											
Finance Expense	438	486	504	508	560	616	604	606	613	635	673
Operating & Administrative	408	418	429	437	451	461	470	480	489	499	522
Depreciation & Amortization	355	372	386	404	433	461	470	481	496	507	520
Water Rentals & Assessments	121	113	108	108	112	115	115	116	117	117	118
Fuel & Power Purchased	131	151	191	211	236	275	301	313	333	344	349
Capital & Other Taxes	80	88	91	93	95	98	102	106	111	117	121
Cost of Gas Sold	379	413	406	407	405	404	403	402	400	399	398
	<u>1,911</u>	<u>2,039</u>	<u>2,114</u>	<u>2,169</u>	<u>2,292</u>	<u>2,429</u>	<u>2,465</u>	<u>2,504</u>	<u>2,560</u>	<u>2,619</u>	<u>2,700</u>
Noncontrolling Interest	0	0	0	0	7	8	6	4	2	1	(2)
Net Income (Loss)	<u>266</u>	<u>166</u>	<u>112</u>	<u>123</u>	<u>123</u>	<u>115</u>	<u>144</u>	<u>183</u>	<u>257</u>	<u>264</u>	<u>284</u>
Additional General Consumers Revenue											
General electricity rate increases	0.00%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
General gas rate increases	0.00%	0.00%	1.50%	1.00%	1.00%	1.00%	0.00%	0.00%	1.00%	0.00%	0.00%
Financial Ratios											
Debt	78%	78%	78%	78%	78%	78%	78%	78%	78%	77%	77%
Interest Coverage	1.53	1.29	1.18	1.18	1.17	1.16	1.19	1.23	1.30	1.29	1.30
Capital Coverage (excl Major Gen.)	1.64	1.11	0.74	0.82	0.94	1.19	1.13	1.19	1.31	1.33	1.52

CONSOLIDATED PROJECTED OPERATING STATEMENT (IFF07-1)**(In millions of Dollars)****Interest Rates +1%****For year ending March 31:**

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
REVENUES											
General Consumers Revenue	1,572	1,672	1,750	1,816	1,872	1,929	1,982	2,037	2,100	2,158	2,225
Extraprovincial	582	468	416	415	471	537	550	573	636	645	679
Other	23	24	25	25	26	26	27	27	27	28	28
	<u>2,177</u>	<u>2,165</u>	<u>2,191</u>	<u>2,257</u>	<u>2,369</u>	<u>2,492</u>	<u>2,558</u>	<u>2,637</u>	<u>2,764</u>	<u>2,831</u>	<u>2,932</u>
EXPENSES											
Finance Expense	438	453	475	484	542	606	601	611	626	660	713
Operating & Administrative	408	418	429	437	451	461	470	480	489	499	522
Depreciation & Amortization	355	372	386	405	434	462	471	482	497	509	522
Water Rentals & Assessments	121	112	107	108	112	114	114	115	116	117	117
Fuel & Power Purchased	131	142	181	201	226	264	290	302	320	331	336
Capital & Other Taxes	80	87	90	93	95	97	102	107	112	117	122
Cost of Gas Sold	379	413	406	407	405	404	403	402	400	399	398
	<u>1,911</u>	<u>1,997</u>	<u>2,073</u>	<u>2,133</u>	<u>2,264</u>	<u>2,409</u>	<u>2,451</u>	<u>2,498</u>	<u>2,561</u>	<u>2,632</u>	<u>2,730</u>
Noncontrolling Interest	0	0	0	0	9	12	11	9	8	6	4
Net Income (Loss)	<u>266</u>	<u>168</u>	<u>118</u>	<u>124</u>	<u>114</u>	<u>95</u>	<u>118</u>	<u>148</u>	<u>211</u>	<u>205</u>	<u>206</u>
Additional General Consumers Revenue											
General electricity rate increases	0.00%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
General gas rate increases	0.00%	0.00%	1.50%	1.00%	1.00%	1.00%	0.00%	0.00%	1.00%	0.00%	0.00%
Financial Ratios											
Debt	78%	78%	78%	78%	78%	78%	79%	79%	79%	79%	79%
Interest Coverage	1.53	1.30	1.19	1.19	1.16	1.13	1.15	1.17	1.23	1.21	1.19
Capital Coverage (excl Major Gen.)	1.64	1.06	0.70	0.77	0.83	1.05	0.96	0.95	1.03	0.96	1.03

CONSOLIDATED PROJECTED OPERATING STATEMENT (IFF07-1)**(In millions of Dollars)****Interest Rates -1%****For year ending March 31:**

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
REVENUES											
General Consumers Revenue	1,572	1,672	1,750	1,816	1,872	1,929	1,982	2,037	2,100	2,158	2,225
Extraprovincial	582	468	416	415	471	537	550	573	636	645	679
Other	23	24	25	25	26	26	27	27	27	28	28
	<u>2,177</u>	<u>2,165</u>	<u>2,191</u>	<u>2,257</u>	<u>2,369</u>	<u>2,492</u>	<u>2,558</u>	<u>2,637</u>	<u>2,764</u>	<u>2,831</u>	<u>2,932</u>
EXPENSES											
Finance Expense	438	469	488	491	530	576	564	565	569	582	608
Operating & Administrative	408	418	429	437	451	461	470	480	489	499	522
Depreciation & Amortization	355	372	386	404	432	460	469	480	494	505	518
Water Rentals & Assessments	121	112	107	108	112	114	114	115	116	117	117
Fuel & Power Purchased	131	142	181	201	226	264	290	302	320	331	336
Capital & Other Taxes	80	87	90	92	94	97	101	105	110	115	119
Cost of Gas Sold	379	413	406	407	405	404	403	402	400	399	398
	<u>1,911</u>	<u>2,013</u>	<u>2,086</u>	<u>2,140</u>	<u>2,250</u>	<u>2,376</u>	<u>2,411</u>	<u>2,448</u>	<u>2,500</u>	<u>2,549</u>	<u>2,617</u>
Noncontrolling Interest	0	0	0	0	5	4	2	0	(2)	(4)	(6)
Net Income (Loss)	<u>266</u>	<u>152</u>	<u>105</u>	<u>117</u>	<u>124</u>	<u>120</u>	<u>149</u>	<u>189</u>	<u>262</u>	<u>278</u>	<u>309</u>
Additional General Consumers Revenue											
General electricity rate increases	0.00%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
General gas rate increases	0.00%	0.00%	1.50%	1.00%	1.00%	1.00%	0.00%	0.00%	1.00%	0.00%	0.00%
Financial Ratios											
Debt	78%	78%	78%	78%	78%	78%	78%	78%	77%	77%	76%
Interest Coverage	1.53	1.28	1.18	1.19	1.19	1.18	1.22	1.26	1.34	1.34	1.37
Capital Coverage (excl Major Gen.)	1.64	1.08	0.76	0.86	1.00	1.23	1.20	1.29	1.43	1.50	1.72

CONSOLIDATED PROJECTED OPERATING STATEMENT (IFF07-1)**(In millions of Dollars)****Low Export Prices****For year ending March 31:**

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
REVENUES											
General Consumers Revenue	1,572	1,672	1,750	1,816	1,872	1,929	1,982	2,037	2,100	2,158	2,225
Extraprovincial	582	468	391	384	428	471	475	488	494	487	501
Other	23	24	25	25	26	26	26	27	27	28	28
	<u>2,177</u>	<u>2,165</u>	<u>2,165</u>	<u>2,226</u>	<u>2,325</u>	<u>2,426</u>	<u>2,483</u>	<u>2,552</u>	<u>2,622</u>	<u>2,673</u>	<u>2,754</u>
EXPENSES											
Finance Expense	438	461	482	488	537	593	587	597	610	642	690
Operating & Administrative	408	418	429	437	451	461	470	480	489	499	522
Depreciation & Amortization	355	372	386	404	433	461	470	481	496	507	520
Water Rentals & Assessments	121	112	107	108	112	114	114	115	116	117	117
Fuel & Power Purchased	131	142	159	175	199	234	255	264	279	284	287
Capital & Other Taxes	80	87	90	93	94	97	102	106	111	116	120
Cost of Gas Sold	379	413	406	407	405	404	403	402	400	399	398
	<u>1,911</u>	<u>2,005</u>	<u>2,058</u>	<u>2,112</u>	<u>2,231</u>	<u>2,364</u>	<u>2,402</u>	<u>2,444</u>	<u>2,502</u>	<u>2,565</u>	<u>2,655</u>
Noncontrolling Interest	0	0	0	0	9	14	14	14	13	12	11
Net Income (Loss)	<u>266</u>	<u>160</u>	<u>107</u>	<u>114</u>	<u>103</u>	<u>76</u>	<u>95</u>	<u>122</u>	<u>133</u>	<u>120</u>	<u>110</u>
Additional General Consumers Revenue											
General electricity rate increases	0.00%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
General gas rate increases	0.00%	0.00%	1.50%	1.00%	1.00%	1.00%	0.00%	0.00%	1.00%	0.00%	0.00%
Financial Ratios											
Debt	78%	78%	78%	78%	78%	78%	79%	79%	80%	80%	81%
Interest Coverage	1.53	1.29	1.18	1.18	1.15	1.11	1.13	1.15	1.15	1.13	1.11
Capital Coverage (excl Major Gen.)	1.64	1.08	0.72	0.80	0.86	1.04	0.95	0.96	0.92	0.85	0.88

CONSOLIDATED PROJECTED OPERATING STATEMENT (IFF07-1)**(In millions of Dollars)****High Export Prices****For year ending March 31:**

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
REVENUES											
General Consumers Revenue	1,572	1,672	1,750	1,816	1,872	1,929	1,982	2,037	2,100	2,158	2,225
Extraprovincial	582	468	442	445	510	587	607	638	741	760	809
Other	23	24	25	25	26	26	26	27	27	28	28
	<u>2,177</u>	<u>2,165</u>	<u>2,217</u>	<u>2,286</u>	<u>2,408</u>	<u>2,542</u>	<u>2,616</u>	<u>2,702</u>	<u>2,868</u>	<u>2,946</u>	<u>3,062</u>
EXPENSES											
Finance Expense	438	461	481	486	534	585	575	577	581	598	627
Operating & Administrative	408	418	429	437	451	461	470	480	489	499	522
Depreciation & Amortization	355	372	386	404	433	461	470	481	496	507	520
Water Rentals & Assessments	121	112	107	108	112	114	114	115	116	117	117
Fuel & Power Purchased	131	142	200	222	247	287	314	329	349	362	368
Capital & Other Taxes	80	87	90	93	94	97	102	106	111	116	120
Cost of Gas Sold	379	413	406	407	405	404	403	402	400	399	398
	<u>1,911</u>	<u>2,005</u>	<u>2,099</u>	<u>2,156</u>	<u>2,276</u>	<u>2,410</u>	<u>2,448</u>	<u>2,490</u>	<u>2,543</u>	<u>2,598</u>	<u>2,673</u>
Noncontrolling Interest	0	0	0	0	5	4	1	(2)	(5)	(8)	(10)
Net Income (Loss)	<u>266</u>	<u>160</u>	<u>118</u>	<u>130</u>	<u>137</u>	<u>136</u>	<u>169</u>	<u>210</u>	<u>320</u>	<u>340</u>	<u>379</u>
Additional General Consumers Revenue											
General electricity rate increases	0.00%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
General gas rate increases	0.00%	0.00%	1.50%	1.00%	1.00%	1.00%	0.00%	0.00%	1.00%	0.00%	0.00%
Financial Ratios											
Debt	78%	78%	78%	78%	78%	77%	78%	77%	77%	76%	75%
Interest Coverage	1.53	1.29	1.19	1.20	1.20	1.20	1.23	1.27	1.39	1.39	1.41
Capital Coverage (excl Major Gen.)	1.64	1.08	0.75	0.83	0.96	1.22	1.18	1.26	1.49	1.53	1.79

CONSOLIDATED PROJECTED OPERATING STATEMENT (IFF07-1)**(In millions of Dollars)****Increase in Capital Spending +100 Million Electric +10 Million Gas****For year ending March 31:**

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
REVENUES											
General Consumers Revenue	1,572	1,672	1,750	1,816	1,872	1,929	1,982	2,037	2,100	2,158	2,225
Extraprovincial	582	468	416	415	471	537	550	573	636	645	679
Other	23	24	25	25	26	26	27	27	27	28	28
	<u>2,177</u>	<u>2,165</u>	<u>2,191</u>	<u>2,257</u>	<u>2,369</u>	<u>2,492</u>	<u>2,558</u>	<u>2,637</u>	<u>2,764</u>	<u>2,831</u>	<u>2,932</u>
EXPENSES											
Finance Expense	438	461	485	498	556	618	621	636	658	693	745
Operating & Administrative	408	418	429	437	451	461	470	480	489	499	522
Depreciation & Amortization	355	373	389	410	443	475	487	502	521	536	553
Water Rentals & Assessments	121	112	107	108	112	114	114	115	116	117	117
Fuel & Power Purchased	131	142	181	201	226	264	290	302	320	331	336
Capital & Other Taxes	80	87	91	94	96	99	104	109	115	120	125
Cost of Gas Sold	379	413	406	407	405	404	403	402	400	399	398
	<u>1,911</u>	<u>2,005</u>	<u>2,087</u>	<u>2,155</u>	<u>2,288</u>	<u>2,436</u>	<u>2,489</u>	<u>2,546</u>	<u>2,619</u>	<u>2,695</u>	<u>2,795</u>
Noncontrolling Interest	0	0	0	0	7	8	6	4	2	1	(2)
Net Income (Loss)	<u>266</u>	<u>160</u>	<u>104</u>	<u>102</u>	<u>88</u>	<u>64</u>	<u>75</u>	<u>95</u>	<u>147</u>	<u>137</u>	<u>135</u>
Additional General Consumers Revenue											
General electricity rate increases	0.00%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
General gas rate increases	0.00%	0.00%	1.50%	1.00%	1.00%	1.00%	0.00%	0.00%	1.00%	0.00%	0.00%
Financial Ratios											
Debt	78%	78%	79%	79%	79%	79%	80%	81%	81%	82%	82%
Interest Coverage	1.53	1.29	1.17	1.15	1.12	1.09	1.10	1.11	1.16	1.14	1.13
Capital Coverage (excl Major Gen.)	1.64	0.82	0.58	0.62	0.67	0.80	0.74	0.74	0.81	0.76	0.81

CONSOLIDATED PROJECTED OPERATING STATEMENT (IFF07-1)**(In millions of Dollars)****Medium High Load Forecast****For year ending March 31:**

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
REVENUES											
General Consumers Revenue	1,572	1,672	1,782	1,870	1,938	2,007	2,071	2,137	2,207	2,274	2,349
Extraprovincial	582	468	398	381	392	444	467	480	499	491	516
Other	23	24	25	25	26	26	26	27	27	28	28
	<u>2,177</u>	<u>2,165</u>	<u>2,205</u>	<u>2,276</u>	<u>2,355</u>	<u>2,477</u>	<u>2,565</u>	<u>2,644</u>	<u>2,733</u>	<u>2,793</u>	<u>2,893</u>
EXPENSES											
Finance Expense	438	461	482	488	537	594	589	596	607	634	678
Operating & Administrative	408	418	429	437	451	461	470	480	489	499	522
Depreciation & Amortization	355	372	386	404	433	461	470	481	496	507	520
Water Rentals & Assessments	121	112	107	108	109	113	114	116	117	117	117
Fuel & Power Purchased	131	142	194	224	263	287	315	332	330	341	350
Capital & Other Taxes	80	87	90	93	94	97	102	106	111	116	120
Cost of Gas Sold	379	413	406	407	405	404	403	402	400	399	398
	<u>1,911</u>	<u>2,005</u>	<u>2,093</u>	<u>2,161</u>	<u>2,293</u>	<u>2,418</u>	<u>2,464</u>	<u>2,513</u>	<u>2,551</u>	<u>2,613</u>	<u>2,705</u>
Noncontrolling Interest	0	0	0	0	7	8	6	4	2	1	(2)
Net Income (Loss)	<u>266</u>	<u>160</u>	<u>112</u>	<u>115</u>	<u>69</u>	<u>67</u>	<u>108</u>	<u>136</u>	<u>185</u>	<u>180</u>	<u>186</u>
Additional General Consumers Revenue											
General electricity rate increases	0.00%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
General gas rate increases	0.00%	0.00%	1.50%	1.00%	1.00%	1.00%	0.00%	0.00%	1.00%	0.00%	0.00%
Financial Ratios											
Debt	78%	78%	78%	78%	78%	79%	79%	80%	80%	80%	79%
Interest Coverage	1.53	1.29	1.18	1.18	1.10	1.10	1.15	1.17	1.22	1.20	1.19
Capital Coverage (excl Major Gen.)	1.64	1.08	0.74	0.80	0.79	1.04	1.00	1.04	1.10	1.04	1.15

CONSOLIDATED PROJECTED OPERATING STATEMENT (IFF07-1)

(In millions of Dollars)

5 Year Drought

For year ending March 31:

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
REVENUES											
General Consumers Revenue	1,572	1,672	1,750	1,816	1,872	1,929	1,982	2,037	2,100	2,158	2,225
Extraprovincial	582	468	224	211	272	388	375	573	636	645	679
Other	23	24	25	25	26	26	26	27	27	28	28
	<u>2,177</u>	<u>2,165</u>	<u>1,999</u>	<u>2,053</u>	<u>2,169</u>	<u>2,343</u>	<u>2,384</u>	<u>2,637</u>	<u>2,764</u>	<u>2,831</u>	<u>2,932</u>
EXPENSES											
Finance Expense	438	461	493	534	621	699	717	740	761	796	847
Operating & Administrative	408	418	429	437	451	461	470	480	489	499	522
Depreciation & Amortization	355	372	386	404	433	461	470	481	496	507	520
Water Rentals & Assessments	121	112	80	76	92	96	99	115	116	117	117
Fuel & Power Purchased	131	142	457	617	297	389	337	302	320	331	336
Capital & Other Taxes	80	87	90	92	94	97	102	106	111	116	120
Cost of Gas Sold	379	413	406	407	405	404	403	402	400	399	398
	<u>1,911</u>	<u>2,005</u>	<u>2,340</u>	<u>2,568</u>	<u>2,393</u>	<u>2,607</u>	<u>2,597</u>	<u>2,625</u>	<u>2,694</u>	<u>2,765</u>	<u>2,860</u>
Noncontrolling Interest	0	0	0	0	7	8	6	4	2	1	(2)
Net Income (Loss)	<u>266</u>	<u>160</u>	<u>(341)</u>	<u>(515)</u>	<u>(217)</u>	<u>(256)</u>	<u>(207)</u>	<u>16</u>	<u>72</u>	<u>67</u>	<u>70</u>
Additional General Consumers Revenue											
General electricity rate increases	0.00%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
General gas rate increases	0.00%	0.00%	1.50%	1.00%	1.00%	1.00%	0.00%	0.00%	1.00%	0.00%	0.00%
Financial Ratios											
Debt	78%	78%	82%	88%	90%	93%	95%	95%	95%	95%	95%
Interest Coverage	1.53	1.29	0.45	0.26	0.72	0.68	0.76	1.02	1.07	1.06	1.06
Capital Coverage (excl Major Gen.)	1.64	1.08	(0.27)	(0.67)	0.09	0.13	0.18	0.71	0.79	0.74	0.81

CAC/MSOS/MH I-106

Subject: Integrated Financial Forecast

Reference: Volume 2, Appendix 5.2

Volume 4, Appendix 12.1

2008 GRA, Coalition/MH I-82

- c) **For the purpose of the record of this proceeding, please provide the incidences of drought history data that are the basis of the statement that “On average, there is a high likelihood of a drought occurring about once every ten years.”**

ANSWER:

A good measure of water shortage (i.e. drought severity) is whether Manitoba Hydro requires on peak power purchases to serve its energy needs. Generally, this actively begins to occur with water supply conditions at the 10th percentile (i.e. 1 in 10 year) or lower. This is the basis for the statement referring to droughts occurring about once every ten years.

CAC/MSOS/MH I-106

Subject: Integrated Financial Forecast

**Reference: Volume 2, Appendix 5.2
Volume 4, Appendix 12.1
2008 GRA, Coalition/MH I-82**

- d) **Please clarify and itemize what risks have been quantified and included in the IFFD09-1 contained in Appendix 5.2.**

ANSWER:

Please see IFF09-1 (page 20), Appendix 5.2 and Tab 12 (pages 7 and 8). Please also refer to Appendix 14 for the associated financial projections.

CAC/MSOS/MH I-106

Subject: Integrated Financial Forecast

Reference: Volume 2, Appendix 5.2

Volume 4, Appendix 12.1

2008 GRA, Coalition/MH I-82

- e) For each of the risks identified in (d) above, please provide a table that indicates the assumption, the assumed factor (e.g. U.S. exchange rate, export price, drought expectation, etc) and the change in the assumed factor from the IFF presented in the 2008 GRA.

ANSWER:

Interest Rates Increase 1 Percent:

	MH Cdn New Short Term Debt Rate*			MH Cdn New Long Term Debt Rate*		
	IFF09-1	IFF09-1 Risk Scenario	IFF07-1 Risk Scenario	IFF09-1	IFF09-1 Risk Scenario	IFF07-1 Risk Scenario
2007/08	-	-	5.70%	-	-	6.15%
2008/09	-	-	5.70%	-	-	6.60%
2009/10	0.45%	0.45%	5.60%	4.60%	4.60%	6.75%
2010/11	1.40%	2.40%	5.60%	4.65%	5.65%	6.95%
2011/12	3.60%	4.60%	5.60%	5.20%	6.20%	7.45%
2012/13	4.30%	5.30%	5.60%	5.70%	6.70%	7.45%
2017/18	4.45%	5.45%	5.60%	6.10%	7.10%	7.45%
2019/20	4.45%	5.45%	-	6.10%	7.10%	-

* Excluding Provincial Guarantee Fee of 1.0%

Interest Rates Decrease 1 Percent:

	MH Cdn New Short Term Debt Rate*			MH Cdn New Long Term Debt Rate*		
	IFF09-1	IFF09-1 Risk Scenario	IFF07-1 Risk Scenario	IFF09-1	IFF09-1 Risk Scenario	IFF07-1 Risk Scenario
2007/08	-	-	3.70%	-	-	4.15%
2008/09	-	-	3.70%	-	-	4.60%
2009/10	0.45%	0.45%	3.60%	4.60%	4.60%	4.75%
2010/11	1.40%	0.40%	3.60%	4.65%	3.65%	4.95%
2011/12	3.60%	2.60%	3.60%	5.20%	4.20%	5.45%
2012/13	4.30%	3.30%	3.60%	5.70%	4.70%	5.45%
2017/18	4.45%	3.45%	3.60%	6.10%	5.10%	5.45%
2019/20	4.45%	3.45%	-	6.10%	5.10%	-

Canadian Dollar Increases \$0.10:

	CDN\$/US\$ Exchange Rate		
	IFF09-1	IFF09-1 Risk Scenario	IFF07-1 Risk Scenario
2007/08	-	-	1.07
2008/09	-	-	0.98
2009/10	1.11	1.11	1.01
2010/11	1.07	0.97	1.01
2011/12	1.09	0.99	1.01
2012/13	1.07	0.97	1.03
2017/18	1.14	1.04	1.06
2019/20	1.14	1.04	-

Canadian Dollar Decreases \$0.10:

	CDN\$/US\$ Exchange Rate		
	IFF09-1	IFF09-1 Risk Scenario	IFF07-1 Risk Scenario
2007/08	-	-	1.07
2008/09	-	-	1.18
2009/10	1.11	1.11	1.21
2010/11	1.07	1.17	1.21
2011/12	1.09	1.19	1.21
2012/13	1.07	1.17	1.23
2017/18	1.14	1.24	1.26
2019/20	1.14	1.24	-

Low Export Prices:

	Net Export Revenue (\$Millions)		
	IFF09-1	IFF09-1 Risk Scenario	IFF07-1 Risk Scenario
2007/08	-	-	335
2008/09	-	-	220
2009/10	197	197	131
2010/11	147	147	108
2011/12	202	147	125
2012/13	227	162	133
2013/14	248	175	114
2014/15	214	148	118
2015/16	297	210	109
2016/17	281	189	96
2017/18	273	181	107
2018/19	347	247	-
2019/20	559	417	-

High Export Prices:

	Net Export Revenue (\$Millions)		
	IFF09-1	IFF09-1 Risk Scenario	IFF07-1 Risk Scenario
2007/08	-	-	335
2008/09	-	-	220
2009/10	197	197	141
2010/11	147	147	122
2011/12	202	318	160
2012/13	227	358	195
2013/14	248	389	187
2014/15	214	341	202
2015/16	297	458	285
2016/17	281	445	292
2017/18	273	435	334
2018/19	347	520	-
2019/20	559	796	-

5 Year Drought:

	Net Export Revenue (\$Millions)		
	IFF09-1	IFF09-1 Risk Scenario	IFF07-1 Risk Scenario
2007/08	-	-	335
2008/09	-	-	220
2009/10	197	197	-306
2010/11	147	147	-475
2011/12	202	-217	-110
2012/13	227	-516	-88
2013/14	248	-1	-51
2014/15	214	-106	165
2015/16	297	26	209
2016/17	281	281	208
2017/18	273	273	237
2018/19	347	347	-
2019/20	559	559	-

Medium High Electric Forecast:

	Net Firm Energy (GW.h)			Net Total Peak (MW)		
	IFF09-1	IFF09-1 Risk Scenario	IFF07-1 Risk Scenario	IFF09-1	IFF09-1 Risk Scenario	IFF07-1 Risk Scenario
2007/08	-	-	23958	-	-	4290
2008/09	-	-	24894	-	-	4477
2009/10	24080	24697	26006	4333	4503	4660
2010/11	24600	25340	26957	4407	4618	4821
2011/12	25159	26018	27585	4499	4745	4924
2012/13	25599	26572	28210	4570	4846	5022
2013/14	26012	27094	28758	4633	4936	5110
2014/15	26618	27808	29273	4733	5062	5192
2015/16	26973	28264	29722	4789	5140	5262
2016/17	27331	28722	30175	4845	5217	5333
2017/18	27644	29132	30623	483	5286	5412
2018/19	27923	29506	-	4942	5354	-
2019/20	28288	29964	-	5007	5437	-

CAC/MSOS/MH I-107

Subject: Integrated Financial Forecast and Electric Load Forecast

Reference: Volume 2, Appendix 5.2 and Appendix 7.1

- a) For each of the fiscal years ending 2000 to 2009, please provide a table showing forecast (in each year's respective IFF) domestic load and actual domestic load together with variances and percentage variances.

ANSWER:

The table below shows Manitoba Firm at Generation less the DSM to date (incentive based energy savings) that was not included in the forecast. This is then compared to weather adjusted actuals.

Manitoba Firm at Generation - Forecast to Actuals

Forecast From	Forecast Fiscal Yr	Forecast			Actuals GW.h	W/A Actuals GW.h	Difference GW.h	Difference Percent
		Energy Forecast GW.h	DSM GW.h	less DSM GW.h				
1999	1999/00	19,479	44	19,435	18,804	19,401	34	0.2%
1999	2000/01	19,949	56	19,893	20,075	19,888	5	0.0%
1999	2001/02	20,413	104	20,309	20,494	20,661	(352)	-1.7%
1999	2002/03	20,809	148	20,661	21,940	21,502	(841)	-3.9%
1999	2003/04	21,102	183	20,919	21,890	21,785	(866)	-4.0%
1999	2004/05	21,299	256	21,043	22,426	22,395	(1,352)	-6.0%
1999	2005/06	21,509	351	21,158	22,598	23,044	(1,886)	-8.2%
1999	2006/07	21,716	435	21,281	23,305	23,253	(1,972)	-8.5%
1999	2007/08	21,944	516	21,428	23,961	23,712	(2,284)	-9.6%
1999	2008/09	22,172	639	21,533	24,262	23,994	(2,461)	-10.3%
2000	2000/01	20,065	12	20,053	20,075	19,888	165	0.8%
2000	2001/02	20,694	60	20,634	20,494	20,661	(27)	-0.1%
2000	2002/03	21,010	104	20,906	21,940	21,502	(596)	-2.8%
2000	2003/04	21,305	139	21,166	21,890	21,785	(620)	-2.8%
2000	2004/05	21,596	212	21,384	22,426	22,395	(1,011)	-4.5%
2000	2005/06	21,887	307	21,580	22,598	23,044	(1,464)	-6.4%
2000	2006/07	22,176	391	21,785	23,305	23,253	(1,468)	-6.3%
2000	2007/08	22,463	472	21,991	23,961	23,712	(1,721)	-7.3%

Forecast From	Forecast Fiscal Yr	Energy Forecast GW.h	Forecast less DSM GW.h		Actuals GW.h	W/A Actuals GW.h	Difference GW.h	Difference Percent
			DSM GW.h	DSM GW.h				
2000	2008/09	22,750	595	22,155	24,262	23,994	(1,839)	-7.7%
2001	2001/02	20,463	48	20,415	20,494	20,661	(245)	-1.2%
2001	2002/03	21,117	92	21,025	21,940	21,502	(477)	-2.2%
2001	2003/04	21,618	127	21,491	21,890	21,785	(294)	-1.4%
2001	2004/05	21,968	200	21,768	22,426	22,395	(627)	-2.8%
2001	2005/06	22,310	295	22,015	22,598	23,044	(1,029)	-4.5%
2001	2006/07	22,642	379	22,263	23,305	23,253	(990)	-4.3%
2001	2007/08	22,935	460	22,475	23,961	23,712	(1,237)	-5.2%
2001	2008/09	23,245	583	22,662	24,262	23,994	(1,332)	-5.6%
2002	2002/03	21,260	44	21,216	21,940	21,502	(286)	-1.3%
2002	2003/04	21,504	79	21,425	21,890	21,785	(360)	-1.7%
2002	2004/05	21,708	152	21,556	22,426	22,395	(839)	-3.7%
2002	2005/06	21,975	247	21,728	22,598	23,044	(1,316)	-5.7%
2002	2006/07	22,251	331	21,920	23,305	23,253	(1,333)	-5.7%
2002	2007/08	22,515	412	22,103	23,961	23,712	(1,609)	-6.8%
2002	2008/09	22,774	535	22,239	24,262	23,994	(1,755)	-7.3%
2003	2003/04	22,171	35	22,136	21,890	21,785	351	1.6%
2003	2004/05	22,690	108	22,582	22,426	22,395	187	0.8%
2003	2005/06	22,976	203	22,773	22,598	23,044	(271)	-1.2%
2003	2006/07	23,262	287	22,975	23,305	23,253	(278)	-1.2%
2003	2007/08	23,554	368	23,186	23,961	23,712	(526)	-2.2%
2003	2008/09	23,783	491	23,292	24,262	23,994	(702)	-2.9%
2004	2004/05	22,371	73	22,298	22,426	22,395	(97)	-0.4%
2004	2005/06	22,941	168	22,773	22,598	23,044	(271)	-1.2%
2004	2006/07	23,491	252	23,239	23,305	23,253	(14)	-0.1%
2004	2007/08	23,858	333	23,525	23,961	23,712	(187)	-0.8%
2004	2008/09	24,184	456	23,728	24,262	23,994	(266)	-1.1%
2005	2005/06	22,928	95	22,833	22,598	23,044	(211)	-0.9%
2005	2006/07	23,394	179	23,215	23,305	23,253	(38)	-0.2%
2005	2007/08	24,059	260	23,799	23,961	23,712	87	0.4%
2005	2008/09	24,574	383	24,191	24,262	23,994	197	0.8%
2006	2006/07	23,328	84	23,244	23,305	23,253	(9)	0.0%
2006	2007/08	23,836	165	23,671	23,961	23,712	(41)	-0.2%
2006	2008/09	24,267	288	23,979	24,262	23,994	(15)	-0.1%

Forecast From	Forecast Fiscal Yr	Energy Forecast GW.h	DSM GW.h	Forecast less DSM GW.h	Actuals GW.h	W/A Actuals GW.h	Difference GW.h	Difference Percent
2007	2007/08	23,596	81	23,515	23,961	23,712	(197)	-0.8%
2007	2008/09	24,398	204	24,194	24,262	23,994	200	0.8%
2008	2008/09	24,167	123	24,044	24,262	23,994	50	0.2%

CAC/MSOS/MH I-107

Subject: Integrated Financial Forecast and Electric Load Forecast

Reference: Volume 2, Appendix 5.2 and Appendix 7.1

- b) For each of the fiscal years ending 2000 to 2009, please provide a table showing forecast (in each year's respective IFF) export load and actual export load together with variances and percentage variances.

ANSWER:

Manitoba Hydro has interpreted "export load" as being total export energy. In the table below, the "Second Forecast" is the first year of the IFF. This forecast is partially based on actual hydraulic conditions and actual exported energy. The First Forecast is prepared in the preceding year as is based on median inflow conditions.

EXPORTED ENERGY "EXPORT LOAD"

(GWh unless otherwise indicated)

Fiscal Year	Actual	Second Forecast	Second Forecast Variance	Second Forecast Variance	First Forecast	First Forecast Variance	First Forecast Variance
1999/00	10,881	10,704	177	2%	9,148	1,733	19%
2000/01	12,150	12,010	140	1%	10,383	1,767	17%
2001/02	12,293	12,676	-383	-3%	10,651	1,642	15%
2002/03	9,900	9,843	57	1%	10,578	-678	-6%
2003/04	6,975	6,220	755	12%	10,542	-3,567	-34%
2004/05	10,798	10,188	610	6%	8,731	2,067	24%
2005/06	15,290	13,597	1,693	12%	8,864	6,426	72%
2006/07	11,061	11,067	-6	0%	8,934	2,127	24%
2007/08	11,788	11,152	636	6%	7,707	4,081	53%
2008/09	10,008	10,279	-271	-3%	7,549	2,459	33%

CAC/MSOS/MH I-108

Subject: Debt and Debt Equity

**Reference: Volume 1, Tab 2, pages 2 – 3
Volume 2, Appendix 5.2, page 35 Electric Operations (MH09-1),
Projected Balance Sheet**

MH states:

As a result of the decreased projections of net income, the debt/equity ratio is projected to rise to 76:24 by the end of 2012 versus the 75:25 that was projected in IFF08. Beyond 2012, the debt/equity ratio is projected to rise to 80:20 by 2019, largely due to the capital program, and then to improve significantly as the returns from capital investments are realized. (Tab2, pages 2 – 3)

And,

While the debt ratio is projected to increase from the current level of 74:26 to a high of 80:20 over the next decade, the ratio quickly recovers in “the decade of returns” and is projected to reach 51:49 by the end of that decade. This is accomplished with domestic rate increases which, over the longer term, are closely aligned with projected rates of inflation.

- a) Please clearly articulate MH’s understanding of the benefit of a 75:25 debt equity.**

ANSWER:

The benefit of a 75:25 debt/equity capital structure is to provide a level of equity sufficient to withstand the financial impacts of risks faced by Manitoba Hydro such as severe drought, significant infrastructure damage, loss of access to export markets, variability in earnings during a period of system expansion and other adverse events while alleviating the need for sudden large compensating rate increases.

Please also see Manitoba Hydro’s response to CAC/MSOS/MH I-8(a).

CAC/MSOS/MH I-108

Subject: Debt and Debt Equity

**Reference: Volume 1, Tab 2, pages 2 – 3
Volume 2, Appendix 5.2, page 35 Electric Operations (MH09-1),
Projected Balance Sheet**

MH states:

As a result of the decreased projections of net income, the debt/equity ratio is projected to rise to 76:24 by the end of 2012 versus the 75:25 that was projected in IFF08. Beyond 2012, the debt/equity ratio is projected to rise to 80:20 by 2019, largely due to the capital program, and then to improve significantly as the returns from capital investments are realized. (Tab2, pages 2 – 3)

And,

While the debt ratio is projected to increase from the current level of 74:26 to a high of 80:20 over the next decade, the ratio quickly recovers in “the decade of returns” and is projected to reach 51:49 by the end of that decade. This is accomplished with domestic rate increases which, over the longer term, are closely aligned with projected rates of inflation.

- b) Please clearly articulate how the 75:25 debt equity translates into benefits to MH domestic customers.**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-108(a) and CAC/MSOS/MH I-8(a).

CAC/MSOS/MH I-108

Subject: Debt and Debt Equity

Reference: Volume 1, Tab 2, pages 2 – 3

**Volume 2, Appendix 5.2, page 35 Electric Operations (MH09-1),
Projected Balance Sheet**

MH states:

As a result of the decreased projections of net income, the debt/equity ratio is projected to rise to 76:24 by the end of 2012 versus the 75:25 that was projected in IFF08. Beyond 2012, the debt/equity ratio is projected to rise to 80:20 by 2019, largely due to the capital program, and then to improve significantly as the returns from capital investments are realized. (Tab2, pages 2 – 3)

And,

While the debt ratio is projected to increase from the current level of 74:26 to a high of 80:20 over the next decade, the ratio quickly recovers in “the decade of returns” and is projected to reach 51:49 by the end of that decade. This is accomplished with domestic rate increases which, over the longer term, are closely aligned with projected rates of inflation.

- c) Please provide a real life example and related calculations of the benefits described in (a) and (b) above of**
- i. the change from a 90:20 debt equity to a 75:25 debt equity;**
 - ii. the change from a 80:20 debt equity to a 75:25 debt equity; and**
 - iii. the change from a 75:25 debt equity to a 51:49 debt equity.**

ANSWER:

Although the corporation hadn't quite reached 75:25 (77:23 in 2001/02), the low water flow conditions in 2002/03 and 2003/04 had the financial effect of changing debt/equity to 87:13 by 2003/04. With moderate rate increases and favourable export revenues, the corporation was able to recover within 3 years to approximately the same level of debt/equity prior to the

drought and continue its progress towards 75:25. If Manitoba Hydro had been in a weaker financial position prior to the low water flows, the progress towards 75:25 would have been slower and/or higher rate increases may have been sought.

The 5 year drought scenario included in IFF09-1 (Appendix 5.2, p. 20 and Appendix 14, p. 20) shows that an extended period of low flows is projected to change debt/equity up to 95:15 assuming no rate adjustments. In order to achieve the same level of retained earnings in 2019/20 as in MH09-1, additional annual rate increases of 3.37% would need to be implemented from 2012/13 to 2019/20.

CAC/MSOS/MH I-108

Subject: Debt and Debt Equity

**Reference: Volume 1, Tab 2, pages 2 – 3
Volume 2, Appendix 5.2, page 35 Electric Operations (MH09-1),
Projected Balance Sheet**

MH states:

As a result of the decreased projections of net income, the debt/equity ratio is projected to rise to 76:24 by the end of 2012 versus the 75:25 that was projected in IFF08. Beyond 2012, the debt/equity ratio is projected to rise to 80:20 by 2019, largely due to the capital program, and then to improve significantly as the returns from capital investments are realized. (Tab2, pages 2 – 3)

And,

While the debt ratio is projected to increase from the current level of 74:26 to a high of 80:20 over the next decade, the ratio quickly recovers in “the decade of returns” and is projected to reach 51:49 by the end of that decade. This is accomplished with domestic rate increases which, over the longer term, are closely aligned with projected rates of inflation.

- d) Please demonstrate how the cost of debt is impacted by each of the different debt equity structures of MH in (c) above.**

ANSWER:

It is expected that Manitoba Hydro’s debt will continue to be viewed to be self-supporting by credit rating agencies during the “decade of investment” (barring other unforeseen circumstances). Therefore, it is not anticipated that there will be any negative impact the cost of debt to Manitoba Hydro.

CAC/MSOS/MH I-108

Subject: Debt and Debt Equity

Reference: Volume 1, Tab 2, pages 2 – 3

**Volume 2, Appendix 5.2, page 35 Electric Operations (MH09-1),
Projected Balance Sheet**

MH states:

As a result of the decreased projections of net income, the debt/equity ratio is projected to rise to 76:24 by the end of 2012 versus the 75:25 that was projected in IFF08. Beyond 2012, the debt/equity ratio is projected to rise to 80:20 by 2019, largely due to the capital program, and then to improve significantly as the returns from capital investments are realized. (Tab2, pages 2 – 3)

And,

While the debt ratio is projected to increase from the current level of 74:26 to a high of 80:20 over the next decade, the ratio quickly recovers in “the decade of returns” and is projected to reach 51:49 by the end of that decade. This is accomplished with domestic rate increases which, over the longer term, are closely aligned with projected rates of inflation.

- e) Please distinguish the amount of current and forecast debt amounts for each of short term and long term that are obtained through the Province of Manitoba from the amounts that are obtained otherwise (please specify).**

ANSWER:

All short term debt is funded through the use of the Manitoba Hydro \$500 million dollar commercial paper program. When Manitoba Hydro requires short term financing to meet liquidity needs or to bridge financing between long term debt issues, Manitoba Hydro transacts directly with Canadian financial institutions to issue short term notes. The short term debt is guaranteed by the Province of Manitoba, but Manitoba Hydro arranges this financing directly with the financial markets as required.

The current portfolio of long term debt is entirely in the form of advances from the Province of Manitoba with the exception of the following debt issued in the name of Manitoba Hydro-Electric Board: Manitoba Hydro Bonds issued for mitigation purposes. On a forecast basis, all long term debt is forecast to be in the form of advances from the Province of Manitoba.

CAC/MSOS/MH I-108

Subject: Debt and Debt Equity

**Reference: Volume 1, Tab 2, pages 2 – 3
Volume 2, Appendix 5.2, page 35 Electric Operations (MH09-1),
Projected Balance Sheet**

MH states:

As a result of the decreased projections of net income, the debt/equity ratio is projected to rise to 76:24 by the end of 2012 versus the 75:25 that was projected in IFF08. Beyond 2012, the debt/equity ratio is projected to rise to 80:20 by 2019, largely due to the capital program, and then to improve significantly as the returns from capital investments are realized. (Tab2, pages 2 – 3)

And,

While the debt ratio is projected to increase from the current level of 74:26 to a high of 80:20 over the next decade, the ratio quickly recovers in “the decade of returns” and is projected to reach 51:49 by the end of that decade. This is accomplished with domestic rate increases which, over the longer term, are closely aligned with projected rates of inflation.

- f) Please clarify the year or years MH is referring to when it states: “...and is projected to reach 51:49 by the end of that decade.”**

ANSWER:

The end of the decade refers to the final year in the 20 Year Financial Outlook or 2028/29.

CAC/MSOS/MH I-108

Subject: Debt and Debt Equity

Reference: Volume 1, Tab 2, pages 2 – 3

**Volume 2, Appendix 5.2, page 35 Electric Operations (MH09-1),
Projected Balance Sheet**

MH states:

As a result of the decreased projections of net income, the debt/equity ratio is projected to rise to 76:24 by the end of 2012 versus the 75:25 that was projected in IFF08. Beyond 2012, the debt/equity ratio is projected to rise to 80:20 by 2019, largely due to the capital program, and then to improve significantly as the returns from capital investments are realized. (Tab2, pages 2 – 3)

And,

While the debt ratio is projected to increase from the current level of 74:26 to a high of 80:20 over the next decade, the ratio quickly recovers in “the decade of returns” and is projected to reach 51:49 by the end of that decade. This is accomplished with domestic rate increases which, over the longer term, are closely aligned with projected rates of inflation.

- g) Please identify when, if ever, the debt equity ratio was previously at or around the 51:49 noted in the quote above. Please provide a separate table showing the amounts used to calculate each of the debt equity ratios in prior years when it was at or around 51:49.**

ANSWER:

The debt/equity ratio has not ever been at or around 51:49.

CAC/MSOS/MH I-108

Subject: Debt and Debt Equity

**Reference: Volume 1, Tab 2, pages 2 – 3
Volume 2, Appendix 5.2, page 35 Electric Operations (MH09-1),
Projected Balance Sheet**

MH states:

As a result of the decreased projections of net income, the debt/equity ratio is projected to rise to 76:24 by the end of 2012 versus the 75:25 that was projected in IFF08. Beyond 2012, the debt/equity ratio is projected to rise to 80:20 by 2019, largely due to the capital program, and then to improve significantly as the returns from capital investments are realized. (Tab2, pages 2 – 3)

And,

While the debt ratio is projected to increase from the current level of 74:26 to a high of 80:20 over the next decade, the ratio quickly recovers in “the decade of returns” and is projected to reach 51:49 by the end of that decade. This is accomplished with domestic rate increases which, over the longer term, are closely aligned with projected rates of inflation.

- h) Please reproduce the schedule on page 35 of the MH09-1, noted above, showing the calculated debt equity ratios for each year.**

ANSWER:

Please see the attached.

ELECTRIC OPERATIONS (MH09-1)
PROJECTED BALANCE SHEET
(In Millions of Dollars)

For the year ended March 31

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ASSETS											
Plant in Service	12,527	13,034	15,075	15,566	15,982	16,691	17,127	17,837	20,301	21,599	25,001
Accumulated Depreciation	(4,663)	(5,018)	(5,398)	(5,805)	(6,216)	(6,649)	(7,091)	(7,540)	(8,010)	(8,514)	(9,052)
Net Plant in Service	7,865	8,015	9,677	9,761	9,765	10,042	10,035	10,297	12,292	13,085	15,950
Construction in Progress	1,947	2,458	1,341	1,818	2,838	3,854	5,532	6,948	6,159	6,446	4,168
Current and Other Assets	2,767	2,735	2,871	2,926	2,708	2,860	3,047	3,259	3,564	3,348	3,683
Goodwill	42	42	42	42	42	42	42	42	42	42	42
	12,621	13,251	13,931	14,546	15,353	16,798	18,656	20,545	22,057	22,922	23,843
LIABILITIES AND EQUITY											
Long-Term Debt	7,800	8,596	9,054	8,769	10,349	11,505	13,123	14,412	15,346	16,429	14,147
Current and Other Liabilities	2,156	1,926	2,119	2,916	2,106	2,306	2,333	2,692	3,045	2,586	5,514
Contributions in Aid of Construction	290	288	284	280	276	275	274	273	272	271	271
Retained Earnings	2,183	2,261	2,331	2,403	2,528	2,641	2,889	3,153	3,388	3,632	3,908
Accumulated Other Comprehensive Income	192	178	143	178	94	71	38	17	6	3	3
	12,621	13,251	13,931	14,546	15,353	16,798	18,656	20,545	22,057	22,922	23,843
Equity Ratio	26%	25%	24%	24%	22%	21%	20%	20%	20%	20%	20%

ELECTRIC OPERATIONS (MH09-1)
PROJECTED BALANCE SHEET
(In Millions of Dollars)

For the year ended March 31

	2021	2022	2023	2024	2025	2026	2027	2028	2029
ASSETS									
Plant in Service	26,067	26,505	30,392	33,459	34,732	35,524	36,105	36,821	37,414
Accumulated Depreciation	(9,616)	(10,190)	(10,793)	(11,461)	(12,177)	(12,911)	(13,663)	(14,420)	(15,188)
Net Plant in Service	16,451	16,316	19,599	21,998	22,556	22,613	22,441	22,401	22,226
Construction in Progress	4,523	5,453	3,111	877	270	119	207	205	338
Current and Other Assets	3,886	3,422	3,704	4,315	5,201	5,650	6,794	8,013	9,284
Goodwill	42	42	42	42	42	42	42	42	42
	<u>24,902</u>	<u>25,233</u>	<u>26,456</u>	<u>27,232</u>	<u>28,068</u>	<u>28,424</u>	<u>29,484</u>	<u>30,661</u>	<u>31,890</u>
LIABILITIES AND EQUITY									
Long-Term Debt	17,406	17,838	18,640	18,642	18,044	18,047	18,049	17,991	17,743
Current and Other Liabilities	3,015	2,476	2,354	2,394	3,036	2,477	2,527	2,642	2,891
Contributions in Aid of Construction	272	272	273	274	276	277	280	283	287
Retained Earnings	4,207	4,645	5,190	5,922	6,713	7,623	8,629	9,745	10,969
Accumulated Other Comprehensive Income	2	1	(0)	0	0	0	0	0	0
	<u>24,902</u>	<u>25,233</u>	<u>26,456</u>	<u>27,232</u>	<u>28,068</u>	<u>28,424</u>	<u>29,484</u>	<u>30,661</u>	<u>31,890</u>
Equity Ratio	21%	22%	24%	26%	30%	34%	38%	43%	49%

CAC/MSOS/MH I-108

Subject: Debt and Debt Equity

**Reference: Volume 1, Tab 2, pages 2 – 3
Volume 2, Appendix 5.2, page 35 Electric Operations (MH09-1),
Projected Balance Sheet**

MH states:

As a result of the decreased projections of net income, the debt/equity ratio is projected to rise to 76:24 by the end of 2012 versus the 75:25 that was projected in IFF08. Beyond 2012, the debt/equity ratio is projected to rise to 80:20 by 2019, largely due to the capital program, and then to improve significantly as the returns from capital investments are realized. (Tab2, pages 2 – 3)

And,

While the debt ratio is projected to increase from the current level of 74:26 to a high of 80:20 over the next decade, the ratio quickly recovers in “the decade of returns” and is projected to reach 51:49 by the end of that decade. This is accomplished with domestic rate increases which, over the longer term, are closely aligned with projected rates of inflation.

- i) Please provide a complete list of all factors and metrics that, in MH’s view, demonstrate a need for a rate increase, including debt equity.**

ANSWER:

Please see the reasons for application in Dection 2.2 of Tab 2 of the Application.

CAC/MSOS/MH I-108

Subject: Debt and Debt Equity

Reference: Volume 1, Tab 2, pages 2 – 3

**Volume 2, Appendix 5.2, page 35 Electric Operations (MH09-1),
Projected Balance Sheet**

MH states:

As a result of the decreased projections of net income, the debt/equity ratio is projected to rise to 76:24 by the end of 2012 versus the 75:25 that was projected in IFF08. Beyond 2012, the debt/equity ratio is projected to rise to 80:20 by 2019, largely due to the capital program, and then to improve significantly as the returns from capital investments are realized. (Tab2, pages 2 – 3)

And,

While the debt ratio is projected to increase from the current level of 74:26 to a high of 80:20 over the next decade, the ratio quickly recovers in “the decade of returns” and is projected to reach 51:49 by the end of that decade. This is accomplished with domestic rate increases which, over the longer term, are closely aligned with projected rates of inflation.

- j) Now that MH has achieved 75:25, what range of debt equity does MH consider is reasonable around which it can forecast rates and rate changes?**

ANSWER:

As stated in the response to CAC/MSOS/MH I-105(a), the target was revised in 2009 to maintain 75:25, except during years of major investment in the generation and transmission system. With the projected rise in debt equity above target during the construction period of the proposed Keeyask and Conawapa projects, the 75:25 debt/equity has been maintained as a target recognizing the importance of returning to the target level to protect the corporation and ratepayers from any adverse events. Manitoba Hydro regularly reviews financial targets to determine the appropriate level of debt/equity to absorb risks foreseen at that time.

CAC/MSOS/MH I-109

Subject: Debt and Debt Management

Reference: PUB/MH I-63

S&P MH Corp Rating – Nov 2007 08 GRA

The above noted S&P report states: “ongoing increases in the self-supported debt of MH”, page 1

- a) Confirm MH has reviewed S&P, DBRS and Moody’s rating reports.**

ANSWER:

Confirmed.

CAC/MSOS/MH I-109

Subject: Debt and Debt Management

Reference: PUB/MH I-63

S&P MH Corp Rating – Nov 2007 08 GRA

The above noted S&P report states: “ongoing increases in the self-supported debt of MH”, page 1

b) Outline each component of each rating report that MH disagrees with.

ANSWER:

Credit rating agencies provide an independent report based on their own analyses and Manitoba Hydro typically does not take issue with the analyses of the agencies.

CAC/MSOS/MH I-109

Subject: Debt and Debt Management

Reference: PUB/MH I-63

S&P MH Corp Rating – Nov 2007 08 GRA

The above noted S&P report states: “ongoing increases in the self-supported debt of MH”, page 1

c) If MH has not reviewed to determine if not agree, explain why it has not.

ANSWER:

Please see Manitoba Hydro’s responses to CAC/MSOS/MH I-109 (a) and (b).

CAC/MSOS/MH I-109

Subject: Debt and Debt Management

Reference: PUB/MH I-63

S&P MH Corp Rating – Nov 2007 08 GRA

The above noted S&P report states: “ongoing increases in the self-supported debt of MH”, page 1

d) Outline each component MH of each rating report that does not understand.

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-109(b).

CAC/MSOS/MH I-109

Subject: Debt and Debt Management

Reference: PUB/MH I-63

S&P MH Corp Rating – Nov 2007 08 GRA

The above noted S&P report states: “ongoing increases in the self-supported debt of MH”, page 1

- e) **Explain the term “self-supported” in the context of page 1 of the above noted S&P report.**

ANSWER:

The above noted S&P report was dated November 21, 2007. “Self-supported” means, in the context of that report, that Manitoba Hydro can support its debt service payments with sufficient funds from operations and without contributions from the Province of Manitoba.

CAC/MSOS/MH I-109

Subject: Debt and Debt Management

Reference: PUB/MH I-63

S&P MH Corp Rating – Nov 2007 08 GRA

The above noted S&P report states: “ongoing increases in the self-supported debt of MH”, page 1

- f) Provide the data that would support “ongoing increases in self-supported debt of MH”.**

ANSWER:

The “ongoing increases” would be referring to the increase in the long term debt balance in the integrated financial forecast (IFF07) covering the next ten years.

CAC/MSOS/MH I-110

Subject: Operating, Maintenance and Administrative Expense

Reference: Volume 1, Tab 4, Appendix 4.4, page 6 of 36

MH states:

Intuitively, as the asset infrastructure ages, there will be a potential decrease in reliability and corresponding increase in the maintenance and replacement requirements. Additionally, technological obsolescence of aging assets contributes further to replacement requirements. [emphasis added]

- a) Provide the data which supports this intuitive statement. At what ages for what assets is there a decrease in reliability? Why is there a reference to “potential” in the quote noted above? Please provide details of various likelihoods of decreases in reliability.**

ANSWER:

As discussed in CAC/MSOS/MH I-17(c), in an effort to ensure continued reliability, asset maintenance and replacement requirements consider a number of factors including asset condition, performance, age, failure rates, employee & public safety, manufacturer’s recommendations etc. Age of the asset is not a single determinant in the assessment process.

CAC/MSOS/MH I-110

Subject: Operating, Maintenance and Administrative Expense

Reference: Volume 1, Tab 4, Appendix 4.4, page 6 of 36

MH states:

Intuitively, as the asset infrastructure ages, there will be a potential decrease in reliability and corresponding increase in the maintenance and replacement requirements. Additionally, technological obsolescence of aging assets contributes further to replacement requirements. [emphasis added]

- b) MH states: “Manitoba Hydro’s assets are aging.” Confirm that statement applies to each and every GRA.**

ANSWER:

Confirmed. However, it must be recognized that many of Manitoba Hydro’s major generation and transmission facilities were constructed during the 1960’s and 1970’s and are now appropriately described as “aging”.

CAC/MSOS/MH I-110

Subject: Operating, Maintenance and Administrative Expense

Reference: Volume 1, Tab 4, Appendix 4.4, page 6 of 36

MH states:

Intuitively, as the asset infrastructure ages, there will be a potential decrease in reliability and corresponding increase in the maintenance and replacement requirements. Additionally, technological obsolescence of aging assets contributes further to replacement requirements. [emphasis added]

- c) Provide a list of the generation assets purchased by MH from Winnipeg Hydro/City of Winnipeg.**

ANSWER:

Information regarding the acquisition of Winnipeg Hydro from the City of Winnipeg has been addressed in a previous GRA.

CAC/MSOS/MH I-110

Subject: Operating, Maintenance and Administrative Expense

Reference: Volume 1, Tab 4, Appendix 4.4, page 6 of 36

MH states:

Intuitively, as the asset infrastructure ages, there will be a potential decrease in reliability and corresponding increase in the maintenance and replacement requirements. Additionally, technological obsolescence of aging assets contributes further to replacement requirements. [emphasis added]

- d) Provide a list of the transmission assets purchased by MH from Winnipeg Hydro/City of Winnipeg.**

ANSWER:

Please see the response to part c of this question.

CAC/MSOS/MH I-110

Subject: Operating, Maintenance and Administrative Expense

Reference: Volume 1, Tab 4, Appendix 4.4, page 6 of 36

MH states:

Intuitively, as the asset infrastructure ages, there will be a potential decrease in reliability and corresponding increase in the maintenance and replacement requirements. Additionally, technological obsolescence of aging assets contributes further to replacement requirements. [emphasis added]

- e) Provide a list of the distribution assets purchased by MH from Winnipeg Hydro/City of Winnipeg.**

ANSWER:

Please see the response to part c of this question.

CAC/MSOS/MH I-110

Subject: Operating, Maintenance and Administrative Expense

Reference: Volume 1, Tab 4, Appendix 4.4, page 6 of 36

MH states:

Intuitively, as the asset infrastructure ages, there will be a potential decrease in reliability and corresponding increase in the maintenance and replacement requirements. Additionally, technological obsolescence of aging assets contributes further to replacement requirements. [emphasis added]

f) Provide the date of acquisition of these assets (in d, e and f above) by MH.

ANSWER:

Please see the response to part c of this question.

CAC/MSOS/MH I-110

Subject: Operating, Maintenance and Administrative Expense

Reference: Volume 1, Tab 4, Appendix 4.4, page 6 of 36

MH states:

Intuitively, as the asset infrastructure ages, there will be a potential decrease in reliability and corresponding increase in the maintenance and replacement requirements. Additionally, technological obsolescence of aging assets contributes further to replacement requirements. [emphasis added]

- g) In light of the age of the assets related to the former Winnipeg Hydro system (and MH's described aging process) and the year of acquisition these assets by MH, please provide an analysis (cost/benefit) that demonstrates the acquisition of those assets was prudent for MH customers.**

ANSWER:

Please see the response to part c of this question.

CAC/MSOS/MH I-111

Subject: Operating, Maintenance and Administrative Expense

Reference: PUB/MH I-8

Volume 1, Tab 4, Appendix 4.4, page 2 of 36

Volume 2, Appendix 3.1

The PUB requested some data regarding cost per customer of MH.

- a) For the purpose of the record of this proceeding, please provide the actual OM&A cost per customer for each of the years 2000/01 through 2008/09.**

ANSWER:

Please see the following table for actual OM&A cost per customer from 2004/05 through 2008/09.

	2004/05	2005/06	2006/07	2007/08	2008/09
	Actual	Actual	Actual	Actual	Actual
OM&A (in thousands of \$)	\$ 298,613	\$ 310,659	\$ 323,466	\$ 322,697	\$ 359,660
Number of Customers	505,666	509,791	516,861	521,599	527,472
Cost Per Customer	\$ 591	\$ 609	\$ 626	\$ 619	\$ 682

CAC/MSOS/MH I-111

Subject: Operating, Maintenance and Administrative Expense

Reference: PUB/MH I-8

Volume 1, Tab 4, Appendix 4.4, page 2 of 36

Volume 2, Appendix 3.1

The PUB requested some data regarding cost per customer of MH.

- b) **For the purpose of the record of this proceeding, please provide a table showing the OM&A forecast cost per customer for each of the years 2000/01 through 2008/09 together with the source reference for that forecast and please indicate whether that source was filed with the PUB together with the filing name and exhibit number.**

ANSWER:

Please see the following table for the OM&A forecast information for 2004/05 through 2008/09.

Forecasted OM&A Cost per Customer Years 2004/05 - 2008/09				
	OM&A cost per Customer	Source	Filing Name	Exhibit Number
2004/05	\$582	IFF04-1	Conditional Rate Apr 1, 2005	Appendix 2 IFF04-1
2005/06	\$610	IFF05-1	08/09 GRA	Appendix 5.3 IFF05-1
2006/07	\$639	IFF06-4	08/09 GRA	Appendix 5.1 IFF06-4
2007/08	\$654	IFF07-1	08/09 GRA	Appendix 22 IFF07-1
2008/09	\$664	IFF08-1	Status Report re: Order 116/08 and 150/08 Directives	Appendix 4.2 IFF08-1

CAC/MSOS/MH I-111

Subject: Operating, Maintenance and Administrative Expense

Reference: PUB/MH I-8

Volume 1, Tab 4, Appendix 4.4, page 2 of 36

Volume 2, Appendix 3.1

The PUB requested some data regarding cost per customer of MH.

- c) Please confirm that the OM&A costs used in Appendix 3.1 (page 2) includes the total of all OM&A for each year. If not confirmed, please explain and provide references to demonstrate otherwise.**

ANSWER:

The OM&A costs used in Appendix 3.1 includes the OM&A for electric operations only.

CAC/MSOS/MH I-111

Subject: Operating, Maintenance and Administrative Expense

Reference: PUB/MH I-8

Volume 1, Tab 4, Appendix 4.4, page 2 of 36

Volume 2, Appendix 3.1

The PUB requested some data regarding cost per customer of MH.

- d) Please confirm that the number of customers used in Appendix 3.1 (page 2) for each year, are the number of domestic electric customers. If not confirmed, please explain and provide references to demonstrate otherwise.**

ANSWER:

Confirmed.

CAC/MSOS/MH I-111

Subject: Operating, Maintenance and Administrative Expense

Reference: PUB/MH I-8

Volume 1, Tab 4, Appendix 4.4, page 2 of 36

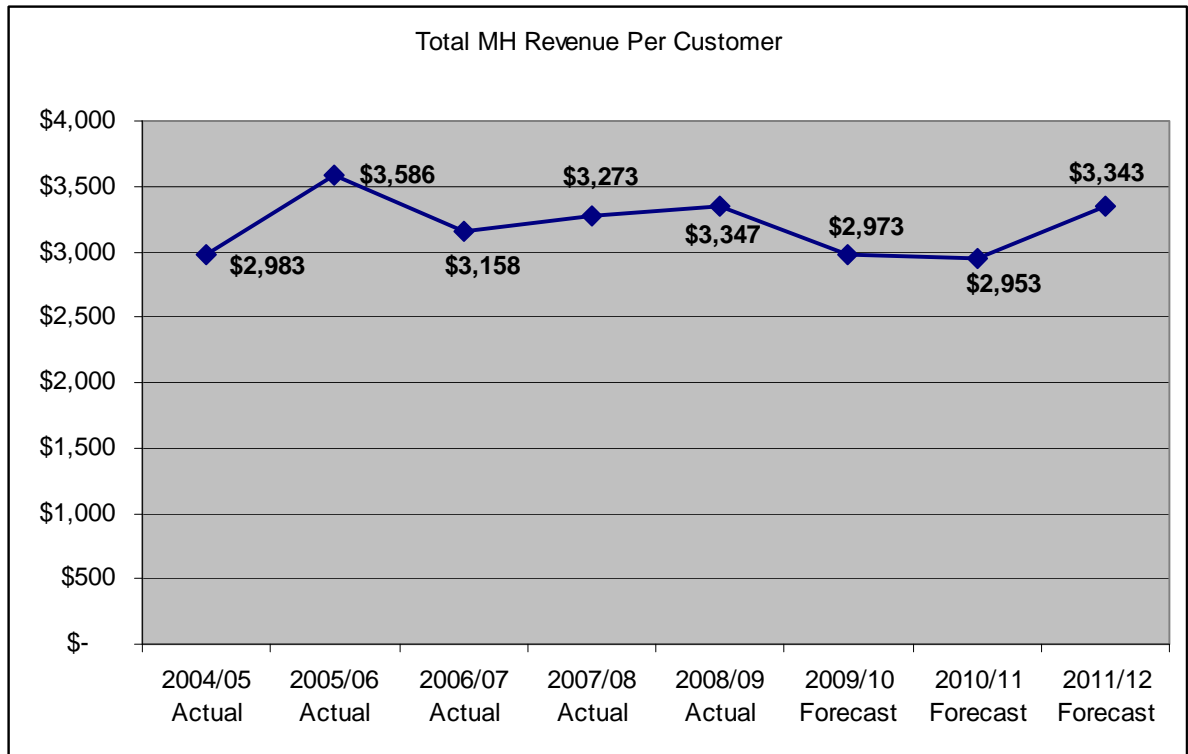
Volume 2, Appendix 3.1

The PUB requested some data regarding cost per customer of MH.

- e) **Please provide the total MH revenue per electric customer on an actual basis for each of the years 2000/01 to 2008/09 and on a forecast basis for each of the years 2009/10 to 2011/12 in a similar format as provided on page 2 of Appendix 3.1.**

ANSWER:

Please see the following graph for the Total revenue per customer for 2004/05 through 2011/12.



CAC/MSOS/MH I-111

Subject: Operating, Maintenance and Administrative Expense

Reference: PUB/MH I-8

Volume 1, Tab 4, Appendix 4.4, page 2 of 36

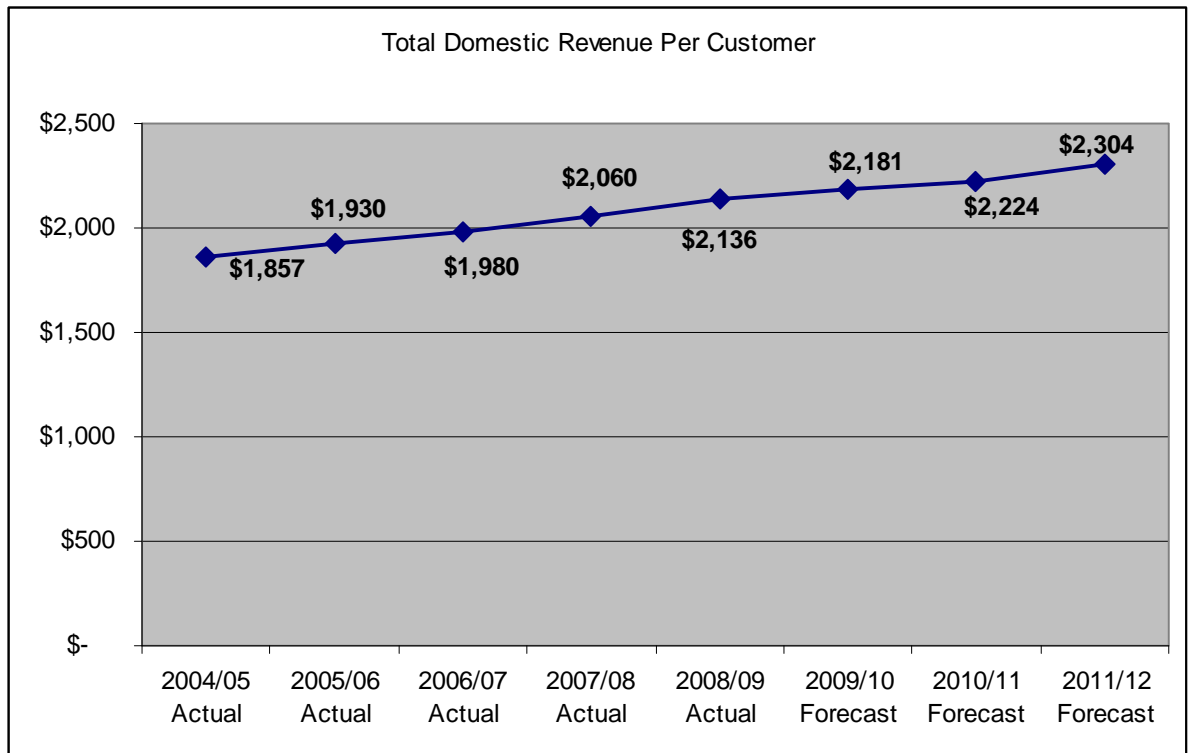
Volume 2, Appendix 3.1

The PUB requested some data regarding cost per customer of MH.

- f) **Please provide the electric MH revenue per electric customer on an actual basis for each of the years 2000/01 to 2008/09 and on a forecast basis for each of the years 2009/10 to 2011/12 in a similar format as provided on page 2 of Appendix 3.1.**

ANSWER:

Please see the following graph for the Domestic revenue per customer for 2004/05 through 2011/12.



CAC/MSOS/MH I-112

Subject: Retained Earnings and Debt/Equity

Reference: Volume 1, Tab 2, page 1 of 4, Table 2.1.1

- a) **Provide the extraprovincial revenue, both on a gross basis and a net basis (net of fuel, power purchased and water rentals) for each of the 10 years leading to and including 2009.**

ANSWER:

Please see the following table which provides the gross and net export revenue for the past ten years.

(in millions of \$)	1999/00 Actual	2000/01 Actual	2001/02 Actual	2002/03 Actual	2003/04 Actual	2004/05 Actual	2005/06 Actual	2006/07 Actual	2007/08 Actual	2008/09 Actual	10 Year Average	5 year Average
Gross Extraprovincial Revenue	376	480	588	463	351	554	827	592	625	623	548	644
Net Extraprovincial Revenue	292	376	404	209	(289)	307	571	254	366	323	281	364

CAC/MSOS/MH I-112

Subject: Retained Earnings and Debt/Equity

Reference: Volume 1, Tab 2, page 1 of 4, Table 2.1.1

b) Provide the 10 year average for each of the gross and net amounts.

ANSWER:

Please see Manitoba Hydro's responses to CAC/MSOS/MH I-112(a).

CAC/MSOS/MH I-112

Subject: Retained Earnings and Debt/Equity

Reference: Volume 1, Tab 2, page 1 of 4, Table 2.1.1

c) Provide the most recent 5 year average for each of the gross and net amounts.

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-112(a).

CAC/MSOS/MH I-112

Subject: Retained Earnings and Debt/Equity

Reference: Volume 1, Tab 2, page 1 of 4, Table 2.1.1

d) Provide the IFF assuming the 10 year average.

ANSWER:

Manitoba Hydro does not view the preparation of a forecast assuming a ten year average of net export revenues as appropriate as the average does not reflect variations in water flows and prices and bears no relationship to the domestic load forecast.

CAC/MSOS/MH I-112

Subject: Retained Earnings and Debt/Equity

Reference: Volume 1, Tab 2, page 1 of 4, Table 2.1.1

e) **Provide the IFF assuming the 5 year average.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-112(d).

CAC/MSOS/MH I-112

Subject: Retained Earnings and Debt/Equity

Reference: Volume 1, Tab 2, page 1 of 4, Table 2.1.1

f) Please update this table for data after March 31, 2009 for the 2009/10 year.

ANSWER:

Actual information related to 2009/10 will not be available until August 2010. Please see the following table which has been updated to December 31, 2009.

(in millions of \$)	Actual			Forecast		
	2008	2009	2010 3rd Qtr Results	2010	2011	2012
General Consumers Revenue						
- at approved rates	\$ 1,075	\$ 1,127	\$ 802	\$ 1,160	\$ 1,159	\$ 1,177
- with proposed increases	n/a	n/a	n/a	n/a	33	69
Extraprovincial Revenue (net of fuel, power purchased and water rentals)	366	323	162	192	141	195
Other Revenue	8	16	5	7	7	8
	<u>1,448</u>	<u>1,466</u>	<u>969</u>	<u>1,358</u>	<u>1,342</u>	<u>1,449</u>
Expenses	1,112	1,178	921	1,237	1,263	1,363
Non-controlling Interest						1
Net Income (electric operations)	<u>\$ 337</u>	<u>\$ 288</u>	<u>\$ 48</u>	<u>\$ 121</u>	<u>\$ 78</u>	<u>\$ 87</u>
Retained Earnings (consolidated)	1,822	2,120	2,154	2,227	2,315	2,396
Debt Ratio (consolidated)*	73%	77%	74%	74%	75%	76%

* Debt Ratio for 2008 and 2009 has been restated as per CAC/MSOS/MH I-116(b)

CAC/MSOS/MH I-113

Subject: Retained Earnings and Debt/Equity

Reference: Volume 1, Tab 2, page 4 of 4

MH states:

An adequate level of retained earnings also provides funding for capital investments which reduces the need for borrowing and reduces the financing costs that ultimately must be recovered from ratepayers. Furthermore, credit rating agencies closely monitor the adequacy of Manitoba Hydro's retained earnings and associated key financial ratios.

- a) Describe the benefit to ratepayers for moving debt equity from 80/20 to 75/25.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-108(a).

CAC/MSOS/MH I-113

Subject: Retained Earnings and Debt/Equity

Reference: Volume 1, Tab 2, page 4 of 4

MH states:

An adequate level of retained earnings also provides funding for capital investments which reduces the need for borrowing and reduces the financing costs that ultimately must be recovered from ratepayers. Furthermore, credit rating agencies closely monitor the adequacy of Manitoba Hydro's retained earnings and associated key financial ratios.

- b) Provide the quantitative evidence of the benefit to ratepayers for moving debt equity from 80/20 to 75/25.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-108(a).

CAC/MSOS/MH I-113

Subject: Retained Earnings and Debt/Equity

Reference: Volume 1, Tab 2, page 4 of 4

MH states:

An adequate level of retained earnings also provides funding for capital investments which reduces the need for borrowing and reduces the financing costs that ultimately must be recovered from ratepayers. Furthermore, credit rating agencies closely monitor the adequacy of Manitoba Hydro's retained earnings and associated key financial ratios.

- c) Having now achieved the long sought after 75/25 debt equity ratio, please confirm that all the benefits to consumers which were gained in that achievement will be lost (at least until some year forecast in the future) as the "decade of investment" erodes that debt equity ratio, or if unable to confirm please explain**

ANSWER:

Not confirmed. With the recent achievement of the 75:25 debt/equity ratio target, Manitoba Hydro is well positioned to undertake planned capital investments which are projected to provide immediate and long term benefits to Manitoba consumers while still being able to absorb the financial impacts of adverse events. If Manitoba Hydro wasn't in such a strong financial position, it would have to consider higher rate increases than currently forecast in order to embark on the "decade of investment".

CAC/MSOS/MH I-114

Subject: Risk and Risk Management

Reference: Volume 2, MH outlines 5 risks and a quantification for each of the 5 risks. (Annual Report , page 81)

In its annual report, and with respect to risk management MH refers to balancing objectives which includes:

to take advantage of opportunities which provide benefits to all stakeholders.

- a) Provide the mechanical calculations for each together with the assumptions used.**

ANSWER:

Infrastructure Major facility was taken out of service for an extended period which resulted in a loss of generation. To meet firm commitments energy was import at expected import prices. The quantification is the result of lost revenue, import energy costs and a reduction in water rentals.

Drought The drought sensitivity replicates the water flows of the historic five year drought period between April 1987 and March 1992 beginning in the forecast year 2010/11 and extending to 2014/15. Over the five year drought period, the cost of drought is projected to be \$2.2 billion (reduction to net export revenues). The cost rises to nearly \$2.7 billion after financing cost impacts.

Loss of Export Market Represents the loss of forecasted export revenues

Interest Rates Interest rate changes were applied to all forecast new long and short-term debt issues and new sinking fund instruments.

Foreign Exchange US exchange rate changes were applied to forecast US dollar revenues, fuel and power purchases and interest payments.

Note: The Manitoba Hydro-Electric Board 58th Annual Report for the year ended March 31, 2009 Risk Management section references the Risk Analysis included in the Integrated Financial Forecast (IFF08-1), pages 18-21. The underlying scenarios for drought, interest and foreign exchange risks, updated based on the Integrated Financial Forecast (IFF09-1), Appendix 5.2, pages 20-22, can be seen in Appendix 14. The associated assumptions for these scenarios can be found in response to CAC/MSOS/MH I-106(e).

CAC/MSOS/MH I-114

Subject: Risk and Risk Management

Reference: Volume 2, MH outlines 5 risks and a quantification for each of the 5 risks. (Annual Report , page 81)

In its annual report, and with respect to risk management MH refers to balancing objectives which includes:

to take advantage of opportunities which provide benefits to all stakeholders.

b) That “opportunities” have been identified which provide benefits to all stakeholders....identify, list, describe and quantify

ANSWER:

Opportunities being pursued by Manitoba Hydro are captured in the Corporate Strategic Plan filed with the Application under Appendix 3.1. Opportunities are identified as goals and strategies which benefit stakeholders from a societal, environmental and financial perspective. Provision of a reliable supply of power at reasonable rates, with moderate increases in rates, to Manitoba customers is a primary goal. Achievement of this goal is supported through expansion of hydropower exports and energy conservation. Development of Manitoba’s abundant renewable hydropower resources and emerging energy system help achieve a cleaner and healthier environment.

CAC/MSOS/MH I-115

Subject: Risk

Reference: Volume 1, Tab 2, page 4 of 4

MH states:

Furthermore, credit rating agencies closely monitor the adequacy of Manitoba Hydro's retained earnings and associated key financial ratios.

- a) To avoid confusion, please provide MH's understanding of each key financial ratio that is closely monitored by credit rating agencies.**

ANSWER:

Generally, the three credit rating agencies review Manitoba Hydro's key financial ratios (Debt/ Equity Ratio, Interest Coverage Ratio, Capital Coverage Ratio, and Net Income).

CAC/MSOS/MH I-116

Subject: Risk

**Reference: Manitoba Hydro 2008/09 GRA, Volume 1, Tab 2, “Summary and Reasons For Application”, pages 1 to 4 of 4
Volume 2, Appendix 5.2, pages 16 - 17**

The Applicant makes a number of references to net income affecting the debt/equity ratio. As well, the Applicant provides a graphical representation of the results of a risk analysis.

- a) For the purpose of the record of this proceeding, please provide a table of all factors together with their associated sensitivities that affect Manitoba Hydro’s debt/equity ratio that Manitoba Hydro is aware of, both within the calculation of net income and external to it.**

ANSWER:

Any event which causes a change to net income will have an effect upon the debt/equity ratio. The ratio is the quotient of debt to debt plus equity, and net income directly affects both variables in the calculation. Equity consists of non-refundable customer contributions and retained earnings, which are the accumulations of net income. In addition, a change to net income due to increases or decreases in cash items will also have an impact on debt.

CAC/MSOS/MH I-116

Subject: Risk

**Reference: Manitoba Hydro 2008/09 GRA, Volume 1, Tab 2, “Summary and Reasons For Application”, pages 1 to 4 of 4
Volume 2, Appendix 5.2, pages 16 - 17**

The Applicant makes a number of references to net income affecting the debt/equity ratio. As well, the Applicant provides a graphical representation of the results of a risk analysis.

- b) Confirm that the description of the calculation for debt/equity ratio used by Manitoba Hydro for many years up to and including 2011/12 is as follows: “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.” If different, please provide and reconcile to prior year’s definitions.**

ANSWER:

The calculation for the debt ratio historically used by Manitoba Hydro is debt (long-term debt, net of sinking funds plus notes payable minus temporary investments) divided by debt plus retained earnings plus contributions in aid of construction. In the 2009 Annual Report, the ratio was presented as an equity ratio, using the same calculation, but as showing equity as a percentage of debt plus equity.

In accordance with changing accounting standards which consider AOCI to be a component of equity, Manitoba Hydro’s calculation of the debt/equity ratio has been modified and now includes accumulated other comprehensive income (AOCI) as part of the equity component. Previously, AOCI was excluded from the calculation of equity given that the gain or loss was unrealized and that its inclusion would increase volatility in the calculation of the debt/equity ratio. This change is effective for 2009/10 reporting and has been retroactively utilized for historical debt/equity calculations (for comparative purposes).

CAC/MSOS/MH I-116

Subject: Risk

**Reference: Manitoba Hydro 2008/09 GRA, Volume 1, Tab 2, "Summary and Reasons For Application", pages 1 to 4 of 4
Volume 2, Appendix 5.2, pages 16 - 17**

The Applicant makes a number of references to net income affecting the debt/equity ratio. As well, the Applicant provides a graphical representation of the results of a risk analysis.

- c) Provide numerical calculations of the actual debt/equity ratios published in the annual reports from 2000/01 to 2008/09 showing each input amount together with references to where the input amounts can be found in the audited financial statements and provide copies of the pages that are referenced.**

ANSWER:

The following table provides the calculations for 2004/05 through 2008/09.

Fiscal Year Ended	A Retained Earnings	B Unamortized Customer Contributions	Debt Ratio (\$ millions)					G Short-Term Investments	$\frac{(D-E+F-G)}{(A+B+C+D-E+F-G)}$ Debt Ratio*
			C Accumulated Other Comprehensive Income	D Long-Term Debt	E Sinking Fund Investment	F Short-Term Debt			
2005	870	296		7,249	562	59	9	0.85	
2006	1,285	297		7,296	555	-	119	0.81	
2007	1,407	298		7,376	630	148	1	0.80	
2008	1,822	300	305	7,571	718	-	133	0.73	
2009	2,120	296	(169)	8,180	666	100	170	0.77	

* Debt Ratio for 2008 and 2009 has been restated as per CAC/MSOS/MH I-116(b)

Ref A: As reported in the Financial Statistics of 2009 annual report (page 3).

Ref B: As reported in the Financial Statistics of 2009 annual report (page 3).

Ref C: As reported in the Financial Statistics of 2009 annual report (page 3).

Ref D: As calculated in the table below.

Ref E: As reported in the Financial Statistics of 2009 annual report (page 3).

Ref F: Represents "Notes Payable" as reported on the balance sheet for respective years (pages 5, 7, 10, 13, 16).

Ref G: Represents "Cash and cash equivalents", "Bank balances and temporary investments" and "Bank overdraft" as reported on the balance sheet for respective years (pages 4, 6, 9, 12, 16).

The following table provides the calculation of long-term debt used in the aforementioned debt ratio calculation.

(\$ millions)

	H	I	J	D = (H+I+J)
Fiscal Year Ended	Long-Term Debt	Deferred Foreign Exchange	Current portion Long-Term Debt	Long-Term Debt
2005	7 048	45	156	7 249
2006	7 051	127	118	7 296
2007	6 822	149	405	7 376
2008	7 218		353	7 571
2009	7 661		519	8 180

Ref H: As reported in the Financial Statistics of 2009 annual report (page 3).

Ref I: As disclosed in the Deferred Debt or Deferred Liabilities Note to Financial Statements for respective years (pages 8, 11).

Ref J: As reported on the Balance Sheet for respective years (pages 5, 7, 10)

Financial Statistics

	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000
Revenues										
Electrical:										
Residential	463	436	410	387	386	368	354	314	320	300
General Service	664	638	614	597	553	550	521	472	461	437
Extraprovincial	623	625	592	827	554	351	463	588	480	376
Other Revenue	34	23	16	17	15	18	16	11	8	9
Gas:										
Residential	320	293	245	238	244	235	247	225	240	137
Commercial / Industrial	253	229	257	274	258	252	261	248	259	130
Transportation	5	4	4	3	5	4	4	4	2	1
Other Revenue	2	2	2	2	2	3	3	2	3	1
	2 364	2 250	2 140	2 345	2 017	1 781	1 869	1 864	1 773	1 391
Expenses										
Operating and Administrative	436	391	386	375	363	346	326	298	285	269
Finance Expense	439	440	506	503	502	487	479	482	420	419
Depreciation and Amortization	374	349	332	322	311	296	281	260	249	227
Water Rentals	123	124	112	131	111	71	103	113	56	51
Fuel and Power Purchased	176	134	226	125	135	569	151	71	48	33
Capital and Other Taxes	87	80	77	77	75	73	66	61	61	58
Cost of Gas Sold	431	386	379	397	384	375	392	365	384	182
	2 066	1 904	2 018	1 930	1 881	2 217	1 798	1 650	1 503	1 239
Net Income	298	346	122	415	136	(436)	71	214	270	152
Assets										
Property, Plant and Equipment	12 514	11 884	11 424	11 065	10 748	10 399	9 991	9 072	8 762	8 454
Less Accumulated Depreciation	4 443	4 187	3 924	3 657	3 447	3 241	3 042	2 834	2 609	2 407
Construction in Progress	1 449	1 238	878	602	475	378	356	388	275	188
Sinking Fund Investments	666	718	630	555	562	715	948	1 515	1 350	1 282
Current and Other Assets	2 155	2 113	1 914	1 917	1 614	1 652	1 981	2 264	2 188	1 175
	12 341	11 766	10 922	10 482	9 952	9 903	10 234	10 405	9 966	8 692
Liabilities and Retained Earnings										
Long-Term Debt	7 661	7 218	6 822	7 051	7 048	7 114	6 925	7 123	6 968	6 611
Current and Other	2 433	2 121	2 395	1 849	1 738	1 781	1 875	1 699	1 629	988
Contributions in Aid of Construction	296	300	298	297	296	274	264	281	281	275
Retained Earnings	2 120	1 822	1 407	1 285	870	734	1 170	1 302	1 088	818
Accumulated Other Comprehensive Income	(169)	305	-	-	-	-	-	-	-	-
	12 341	11 766	10 922	10 482	9 952	9 903	10 234	10 405	9 966	8 692
Cash Flows										
Operating Activities	701	633	443	710	433	(127)	432	554	334	374
Financing Activities	425	487	227	77	236	753	213	100	170	440
Investing Activities	(1 089)	(988)	(788)	(677)	(666)	(650)	(629)	638	521	856
Financial Indicators										
Interest Coverage ¹	1.58	1.69	1.23	1.77	1.25	0.17	1.14	1.42	1.62	1.35
Equity Ratio ²	0.25	0.24	0.20	0.19	0.15	0.13	0.20	0.23	0.20	0.17
Capital Coverage ³	1.81	1.62	1.10	2.28	1.20	(0.32)	1.10	1.67	1.18	1.28

¹ Interest Coverage represents net income plus interest on debt divided by interest on debt.

² Equity ratio represents equity (retained earnings plus contributions in aid of construction) divided by equity plus debt (long-term debt plus notes payable minus temporary investments).

³ Capital Coverage represents internally generated funds divided by capital construction expenditures.

Consolidated Financial Statements

CONSOLIDATED BALANCE SHEET As at March 31

	Notes	2009	2008
<i>millions of dollars</i>			
Assets			
Property, Plant and Equipment			
In service	6	12 514	11 884
Less accumulated depreciation	6	4 443	4 187
		8 071	7 697
Construction in progress	6	1 449	1 238
		9 520	8 935
Current Assets			
Cash and cash equivalents		170	133
Accounts receivable and accrued revenue		434	464
Interest receivable		6	10
Materials and supplies, at average cost	7	82	78
		692	685
Other Assets			
Sinking fund investments	8	666	718
Pension assets	9	623	781
Deferred charges	10	732	539
Goodwill		108	108
		2 129	2 146
		12 341	11 766

Approved on behalf of the Board:



Victor H. Schroeder, QC
Chair of the Board



William Fraser, FCA
Chair of the Audit Committee

	Notes	2009	2008
		<i>millions of dollars</i>	
Liabilities and Equity			
Long-Term Debt			
Long-term debt net of sinking fund investments		6 995	6 500
Sinking fund investments shown as assets	8	666	718
	11	7 661	7 218
Current Liabilities			
Accounts payable and accrued liabilities	12	341	339
Notes payable	13	100	-
Accrued interest		99	106
Current portion of long-term debt	11	519	353
		1 059	798
Other Liabilities			
Deferred liabilities and credits	14	426	387
Pension obligation	9	730	714
Asset purchase obligation	15	218	222
		1 374	1 323
Contributions in Aid of Construction			
		296	300
Equity			
Retained earnings		2 120	1 822
Accumulated other comprehensive income (loss)		(169)	305
		1 951	2 127
		12 341	11 766

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

Consolidated Financial Statements

CONSOLIDATED BALANCE SHEET

As at March 31

	Notes	2007	2006
<i>millions of dollars</i>			
Assets			
Property, Plant and Equipment			
In service	5	11 424	11 065
Less accumulated depreciation	5	3 924	3 657
		7 500	7 408
Construction in progress	5	915	602
		8 415	8 010
Current Assets			
Cash and cash equivalents		1	119
Accounts receivable and accrued revenue		426	421
Interest receivable		10	6
Materials and supplies, at average cost		117	159
		554	705
Other Assets and Deferred Charges			
Sinking fund investments	6	630	555
Pension assets	7	800	719
Deferred charges	8	457	385
Goodwill		108	108
		1 995	1 767
		10 964	10 482

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Approved on behalf of the Board:



Victor H. Schroeder, QC
Chair of the Board



William Fraser, FCA
Chair of the Audit Committee

	Notes	2007	2006
<i>millions of dollars</i>			
Liabilities and Retained Earnings			
Long-Term Debt			
Long-term debt net of sinking fund investments		6 192	6 496
Sinking fund investments shown as assets	6	630	555
	9	6 822	7 051
Current Liabilities			
Accounts payable and accrued liabilities	10	294	313
Notes payable	11	148	-
Accrued interest		138	110
Current portion of long-term debt	9	405	118
		985	541
Other Liabilities and Deferred Credits			
Deferred liabilities and credits	12	524	466
Pension obligation	7	663	606
Asset purchase obligation	13	228	236
Contributions in aid of construction		335	297
		1 750	1 605
Retained Earnings			
		1 407	1 285
		10 964	10 482

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

NOTE 11 NOTES PAYABLE

	2007	2006
	<i>millions of dollars</i>	
Canadian notes	148	-
	148	-

Notes payable at March 31, 2007 had a weighted average term to maturity of 40 days at a weighted average rate of 4.2% (2006 - no notes payable outstanding). 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.

NOTE 12 DEFERRED LIABILITIES AND CREDITS

	2007	2006
	<i>millions of dollars</i>	
Deferred foreign exchange	149	127
Mitigation liability (Note 16)	132	121
Employee future benefits, excluding pensions	126	112
Refundable advances from customers	35	30
Affordable Energy Fund (Note 17)	34	-
Asset retirement obligations	30	29
Non-controlling interest (Note 18)	15	-
Interest income and other credits	3	47
	524	466

Asset retirement obligations have been recognized for the decommissioning of the Corporation's two thermal generating stations, and for the removal and disposal of polychlorinated biphenyl contaminated fluid in HVDC converter station capacitors. The Corporation estimates that the undiscounted cash flows required to settle the asset retirement obligations are approximately \$65 million, \$16 million of which will be incurred between March 31, 2007 and March 31, 2010 for polychlorinated biphenyl contaminated oil removal and disposal. The balance of \$49 million is expected to be incurred in 2024 as part of the decommissioning of Manitoba Hydro's two thermal generating stations. No funds are being set aside to settle the asset retirement obligations.

NOTE 13 ASSET PURCHASE OBLIGATION

Effective September 3, 2002, the Corporation acquired the net assets of Winnipeg Hydro from the City of Winnipeg. The Asset Purchase Obligation represents the net present value of payments to the City of Winnipeg of \$20 million per annum in years 2007 to 2010, and \$16 million per annum in year 2011 and each year thereafter in perpetuity.

CONSOLIDATED BALANCE SHEET

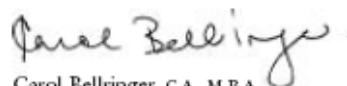
As at March 31

	Notes	2005	2004
		<i>millions of dollars</i>	
Assets			
Property, Plant and Equipment			
In service		10 748	10 399
Less accumulated depreciation		3 447	3 241
		<u>7 301</u>	<u>7 158</u>
Construction in progress		475	378
	5	<u>7 776</u>	<u>7 536</u>
Current Assets			
Bank balances and temporary investments		9	6
Accounts receivable and accrued revenue		409	371
Interest receivable		6	7
Materials and supplies, at average cost		84	81
		<u>508</u>	<u>465</u>
Other Assets			
Sinking fund investments	6	562	715
Pension assets	7	615	556
Deferred debt and other costs	8	340	523
Goodwill		108	108
		<u>1 625</u>	<u>1 902</u>
		<u>9 909</u>	<u>9 903</u>

Approved on behalf of the Board:



Victor H. Schroeder, Q.C.
Chair of the Board



Carol Bellringer, C.A., M.B.A.
Chair of the Audit Committee

	Notes	2005	2004
<i>millions of dollars</i>			
Liabilities and retained earnings			
Long-Term Debt			
Long-term debt net of sinking fund investments		6 486	6 399
Sinking fund investments shown as assets	6	562	715
	9	7 048	7 114
Current Liabilities			
Accounts payable and accrued liabilities		256	255
Notes payable	10	59	93
Accrued interest		106	107
Current portion of long-term debt	9	156	276
		577	731
Other Liabilities			
Deferred liabilities and credits	11	316	294
Pension obligation	7	559	507
Asset purchase obligation	12	243	249
		1 118	1 050
Contributions in Aid of Construction		296	274
Retained Earnings		870	734
		9 909	9 903

The accompanying notes are an integral part of 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:

	The Fund Pension Plan		Centra Gas Pension Plan	
	Fair Value		Fair Value	
	<i>millions of dollars</i>			
	2005	2004	2005	2004
Bonds and debentures	240	228	23	22
Equities	303	268	31	29
Short-term investments	24	19	4	1
Real estate	48	41	1	1
	615	556	59	53

The return on pension fund assets for the Fund was 10.7% (2004 - 21.6%). The return for the Centra Gas curtailed plan fund assets was 10.0% (2004 - 23.2%).

The weighted average term to maturity on fixed income investments is 7.6 years (2004 - 8.8 years).

The following table is a summary of the pension expense calculation for the Fund and the Centra Gas curtailed pension plans:

	The Fund Pension Plan		Centra Gas Pension Plan	
	Fair Value		Fair Value	
	<i>millions of dollars</i>			
	2005	2004	2005	2004
Current service cost	15	15	-	-
Administrative fees	1	1	-	-
Canada Pension Plan remittances	9	8	-	-
Interest on obligation	36	33	4	4
Expected return on plan assets	(41)	(39)	(4)	(4)
Amortization of net experience loss (gain)	2	1	1	1
Amortization of transitional loss (gain)	(1)	(1)	-	-
	21	18	1	1

Pension expense for the former Winnipeg Hydro employees is equal to employer contributions to the EBBP in addition to employer remittances to the Canada Pension Plan. Total contributions to the EBBP during the year amounted to \$0.4 million (2004 - \$0.2 million) and reflect an employer contribution rate approximating 1.4% of pensionable earnings.

NOTE 8 DEFERRED DEBT AND OTHER COSTS

	2005	2004
	<i>millions of dollars</i>	
Deferred foreign exchange	(45)	166
Premium on purchase of sinking fund investments	20	36
Power Smart programs	76	61
Planning studies	45	37
Deferred taxes	43	45
Pension and benefits	83	67
Contract receivables	40	33
Site restoration costs	25	20
Acquisition costs	18	19
Other	35	39
	340	523

CAC/MSOS/MH I-117

Subject: Risk

Reference: Volume 5, National Bank Financial (“NBF”) Independent Assessment of Corporate Policy Fixed vs. Floating Rate Debt, page 31

NBF states:

As previously discussed, Manitoba Hydro’s financial results are subject to several volatility factors, most notably variances in export electricity prices, exchange rates and hydrology. The primary source of net income variability relates to the substantial level of hydrology risk that is present in Manitoba Hydro’s operations. Given that in principle there is no causal relationship between weather patterns and macroeconomic indicators, it is not possible to lower exposure to this hydrology risk through determining a debt policy. However, it is important to note that the added volatility introduced by fluctuations in hydrology does highlight the need for the stabilization of income, to the extent that it can be managed through financial instruments.

- a) Explain the NBF’s understanding of “export electricity prices” in terms of rates per kWh or other measure.**

ANSWER:

The following response was provided by National Bank Financial:

“Day ahead electricity prices in the markets to which Manitoba Hydro exports electricity have varied between \$US17.99/ MWh and \$US76.24/ MWh over the past five years. The standard deviation over this time period was \$US11.96/ MWh.”

CAC/MSOS/MH I-117

Subject: Risk

Reference: Volume 5, National Bank Financial (“NBF”) Independent Assessment of Corporate Policy Fixed vs. Floating Rate Debt, page 31

NBF states:

As previously discussed, Manitoba Hydro’s financial results are subject to several volatility factors, most notably variances in export electricity prices, exchange rates and hydrology. The primary source of net income variability relates to the substantial level of hydrology risk that is present in Manitoba Hydro’s operations. Given that in principle there is no causal relationship between weather patterns and macroeconomic indicators, it is not possible to lower exposure to this hydrology risk through determining a debt policy. However, it is important to note that the added volatility introduced by fluctuations in hydrology does highlight the need for the stabilization of income, to the extent that it can be managed through financial instruments.

- b) Given that NBF suggests the most notable volatility factors are “variances in export electricity prices, exchange rates and hydrology”, please reconcile this list of “most notables” with the MH list of “major risks”, as listed on page 81 of the Manitoba Hydro-Electric Board 58th Annual Report, GRA Filing Appendix 4.1.**

ANSWER:

The following response was provided by National Bank Financial:

“NBF’s independent assessment was based on observations of historical data. NBF was not engaged to review Manitoba Hydro’s list of “major risks” as detailed in the Manitoba Hydro-Electric Board 58th Annual Report, GRA Filing Appendix 4.1.”

CAC/MSOS/MH I-117

Subject: Risk

Reference: Volume 5, National Bank Financial (“NBF”) Independent Assessment of Corporate Policy Fixed vs. Floating Rate Debt, page 31

NBF states:

As previously discussed, Manitoba Hydro’s financial results are subject to several volatility factors, most notably variances in export electricity prices, exchange rates and hydrology. The primary source of net income variability relates to the substantial level of hydrology risk that is present in Manitoba Hydro’s operations. Given that in principle there is no causal relationship between weather patterns and macroeconomic indicators, it is not possible to lower exposure to this hydrology risk through determining a debt policy. However, it is important to note that the added volatility introduced by fluctuations in hydrology does highlight the need for the stabilization of income, to the extent that it can be managed through financial instruments.

- c) Please elaborate on the remarks that it is not possible to lower exposure to this hydrology risk through determining a debt policy.**

ANSWER:

The following response was provided by National Bank Financial:

“Neither the Bank of Canada nor the U.S. Federal Reserve take domestic rainfall into account when determining macroeconomic policy such as interest rates. There is no manner in which to lower exposure to hydrology through debt policy.”

CAC/MSOS/MH I-117

Subject: Risk

Reference: Volume 5, National Bank Financial (“NBF”) Independent Assessment of Corporate Policy Fixed vs. Floating Rate Debt, page 31

NBF states:

As previously discussed, Manitoba Hydro’s financial results are subject to several volatility factors, most notably variances in export electricity prices, exchange rates and hydrology. The primary source of net income variability relates to the substantial level of hydrology risk that is present in Manitoba Hydro’s operations. Given that in principle there is no causal relationship between weather patterns and macroeconomic indicators, it is not possible to lower exposure to this hydrology risk through determining a debt policy. However, it is important to note that the added volatility introduced by fluctuations in hydrology does highlight the need for the stabilization of income, to the extent that it can be managed through financial instruments.

- d) Please elaborate on the comments on the need for stabilization of income and why that is important for each of MH and MH customers.**

ANSWER:

The following response was provided by National Bank Financial:

“Stabilization of income assists any company with corporate strategy, business planning and policy, with the assumption that such strategies and policies would assist management in the predictability of earnings and cashflows. NBF did not state in its report that stabilization of income is important for Manitoba Hydro’s customers.”

CAC/MSOS/MH I-118

**Reference: Volume 2, Appendix 4.1, page 81 and Appendix 5.2, page 22
Volume 3, Appendix 12.1
2008 GRA, Coalition/MH I-82**

MH states:

The Corporation is exposed to a number of other uncertainties which must be managed including risks related to reliability of service, infrastructure loss, environmental, and regulatory/legal issues. The magnitude of their impact and relative probability of occurrence are outlined in Manitoba Hydro's Corporate Risk Management report. [emphasis added]

And,

Sensitivity analysis is conducted on all major risks to determine the Corporation's risk exposure and to determine the extent to which risks are within established tolerances.

- a) Provide the purpose of filing the Corporate Risk Management Report contained in Appendix 12.1.**

ANSWER:

The report provides further information on the Corporate Risk Management Program to that provided in Tab 12.

CAC/MSOS/MH I-118

**Reference: Volume 2, Appendix 4.1, page 81 and Appendix 5.2, page 22
Volume 3, Appendix 12.1
2008 GRA, Coalition/MH I-82**

MH states:

The Corporation is exposed to a number of other uncertainties which must be managed including risks related to reliability of service, infrastructure loss, environmental, and regulatory/legal issues. The magnitude of their impact and relative probability of occurrence are outlined in Manitoba Hydro's Corporate Risk Management report. [emphasis added]

And,

Sensitivity analysis is conducted on all major risks to determine the Corporation's risk exposure and to determine the extent to which risks are within established tolerances.

- b) Please clarify whether the low, medium and high referred to in Appendix 12.1 refers to "probability of occurrence" or "likelihood" or "risk tolerance".**

ANSWER:

Manitoba Hydro will sometimes substitute the term likelihood with probability of occurrence and low, medium and high are defined for likelihood on page 62 of Appendix 12.1. Tolerance also uses low, medium and high definitions and these can be found on page 9 of the same report.

CAC/MSOS/MH I-118

**Reference: Volume 2, Appendix 4.1, page 81 and Appendix 5.2, page 22
Volume 3, Appendix 12.1
2008 GRA, Coalition/MH I-82**

MH states:

The Corporation is exposed to a number of other uncertainties which must be managed including risks related to reliability of service, infrastructure loss, environmental, and regulatory/legal issues. The magnitude of their impact and relative probability of occurrence are outlined in Manitoba Hydro's Corporate Risk Management report. [emphasis added]

And,

Sensitivity analysis is conducted on all major risks to determine the Corporation's risk exposure and to determine the extent to which risks are within established tolerances.

- c) Please point to where MH considers it has outlined the relative "probability of occurrence" of risks in the Corporate Risk Management Report.**

ANSWER:

As stated on page 7 of appendix 12.1 each identified risk has been assessed in terms of likelihood and consequence of occurrence. Likelihood is defined in terms of whether the event may occur within the next ten years. Consequences are assessed using a combination of qualitative and quantitative methods including system reliability, safety (employee and public), finance, environmental impacts and customer service. The criteria used in assessing risk are provided in appendix B (page 62) and the results of the assessment are illustrated on the Corporate Risk Map which is on page 7 of the same report.

CAC/MSOS/MH I-118

**Reference: Volume 2, Appendix 4.1, page 81 and Appendix 5.2, page 22
Volume 3, Appendix 12.1
2008 GRA, Coalition/MH I-82**

MH states:

The Corporation is exposed to a number of other uncertainties which must be managed including risks related to reliability of service, infrastructure loss, environmental, and regulatory/legal issues. The magnitude of their impact and relative probability of occurrence are outlined in Manitoba Hydro's Corporate Risk Management report. [emphasis added]

And,

Sensitivity analysis is conducted on all major risks to determine the Corporation's risk exposure and to determine the extent to which risks are within established tolerances.

- d) Unless provided in the GRA filing, please provide a quantified probabilistic analysis that shows the probability of occurrence together with the analysis which provides the support for the probability factor.**

ANSWER:

The information requested is in Appendix A of the Corporate Risk Management Report which was distributed on March 8, 2010.

CAC/MSOS/MH I-118

**Reference: Volume 2, Appendix 4.1, page 81 and Appendix 5.2, page 22
Volume 3, Appendix 12.1
2008 GRA, Coalition/MH I-82**

MH states:

The Corporation is exposed to a number of other uncertainties which must be managed including risks related to reliability of service, infrastructure loss, environmental, and regulatory/legal issues. The magnitude of their impact and relative probability of occurrence are outlined in Manitoba Hydro's Corporate Risk Management report. [emphasis added]

And,

Sensitivity analysis is conducted on all major risks to determine the Corporation's risk exposure and to determine the extent to which risks are within established tolerances.

- e) If the probabilistic analysis requested in (b) was not done by MH, then please provide the underlying support, analysis, workpapers and all other internal and external studies and analyses to derive the relative probability of occurrence referred to in the above quote.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-118(d).

CAC/MSOS/MH I-118

**Reference: Volume 2, Appendix 4.1, page 81 and Appendix 5.2, page 22
Volume 3, Appendix 12.1
2008 GRA, Coalition/MH I-82**

MH states:

The Corporation is exposed to a number of other uncertainties which must be managed including risks related to reliability of service, infrastructure loss, environmental, and regulatory/legal issues. The magnitude of their impact and relative probability of occurrence are outlined in Manitoba Hydro's Corporate Risk Management report. [emphasis added]

And,

Sensitivity analysis is conducted on all major risks to determine the Corporation's risk exposure and to determine the extent to which risks are within established tolerances.

- f) Provide the percentage ranges of probability for each of low, medium and high likelihoods.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-118(d).

CAC/MSOS/MH I-118

**Reference: Volume 2, Appendix 4.1, page 81 and Appendix 5.2, page 22
Volume 3, Appendix 12.1
2008 GRA, Coalition/MH I-82**

MH states:

The Corporation is exposed to a number of other uncertainties which must be managed including risks related to reliability of service, infrastructure loss, environmental, and regulatory/legal issues. The magnitude of their impact and relative probability of occurrence are outlined in Manitoba Hydro's Corporate Risk Management report. [emphasis added]

And,

Sensitivity analysis is conducted on all major risks to determine the Corporation's risk exposure and to determine the extent to which risks are within established tolerances.

- g) Provide a table showing the probability percentage associated with each event on the "Corporate Risk Map" on page 7 of Appendix 12.1.**

ANSWER:

The information requested is in Appendixes A and C of the Corporate Risk Management Report which was distributed March 8, 2010.

CAC/MSOS/MH I-118

**Reference: Volume 2, Appendix 4.1, page 81 and Appendix 5.2, page 22
Volume 3, Appendix 12.1
2008 GRA, Coalition/MH I-82**

MH states:

The Corporation is exposed to a number of other uncertainties which must be managed including risks related to reliability of service, infrastructure loss, environmental, and regulatory/legal issues. The magnitude of their impact and relative probability of occurrence are outlined in Manitoba Hydro's Corporate Risk Management report. [emphasis added]

And,

Sensitivity analysis is conducted on all major risks to determine the Corporation's risk exposure and to determine the extent to which risks are within established tolerances.

h) Provide a copy of the "Sensitivity analysis conducted on all major risks".

ANSWER:

The information requested is provide in the Corporate Risk Management Report which was distributed March 8, 2010.

CAC/MSOS/MH I-118

**Reference: Volume 2, Appendix 4.1, page 81 and Appendix 5.2, page 22
Volume 3, Appendix 12.1
2008 GRA, Coalition/MH I-82**

MH states:

The Corporation is exposed to a number of other uncertainties which must be managed including risks related to reliability of service, infrastructure loss, environmental, and regulatory/legal issues. The magnitude of their impact and relative probability of occurrence are outlined in Manitoba Hydro's Corporate Risk Management report. [emphasis added]

And,

Sensitivity analysis is conducted on all major risks to determine the Corporation's risk exposure and to determine the extent to which risks are within established tolerances.

- i) Provide a table showing the established tolerances for each risk and indicate which risks are within established tolerances.**

ANSWER:

See Appendix C in the filed Corporate Risk Management Report which was distributed March 8, 2010.

CAC/MSOS/MH I-118

**Reference: Volume 2, Appendix 4.1, page 81 and Appendix 5.2, page 22
Volume 3, Appendix 12.1
2008 GRA, Coalition/MH I-82**

MH states:

The Corporation is exposed to a number of other uncertainties which must be managed including risks related to reliability of service, infrastructure loss, environmental, and regulatory/legal issues. The magnitude of their impact and relative probability of occurrence are outlined in Manitoba Hydro's Corporate Risk Management report. [emphasis added]

And,

Sensitivity analysis is conducted on all major risks to determine the Corporation's risk exposure and to determine the extent to which risks are within established tolerances.

j) Please explain why the report contained in Appendix 12.1 is not more recent than October 2008.

ANSWER:

The October 2008 Corporate Risk Management report is the most recent report approved by the Manitoba Hydro-Electric Board.

CAC/MSOS/MH I-118

**Reference: Volume 2, Appendix 4.1, page 81 and Appendix 5.2, page 22
Volume 3, Appendix 12.1
2008 GRA, Coalition/MH I-82**

MH states:

The Corporation is exposed to a number of other uncertainties which must be managed including risks related to reliability of service, infrastructure loss, environmental, and regulatory/legal issues. The magnitude of their impact and relative probability of occurrence are outlined in Manitoba Hydro's Corporate Risk Management report. [emphasis added]

And,

Sensitivity analysis is conducted on all major risks to determine the Corporation's risk exposure and to determine the extent to which risks are within established tolerances.

k) Please provide the release date of the annual report contained in Appendix 4.1.

ANSWER:

Manitoba Hydro released the 58th annual report on August 11, 2009.

CAC/MSOS/MH I-118

**Reference: Volume 2, Appendix 4.1, page 81 and Appendix 5.2, page 22
Volume 3, Appendix 12.1
2008 GRA, Coalition/MH I-82**

MH states:

The Corporation is exposed to a number of other uncertainties which must be managed including risks related to reliability of service, infrastructure loss, environmental, and regulatory/legal issues. The magnitude of their impact and relative probability of occurrence are outlined in Manitoba Hydro’s Corporate Risk Management report. [emphasis added]

And,

Sensitivity analysis is conducted on all major risks to determine the Corporation’s risk exposure and to determine the extent to which risks are within established tolerances.

- 1) Please reconcile the differences in amounts and differences in precise descriptions [in bold] of the items listed under “Potential Range” on page 8 of Appendix 12.1 to the amounts and precise descriptions under “Potential Impact” on page 81 of Appendix 4.1 in the following table:**

Risk	As Per 58th Annual Report (page 81)	As Per Corporate Risk Management Report (page 8)	Reconciliation of Amount/Magnitude	Reconciliation of Wording
Infrastructure	"Greater than \$2.0 billion for a major facility long term outage"	"Greater than \$2 billion for a major facility long term outage"		
Drought	"\$2.2 billion net reduction in export revenue for a 5 year drought"	"\$2.8 billion for worst 5 year drought and higher if it coincides with high energy prices"		
Loss of export market	"Up to 30% of electric revenues"	"Greater than 30% of revenue"		

Risk	As Per 58th Annual Report (page 81)	As Per Corporate Risk Management Report (page 8)	Reconciliation of Amount/Magnitude	Reconciliation of Wording
Interest rates	“Up to \$115 million for a 1% change over a 10 year period”	“Up to \$170 million for a 1% change over a forecast period ending 2017-18”		
Foreign exchange rates	“Up to \$144 million for a \$.10 US change over a 10 year period”	“Up to \$100 million for a \$.10 US change over a forecast period ending 2017-18”		

ANSWER:

These reports are produced at different times and use the most current information available when produced. The information used in the 58th Annual Report is taken from IFF08-1 the information used in the Corporate Risk Management Report is taken from IFF07-1.

Drought

The amount is different as it relates to different periods. The Annual Report starts one year later than the Corporate Risk Management Report. As well, the Annual Report amount only relates to the reduction to export sales whereas the corporate risk report measures the impact on retained earnings, which include financing charges.

Loss of Export Market

The Annual Report starts one year later than the Corporate Risk Management Report. The updated wording in the annual report reflects that without any new generation the amount available for export decreases as time goes forward.. The term “electric revenues” was added to the Annual Report to better describe what the 30% relates to.

Interest Rates

The Annual Report period starts one year later and instead of stating the exact ending year it was replaced it with the term “10 year period”. The difference in dollar impacts is due to the interest rates used and the amount of debt that exists over the ten year periods

Foreign Exchange Rates

The Annual Report period starts one year later and instead of stating the exact ending year it was replaced it with the term “10 year period”. The difference in dollar impacts is due to the exchange rates used and the level of US dollars it was applied against.

CAC/MSOS/MH I-118

**Reference: Volume 2, Appendix 4.1, page 81 and Appendix 5.2, page 22
Volume 3, Appendix 12.1
2008 GRA, Coalition/MH I-82**

MH states:

The Corporation is exposed to a number of other uncertainties which must be managed including risks related to reliability of service, infrastructure loss, environmental, and regulatory/legal issues. The magnitude of their impact and relative probability of occurrence are outlined in Manitoba Hydro's Corporate Risk Management report. [emphasis added]

And,

Sensitivity analysis is conducted on all major risks to determine the Corporation's risk exposure and to determine the extent to which risks are within established tolerances.

- m) Please provide confirmation from the MH financial statement auditors that they conducted a review of the Annual Report, in accordance with Generally Accepted Auditing Standards.**

ANSWER:

Confirmed.

CAC/MSOS/MH I-118

**Reference: Volume 2, Appendix 4.1, page 81 and Appendix 5.2, page 22
Volume 3, Appendix 12.1
2008 GRA, Coalition/MH I-82**

MH states:

The Corporation is exposed to a number of other uncertainties which must be managed including risks related to reliability of service, infrastructure loss, environmental, and regulatory/legal issues. The magnitude of their impact and relative probability of occurrence are outlined in Manitoba Hydro's Corporate Risk Management report. [emphasis added]

And,

Sensitivity analysis is conducted on all major risks to determine the Corporation's risk exposure and to determine the extent to which risks are within established tolerances.

- n) Please provide confirmation from the MH financial statement auditors that they did not rely on the document filed in Appendix 12.1 to conduct its review of page 81 of the annual report.**

ANSWER:

Confirmed.

CAC/MSOS/MH I-118

**Reference: Volume 2, Appendix 4.1, page 81 and Appendix 5.2, page 22
Volume 3, Appendix 12.1
2008 GRA, Coalition/MH I-82**

MH states:

The Corporation is exposed to a number of other uncertainties which must be managed including risks related to reliability of service, infrastructure loss, environmental, and regulatory/legal issues. The magnitude of their impact and relative probability of occurrence are outlined in Manitoba Hydro's Corporate Risk Management report. [emphasis added]

And,

Sensitivity analysis is conducted on all major risks to determine the Corporation's risk exposure and to determine the extent to which risks are within established tolerances.

- o) After page 10 of Appendix 12.1, there follows an "Appendix B" on page 62. Please provide a copy of Appendix A. Please provide the pages of the report that are apparently missing.**

ANSWER:

A copy of the full report (with sensitive information redacted) was circulated to all Parties on March 8, 2010.

CAC/MSOS/MH I-118

**Reference: Volume 2, Appendix 4.1, page 81 and Appendix 5.2, page 22
Volume 3, Appendix 12.1
2008 GRA, Coalition/MH I-82**

MH states:

The Corporation is exposed to a number of other uncertainties which must be managed including risks related to reliability of service, infrastructure loss, environmental, and regulatory/legal issues. The magnitude of their impact and relative probability of occurrence are outlined in Manitoba Hydro's Corporate Risk Management report. [emphasis added]

And,

Sensitivity analysis is conducted on all major risks to determine the Corporation's risk exposure and to determine the extent to which risks are within established tolerances.

- p) Please confirm that the "potential impact" associated with interest rates is symmetrical in that the \$115 million or \$170 million for a 1% change could mean either additional or less net income.**

ANSWER:

Not confirmed. The potential impact on net income associated with a plus or minus 1% interest rate change is not symmetrical, as illustrated on the risk sensitivity table provided on page 20 of IFF09-1 (Appendix 5.2).

CAC/MSOS/MH I-118

**Reference: Volume 2, Appendix 4.1, page 81 and Appendix 5.2, page 22
Volume 3, Appendix 12.1
2008 GRA, Coalition/MH I-82**

MH states:

The Corporation is exposed to a number of other uncertainties which must be managed including risks related to reliability of service, infrastructure loss, environmental, and regulatory/legal issues. The magnitude of their impact and relative probability of occurrence are outlined in Manitoba Hydro's Corporate Risk Management report. [emphasis added]

And,

Sensitivity analysis is conducted on all major risks to determine the Corporation's risk exposure and to determine the extent to which risks are within established tolerances.

- q) Please confirm that the "potential impact" associated with exchange rates is symmetrical in that the \$144 million or \$100 million for a \$0.10 US change could mean either additional or less net income.**

ANSWER:

Not confirmed. The potential impact on net income associated with a plus or minus change in the Canadian dollar of \$.10 US is not symmetrical, as illustrated on the risk sensitivity table provided on page 20 of IFF09-1 (Appendix 5.2).

CAC/MSOS/MH I-118

**Reference: Volume 2, Appendix 4.1, page 81 and Appendix 5.2, page 22
Volume 3, Appendix 12.1
2008 GRA, Coalition/MH I-82**

MH states:

The Corporation is exposed to a number of other uncertainties which must be managed including risks related to reliability of service, infrastructure loss, environmental, and regulatory/legal issues. The magnitude of their impact and relative probability of occurrence are outlined in Manitoba Hydro's Corporate Risk Management report. [emphasis added]

And,

Sensitivity analysis is conducted on all major risks to determine the Corporation's risk exposure and to determine the extent to which risks are within established tolerances.

- r) Given that the two risks "drought" and "loss of export market" can both affect export revenue, provide the details of each potential cause of "loss of export market" that can occur separate and apart from "drought".**

ANSWER:

The Corporation could be exposed to the loss of or restricted access to the export market as a result of changes in the legal, regulatory and industry environment or non-compliance with market rules.

CAC/MSOS/MH I-118

**Reference: Volume 2, Appendix 4.1, page 81 and Appendix 5.2, page 22
Volume 3, Appendix 12.1
2008 GRA, Coalition/MH I-82**

MH states:

The Corporation is exposed to a number of other uncertainties which must be managed including risks related to reliability of service, infrastructure loss, environmental, and regulatory/legal issues. The magnitude of their impact and relative probability of occurrence are outlined in Manitoba Hydro's Corporate Risk Management report. [emphasis added]

And,

Sensitivity analysis is conducted on all major risks to determine the Corporation's risk exposure and to determine the extent to which risks are within established tolerances.

- s) Provide a description of each occurrence of each "loss of export market" that have, in fact, occurred in the last 10 years, the MW and MWh lost and provide a copy of each study, analysis and workpaper that documented that occurrence.**

ANSWER:

There have been no occurrences of "loss of export market".

CAC/MSOS/MH I-118

**Reference: Volume 2, Appendix 4.1, page 81 and Appendix 5.2, page 22
Volume 3, Appendix 12.1
2008 GRA, Coalition/MH I-82**

MH states:

The Corporation is exposed to a number of other uncertainties which must be managed including risks related to reliability of service, infrastructure loss, environmental, and regulatory/legal issues. The magnitude of their impact and relative probability of occurrence are outlined in Manitoba Hydro's Corporate Risk Management report. [emphasis added]

And,

Sensitivity analysis is conducted on all major risks to determine the Corporation's risk exposure and to determine the extent to which risks are within established tolerances.

- t) Please clarify what portion of the export market would be represented by "30% of electric revenues".**

ANSWER:

100% of export market revenues equates to roughly 30% of electric revenues on average.

CAC/MSOS/MH I-118

**Reference: Volume 2, Appendix 4.1, page 81 and Appendix 5.2, page 22
Volume 3, Appendix 12.1
2008 GRA, Coalition/MH I-82**

MH states:

The Corporation is exposed to a number of other uncertainties which must be managed including risks related to reliability of service, infrastructure loss, environmental, and regulatory/legal issues. The magnitude of their impact and relative probability of occurrence are outlined in Manitoba Hydro's Corporate Risk Management report. [emphasis added]

And,

Sensitivity analysis is conducted on all major risks to determine the Corporation's risk exposure and to determine the extent to which risks are within established tolerances.

- u) Please confirm that there is also a risk (upside opportunity) for higher sales from export market or gain of export market. If this is not confirmed explain.**

ANSWER:

Confirmed.

CAC/MSOS/MH I-118

**Reference: Volume 2, Appendix 4.1, page 81 and Appendix 5.2, page 22
Volume 3, Appendix 12.1
2008 GRA, Coalition/MH I-82**

MH states:

The Corporation is exposed to a number of other uncertainties which must be managed including risks related to reliability of service, infrastructure loss, environmental, and regulatory/legal issues. The magnitude of their impact and relative probability of occurrence are outlined in Manitoba Hydro’s Corporate Risk Management report. [emphasis added]

And,

Sensitivity analysis is conducted on all major risks to determine the Corporation’s risk exposure and to determine the extent to which risks are within established tolerances.

- v) In the context of the above noted loss of up to 30% electric revenues from a loss of export sales, please populate the following tables with the reduced or increased MW and MWh with the associated loss or gain of sales:**

	Impact of Total Export Market Sales Loss or Gain					
	Loss of 10%	Gain of 10%	Loss of 25%	Gain of 25%	Loss of 50%	Gain of 50%
Units						
MH						
MWh						

	Impact of Export Market Dependable Sales Loss or Gain					
	Loss of 10%	Gain of 10%	Loss of 25%	Gain of 25%	Loss of 50%	Gain of 50%
Units						
MH						
MWh						
	Impact of Export Market Opportunity Sales Loss or Gain					
	Loss of 10%	Gain of 10%	Loss of 25%	Gain of 25%	Loss of 50%	Gain of 50%
Units						
MH						
MWh						

ANSWER:

The Manitoba Hydro risk described as a loss of 30% of electric revenues from the loss of export sales is associated with losing access to neighbouring markets for political, regulatory or market/reliability rule reasons. As there is no export market load at the Manitoba borders with Ontario, Saskatchewan or the United States, Manitoba Hydro electricity must be transported into these jurisdictions to reach the ultimate customer and so is dependant upon others allowing access. The analysis requested assumes that Manitoba Hydro would lose access by product type (i.e. energy in the form of dependable or opportunity sales and/or capacity) which is not the risk of concern. The risk of concern is the risk from others; those who control whether the border is open to electricity trade with Manitoba or closed.

As the vast majority of exports are to the US, the potential loss of US market access, although unlikely, is most important. The risk of 30% reduction in electric revenues would be consistent with a loss of 100% of US market access. If for whatever reason, US access was reduced by 50%, for example, it would be reasonable to assume Manitoba Hydro would lose 50% of its export revenues or 15% of its total electric revenues.

Manitoba Hydro has fairly equitable treatment with regard to market access to other jurisdictions. Some further improvements regarding how Manitoba Hydro is treated as an external market participant in MISO would be of benefit, especially during high water years

when Manitoba Hydro needs to rely on non-firm transmission service to sell all its energy rather than spilling it. Were this issue to be resolved there would be some additional financial benefits, estimated at less than 5% of annual export revenues, but there is not significant upside to this issue in the order of 25% or 50% as implied might be possible in the question.

CAC/MSOS/MH I-119

Subject: Integrated Financial Forecast

**Reference: Volume 2, Appendix 4.1, Annual Report, page 80
Volume 2, Appendix 5.2**

- a) **Provide the interest coverage target and achieved ratios for each of the years 2000/01 through 2008/09**

ANSWER:

The following table provides the interest coverage target and achieved ratios for 2005 through 2009.

	Target	Actual
2005	1.2	1.25
2006	1.2	1.77
2007	1.2	1.23
2008	1.2	1.69
2009	1.2	1.58

CAC/MSOS/MH I-119

Subject: Integrated Financial Forecast

**Reference: Volume 2, Appendix 4.1, Annual Report, page 80
Volume 2, Appendix 5.2**

- b) Provide the detailed definition of interest ratio used for each year, 2001/01 through 2008/09, noting any year to year changes.**

ANSWER:

The interest coverage ratio represents net income/(loss) plus interest on debt divided by interest on debt. Interest on debt is defined as net finance expense plus capitalized interest. The calculation has not changed during the period noted.

CAC/MSOS/MH I-119

Subject: Integrated Financial Forecast

**Reference: Volume 2, Appendix 4.1, Annual Report, page 80
Volume 2, Appendix 5.2**

- c) **Provide the numerical formula for interest coverage used by MH for each year, 2001/01 through 2008/09, noting any year to year changes.**

ANSWER:

The following table provides the calculation of the interest coverage ratio for 2004/05 to 2008/09.

Fiscal	A	B	C	<u>(A+B+C)</u>
Year	Net	Net Finance	Capitalized	<u>(B+C)</u>
Ended	Income/(Loss)	Expense	Interest	Interest
		(\$ millions)		Coverage
2004/05	136	502	36	1.25
2005/06	415	503	38	1.77
2006/07	122	506	43	1.23
2007/08	346	440	62	1.69
2008/09	298	439	78	1.58

CAC/MSOS/MH I-120

Subject: Integrated Financial Forecast

Reference: PUB/MH I-68

Volume 2, Appendix 5.2

- a) **Please ensure that the bond rating reports provided under the PUB/MH I-68 include all those since the ones that were provided in the 2008 GRA.**

ANSWER:

Attached to this response are additional reports issued by Moody's for the MHEB, dated October 22, 2008 and October 15, 2009.

Credit Opinion: Manitoba Hydro Electric Board

Manitoba Hydro Electric Board

Manitoba, Canada

Ratings

Category	Moody's Rating
Outlook	Stable
Bkd Commercial Paper	P-1

Contacts

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Allan McLean/Toronto	416.214.3852
William L. Hess/New York	212.553.3837

Opinion

Corporate Profile

Manitoba Hydro-Electric Board (MHEB) is a vertically integrated regulated electric and gas utility which is wholly owned by the Province of Manitoba (the Province). A provincial Crown Corporation, MHEB generates approximately 98% of electricity for the Province of Manitoba primarily through 14 hydroelectric generation stations with the balance produced by thermal and diesel generating stations. MHEB's natural gas segment delivers over 2.1 billion cubic meters of natural gas to approximately 100 communities in the Province.

MHEB meets its customers' needs largely with power from its low-cost hydroelectric plants. These assets are valuable in that they provide the company with the opportunity to sell excess supply into neighbouring states and provinces during peak periods and import energy during off-peak periods. Approximately one-third of MHEB's electric revenues come from export sales during normal water years. MHEB's results for fiscal year 2008 (ended March 31, 2008) were reflective of better than average hydrology, similar to those seen in fiscal year 2006, and changes in accounting standards that led to a reduction in finance charges pertaining to the recognition of foreign exchange gains on U.S. denominated long-term debt. The favourable hydrology conditions gave rise to robust revenues and cash flows from electricity exports. In fiscal year 2008, MHEB produced total generation of 35.4 million MWh and net income from electricity and natural gas operations of \$346 million. Total generation in 2008 was up from 32.6 MWh in 2007 although lower than the 37.6 million MWh generated in 2006. Net income in 2008 was up from \$122 million in the previous year although lower than the \$415 million recorded in 2006. Export energy sales, primarily to the United States, increased to \$625 million in 2008 from \$592 million in 2007, resulting in the second highest export sales in MHEB's history. During fiscal 2008, MHEB generated approximately 36.3% of its electricity revenue from export sales to neighbouring provinces and states, unchanged from the previous year and down from 47% in 2006. For the fiscal year ending March 31, 2008, the electricity segment comprised approximately 76.6% of the company's total revenues and 98.3% of its net income, with 1.7% of net income attributable to MHEB's natural gas business.

With an as-reported debt/equity ratio of 77:23 at March 31, 2008, MHEB continued to make progress towards management's primary financial targets, including reducing its debt/equity ratio to 75:25 by 2012 and reducing its reliance on debt to finance its capital expenditure needs. According to MHEB's management, the target 75:25 debt/equity ratio is likely to be achieved in the fiscal year ending March 31, 2009 largely due to favourable hydrology. Management believes that the 75:25 debt/equity target should be sustainable going forward assuming annual rate increases approximate the rate of inflation and barring one or more poor hydrology years. However, Moody's notes that major debt-financed capital projects such as Wuskwatim, Conawapa, Keeyask and Bipole III could result in a weakening of MHEB's debt/equity going forward.

In addition to owning 100% of MHEB, the Province directly provides over 90% of MHEB's debt and unconditionally guarantees virtually all of MHEB's third party debt, including the promissory notes issued under MHEB's promissory note program (commercial paper or CP program). Only \$104 million or less than 1% of MHEB's total debt is neither held nor guaranteed by the Province Manitoba. This \$104 million is comprised of Manitoba Hydro-Electric Bonds related to "mitigation projects".

Recent Developments

Subsequent to MHEB's March 31, 2008 year end, MHEB received approval for two increases in its electricity rates. The first increase of 5% became effective on July 1, 2008. The second increase of 4% is to become effective on April 1, 2009 although that increase is conditional upon the Public Utilities Board of Manitoba's (PUB) satisfactory review of certain information to be submitted to the PUB by MHEB. These rate increases are expected to be helpful in maintaining MHEB's primary financial ratios within its target ranges during the upcoming years of significant capital expansion.

MHEB continues to have a number of major capital projects in various stages of development. Hydro projects include the 200 MW run of river Wuskwatim project currently under construction. Wuskwatim, with an estimated capital cost of \$1.3 billion, is expected to be on budget and in service on schedule in 2012. Two other major run of river projects, Keeyask and Conawapa, are in early stage development. Keeyask is currently envisioned as a 620 MW project with an estimated budget of \$3.7 billion and a potential in service date of 2018 while Conawapa is currently expected to be a 1,300 MW project with an estimated budget of \$5.0 billion and a potential in service date of 2022. MHEB's major transmission project, known as Bipole III, is a new high voltage direct current (HVDC) transmission line on the west side of the Province. Bipole III will act as a back-up to the current system as well as carry power from new generation to the south and to export markets. The targeted in-service date is 2017 with an estimated cost of \$2.2 billion. Since management's projections indicate that internally generated funds are anticipated to be roughly equal to maintenance capital expenditures, Moody's expects that MHEB will finance the construction of its major development projects primarily with additional long-term borrowings from the Province.

Rating Rationale

PROVINCIAL GUARANTEE

MHEB's Prime-1 (P-1) rating reflects the Province's unconditional guarantee of all of MHEB's short-term debt, together with Moody's belief that the Province manages its own liquidity in a professional manner and will have easy access to capital markets over the next year at a minimum. MHEB and a similar entity, British Columbia Hydro & Power Authority (BC Hydro), are unique among Moody's-rated companies and are not readily comparable to other regulated electric utilities. Both are 100% owned by their respective provincial shareholder and the provincial shareholder owns virtually all of the companies' debts. Moody's observes that MHEB continues to independently support all of its outstanding debt, make water royalty payments in excess of \$100 million annually to the Province, and earn positive net income thereby maintaining or achieving modest improvements in its financial profile.

LIQUIDITY

MHEB's CP borrowings are guaranteed by the Province of Manitoba. While the Province does not maintain committed bank credit facilities in support of its short-term borrowing programs, Moody's believes that the probability that the Aa1-rated Province would be unable to obtain funding on a timely basis either from the capital markets or its bankers is highly remote. Accordingly, Moody's is comfortable with the Prime -1 rating assigned to MHEB's provincially guaranteed CP program despite the absence of committed back-up facilities at either MHEB or the Province. While MHEB maintains \$500 million uncommitted credit facilities in support of its \$500 million CP program, Moody's generally views uncommitted facilities as providing little in the way of support for CP borrowings. Accordingly, our Prime -1 rating of MHEB's CP program relies principally on the guarantee of the Province.

Rating Outlook

The Stable Outlook reflects the outlook of the guarantor, the Province of Manitoba.

What Could Change the Rating - Up

A change in the rating of the guarantor.

What Could Change the Rating - Down

A change in the rating of the guarantor.

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Moody's Investors Service

Credit Opinion: [Manitoba Hydro Electric Board](#)

Global Credit Research - 15 Oct 2009

Manitoba, Canada

Ratings

Category	Moody's Rating
Outlook	Stable
Bkd Commercial Paper	P-1

Contacts

Analyst	Phone
Allan McLean/Toronto	416.214.3852
William L. Hess/New York	212.553.3837

Opinion

Rating Drivers

Manitoba Hydro-Electric Board's (MHEB)'s Prime-1 rating reflects the explicit guarantee of the Province of Manitoba (Province)

The Province is rated Aa1 with a stable outlook

The Province owns 100% of Manitoba Hydro-Electric Board's (MHEB) equity and holds over 90% of MHEB's debt

Extensive ownership, financial and public policy linkages to the Province

Regulated utility with predominantly low cost hydro-electric generation

Corporate Profile

MHEB is a vertically integrated regulated electric and gas utility which is 100% owned by the Province. MHEB's 14 hydroelectric generating stations contribute 92% of total electricity generation, with the balance produced by thermal and diesel generating stations. MHEB's natural gas segment delivers over 2.1 billion cubic meters of natural gas to approximately 100 communities in the Province.

MHEB is a provincial Crown Corporation, and in addition to owning 100% of MHEB, the Province directly provides over 90% of MHEB's debt. The Province also unconditionally guarantees virtually all of MHEB's third party debt, including the promissory notes issued under MHEB's promissory note program (commercial paper or CP program). Only \$77 million or less than 1% of MHEB's total debt is neither held nor guaranteed by the Province Manitoba. This \$77 million is comprised of Manitoba Hydro-Electric Bonds related to "mitigation projects".

SUMMARY RATING RATIONALE

MHEB's Prime-1 (P-1) rating reflects the Province's guarantee of MHEB's promissory note program, together with Moody's belief that the Province manages its own liquidity in a professional manner and will have easy access to capital markets over the next year at a minimum.

Recent Developments

Subsequent to MHEB's March 31, 2009 year end, the Public Utilities Board of Manitoba (PUB) confirmed its approval for a 2.9% increase in electricity rates. The rate increase became effective on April 1st, 2009. Previously, in June 2008 the PUB had approved a conditional increase of 4% for fiscal 2010, subject to satisfactory review of certain information to be submitted to the PUB by MHEB. The downward revision of the increase from 4% to 2.9% reflected MHEB's better than projected financial results for fiscal 2009 as well as the PUB's concern about the impact of rate increases on consumers during the economic downturn. MHEB expects to file its rate application in November 2009 for rates effective from April 1, 2010 and April 1, 2011.

On October 2, 2009, the International Brotherhood of Electrical Workers (IBEW), Local 2034 representing 2,913 line and technical trade workers (approximately 60% of MHEB's workforce excluding construction workers), commenced strike action over wage and contract demands. This is the first strike in MHEB's history. On October 8, 2009, MHEB announced that a tentative agreement had been reached with the IBEW and that its unionized staff had returned to work pending ratification of the proposed collective agreement. Moody's understands that essential services were maintained during the period that the unionized employees were off the job.

DETAILED RATING CONSIDERATIONS

PROVINCIAL GUARANTEE

MHEB's Prime-1 (P-1) rating reflects the Province's guarantee of MHEB's promissory note program, together with Moody's belief that the Province manages its own liquidity in a professional manner and will have ready access to capital markets over the next year at a minimum. MHEB and a similar entity, British Columbia Hydro & Power Authority (BC Hydro), are unique among Moody's-rated companies and are not readily comparable to other regulated electric utilities. Both are 100% owned by their respective provincial shareholder and the provincial shareholder owns virtually all of the companies' debts. The ratings of both MHEB and BC Hydro reflect the guarantee of the utility's rated debt by the respective provincial shareholder. Moody's observes that MHEB continues to independently support all of its outstanding debt, make water royalty payments in excess of \$100 million annually to the Province, and earn positive net income thereby maintaining or achieving modest improvements in its financial profile.

Other Considerations

NEW GENERATING CAPACITY WILL BOOST EXPORTS AND ANTICIPATE DOMESTIC DEMAND GROWTH

MHEB meets its customers' needs largely with low-cost power from its hydroelectric plants. These assets are valuable in that they provide the company with the opportunity to sell excess supply into neighbouring states and provinces during peak periods and import energy during off-peak periods. Approximately 35% of MHEB's electric revenues come from export sales during normal water years. MHEB continues to have a number of major capital projects in various stages of development. These projects will meet anticipated growth in domestic demand for the next 25-30 years and also allow MHEB to exploit additional export opportunities. MHEB has negotiated long-term export sales contracts with several US utilities that will partially underpin new generation developments. These contracts are subject to regulatory approvals, and represent in total around 1,125 MW of capacity. The agreements are conditional upon the construction of new generation and interconnection facilities. MHEB's policy is to only enter into long-term contracts to the extent of firm energy that could be generated by 'dependable flow', which assumes a repetition of the worst 18-month drought on record (1939-41). Moody's notes that this prudent policy does not entirely eliminate the risk that MHEB could be required to import power to meet its contractual commitments in extreme drought conditions.

MHEB's development projects include the 200 MW run of river Wuskwatim project currently under construction. Wuskwatim, together with associated transmission investment, has an estimated capital cost of \$1.6 billion and the in-service date has advanced to 2011 from 2012. Two other major run of river projects, Keeyask and Conawapa, are in early stage development. Keeyask is currently envisioned as a 695 MW project with an estimated budget of \$4.5 billion and an earliest in service date of 2018 while Conawapa is currently expected to be a 1,485 MW project with an estimated budget of \$6.3 billion and a potential in service date of 2022. MHEB's major transmission project, known as Bipole III, is a new high voltage direct current (HVDC) transmission line on the west side of the Province. Bipole III will act as a back-up to the current system as well as carry power from new generation to the south and to export markets. The targeted in-service date is 2017, with costs estimated in 2008 at \$2.2 billion.

Moody's expects that MHEB will finance the construction of its major development projects with a combination of additional long-term borrowings from the Province and internally generated funds. Management projections indicate that MHEB can fund its maintenance capital expenditures and approximately 25% of its new capital projects over the next decade from internally generated cash flow.

MHEB EXPECTS TO CONTINUE TO MEET ITS FINANCIAL TARGETS

MHEB achieved its target minimum 25% equity with an as reported debt/total capitalization of 75% at March 31, 2009. Favourable hydrology conditions enabled MHEB to achieve this level earlier than the original 2012 target. MHEB is cognizant that its hydro-generation results in unavoidable exposure to drought risk, and management therefore attaches a high priority to this equity target. MHEB believes that the 75:25 debt/capital target should be sustainable going forward assuming annual rate increases that approximate the rate of inflation and barring one or more poor hydrology years. The attainment of financial targets also assumes that there will be an economic recovery in major export markets and prices of electricity exports will recover from current depressed levels. Management's other targets are a minimum interest coverage ratio of 1.2x (based on net income plus gross interest / gross interest) and a minimum capital coverage ratio of 1.2x (based on cash flow from operations / maintenance capital expenditures). For the year ended March 31, 2009, MHEB's interest coverage ratio of 1.58x and capital coverage ratio of 1.81x exceeded the company's minimum targets. Despite the high level of planned capital expenditures during the next decade, much of which is expected to be debt financed, MHEB expects to be able to continue to satisfy each of its financial targets. However, Moody's notes that the occurrence of poor hydrology years during the period of elevated capital expenditures could result in a material deterioration in these metrics.

Liquidity Profile

MHEB's CP borrowings are guaranteed by the Province of Manitoba. While the Province does not maintain committed bank credit facilities in support of its short-term borrowing programs, Moody's believes that the probability that the Aa1-rated Province would be unable to obtain funding on a timely basis either from the capital markets or its bankers is highly remote. Accordingly, Moody's is comfortable with the Prime -1 rating assigned to MHEB's provincially guaranteed CP program despite the absence of committed back-up facilities at either MHEB or the Province. While MHEB maintains \$500 million uncommitted credit facilities in support of its \$500 million CP program, Moody's generally views uncommitted facilities as providing little in the way of support for CP borrowings. Accordingly, our Prime -1 rating of MHEB's CP program relies principally on the guarantee of the Province.

Rating Outlook

The Stable Outlook reflects the outlook of the guarantor, the Province of Manitoba.

What Could Change the Rating - Up

A change in the rating of the guarantor

What Could Change the Rating - Down

A change in the rating of the guarantor



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CAC/MSOS/MH I-121

Subject: Export Sales

Reference: Volume 2, Appendix 4.1, page 79

MH states:

The ability to sell surplus energy into export markets has contributed significantly to low domestic rates in Manitoba. It is projected that export revenues will continue to be a significant proportion of Corporate revenues.

- a) Provide the details of MH's understanding of the intended purpose of export sales for MH, for MH customers, for the Province of Manitoba.**

ANSWER:

Export sales allow Manitoba Hydro to “promote economy and efficiency in the development, generation, and transmission of power” in accordance with the Manitoba Hydro Act by providing a revenue stream from the sale of energy surplus to the needs of the province. This revenue stream provides a significant benefit to Manitoba Hydro customers as described below. In addition, Manitoba Hydro pays water rentals on hydro generation for export and this provides a direct benefit to the Province of Manitoba.

There are two aspects of hydroelectric development that result in surplus energy that can be exported. The first aspect is related to the variability of water flows. A predominately hydro system serving a specific domestic load is designed to meet the energy requirements of that load under low flow conditions (the critical flow period), and is also designed with sufficient capacity to meet the peak load requirements. In all flow conditions other than the critical flow period, there will be flows surplus to that required for generation to serve the domestic load. In each year there will be hydro generation capacity surplus to domestic load requirements, with the possible exception of peak load conditions. Hence in any year which is not the critical flow year, there will be water flows which are surplus to the domestic requirements, and surplus generation capacity in most hours. Those surplus flows could be spilled or, if the predominately hydro system is interconnected to a thermal system, the water could be put through the unutilized generators and the surplus power could be sold on the export market.

The second aspect of hydroelectric development that results in surplus energy that can be exported is due to a condition known as the lumpy investment challenge. Potential hydro sites identified by Manitoba Hydro such as Conawapa and Keeyask are generally large and can satisfy many years of Manitoba load growth. The majority of the cost of developing a proposed hydro site is related to the substantial civil structures that are required. The actual generators and turbines themselves are only about 10% of the total plant cost. Therefore, the practical decision is generally to develop the entire hydro generating station to its maximum capability at the time of initial construction, and any power surplus beyond immediate needs can be made available to the export market.

The net revenue from the export activity reduces the revenue required from Manitoba consumers, resulting in lower rates. Net export revenue is defined as extraprovincial revenues from power sales less all fuel expenses, power purchases and water rental expenses allocated to extraprovincial power sales. As detailed in the response to PUB/MH I-151 (a) and (b), Manitoba Hydro has realized net export revenue of \$2.246 billion over the five fiscal years from 2004/05 thru 2008/09 inclusive, and this represents about 26% of total revenue over that time period. Export sales are a significant contributor to overall Manitoba Hydro revenue, which assists in keeping rates low for consumers.

The Province of Manitoba benefits directly from export sales through the levy of water rentals. Water rentals on that portion of hydro generation utilized for exports have totalled \$266 million over the last 10 years and are a significant revenue stream for the Province.

CAC/MSOS/MH I-121

Subject: Export Sales

Reference: Volume 2, Appendix 4.1, page 79

MH states:

The ability to sell surplus energy into export markets has contributed significantly to low domestic rates in Manitoba. It is projected that export revenues will continue to be a significant proportion of Corporate revenues.

b) Provide details of how the intended purpose has been achieved to date.

ANSWER:

As detailed in the response to PUB/MH I-151(a) and (b), Manitoba Hydro has realized net export revenue of \$2.246 billion over the five fiscal years from 2004/05 through 2008/09 inclusive, and this represents about 26% of total revenue.

The net export revenue is an income stream that does not come from the Manitoba domestic customers. If Manitoba Hydro had chosen to spill the water rather than generate for export, the Manitoba consumer would have had to provide this revenue.

As a result of the net export revenue, Manitoba Hydro has been able to keep domestic rates lower than had there not been export sales, and among the lowest electricity rates in Canada. Please see Volume 4, Appendix 10.10 of the General Rate Application for a reference to the comparison of utility rates.

CAC/MSOS/MH I-121

Subject: Export Sales

Reference: Volume 2, Appendix 4.1, page 79

MH states:

The ability to sell surplus energy into export markets has contributed significantly to low domestic rates in Manitoba. It is projected that export revenues will continue to be a significant proportion of Corporate revenues.

c) Provide details of how the intended purpose will be met in the future.

ANSWER:

Please see the response to PUB/MH I-10(c) for projections of net export revenue as a percentage of total revenue through to 2019/20. This response indicates that net export revenue is expected to continue to provide nearly 20 % of total revenue through to 2019/20 based on expected water flow conditions.

CAC/MSOS/MH I-121

Subject: Export Sales

Reference: Volume 2, Appendix 4.1, page 79

MH states:

The ability to sell surplus energy into export markets has contributed significantly to low domestic rates in Manitoba. It is projected that export revenues will continue to be a significant proportion of Corporate revenues.

- d) Please provide a description of all aspects of how domestic customers benefit from export sales.**

ANSWER:

The primary benefit to domestic customers from export sales is low domestic rates in Manitoba. Please see Volume 4, Appendix 10.10 of the General Rate Application for a reference to the comparison of utility rates.

Another benefit to domestic customers from export sales is improved reliability of the high voltage transmission system as a result of larger interconnections that were sized to handle surplus hydro generation. For example, strong interconnection provided by the 500 kV AC transmission line that runs from the Winnipeg area to the Minneapolis area would not have been built had it not been for the firm contracts to export surplus hydro generation.

The value of the strong interconnection was shown on September 5, 1996 when tornado like winds swept through the Grosse Isle area, toppling 19 transmission towers and disabling both High Voltage Direct Current (HVDC) bipoles. In a very short time, Manitoba Hydro went from being a net exporter to becoming an importer, but no customers in Manitoba lost their supply. Had it not been for the strength of interconnections, particularly the 500 kV AC transmission line, there would have been significant blackouts in Manitoba on that day and for the next five days until the transmission lines were restored.

CAC/MSOS/MH I-121

Subject: Export Sales

Reference: Volume 2, Appendix 4.1, page 79

MH states:

The ability to sell surplus energy into export markets has contributed significantly to low domestic rates in Manitoba. It is projected that export revenues will continue to be a significant proportion of Corporate revenues.

- e) Detail how the export benefits in terms of rates charged to domestic customers are achieved in current and subsequent years.**

ANSWER:

The IFF includes forecast regular rate increases for domestic customers as necessary to continue the steady progress towards achieving and maintaining the corporation's financial targets. The ability to sell surplus energy into export markets at prices that exceed the embedded cost of generation increases net income, cash flow from operations, and consequently increases retained earnings to the benefit of the financial targets. As a result, the contribution to retained earnings required from domestic customers is reduced.

Current rates reflect the cumulative contribution to retained earnings made by past export sales. The expected contribution to retained earnings from continued sales of surplus energy at favorable prices will reduce the future rate increases sought for domestic customers

CAC/MSOS/MH I-121

Subject: Export Sales

Reference: Volume 2, Appendix 4.1, page 79

MH states:

The ability to sell surplus energy into export markets has contributed significantly to low domestic rates in Manitoba. It is projected that export revenues will continue to be a significant proportion of Corporate revenues.

- f) For each aspect noted in (a) above, please provide a description of the mechanics that demonstrate how the benefits of export sales quantitatively flow through to domestic customers.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-121(e) for a description of how the benefits of export sales flow through to domestic customers.

CAC/MSOS/MH I-121

Subject: Export Sales

Reference: Volume 2, Appendix 4.1, page 79

MH states:

The ability to sell surplus energy into export markets has contributed significantly to low domestic rates in Manitoba. It is projected that export revenues will continue to be a significant proportion of Corporate revenues.

- g) For each aspect noted in (a) above, and for each description of mechanics noted in (b) above, please provide the reference (tab, appendix, page number) in the GRA filing where those matters are outlined.**

ANSWER:

As provided in the response to CAC/MSOS/MH I-121(a), export sales allow for Manitoba Hydro to “promote economy and efficiency in the development, generation, and transmission of power” in accordance with the Manitoba Hydro Act by providing a revenue stream from the sale of energy surplus to the needs of the province.

As detailed in the response to PUB/MH I-151(a) and (b), Manitoba Hydro has realized net export revenue of \$2.246 billion over the five fiscal years from 2004/05 through to 2008/09 inclusive, and this represents about 26% of total revenue.

The net export revenue is an income stream that does not come from the domestic customers in Manitoba. As a result of this revenue source, Manitoba Hydro has been able to keep domestic rates lower than had there not been export sales, and among the lowest electricity rates in Canada. Please see Volume 4, Appendix 10.10 of the General Rate Application for a reference to the comparison of utility rates.

CAC/MSOS/MH I-121

Subject: Export Sales

Reference: Volume 2, Appendix 4.1, page 79

MH states:

The ability to sell surplus energy into export markets has contributed significantly to low domestic rates in Manitoba. It is projected that export revenues will continue to be a significant proportion of Corporate revenues.

- h) For each aspect noted in (a) above, and for each description of mechanics noted in (b) above, provide the quantified benefit to domestic customers in each year from 2000/01 to 2008/09 on an actual basis and for 2009/10 through 2011/12 on a forecast basis.**

ANSWER:

As detailed in the response to PUB/MH I-151(a) and (b), Manitoba Hydro has realized net export revenue of \$2.246 billion over the five fiscal years from 2004/05 thru 2008/09 inclusive, and this represents about 26% of total revenue.

Please see the response to PUB/MH I-10(c) for projections of net export revenue as a percentage of total revenue through to 2019/20. This response indicates that net export revenue is expected to continue to provide nearly 20 % of total revenue through to 2019/20 based on expected water flow conditions.

CAC/MSOS/MH I-122

Subject: Summary and Reasons for Application

Reference: MH states:

During “the decade of investment”, there will be a requirement to increase debt in order to finance Hydro’s investments in new generation, transmission and distribution facilities. While the debt ratio is projected to increase from the current level of 74:26 to a high of 80:20 over the next decade, the ratio quickly recovers in “the decade of returns” and is projected to reach 51:49 by the end of that decade.

a) Please explain the MH intent of reaching 51:49 debt equity ratio.

ANSWER:

Manitoba Hydro has not stated an intent of reaching 51:49 debt/equity structure. For illustrative purposes, the 20 Year Financial Outlook demonstrates the long-term directional impacts based on the best current assumptions and shows a substantial improvement in the debt/equity ratio based on these assumptions. A change to any of those assumptions, based on then - current information, will have an impact on Financial Forecasts.

CAC/MSOS/MH I-122

Subject: Summary and Reasons for Application

Reference: MH states:

During “the decade of investment”, there will be a requirement to increase debt in order to finance Hydro’s investments in new generation, transmission and distribution facilities. While the debt ratio is projected to increase from the current level of 74:26 to a high of 80:20 over the next decade, the ratio quickly recovers in “the decade of returns” and is projected to reach 51:49 by the end of that decade.

- b) Please explain the value to each of MH and to MH domestic customers of reaching a 51:49 debt equity ratio.**

ANSWER:

Everything Manitoba Hydro does is intended to bring value to Manitoba Hydro customers. While it is unlikely that Manitoba Hydro would recommend a domestic rate increase strategy that would achieve a 51:49 debt/equity ratio, such a ratio would result in the generation of significant cash which would substantially reduce the need for debt financing. While this is positive from a debt perspective, it would result in intergenerational inequities.

CAC/MSOS/MH I-122

Subject: Summary and Reasons for Application

Reference: MH states:

During “the decade of investment”, there will be a requirement to increase debt in order to finance Hydro’s investments in new generation, transmission and distribution facilities. While the debt ratio is projected to increase from the current level of 74:26 to a high of 80:20 over the next decade, the ratio quickly recovers in “the decade of returns” and is projected to reach 51:49 by the end of that decade.

- c) Please provide the MH’s understanding of the ability to predict a debt equity in “the decade of returns”.**

ANSWER:

As stated in the response to CAC/MSOS/MH I-122(a), the ability to predict the future is based on a series of assumptions. It is almost certain that those assumptions will change over time but the future can only be predicted with the best information at the time of the forecast. A base forecast also allows the preparation of various “what if” scenarios based on changes to assumptions.

CAC/MSOS/MH I-122

Subject: Summary and Reasons for Application

Reference: MH states:

During “the decade of investment”, there will be a requirement to increase debt in order to finance Hydro’s investments in new generation, transmission and distribution facilities. While the debt ratio is projected to increase from the current level of 74:26 to a high of 80:20 over the next decade, the ratio quickly recovers in “the decade of returns” and is projected to reach 51:49 by the end of that decade.

- d) Please provide MH’s understanding of each alternative to moving the debt equity ratio to 51:49.**

ANSWER:

Please see Manitoba Hydro’s responses to CAC/MSOS/MH I-122(a) and CAC/MSOS/MH I-122(c).

CAC/MSOS/MH I-122

Subject: Summary and Reasons for Application

Reference: MH states:

During “the decade of investment”, there will be a requirement to increase debt in order to finance Hydro’s investments in new generation, transmission and distribution facilities. While the debt ratio is projected to increase from the current level of 74:26 to a high of 80:20 over the next decade, the ratio quickly recovers in “the decade of returns” and is projected to reach 51:49 by the end of that decade.

- e) **Please indicate whether together with an improved debt/equity ratio, such as the one forecast in “the decade of returns” there should be accompanied by a reduced debt guarantee fee.**

ANSWER:

Manitoba Hydro is able to borrow at very attractive rates largely because of the debt guarantee of the Province. On this basis, Manitoba Hydro receives substantial value from the Debt Guarantee Fee. Should Manitoba Hydro ever achieve a 51:49 debt/equity ratio, there would be less reliance on the provincial guarantee and presumably, the fee would reflect this.

CAC/MSOS/MH I-122

Subject: Summary and Reasons for Application

Reference: MH states:

During “the decade of investment”, there will be a requirement to increase debt in order to finance Hydro’s investments in new generation, transmission and distribution facilities. While the debt ratio is projected to increase from the current level of 74:26 to a high of 80:20 over the next decade, the ratio quickly recovers in “the decade of returns” and is projected to reach 51:49 by the end of that decade.

- f) Please clarify whether the matter noted in (e) above, has been discussed with the Province of Manitoba. If it has, please provide the results of those discussions. If it has not, explain why not.**

ANSWER:

Given the current debt/equity ratio, it would be premature to consider discussions with the Province.

CAC/MSOS/MH I-123

Subject: Summary and Reasons for Application

Reference: PUB/MH I-68

The PUB requested copies of debt rating agency reports.

- a) **Please confirm which debt rating agencies that report on MH include data on return on common equity (%) and/or return on average equity or similar statistic.**

ANSWER:

DBRS reports Return on Average Equity and Standard & Poor's reports Return on Common Equity. Moody's does not report on either statistic.

CAC/MSOS/MH I-123

Subject: Summary and Reasons for Application

Reference: PUB/MH I-68

The PUB requested copies of debt rating agency reports.

- b) Confirm the 2003 COPE study also reported a return on average common equity.**

ANSWER:

Confirmed.

CAC/MSOS/MH I-123

Subject: Summary and Reasons for Application

Reference: PUB/MH I-68

The PUB requested copies of debt rating agency reports.

- c) **Please provide the data for return on common equity or return on average equity or similar (as reported, by each credit rating agency) for MH for each of the years 2000/01 through to the most recent data provided by that agency.**

ANSWER:

	2008	2007	2006	2005	2004	2003	2002	2001
S&P								
Return on Common Equity (%)	17.1	6.3	35.5	12.6	(49.5)	3.6	15.8	26.4
DBRS								
Return on Average Equity (%)	21.4	9.1	38.5	17.0	(45.8)	5.7	17.9	28.3

CAC/MSOS/MH I-123

Subject: Summary and Reasons for Application

Reference: PUB/MH I-68

The PUB requested copies of debt rating agency reports.

- d) Please provide the data in the form of that provided in (b) above for the years following on an actual basis through to 2008/09 on an actual basis and for the years 2009/10 through 2011/12 on a forecast basis.**

ANSWER:

The 2003 COPE study is the most recent available and hence requested data for subsequent years and forecasts for future years cannot be provided.

CAC/MSOS/MH I-124

Subject: Financial Forecast General

Reference: 2008/09 GRA PUB/MH I-36 and 37(c)

During the previous GRA MH stated with respect to the assessment and capturing of productivity improvements:

i. Assessed

Year-over-year OM&A increases are tracked and compared to increases in the CPI plus customer growth. Similar assessments are applied at the Business Unit and Divisional levels. In addition, targets are established for OM&A costs per customer and monitored monthly by Divisional management and Executive Committee.

ii. Captured in the forecasting process

Manitoba Hydro establishes an overall target for its operating and administrative costs which takes into consideration productivity improvements. Divisional budgets consider pertinent factors such as automation and cost reduction opportunities, including productivity improvements.

And,

The forecast allows for a productivity improvement factor in the order of 1.0% per year.

- a) Please provide a table showing the productivity factors forecast, the resulting productivity dollar amount forecast, the productivity percentages achieved and the productivity dollar amount achieved, in OM&A for each of the years 2000/01 to 2008/09.**

ANSWER:

As indicated in this and in previous GRA's, Manitoba Hydro provides for a productivity factor in the order of 0.5% to 1% annually in the setting of business unit OM&A targets. Departmental budgets are prepared that consider all relevant factors and, when combined, agree to the targets set. Implicit in the detailed budgets and actual operating performance is

the achievement of cost reductions, process improvements, and other steps necessary to meet the targets.

Manitoba Hydro does not and cannot specifically measure individually all the actions and events that occur within each department each year that contribute to the achievement of the overall productivity savings target. Instead, it relies on the budgetary control process to ensure that proper steps are taken and the required results are achieved.

CAC/MSOS/MH I-124

Subject: Financial Forecast General

Reference: 2008/09 GRA PUB/MH I-36 and 37(c)

During the previous GRA MH stated with respect to the assessment and capturing of productivity improvements:

i. Assessed

Year-over-year OM&A increases are tracked and compared to increases in the CPI plus customer growth. Similar assessments are applied at the Business Unit and Divisional levels. In addition, targets are established for OM&A costs per customer and monitored monthly by Divisional management and Executive Committee.

ii. Captured in the forecasting process

Manitoba Hydro establishes an overall target for its operating and administrative costs which takes into consideration productivity improvements. Divisional budgets consider pertinent factors such as automation and cost reduction opportunities, including productivity improvements.

And,

The forecast allows for a productivity improvement factor in the order of 1.0% per year.

b) Please explain the process MH went through to estimate the productivity.

ANSWER:

Estimates of the productivity savings provided at the last GRA were based upon high level assessments of forecast salary increases as well as other relevant factors. After considering merit, progression, general wage increases, and the impacts of retirements and replacements, the Company's wage and salary forecast for existing positions was forecast to show increases ranging from 3 - 4 % each year. After deducting the allowed general target increase of 2% and considering other factors, the implicit productivity increase was estimated to be in the order of 1% per year.

CAC/MSOS/MH I-124

Subject: Financial Forecast General

Reference: 2008/09 GRA PUB/MH I-36 and 37(c)

During the previous GRA MH stated with respect to the assessment and capturing of productivity improvements:

i. Assessed

Year-over-year OM&A increases are tracked and compared to increases in the CPI plus customer growth. Similar assessments are applied at the Business Unit and Divisional levels. In addition, targets are established for OM&A costs per customer and monitored monthly by Divisional management and Executive Committee.

ii. Captured in the forecasting process

Manitoba Hydro establishes an overall target for its operating and administrative costs which takes into consideration productivity improvements. Divisional budgets consider pertinent factors such as automation and cost reduction opportunities, including productivity improvements.

And,

The forecast allows for a productivity improvement factor in the order of 1.0% per year.

- c) Provide a copy of the analysis which shows the computations which demonstrate the achieved productivity for 2008/09.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-24(a).

CAC/MSOS/MH I-125

Reference: PUB/MH I-48 (current)

- a) **In a similar table, please provide the export prices [on average] for each of the years 2000/01 through 2009/10.**

ANSWER:

Average export prices are listed below. Note that 2009/10 reflects actual average to December 2009.

<u>Year</u>	<u>c/kW.h</u>
2000/01	3.9
2001/02	4.9
2002/03	4.9
2003/04	5.0
2004/05	5.1
2005/06	5.2
2006/07	5.1
2007/08	4.9
2008/09	5.2
2009/10	3.1

CAC/MSOS/MH I-125

Reference: PUB/MH I-48 (current)

- b) Please provide a table showing the forecast export sales (together with a copy of the document from which the forecast was taken) and the actual export sales for each year for the years 2000/01 through 2008/09**

ANSWER:

Actual and forecast export sales are listed below. The forecast data is from the indicated IFF prepared in the prior year on the assumptions of median inflows to reservoirs.

Year	Actual Export Sales CDN\$	Forecast Export Sales CDN\$	IFF
2000/01	440,065,947	361,535,000	99
2001/02	602,861,717	406,199,000	00
2002/03	476,338,635	531,973,000	01
2003/04	348,135,711	522,491,000	02
2004/05	539,544,374	443,533,000	03
2005/06	749,974,832	541,615,000	04
2006/07	513,227,433	529,069,000	05
2007/08	536,456,328	490,314,000	06
2008/09	520,119,407	459,468,000	07

CAC/MSOS/MH I-126

Reference: Volume 2, Appendix 4.1

- a) **Please provide a copy of the Manitoba Hydro-Electric Board 59th Annual Report, for the year ended March 31, 2010 on its release date.**

ANSWER:

The Manitoba Hydro-Electric Board 59th Annual Report will be available in August 2010 after its been approved for release by the Province of Manitoba.

CAC/MSOS/MH I-127

Subject: Operating, Maintenance and Administrative Cost

Reference: Volume 1, Appendix 4.4

- a) Please populate the following table with respect to matters and reports presented in electric regulatory proceedings for each year since 2000/01:

	Regulatory Costs by Proceeding			
	Insert Name and year(s) of Regulatory Proceeding	Insert Name and year(s) of Regulatory Proceeding	...	Insert Name and year(s) of Regulatory Proceeding
Intervener Cost Awards	\$	\$	\$	\$
MH External Consultant Costs	\$	\$	\$	\$
MH External Legal Fees	\$	\$	\$	\$
PUB Costs (PUB Fees)	\$	\$	\$	\$
PUB Costs (PUB Advisors)	\$	\$	\$	\$
Other (please specify)	\$	\$	\$	\$

ANSWER:

Please refer to the attached schedule.

Electric Regulatory Costs by Proceeding

April 1, 2001 - January 31, 2010 (000s)

Electric PUB Status Update 2001	Electric GRA 2004/05	Cost of Service Hearing 05/06	Electric GRA 2008/09	Energy Intensive Hearing	Electric GRA 2010/11	Other Regulatory	Diesel Applications	Total
Intervenor Costs	298	119	330	97	-	-	75	\$ 1,064
PUB Advisor Costs	1,068	672	1,327	470	103	426	353	\$ 5,209
PUB fees	8	9	-	-	-	2,805	5	\$ 2,835
External Costs	431	-	-	-	-	149	27	\$ 607
Internal Costs	1,339	417	1,738	195	104	411	534	\$ 5,677
Grand Total	\$ 3,144	\$ 1,216	\$ 3,395	\$ 762	\$ 208	\$ 3,791	\$ 994	\$ 15,392

CAC/MSOS/MH I-127

Subject: Operating, Maintenance and Administrative Cost

Reference: Volume 1, Appendix 4.4

- b) Please populate the following table with respect to MH's internal regulatory cost in electric proceedings for each year since 2000/01:

	Internal Regulatory Costs by Year			
	2000/01	2001/02	...	2011/12
On each line below, insert the Number, Name and Year of Proceeding				
(ie. Board Order 101/04 2004 GRA)	\$	\$	\$	\$
(ie. Board Order 1/10 2009 Diesel)	\$	\$	\$	\$

ANSWER:

Please refer to the attached schedule.

Internal Electric Regulatory Costs by Fiscal Year

April 1, 2000 - January 31, 2010 (000s)

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	Total
Electric PUB Status Update 2001	809	457	53	16	3	-	-	-	-	1,339
Electric GRA 2004/05	-	-	111	787	37	3	-	-	-	938
Cost of Service Hearing 05/06	-	-	-	-	190	221	5	1	-	417
Electric GRA 08/09	-	-	-	-	-	37	1,228	442	31	1,738
Energy Intensive Hearing	-	-	-	-	-	-	0	188	8	195
Electric GRA 10/11	-	-	-	-	-	-	-	-	104	104
Other Regulatory	11	44	2	(4)	146	91	11	28	82	411
Diesel Applications	-	47	137	116	41	92	14	43	43	534
	\$ 820	\$ 547	\$ 304	\$ 915	\$ 418	\$ 444	\$ 1,259	\$ 701	\$ 269	\$ 5,677

Note: There were no internal costs in fiscal year 2001

CAC/MSOS/MH I-127

Subject: Operating, Maintenance and Administrative Cost

Reference: Volume 1, Appendix 4.4

- c) Please populate the following table that summarizes the above data by year for each year since 2000/01:

	Summary of Regulatory Costs by Year			
	2000/01	2001/02	...	2011/12
PUB (Advisors & PUB Fees)	\$	\$	\$	\$
Intervenors	\$	\$	\$	\$
MH External Costs	\$	\$	\$	\$
MH Internal Costs	\$	\$	\$	\$

ANSWER:

Please refer to the attached schedule.

Summary of Electric Regulatory Costs by Fiscal Year

April 1, 2000 - January 31, 2010 (000s)

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	Total
Intervenor Costs	-	-	129	170	111	98	119	-	325	113	\$ 1,064
PUB Advisor Costs	-	183	850	436	907	161	534	645	923	571	\$ 5,209
PUB fees	-	312	347	318	318	314	318	314	328	266	\$ 2,835
External Costs	91	56	19	157	218	66	-	-	-	-	\$ 608
Internal Costs	-	820	547	304	915	418	444	1,259	701	269	\$ 5,677
	\$ 91	\$ 1,371	\$ 1,892	\$ 1,384	\$ 2,468	\$ 1,057	\$ 1,415	\$ 2,218	\$ 2,277	\$ 1,219	\$ 15,392

CAC/MSOS/MH I-128

Subject: Operating, Maintenance and Administrative Cost

Reference: Volume 1, Appendix 4.4

- a) Please provide a table showing the MH quantum for each of the following measures for each of the years 2000/01 through 2008/09 on an actual basis and 2009/10 through 2011/12 on a forecast basis.
- i. EFT per domestic kWh of energy delivered
 - ii. EFT per export kWh of energy delivered
 - iii. EFT per total kWh of energy delivered
 - iv. EFT per customer
 - v. OM&A per domestic kWh of energy delivered
 - vi. OM&A per export kWh of energy delivered
 - vii. OM&A per total kWh of energy delivered
 - viii. OM&A per EFT
 - ix. Total Electric Revenue per EFT
 - x. Total Export Electric Revenue per EFT
 - xi. Total Domestic Electric Revenue per EFT

ANSWER:

Please see the following table for information from 2004/05 through 2011/12.

Data Table								
	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Total Corporate EFTs	5,867	5,982	5,989	6,071	6,276	6,613	6,669	6,669
Total Electric OM&A (in thousands of \$)	298,613	310,659	323,466	322,697	359,660	371,504	379,695	403,370
Number of customers	505,666	509,791	516,861	521,599	527,472	531,804	536,267	540,756
Domestic kWh energy delivered	19,781,000,000	19,976,000,000	20,554,000,000	21,108,000,000	21,266,000,000	21,101,000,000	21,550,000,000	21,360,000,000
Net export kWh energy delivered (less Imports)	8,213,000,000	13,706,000,000	8,217,000,000	10,590,000,000	9,589,000,000	8,774,000,000	5,984,000,000	5,175,000,000
Total kWh energy delivered	27,994,000,000	33,682,000,000	28,771,000,000	31,698,000,000	30,855,000,000	29,875,000,000	27,534,000,000	26,535,000,000
Total Electric Revenue (in thousands of \$)	1,496,933	1,815,915	1,621,330	1,707,132	1,765,328	1,581,168	1,583,587	1,807,916
Export Revenue (in thousands of \$)	553,727	826,766	592,245	624,971	622,646	414,463	383,467	554,194
Domestic revenue (in thousands of \$)	938,954	983,653	1,023,613	1,074,581	1,126,812	1,160,009	1,192,762	1,245,962

Calculated Measures								
	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
EFT per domestic kWh of energy delivered	0.00000030	0.00000030	0.00000029	0.00000029	0.00000030	0.00000031	0.00000031	0.00000031
EFT per net export kWh of energy delivered	0.00000071	0.00000044	0.00000073	0.00000057	0.00000065	0.00000075	0.00000111	0.00000129
EFT per total kWh of energy delivered	0.00000021	0.00000018	0.00000021	0.00000019	0.00000020	0.00000022	0.00000024	0.00000025
EFT per customer	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012
OM&A per domestic kWh of energy delivered	0.000015	0.000016	0.000016	0.000015	0.000017	0.000018	0.000018	0.000019
OM&A per net export kWh of energy delivered	0.000036	0.000023	0.000039	0.000030	0.000038	0.000042	0.000063	0.000078
OM&A per total kWh of energy delivered	0.000011	0.000009	0.000011	0.000010	0.000012	0.000012	0.000014	0.000015
OM&A per EFT	50,897	51,932	54,010	53,154	57,307	56,181	56,937	60,488
Total Electric Revenue per EFT	255,145	303,563	270,718	281,195	281,282	239,112	237,467	271,107
Total Export Revenue per EFT	94,380	138,209	98,889	102,944	99,211	62,677	57,503	83,104
Total Domestic Revenue per EFT	160,040	164,435	170,916	177,002	179,543	175,422	178,861	186,839

CAC/MSOS/MH I-129

Subject: Utility Rate Comparison

Reference: Volume 4, Appendix 10.10

http://www.hydro.mb.ca/regulatory_affairs/energy_rates/electricity/utility_rate_comp.shtml

- a) **Please provide the underlying data and copies of documents used by MH to compute and/or prepare the results of the table referenced in the MH web site above.**

ANSWER:

The underlying data used to prepare the tables referenced in the MH web site above come from the utilities themselves. Each year Manitoba Hydro surveys Canadian utilities although utilities are under no obligation to participate. Manitoba Hydro compares information received to utility websites to ensure accuracy and provide understanding of how the bills are calculated

CAC/MSOS/MH I-130

Subject: Operating, Maintenance and Administrative Cost

Reference: Volume 1, Appendix 4.4

Volume 2, Appendix 5.2, page 12

PUB/MH I-175

- a) **Please augment the response to the above noted PUB questions by providing an historical accounting of past IFRS costs, by year to date, for both internal and external costs.**

ANSWER:

Please see Manitoba Hydro's response to PUB/MH I-175(c).

CAC/MSOS/MH I-130

Subject: Operating, Maintenance and Administrative Cost

Reference: Volume 1, Appendix 4.4

Volume 2, Appendix 5.2, page 12

PUB/MH I-175

- b) **Please provide the number of EFT's devoted to IFRS projects by year, since the time MH started its review and assessment.**

ANSWER:

Approximately 4 EFTs and 7 EFTs were directly devoted to the project in 2008/09 and 2009/10, respectively. In addition, there has been significant involvement by senior management, and finance and operational staff throughout the Corporation.

CAC/MSOS/MH I-130

Subject: Operating, Maintenance and Administrative Cost

Reference: Volume 1, Appendix 4.4

Volume 2, Appendix 5.2, page 12

PUB/MH I-175

- c) **Please provide a breakdown of the details of the \$15 million annual “general provision” devoted to matters of accounting changes, research, training, implementation, and other relevant categories for the changes required by IFRS.**

ANSWER:

Please see Manitoba Hydro’ response to MIPUG/MH I-10(b).

Costs related to research, training, and implementation of IFRS are expensed and not included in the \$15 million general provision.

CAC/MSOS/MH I-130

Subject: Operating, Maintenance and Administrative Cost

Reference: Volume 1, Appendix 4.4

Volume 2, Appendix 5.2, page 12

PUB/MH I-175

- d) **Clarify what amounts, if any, related to IFRS costs are intended to be capitalized and the reason for those capitalizations.**

ANSWER:

None of the costs identified in this application that are associated with IFRS are intended to be capitalized. Software development, if required in order to be compliant with IFRS, will be capitalized in accordance with corporate policy.

CAC/MSOS/MH I-130

Subject: Operating, Maintenance and Administrative Cost

Reference: Volume 1, Appendix 4.4

Volume 2, Appendix 5.2, page 12

PUB/MH I-175

- e) **Provide the IFRS cost per customer by year historically and for the forecast period for MH.**

ANSWER:

IFRS compliant accounting will commence in 2011/12. As such, other than project costs, there is no historical cost or cost per customer.

CAC/MSOS/MH I-130

Subject: Operating, Maintenance and Administrative Cost

Reference: Volume 1, Appendix 4.4

Volume 2, Appendix 5.2, page 12

PUB/MH I-175

- f) **Provide the IFRS costs and costs per customer by year for other Canadian utilities.**

ANSWER:

This information is not available to Manitoba Hydro.

CAC/MSOS/MH I-131

Subject: Operating, Maintenance & Administrative Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Appendix 4.4, “Operating, Maintenance & Administrative Expense”, Section 4, “Corporate Planning and Strategic Analysis Overview” page 21 of 36, line 24 and following.

The Applicant indicates increasing EFT’s in strategic analysis.

CAC/MSOS wishes to better understand the degree to which the strategic issues relate to financial matters, including the preservation of the 75:25 debt equity ratio.

- a) Please describe in greater detail the tasks undertaken by this group, with particular attention to how the financial implications of “significant strategic issues and proposals” are addressed within the group.**

ANSWER:

The Corporate Planning & Strategic Analysis Business Unit evaluates issues from a corporate perspective to ensure that all relevant corporate objectives are considered in major decisions. By working closely with the Business Units, recommendations are developed which are well aligned with the Corporation’s overall direction. This Business Unit also brings together several planning and coordinating functions including corporate planning, economic analysis, economic development and corporate environmental management.

CAC/MSOS/MH I-131

Subject: Operating, Maintenance & Administrative Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Appendix 4.4, “Operating, Maintenance & Administrative Expense”, Section 4, “Corporate Planning and Strategic Analysis Overview” page 21 of 36, line 24 and following.

The Applicant indicates increasing EFT’s in strategic analysis.

CAC/MSOS wishes to better understand the degree to which the strategic issues relate to financial matters, including the preservation of the 75:25 debt equity ratio.

- b) Please contrast the work undertaken by this group with that undertaken by the Finance and Administration group.**

ANSWER:

As described in Tab 3 of the Application, the Finance & Administration Business Unit promotes fiscal responsibility throughout the Corporation through its Controllership, Treasury and other Divisions. The Corporate Strategic Review Division within the Corporate Planning & Strategic Analysis Business Unit performs corporate level examinations of subjects or issues that are strategically significant to Manitoba Hydro. Staff participate in strategic initiatives which involve more than one business unit and require corporate co-ordination. A key objective of this Business Unit is to assist Manitoba Hydro in balancing its overall goals (not just financial) and achieve a high degree of rigour in the basis for its strategic decision-making.

CAC/MSOS/MH I-132

Subject: Operating, Maintenance & Administrative Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Appendix 4.4, “Operating, Maintenance & Administrative Expense”, Section 4, “Schedules 4.5.3 and 4.5.4

The Applicant identifies the costs for business units and their EFTs. The costs of the Corporate Planning and Strategic Analysis group increase markedly from 2008/09 through 2010/11. The table below provides some data from those tables and contains a CAC/MSOS calculation of the average cost per EFT, developed by dividing the total cost by the EFTs shown.

Corporate Planning & Strategic Analysis Schedule 4.5.3	2007/08 Actual	2008/09 Actual	2009/10 Forecast	2010/11 Forecast	2011/12 Forecast
Corporate Strategic Review	582	626	1,064	2,658	2,719
Corporate Planning & Development	1,042	1,069	2,078	2,592	2,652
Administration	362	380	558	1,050	1,074
Total (\$000)	1,986	2,075	3,700	6,300	6,445
Corporate Planning & Strategic Analysis Schedule 4.5.4					
Corporate Strategic Review	5	6	6	21	21
Corporate Planning & Development	11	11	10	12	12
Administration	3	3	4	5	5
Total EFT	19	20	23	38	38
Cost per EFT	\$104,526	\$103,750	\$160,870	\$165,789	\$169,605

CAC/MSOS wishes to better understand significant increase in the costs per person.

- a) **Please provide the number of employees**
- i. **employed in the group at the end of 2008/09,**
 - ii. **currently working with this group and**
 - iii. **are forecast to be employed at the end of 2011/12, and, provide the number of each of the employees who are: professional engineers, chartered accountants, Certified General Accountants, or members of other professional groups.**

ANSWER:

In the preamble to CAC/MSOS/MH I-132, a calculation of Cost per EFT is included. Manitoba Hydro would like to note that this calculation includes consulting and other costs that are not directly attributable to the cost of employees within the Business Unit. CAC/MSOS has also included in the preamble a table showing costs and EFTs from 2007/08 to 20011/12 based upon information included in the filing. Manitoba Hydro would like to note that this table includes an error in the EFT count in the Corporate Strategic Review division for the year 2009/10. As per Schedule 4.5.4, the EFTs in Corporate Strategic Review forecasted in 2009/10 is nine (9) and not six (6) as indicated in the preamble to CAC/MSOS/MH I-132.

- i. The Corporate Planning and Strategic Analysis Business Unit was created in the 2009/10 Fiscal Year by bringing together several existing departments from other Business Units with the newly created Corporate Strategic Review Division. The number of employees anticipated to be in this Business Unit by the end of the 2009/10 fiscal year is 28. Costs and EFTs assigned to this Business Unit prior to 2009/10 are associated with the Economic Analysis, Corporate Planning & Development, Corporate Environmental Management and Economic Development departments that were already in existence but then subsequently moved into the new Business Unit when it was created.
- ii. See response to i) above.
- iii. As indicated in Appendix 4.4, Page 21 of 36 (lines 24-27), Corporate Planning and Strategic Analysis forecasts there will be a total of 38 EFTs in the Business Unit at the end of the 2011/12 fiscal year. It is anticipated that staff will have backgrounds similar to those identified in CAC/MSOS/MH I-132(b).

CAC/MSOS/MH I-132

Subject: Operating, Maintenance & Administrative Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Appendix 4.4, “Operating, Maintenance & Administrative Expense”, Section 4, “Schedules 4.5.3 and 4.5.4

The Applicant identifies the costs for business units and their EFTs. The costs of the Corporate Planning and Strategic Analysis group increase markedly from 2008/09 through 2010/11. The table below provides some data from those tables and contains a CAC/MSOS calculation of the average cost per EFT, developed by dividing the total cost by the EFTs shown.

Corporate Planning & Strategic Analysis Schedule 4.5.3	2007/08 Actual	2008/09 Actual	2009/10 Forecast	2010/11 Forecast	2011/12 Forecast
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Corporate Planning & Development	1,042	1,069	2,078	2,592	2,652
Administration	362	380	558	1,050	1,074
Total (\$000)	1,986	2,075	3,700	6,300	6,445
Corporate Planning & Strategic Analysis Schedule 4.5.4					
Corporate Strategic Review	5	6	6	21	21
Corporate Planning & Development	11	11	10	12	12
Administration	3	3	4	5	5
Total EFT	19	20	23	38	38
Cost per EFT	\$104,526	\$103,750	\$160,870	\$165,789	\$169,605

CAC/MSOS wishes to better understand significant increase in the costs per person.

b) Please also indicate, for each case in (a) above, the number of EFTs whose highest level of education is a bachelor's degree, and masters degree, or a PhD.

ANSWER:

The education levels of the current staff complement include undergraduate degrees, post-graduate degrees at the Masters and Ph.D level, accounting designations, professional engineers, and certifications in financial planning and engineering technology.

The 25 staff employed as of February 1, 2010 have the following education levels:

Ph.D	Masters	Undergraduate	Prof. Acct.	Prof. Eng	CET	CFP
1	13	21	4	4	1	1

CAC/MSOS/MH I-132

Subject: Operating, Maintenance & Administrative Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Appendix 4.4, “Operating, Maintenance & Administrative Expense”, Section 4, “Schedules 4.5.3 and 4.5.4

The Applicant identifies the costs for business units and their EFTs. The costs of the Corporate Planning and Strategic Analysis group increase markedly from 2008/09 through 2010/11. The table below provides some data from those tables and contains a CAC/MSOS calculation of the average cost per EFT, developed by dividing the total cost by the EFTs shown.

Corporate Planning & Strategic Analysis Schedule 4.5.3	2007/08 Actual	2008/09 Actual	2009/10 Forecast	2010/11 Forecast	2011/12 Forecast
Corporate Strategic Review	582	626	1,064	2,658	2,719
Corporate Planning & Development	1,042	1,069	2,078	2,592	2,652
Administration	362	380	558	1,050	1,074
Total (\$000)	1,986	2,075	3,700	6,300	6,445
Corporate Planning & Strategic Analysis Schedule 4.5.4					
Corporate Strategic Review	5	6	6	21	21
Corporate Planning & Development	11	11	10	12	12
Administration	3	3	4	5	5
Total EFT	19	20	23	38	38
Cost per EFT	\$104,526	\$103,750	\$160,870	\$165,789	\$169,605

CAC/MSOS wishes to better understand significant increase in the costs per person.

- c) Please provide, for each actual and forecast period, the proportion of the total costs which are labour related {salary, benefits, etc.} and the proportion that are not labour related {travel, occupancy costs etc.}

ANSWER:

Corporate Planning & Strategic Analysis	2007/08	2008/09	2009/10	2010/11	2011/12
Labour Related	79%	78%	69%	73%	73%
Non-Labour Related	21%	22%	31%	27%	27%

CAC/MSOS/MH I-133

Subject: Operating, Maintenance & Administrative Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Appendix 4.4, “Operating, Maintenance & Administrative Expense”, Section 4, “Operating, Maintenance and Administrative” page 12 of 29, “Finance and Administration Overview” page 23 of 36, line 26 and following

The Applicant identifies certain increasing consulting and professional fees: “Increased consulting and professional fees (\$0.3) mainly due to the commencement of the International Financial Reporting Standards project and the hiring of a consultant to assess corporate risk management practices“.

At page 12 in Tab 4, lines 5-7, the applicant makes no comment as to IFRS impacting the 2010/2011 forecast, but at lines 9-11, indicates that the 2011/12 forecast has been increased and “this increase is primarily attributable to the \$15 million provision for IFRS”.

At page 23 in Appendix 4.4, lines 26-28, the applicant indicates \$300,000 increases of professional fees in 2008/09 related to matters including the IFRS and Corporate Risk Management. At page 24, lines 20-23, the applicant indicates \$1,000,000 increases of professional fees in 2009/10 related to matters including the IFRS and Corporate Risk Management.

In the recent Centra application, in CAC/MSOS/Centra 2-153 Centra indicated that “\$5 million represents the minimum expected impact of adopting International Financial Reporting Standards for the 2010/11” and other cost pressures that it was facing.

CAC/MSOS wishes to better understand the costs of the adoption of IFRS, the allocation of those costs between the electricity and gas operations, and the aspects of corporate risk management which are the subject of the consultant’s mandate.

- a) Please place on the record of this proceeding, CAC/MSOS/Centra 2-153, and if required please correct the response, identifying the further updates.**

ANSWER:

The requested response is attached.

No correction to that response is required as it represented the information available at that time including the understanding that IFRS did not allow rate regulated accounting. Subsequently, the IASB has issued an exposure draft which recognizes rate regulated accounting but it is not yet certain whether or not a related standard will be issued.

Please see the IFRS status update report (Appendix 32) for the most current information on how the various IFRS topics impact Manitoba Hydro.

CENTRA GAS MANITOBA INC.

2009/10 & 2010/11 GRA

**RESPONSE TO INFORMATION REQUESTS OF
CONSUMERS ASSOCIATION OF CANADA (MANITOBA) LTD. AND
MANITOBA SOCIETY OF SENIORS**

1 **CAC/MSOS/CENTRA 2 - 153**

2 ***Reference: Updated Schedule 3.0.0***

3
4 **Centra has added a new revenue requirement item for 2010/11: “Provision for Accounting
5 and Other Changes.”**

6
7 **(a) Fully describe all of the accounting and other changes that Centra expects in
8 2010/11 and provide the full work up as to how the figure of \$5M was determined.**

9
10 **(b) Why was this revenue item not included when Centra filed its GRA in January of
11 2009? Describe what events or information arose justifying the inclusion of this
12 additional revenue item. When did Centra decide to add this additional revenue
13 item? Who authorized this amendment?**

14 **Response to parts (a) and (b).**

15
16 The provision for the accounting and other changes cost item of \$5 million represents the
17 minimum expected impact of adopting International Financial Reporting Standards for fiscal
18 2010/11 and other future cost pressures facing the organization.

19
20 Although fiscal 2010/11 results will be reported in accordance with current Canadian
21 GAAP, the results will have to be subsequently restated and reported in accordance with

1 IFRS. The impact that this will have on Centra's Revenue Requirement for 2010/11 is still
2 being assessed and quantified. Some of the key IFRS areas that are currently being
3 assessed for financial impacts to Centra include:

- 4 • IFRS indicates that certain components of general and administrative overheads are
5 ineligible for capitalization. Centra capitalizes approximately \$16 million of internal
6 labour and overhead costs annually. Centra is still in the process of assessing which of
7 these costs will continue to be eligible for capitalization under IFRS. Centra estimates
8 that such expenses in the range of \$4 - \$6 million annually may be ineligible for
9 capitalization.
- 10 • Accounting for Plant in Service and related depreciation may be impacted by IFRS
11 requirements of further componentization and the setting of separate depreciation rates
12 based upon these components. Further, Centra's accounting for plant retirements and
13 negative salvage value considerations may not be consistent with the requirements of
14 IFRS. The adoption of IFRS changes could give rise to a depreciation expense
15 increase in the order of \$1 million retroactively for fiscal 2010/11.
- 16 • Investment returns on Pension fund assets has been negatively impacted by the turmoil
17 in financial markets. In accordance with current GAAP, gains or losses related to fund
18 performance are introduced into pension cost calculations over the subsequent 5 years,
19 Under IFRS, gains and losses on the fund performance are introduced immediately into
20 the following year's expense calculations. The impact of these changes on Centra's
21 costs may be an increase of approximately \$2 million.
- 22 • Centra has regulatory assets that include PGVA, the One Time Income Tax Payment,
23 Rate Hearing Costs, Demand Side Management Costs, and Site Remediation Costs.
24 Existing IFRS does not provide for the concept of maintaining regulatory assets and
25 liabilities, however the IASB is expected to release an exposure draft with respect to the
26 recognition of regulated assets and liabilities in July, 2009. Even if the IASB ultimately

1 accepts a standard recognizing rate regulated items, it is expected that the standard
2 would not be in effect for Manitoba Hydro until 2011-12 . Given the uncertainty with
3 respect to the IFRS allowing these types of balance sheet items, Centra cannot provide
4 a reasonable estimate relating to this item at this time.

- 5 • Existing IFRS would require Centra to retrospectively restate its PP&E to retained
6 earnings for ineligible capitalized costs upon transition to IFRS, This requirement may
7 be subject to an exemption for rate regulated enterprises that would allow such entities
8 to carry forward the pre-IFRS net book value of PP&E. This exemption may be
9 introduced as part of the rate regulated accounting exposure draft expected in July
10 2009.
- 11 • Other pressures on costs and revenues are also being experienced and are not fully
12 reflected in IFF08 or the update provided for this Hearing:
- 13 • Given the volatility of the financial markets, there is considerable risk that interest rates
14 may rebound somewhat during fiscal 2010/11.
- 15 • Operating costs continue to be under pressure as a result of ageing infrastructure, the
16 requirement of additional trainees due to employee demographics, & other cost
17 escalation factors. Centra has included only moderate cost increases in its forecasts
18 which, as evidenced by the 2008/09 operating costs which were approximately \$1
19 million over forecasted levels, have not fully covered these factors.
- 20 • Several Accounting changes directed by CICA are also putting upward pressure on
21 amounts charged to expense. These include changes to Section 3031, which reduce
22 the amounts of inventorying costs that are eligible for capitalization and changes to
23 Section 3064 which limit the amount of overhead eligible for capitalization to intangible
24 assets.
- 25 • The economic slowdown along with a successful DSM program may result in there
26 being lower volumes sold than forecasted in IFF08. In the past, conservation and

1 consumption measures have sometimes produced substantial reductions to margins
2 from gas sales.

3
4 As illustrated by these issues, substantial variability can be expected in Centra's operating
5 environment. Although the impact of these factors cannot be accurately forecasted at this
6 time, the directional impact that these factors may have on Centra's financial results is
7 universally downward. It was management's view that continuing with the relatively
8 modest rate increases requested, albeit that the first one is delayed, was the most prudent
9 course of action. Inherent in that decision is the recognition that a provision for accounting
10 and other changes in the order of \$5 million was appropriate.

11
12
13

CAC/MSOS/MH I-133

Subject: Operating, Maintenance & Administrative Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Appendix 4.4, “Operating, Maintenance & Administrative Expense”, Section 4, “Operating, Maintenance and Administrative” page 12 of 29, “Finance and Administration Overview” page 23 of 36, line 26 and following

The Applicant identifies certain increasing consulting and professional fees: “Increased consulting and professional fees (\$0.3) mainly due to the commencement of the International Financial Reporting Standards project and the hiring of a consultant to assess corporate risk management practices“.

At page 12 in Tab 4, lines 5-7, the applicant makes no comment as to IFRS impacting the 2010/2011 forecast, but at lines 9-11, indicates that the 2011/12 forecast has been increased and “this increase is primarily attributable to the \$15 million provision for IFRS”.

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In the recent Centra application, in CAC/MSOS/Centra 2-153 Centra indicated that “\$5 million represents the minimum expected impact of adopting International Financial Reporting Standards for the 2010/11” and other cost pressures that it was facing.

CAC/MSOS wishes to better understand the costs of the adoption of IFRS, the allocation of those costs between the electricity and gas operations, and the aspects of corporate risk management which are the subject of the consultant’s mandate.

- b) **Please confirm the information contained in CAC/MSOS/Centra 2-153 or if unable to confirm the accuracy of the response, please correct the response, identifying the further updates.**

ANSWER:

Please see the response to part (a) of this Information Request.

CAC/MSOS/MH I-133

Subject: Operating, Maintenance & Administrative Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Appendix 4.4, “Operating, Maintenance & Administrative Expense”, Section 4, “Operating, Maintenance and Administrative” page 12 of 29, “Finance and Administration Overview” page 23 of 36, line 26 and following

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- c) **Please explain why the timing is non-synchronous, with Centra bearing a \$5 million cost in 2010/11 and Hydro incurring an incremental \$15 million in 2011/12.**

ANSWER:

Financial Statements that comply with IFRS are required for fiscal 2011/12 for both Manitoba Hydro and Centra Gas. Also in 2011/12, comparative reporting for the previous year (2010/11) will also have to be restated for both Companies to conform with IFRS, with a corresponding adjustment to retained earnings for any income differences between the two methods.

At the time of the Centra Gas General Rate Application, it was understood that rate regulated accounting was not permitted under IFRS and that the full impact of IFRS would be experienced retroactively in 2010/11. The impacts of IFRS and other cost changes were potentially so significant to Centra relative to its allowed income of \$3 million that it was deemed prudent to incorporate a provision for IFRS and other expected cost changes in that Test Year in order to preserve the applied for rate increase.

Subsequent to the Centra GRA, the IASB issued an exposure draft which considered the economic impacts of rate regulation. IFF09 was prepared based upon the understanding that rate regulated accounting would likely prevail. Given that there were still substantial uncertainties with respect to the exposure draft, it was decided to maintain the same level & timing of the provision for IFRS for IFF09 (\$15 million commencing 2011/12) as had previously been incorporated into IFF08.

CAC/MSOS/MH I-133

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- d) **Please explain why quantum of the forecast IFRS costs appears inconsistent considering organizational size, and the proportion of O&A charged to Centra in past, with Centra bearing a \$5 million cost in 2010/11 and Hydro incurring an incremental \$15 million in 2011/12, beyond the \$5 million requested from consumers for Centra in 2010/11.**

ANSWER:

Please see the response to part c of this question.

CAC/MSOS/MH I-133

Subject: Operating, Maintenance & Administrative Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Appendix 4.4, “Operating, Maintenance & Administrative Expense”, Section 4, “Operating, Maintenance and Administrative” page 12 of 29, “Finance and Administration Overview” page 23 of 36, line 26 and following

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CAC/MSOS wishes to better understand the costs of the adoption of IFRS, the allocation of those costs between the electricity and gas operations, and the aspects of corporate risk management which are the subject of the consultant’s mandate.

- e) **CAC/MSOS observes that schedule 4.5.3 indicated a forecast cost of \$112,490,000 for 2011.12, and schedule 4.5.4 forecasts 1,043 EFTs for that year. Simple division produces an average cost per EFT of approximately \$107,858 per ETF. At an average cost of \$107,858 the further \$15 million sought for IFRS in 2011/12 would approximate about 139 EFTs, about 13% of the then total finance and administration staff. Please provide any supporting documentation which would support the \$15 million estimate and indicate how this process will go from spending small amounts in recent years to an amount in 2011/12.**

ANSWER:

The \$15 million provision for IFRS represents an estimate of the increase in costs that will be required to be charged to current expense instead of being deferred or capitalized as allowed under current GAAP. IFRS will be implemented in the 2011/12 fiscal year and therefore that is the first year that reporting will comply with IFRS.

The cost of assessing and implementing IFRS is being managed within the F&A Business Unit OM&A budget. No element of the \$15 million IFRS provision relates to staff or implementation costs within F&A.

Please see Manitoba Hydro's response to PUB/MH I-175(c) for the projects incurred to date.

CAC/MSOS/MH I-133

Subject: Operating, Maintenance & Administrative Expense

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CAC/MSOS wishes to better understand the costs of the adoption of IFRS, the allocation of those costs between the electricity and gas operations, and the aspects of corporate risk management which are the subject of the consultant’s mandate.

- f) **As schedule 4.5.4 forecasts no increase in EFTs between 2010/11 and 2011/12 for finance and administration, does the work plan assume that these funds will be expended in overtime, or in a manner that does not require personnel?**

ANSWER:

Please see the response to part e of this question.

CAC/MSOS/MH I-133

Subject: Operating, Maintenance & Administrative Expense

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CAC/MSOS wishes to better understand the costs of the adoption of IFRS, the allocation of those costs between the electricity and gas operations, and the aspects of corporate risk management which are the subject of the consultant’s mandate.

g) Please indicate the portion of the \$1,000,000 of professional fees mentioned at page 24, lines 20-23 which are related to each of

- i. IFRS, and**
- ii. Corporate risk management.**

ANSWER:

The portion of the \$1.0 million increase in Consulting & Professional fees is attributable as follows:

- i) IFRS - \$150 000
- ii) Corporate Risk Management - \$227 000

CAC/MSOS/MH I-133

Subject: Operating, Maintenance & Administrative Expense

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CAC/MSOS wishes to better understand the costs of the adoption of IFRS, the allocation of those costs between the electricity and gas operations, and the aspects of corporate risk management which are the subject of the consultant’s mandate.

h) Please identify the specific risk management projects that have required the engagement of consultants in 2008/09 and 2009/10.

ANSWER:

2008/09

There were no specific risk management projects in 2008/09.

2009/10

- ICF International was engaged to conduct an independent review of the corporations:
 - export sales, pricing strategy and their associated risk
 - reasonableness of drought risk quantification and drought mitigation measures
 - the extent to which Manitoba Hydro should be involved in pure merchant energy transactions

CAC/MSOS/MH I-134

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.0 line 18, and Appendix 5.1

The Applicant attaches the 2009 Economic Outlook as an appendix.

CAC/MSOS notes that this document and data drawn from it were the subject of IRs, including among others, CAC/MSOS/Centra 2-154, in a recent Centra proceeding. To expedite this proceeding, CAC/MSOS suggests that certain of the IRs from that proceeding be confirmed by the Manitoba Hydro, or amended as required, and accepted into or placed on the record of this proceeding.

- a) Please confirm the information contained in PUB/Centra 2-198 Revised June 1, 2009, or if unable to confirm the accuracy of the replies therein, please respond to each question, identifying the further updates.**

ANSWER:

The information is confirmed as at June 1, 2009.

Refer to PUB/MH I-46(b), (d), (e) for details of the interest rate forecast embedded in the rate application.

CAC/MSOS/MH I-134

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.0 line 18, and Appendix 5.1

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- b) Please place on the record of this proceeding, PUB/Centra 2-198 as Revised June 1, 2009, and if required, please correct the response, identifying the further updates.**

ANSWER:

PUB/Centra 2-198 is attached and referenced as CAC/MSOS/MH I-134(b)-Attachment 1.

The information is current as of June 1, 2009.

Please see Manitoba Hydro responses to PUB/MH I-46(b), (d) and (e) for details of the interest rate forecast embedded in the rate application.

CENTRA GAS MANITOBA INC.**2009/10 & 2010/11 GRA****RESPONSE TO INFORMATION REQUESTS OF
THE PUBLIC UTILITIES BOARD OF MANITOBA****PUB/CENTRA 2 - 198****Reference: CAC/MSOS/Centra 2 (b), CAC/MSOS/Centra 4 – Interest Rates**

- a) Please provide an update based on more current forecasts than March 2008 and the supporting calculations for a one month banker's acceptance for the 2009/10 and 2010/11 test years.

Centra does not calculate a one month banker's acceptance rate for forecasting purposes. For forecasting purposes, Centra utilizes a methodology to arrive at a three month banker's acceptance rate. The following updated short and long term interest rates based on the Corporation's approved Economic Outlook 2009 were utilized in the revised Application:

	Calendar Year 90 Day Cdn T-Bill Rate	Fiscal Year	Fiscal Year 90 Day Cdn T-Bill Rate	Spread	Short Term Cdn Debt Rate
2009	0.60	2009/10	0.80	0.10	0.90
2010	1.30	2010/11	1.90	0.10	2.00
2011	3.65	2011/12	3.80	0.10	3.90

	Calendar Year Govt of Canada 10 Yr+ Rate	Fiscal Year	Fiscal Year Govt of Canada 10 Yr+ Rate	Spread	Long Term Cdn Debt Rate
2009	3.05	2009/10	3.15	1.60	4.75
2010	3.45	2010/11	3.80	1.10	4.90
2011	4.80	2011/12	4.95	0.60	5.55

Note that the aforementioned short and long term Canadian Debt Rates are exclusive of the 1% Provincial Debt Guarantee Fee.

1 **b) Please provide table(s) detailing the relied-upon interest forecasts by forecaster for**
2 **both short term and long term interest rates.**

- 3
4 1. Calendar Year Forecasts. The forecasts from the following sources was used in the
5 determination of the calendar year forecast for the Canadian 90 day T-Bill rate and the
6 Canadian government long term bond rate 10 Year+. Given the current unusual state
7 of the financial markets, only forecasts dated March 2009 were considered for calendar
8 years 2009 and 2010. For 2011 all forecasters were considered in the survey.

Canada 90 Day T-Bill Rate (%)		2009	2010	2011
BMO Nesbitt Burns	Mar-09	0.40	1.00	
CIBC	Mar-09	0.40	0.60	
Federal Finance	Nov-08	1.90	2.70	4.20
National Bank	Mar-09	1.30	3.10	
Province of British Columbia	Feb-09	0.90	1.70	2.90
Royal Bank	Mar-09	1.10	2.00	
Scotiabank	Mar-09	0.30	0.60	
TD Bank	Mar-09	0.40	1.00	
Conference Board	Dec-08	2.20	3.90	4.50
IHS Global Insight	Mar-09	0.40	0.70	2.40
Informetrica	Feb-09	2.40	3.30	3.80
Spatial Economics	Nov-08	2.60	3.10	4.00
Average of Highlighted Forecasters		0.61	1.29	3.64
Economic Outlook 2009		0.60	1.30	3.65

Canada Bond Yield 10 Year + (%)		2009	2010	2011
BMO Nesbitt Burns	Mar-09	2.90	3.10	
CIBC	Mar-09	3.30	3.55	
Federal Finance	Nov-08	3.70	4.20	5.00
National Bank	Mar-09	3.60	4.50	
Province of British Columbia	Feb-09	2.90	3.40	4.00
Royal Bank	Mar-09	2.60	3.40	
Scotiabank	Mar-09	2.50	3.30	
TD Bank	Mar-09	2.80	3.10	
Consensus	Oct-08	3.80	4.50	4.90
Conference Board	Dec-08	3.80	4.60	5.20
IHS Global Insight	Mar-09	3.50	3.50	4.40
Informetrica	Feb-09	4.00	4.30	4.70
Spatial Economics	Nov-08	4.20	4.20	5.50
Average of Highlighted Forecasters		3.03	3.49	4.81
Economic Outlook 2009		3.05	3.45	4.80

1 See CAC/MSOS/Centra 154 for the 2009 Economic Outlook document and
2 CAC/MSOS/Centra 156 for the copies of the forecasts used as data sources for the
3 table.

- 4
- 5 2. Fiscal Year Conversion of Calendar Year Average. The weighted average rate of three
6 quarters of one calendar year and one quarter of the following calendar year are
7 utilized to prepare the forecast on a fiscal year basis. The calculated fiscal year rates
8 were rounded to the nearest 5 basis points.

- 9
- 10 3. Credit Spread. The credit spread reflects the difference in cost for Manitoba Hydro to
11 borrow at various terms. For the short term rates, as the majority of Manitoba Hydro's
12 Canadian floating rate debt is based on the 3 month Bloomberg banker's acceptance
13 index, the spread is the differential between the 90 day T-Bill rate and the anticipated 3
14 month Bloomberg banker's acceptance rate. For the long term rates, the credit spread
15 reflects the difference in risk between the Government of Canada bond rate and a
16 Province of Manitoba bond rate for the 10 years+ term. The level of current credit
17 spreads influences the first two years of the forecast period, after which historical credit
18 spreads are utilized.

19

20 *The following discussion addresses CAC/MSOS/Centra 155:*

21 A historical spread was considered as part of the interest rate forecast. As per
22 information in Appendix A to the Economic Outlook 2009, the average spread for the
23 three years ended March 31, 2007 through 2009 was calculated to be .606 $[(.36 + .47$
24 $+ .99) / 3]$.

25

26

1 The spread incorporated into the forecasted long term Canadian debt rate of 1.60 for
2 2009/10 was calculated by taking an average of the 10 year and 30 year “credit spread
3 and curve” supplied by one of the financial institution forecasters on March 31, 2009
4 $[(1.77 + 1.43) / 2]$.

5
6 On the basis that the financial markets will return to a more normal environment in
7 2011/12, the spread for 2010/11 was calculated by taking an average of the 2009/10
8 spread of 1.60 and the 2011/12 spread of 0.60 (using the aforementioned historical
9 average).

10
11 Since the date the forecast was prepared (March 31, 2009) the credit spreads and
12 benchmark rates have fluctuated, and as at June 1, 2009 the credit spreads have
13 tightened (please see the attached schedule showing the comparison of the F101 and
14 F302 yield table and curve as requested in response to CAC/MSOS/Centra 163). It is
15 important to note that while the credit spreads have tightened during this time, the
16 benchmark rates have increased such that the all-in cost to Manitoba Hydro has
17 remained relatively constant. This can be seen in the attachment as the Province of
18 Manitoba yields for 10 year+ terms from 10 to 30 years range from 4.6143 to 5.0885%.
19 Thus, the 2009/10 long term Canadian forecast rate of 4.75% is still indicative for the
20 current fiscal year.

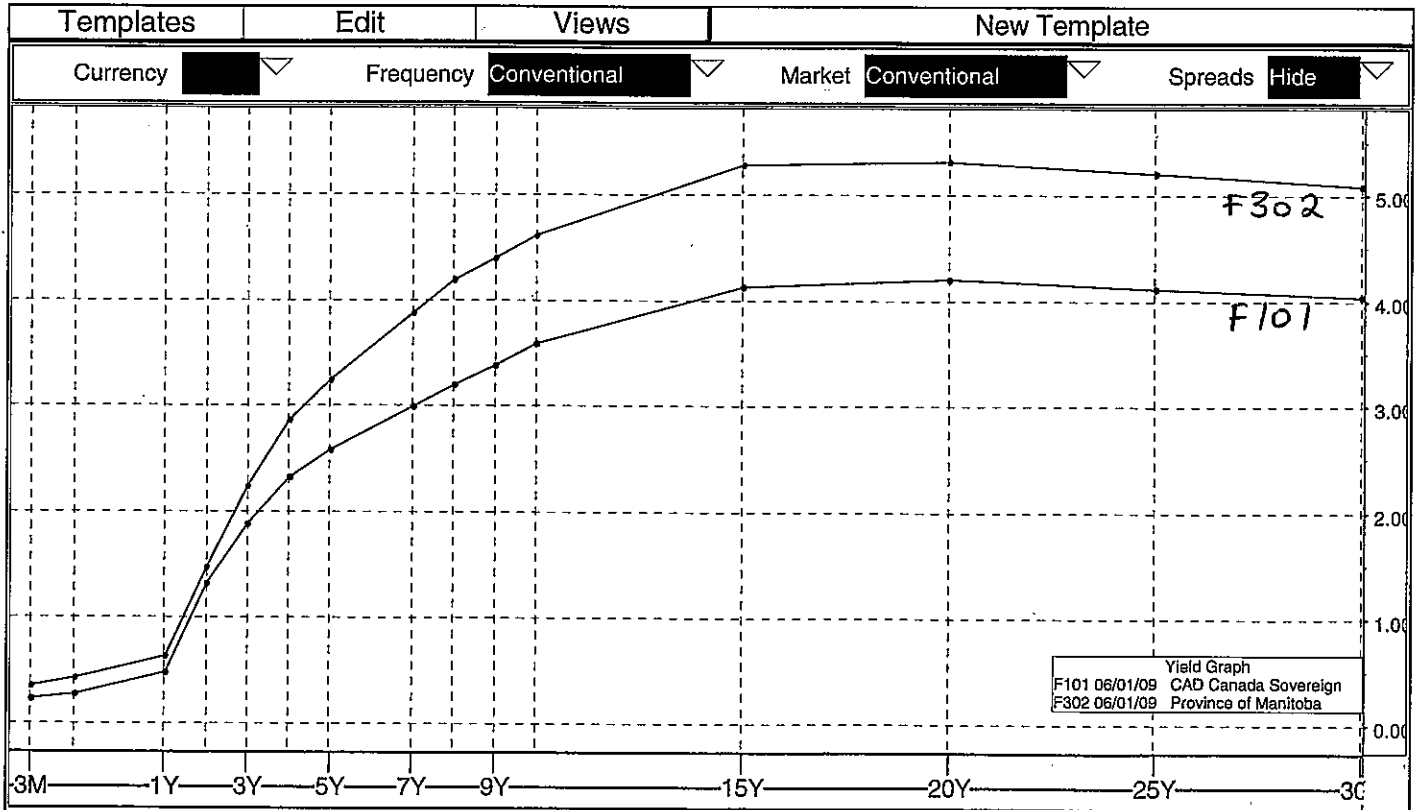
- 21
22 4. Forecasted Rates. The Manitoba Hydro forecast short and long term debt rates are
23 calculated by adding the fiscal year rates plus the respective credit spreads. In
24 addition, the Provincial Debt Guarantee Fee of 1.00% is assessed on the balance of
25 the short and long term debt outstanding at the fiscal year end.

Term	F101 G Of Canada BFV Curve as at June 1, 2009	Yield in %	Term	F302 Prov of MB BFV Curve as at June 1, 2009	Yield in %	Spread in %
3 Months	C1013M Index	0.2360	3 Months	C3023M Index	0.3530	0.1170
6 Months	C1016M Index	0.2774	6 Months	C3026M Index	0.4271	0.1497
1 Year	C1011Y Index	0.4793	1 Year	C3021Y Index	0.6267	0.1474
2 Years	C1012Y Index	1.3165	2 Years	C3022Y Index	1.4625	0.1460
3 Years	C1013Y Index	1.8732	3 Years	C3023Y Index	2.2310	0.3578
4 Years	C1014Y Index	2.3151	4 Years	C3024Y Index	2.8633	0.5482
5 Years	C1015Y Index	2.5747	5 Years	C3025Y Index	3.2380	0.6633
7 Years	C1017Y Index	2.9885	7 Years	C3027Y Index	3.8800	0.8915
8 Years	C1018Y Index	3.1972	8 Years	C3028Y Index	4.1946	0.9974
9 Years	C1019Y Index	3.3787	9 Years	C3029Y Index	4.4004	1.0217
10 Years	C10110Y Index	3.5825	10 Years	C30210Y Index	4.6143	1.0318
15 Years	C10115Y Index	4.1306	15 Years	C30215Y Index	5.2816	1.1510
20 Years	C10120Y Index	4.2063	20 Years	C30220Y Index	5.3111	1.1048
25 Years	C10125Y Index	4.1118	25 Years	C30225Y Index	5.2051	1.0933
30 Years	C10130Y Index	4.0352	30 Years	C30230Y Index	5.0885	1.0533

Index YCRV

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Yield Graph



Yield Graph
 F101 06/01/09 CAD Canada Sovereign
 F302 06/01/09 Province of Manitoba

CAC/MSOS/MH I-135

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.0 line 18, and Section 5.1 page 2 of 8 line 17.

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CAC/MSOS notes that the table in Section 5.1 of Tab 5, provides forecasts of short and long term base rates and the resulting Manitoba Hydro borrowing cost, presumably taking into account the guarantee fee and applicable spread.

CAC/MSOS observes that Manitoba Hydro, in the previous GRA, in Coalition/MH I-98(d), provided its then forecast of borrowing spreads for new long term issues.

- a) Please confirm the information contained in “Appendix A – 2009 Economic Outlook – Manitoba Hydro Cost of Debt” was correct as of June 1, 2009 or if unable to confirm the accuracy, please correct the Appendix, identifying the further updates.

ANSWER:

The information provided in “Appendix A - 2009 Economic Outlook - Manitoba Hydro Cost of Debt” has been corrected to reflect a minor revision to the historical T-Bill rate for 2008/09, to provide the historical spreads between 3 month T-Bill rates and 3 Month Bloomberg BA rates, and to correct the historical guarantee fee for fiscal years 2006/07 and 2007/08; and is otherwise confirmed as at June 1, 2009. See the attachment for the updated information.

Please see Manitoba Hydro’s response to CAC/MSOS I-135(c) for further explanation of revisions.

Appendix A
2009 Economic Outlook
Manitoba Hydro Short Term and Long Term Interest Rates

Short Term – Cdn\$

	T-Bill	Spread	Guarantee Fee	Short Term Rate
2006/07	4.16%	0.17%	1.00%	5.33%
2007/08	3.83%	0.66%	1.00%	5.49%
2008/09	1.84%	0.63%	1.00%	3.47%
2009/10	0.80%	0.10%	1.00%	1.90%
2010/11	1.90%	0.10%	1.00%	3.00%
2011/12	3.80%	0.10%	1.00%	4.90%
2012/13	4.20%	0.10%	1.00%	5.30%
2013/14	4.25%	0.10%	1.00%	5.35%
2014/15	4.25%	0.10%	1.00%	5.35%
2015/16 & on	4.25%	0.10%	1.00%	5.35%

Long Term – Cdn\$

	GOC 10yr+	Borrowing Spread	Guarantee Fee	Long Term Rate
2006/07	4.23%	0.36%	1.00%	5.59%
2007/08	4.24%	0.47%	1.00%	5.71%
2008/09	3.66%	0.99%	1.00%	5.65%
2009/10	3.15%	1.60%	1.00%	5.75%
2010/11	3.80%	1.10%	1.00%	5.90%
2011/12	4.95%	0.60%	1.00%	6.55%
2012/13	5.40%	0.60%	1.00%	7.00%
2013/14	5.50%	0.60%	1.00%	7.10%
2014/15	5.50%	0.60%	1.00%	7.10%
2015/16 & on	5.50%	0.60%	1.00%	7.10%

Long Term – US\$

	U.S. Long Bond 10 Yr+	Borrowing Spread	Guarantee Fee	Long Term Rate
2006/07	4.82%	0.60%	1.00%	6.42%
2007/08	4.39%	0.60%	1.00%	5.99%
2008/09	3.43%	1.28%	1.00%	5.71%
2009/10	3.00%	2.40%	1.00%	6.40%
2010/11	3.60%	1.55%	1.00%	6.15%
2011/12	4.25%	0.70%	1.00%	5.95%
2012/13	4.70%	0.70%	1.00%	6.40%
2013/14	5.05%	0.70%	1.00%	6.75%
2014/15	5.25%	0.70%	1.00%	6.95%
2015/16 & on	5.50%	0.70%	1.00%	7.20%

CAC/MSOS/MH I-135

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.0 line 18, and Section 5.1 page 2 of 8 line 17.

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CAC/MSOS observes that Manitoba Hydro, in the previous GRA, in Coalition/MH I-98(d), provided its then forecast of borrowing spreads for new long term issues.

- b) Please identify the source of the 2006/07 through 2008/09 T-bill rates, the term represented, and indicate the extent to which this represents the “Manitoba Hydro Cost of Debt” for short term borrowings, during those fiscal periods.**

ANSWER:

The data source for the historical T-Bill rate contained in Appendix A - 2009 Economic Outlook is Statistics Canada Series V122541. The term of the T-Bill is 3 months.

The primary intent of the forecasted short term interest rates is to provide a reasonable basis for forecasting the debt servicing costs associated with Manitoba Hydro's long term floating rate debt portfolio, which at March 31, 2009 was \$1,595 million. As Manitoba Hydro's Canadian long term floating rate financing is predominately structured utilizing the 3 month Bloomberg BA rate, and economic forecasters typically base their short term forecasts on the 3 month T-Bill rate, a spread is required to derive the necessary interest reset rates.

Although Manitoba Hydro will utilize its Commercial Paper Program for temporary short term borrowings, the spread is not intended to reflect the difference between forecasted 3 month T-Bill rates and actual short term borrowings. This is because Manitoba Hydro makes limited use of the Commercial Paper Program in comparison to its floating rate debt portfolio. For example, during 2008/09 and 2009/10 the temporary borrowings outstanding at month end have ranged from \$0 to \$170 million (with an average balance of less than \$100 million).

Manitoba Hydro acknowledges that its cost of short term borrowings will vary from the 3 month T-Bill and 3 month Bloomberg BA rates for a variety of reasons including the requirement to apply Manitoba credit spreads on its short term borrowings and the fact that the term of Manitoba Hydro's commercial paper is typically of shorter duration than 3 months.

CAC/MSOS/MH I-135

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.0 line 18, and Section 5.1 page 2 of 8 line 17.

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CAC/MSOS notes that the table in Section 5.1 of Tab 5, provides forecasts of short and long term base rates and the resulting Manitoba Hydro borrowing cost, presumably taking into account the guarantee fee and applicable spread.

CAC/MSOS observes that Manitoba Hydro, in the previous GRA, in Coalition/MH I-98(d), provided its then forecast of borrowing spreads for new long term issues.

- c) While some of the historic rates in this appendix generally equal those found on page 5 of the Economic Outlook Spring 2009, there are discrepancies, some minor, but one of 28 basis points, in the values from those presented on page 5 of the Economic Outlook – Spring 2009, for 2008/09 T-bill rates, and the GOC 10 yr+ rates for each of 2006/07, 2007/08, and 2008/09. Please provide the data source for each of the differing rates and correct whichever rate may be incorrect.**

ANSWER:

The data source for the historical T-bill rate contained on page 5 of the Economic Outlook Spring 2009 and that in Appendix A - 2009 Economic Outlook - Manitoba Hydro Cost of Debt is Statistics Canada Series V122541. As noted in the response to CAC/MSOS/MH I-135(a), the T-bill rate for 2008/09 has been corrected to 1.84% from 1.87%.

The GOC 10 Yr+ rates contained in Appendix A - 2009 Economic Outlook - Manitoba Hydro Cost of Debt reflect the average of GOC 10 Yr rates and GOC 30 Yr rates which are both sourced from Bloomberg. The GOC 10 Yr+ rates contained on page 5 of the Economic Outlook are Statistics Canada Series V122487.

In future Economic Outlooks, the GOC 10 Yr+ historical rate will be revised to include a consistent rate.

CAC/MSOS/MH I-135

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CAC/MSOS observes that Manitoba Hydro, in the previous GRA, in Coalition/MH I-98(d), provided its then forecast of borrowing spreads for new long term issues.

- d) As it appears that there was no “borrowing spread” in the fiscal years 2006/07 through 2008/09, please explain why a 10 basis point spread was forecast for the years 2009/10 and thereafter.**

ANSWER:

Please see the response to CAC/MSOS/MH I-135(a) for the historical spreads between 3 month T-Bill rates and 3 month Bloomberg BA rates for the fiscal years 2006/07 through 2008/09.

Please see the response to CAC/MSOS/MH I-135(f) regarding the forecasted spreads between 3 month T-Bill rates and 3 month Bloomberg BA rates.

CAC/MSOS/MH I-135

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CAC/MSOS observes that Manitoba Hydro, in the previous GRA, in Coalition/MH I-98(d), provided its then forecast of borrowing spreads for new long term issues.

- e) The document “Appendix A – 2009 Economic Outlook – Manitoba Hydro Cost of Debt” forecasts a 10 basis point spread over a T-bill rate for years 2009/10 and thereafter, and assuming the continuation of a 1% guarantee fee, the forecast short term borrowing cost for the period 2009/10 from the table in Section 5.1 of the current application doubles the spread to 20 basis points and holds it constant thereafter. Please provide the spread from t-bills for each of the short term financings by Manitoba Hydro during 2008/09 and 2009/10.**

ANSWER:

As stated in CAC/MSOS/MH I-135 (b), the forecasted short term spread is not intended to reflect the difference between forecasted 3 month T-Bill rates and actual short term borrowings.

Please see the attached schedule for Canadian short term borrowings for the 2008/09 and 2009/10 fiscal years. Financings with terms of less than 5 days have been excluded from the analysis as these borrowings more closely represent routine cash balancing/ overdraft transactions.

CAC/MSOS/MH I - 135 (e)

Short Term Borrowings with Terms > 5 Days

Issue Date	Term	Rate (%)	Canada 3 Month T-Bill (%) *	Spread over 3 Month T-Bill (%)
6/25/2008	57	2.60	2.60	-
6/30/2008	60	2.58	2.48	0.10
7/25/2008	31	2.42	2.42	0.00
8/1/2008	32	2.38	2.39	(0.01)
8/7/2008	32	2.40	2.49	(0.09)
8/29/2008	34	2.37	2.40	(0.03)
9/2/2008	29	2.42	2.40	0.02
9/4/2008	33	2.41	2.38	0.03
9/15/2008	30	2.38	2.21	0.17
10/2/2008	33	1.97	1.35	0.62
10/7/2008	30	1.10	0.95	0.15
10/15/2008	30	2.02	1.71	0.31
10/21/2008	59	2.10	1.90	0.20
11/5/2008	62	2.15	1.77	0.38
11/6/2008	32	1.97	1.75	0.22
11/14/2008	60	2.05	1.80	0.25
12/8/2008	31	1.38	1.38	(0.00)
12/19/2008	32	0.85	0.79	0.06
1/6/2009	30	0.82	0.87	(0.05)
1/8/2009	61	0.88	0.83	0.05
1/13/2009	30	0.76	0.79	(0.03)
1/20/2009	30	0.84	0.85	(0.01)
2/5/2009	28	0.67	0.84	(0.17)
2/12/2009	28	0.65	0.73	(0.08)
2/19/2009	28	0.58	0.69	(0.12)
3/5/2009	33	0.39	0.43	(0.04)
3/10/2009	30	0.34	0.44	(0.10)
3/12/2009	33	0.33	0.42	(0.09)
3/19/2009	33	0.31	0.37	(0.06)
4/7/2009	35	0.36	0.39	(0.04)
4/9/2009	35	0.36	0.41	(0.06)
4/14/2009	35	0.37	0.40	(0.03)
4/21/2009	30	0.31	0.24	0.07
5/12/2009	31	0.12	0.18	(0.06)
5/14/2009	33	0.13	0.17	(0.04)
5/19/2009	30	0.12	0.17	(0.05)
5/21/2009	15	0.12	0.18	(0.06)
10/2/2009	32	0.17	0.21	(0.04)
10/2/2009	32	0.17	0.21	(0.04)
10/13/2009	31	0.17	0.23	(0.07)
10/30/2009	31	0.17	0.22	(0.06)
11/3/2009	27	0.18	0.22	(0.04)
11/3/2009	27	0.18	0.22	(0.04)
Average	35	1.093	1.067	0.026

* Using Bank of Canada 3 month T-Bill rates (V39065) on issue date.

CAC/MSOS/MH I-135

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CAC/MSOS observes that Manitoba Hydro, in the previous GRA, in Coalition/MH I-98(d), provided its then forecast of borrowing spreads for new long term issues.

- f) Please indicate the historic period during with the short-term borrowing rate of Manitoba Hydro was determined to be 10 basis points.**

ANSWER:

Manitoba Hydro has not forecasted a short term borrowing rate of 10 basis points.

The following response assumes that this question refers to the previously forecast 10 basis point *spread* between the 3 month T-Bill interest rate and 3 month Bloomberg BA interest rate.

Please see the attached chart depicting the actual spreads between the 3 month T-Bill interest rate and 3 month Bloomberg BA interest rate (using Bloomberg data as sourced from C1033M and CDOR03 respectively) for the period from October 2000 to January 2010, as well as the forecasted spreads to 2021. Note that these charts exclude transaction costs and the Provincial Debt Guarantee Fee.

In order to establish an average spread between the two financial instruments, in the spring of 2007, Manitoba Hydro considered a 5 year historic period from April 2002 to March 2007 using the aforementioned weekly Bloomberg data sources. As indicated on the chart, the spread during this time was just over 10 basis points, which was rounded down to 10 basis points.

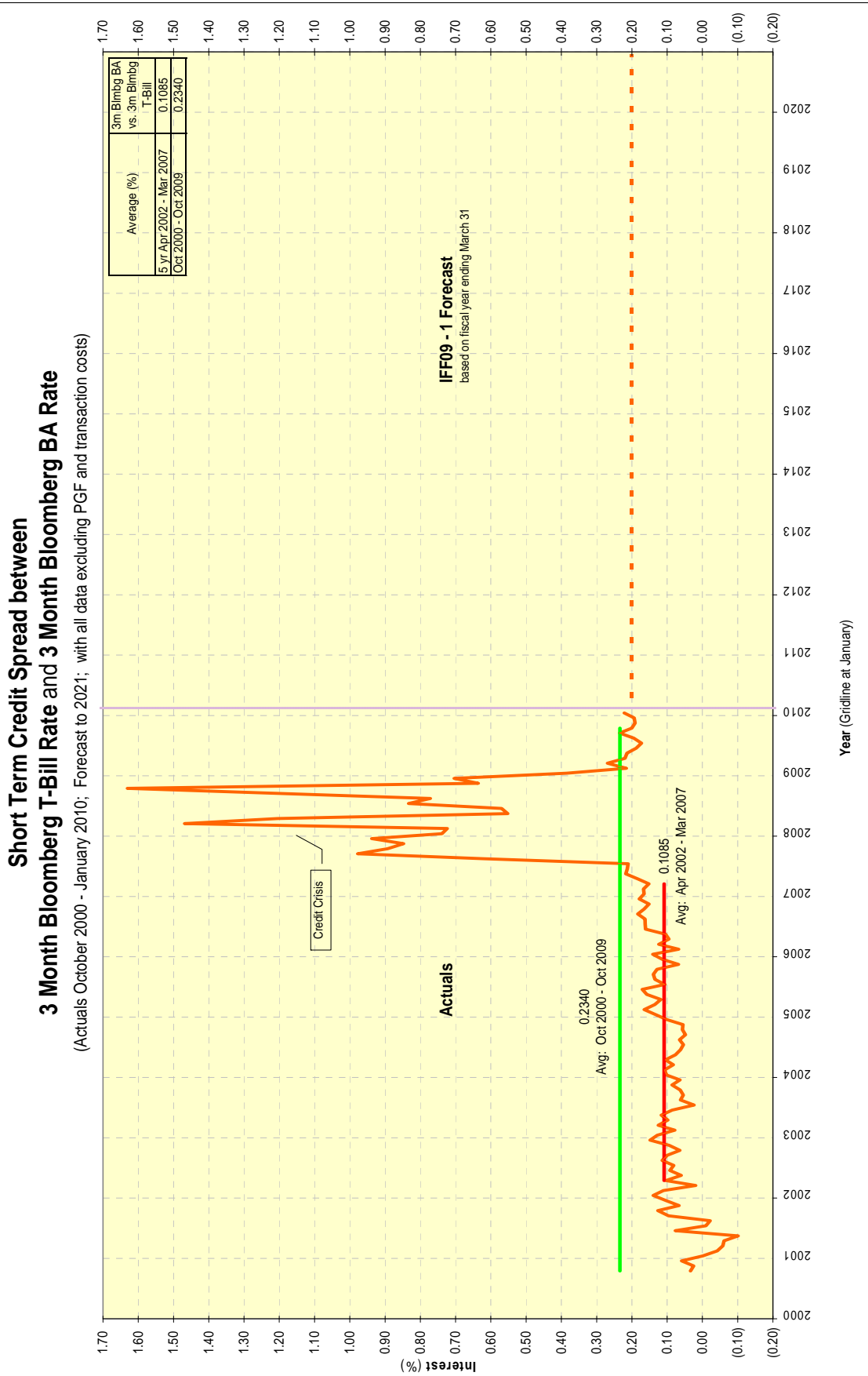
The impact of the recent financial credit crisis is readily apparent on the spread as it soared beyond 160 basis points at the apex of the crisis. The emergency monetary policy actions undertaken by central banks during this time led directly to the rapid decline of actual short term interest rates and the phenomenon whereby spreads became inversely correlated to interest rates. As also indicated on the graph, there was significant volatility during the period from mid-2007 to early 2009 which presented significant challenges to forecasters at the time. By March 2009 the spread had decreased sharply and has since showed preliminary signs of stabilization, although still remaining elevated above the pre-crisis levels.

As part of IFF preparations, in the summer of 2009, Manitoba Hydro reviewed the actual year to date spreads during 2009/10. As noted in the response to PUB/MH I-46(d), the first fiscal quarter had a spread of 20 basis points and a decision was made to utilize a 20 basis point spread for the balance of the forecasting period.

In October 2009, the calculation of the historic average spread was revisited. For comparative purposes, the same weekly Bloomberg data sources were utilized (C1033M and CDOR03). In light of the recent credit crisis and in order to obtain greater longitudinal data, the historic period for analysis was extended from 5 to 10 years (note that aforementioned Bloomberg indices commenced October 2000 and as such became the starting point for the analysis). As indicated on the chart, the historic spread from October 2000 to October 2009 was just over 23 basis points. Given the immateriality of the difference between this historic

average and the actual fiscal year to date results, the 20 basis point short term spread was retained for forecasting purposes.

Given the magnitude of the crisis and the residual uncertainty in the financial markets, more time will be required to assess if the current levels are a new normal or if a return to pre-crisis spreads will occur. Manitoba Hydro will continue to monitor this spread relationship.



Notes:

1. Data per Bloomberg weekly series C1033m (T-Bill) and CDOR03 (BA).
2. Spread = BA - T-Bill.
3. Forecasts commence on April 2010.

CAC/MSOS/MH I-135

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- g) The document “Appendix A – 2009 Economic Outlook – Manitoba Hydro Cost of Debt” forecasts a 110 basis point spread over a GOC 10 Yr+ rate for years 2010/11, falling to 60 basis points, and assuming the continuation of a 1% guarantee fee, the forecast short term borrowing cost for the period 2010/11 from the table in Section 5.1 of the current application reduces the spread to 65 basis points then 60 basis points and holds it constant thereafter. Please provide**

the spread from a Canada bond of similar term for each of the Canadian Dollar long term fixed rate financing by Manitoba Hydro during 2008/09 and 2009/10.

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-31(c).

CAC/MSOS/MH I-135

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- h) Please add the Manitoba Hydro response from the previous GRA, Coalition/MH I-98(d), to the record of this proceeding and if required, please correct the response and specifically identify the further updates.**

ANSWER:

The following was the response to Coalition/MH I-98(d) from the previous GRA (there were no further updates):

The interest rates used for forecasting long term debt issues are outlined in the table below. The same rates are used for new long term debt issues or refinancing of existing issues, and do not include the provincial guarantee fee.

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14 and later
Gov't of Canada Benchmark	4.75	5.15	5.30	5.50	5.65	6.00	6.00
Spread	0.40	0.45	0.45	0.45	0.45	0.45	0.45
Forecast Financing Rate	5.15	5.60	5.75	5.95	6.10	6.45	6.45

CAC/MSOS/MH I-135

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CAC/MSOS observes that Manitoba Hydro, in the previous GRA, in Coalition/MH I-98(d), provided its then forecast of borrowing spreads for new long term issues.

- i) CAC/MSOS observes that Manitoba Hydro, in the previous GRA, in Coalition/MH I-98(d), was forecasting a 40 or 45 basis point borrowing spread for new long term issues, and requests that Manitoba Hydro describe the methodology which gave rise to the 45 basis point forecast and provide the bond spread analysis data upon which the forecast was made.**

ANSWER:

Please see the attached chart depicting the actual credit spreads between the 10 Year+ Government of Canada and the 10 Year+ Province of Manitoba yields (using Bloomberg data as sourced from C101 and C302 respectively) for the period from October 2000 to January 2010, as well as the forecasted spreads to 2021. The 10 Year+ yields are computed by taking an average of the 10 and 30 year yields from the aforementioned Bloomberg indices. Note that these charts exclude transaction costs and the Provincial Debt Guarantee Fee.

In order to establish an average credit spread between the benchmark Canada rates and the credit spread to the Province of Manitoba, in the spring of 2007, Manitoba Hydro considered a 5 year historic period from April 2002 to March 2007 using the aforementioned weekly Bloomberg data sources. As indicated on the chart, the credit spread during this time was just under 37 basis points. With the addition of transaction costs of 6 basis points (based on the average indicative transaction costs for new 10 and 30 year Canadian public issues) the historic average all-in cost to the Province of Manitoba was determined to be 43 basis points. For forecasting purposes at that time, given that the all-in 10 year+ borrowing spread in the spring of 2007 was approximately 40 basis points, the historic average all-in borrowing spread for the 2007/08 forecast was rounded down to 40 basis points. The all-in borrowing spread for the subsequent forecast years utilized the 5 year historic average all-in cost of 43 basis points, which was rounded up to 45 basis points.

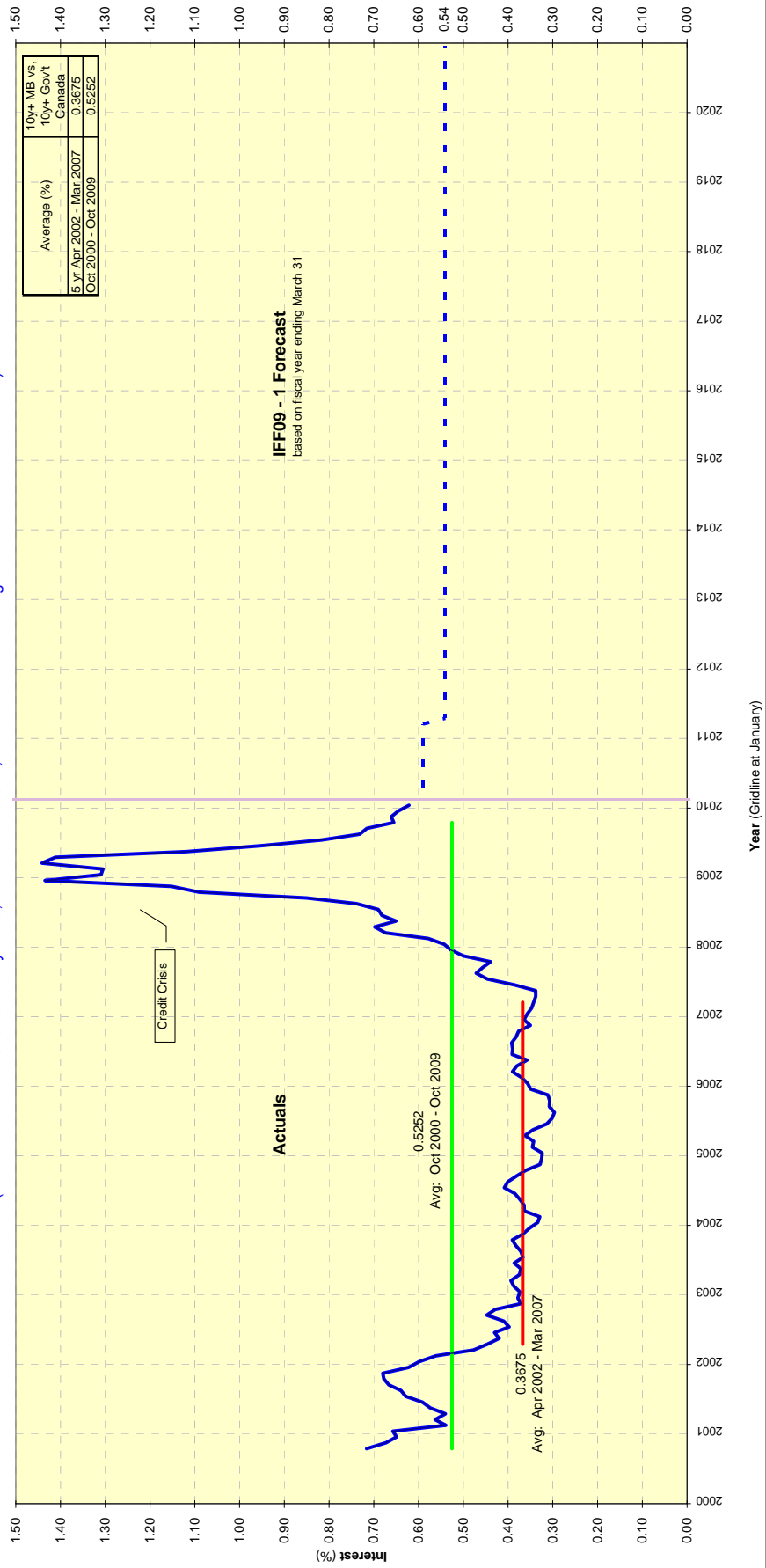
As part of IFF preparations, as noted in the response to CAC/MSOS/MH I-31(b), the first two fiscal quarters had average credit spreads of 125 and 87 basis points respectively with a Q2 end of period borrowing spread of 75 basis points. In October 2009, the calculation of the historic average spread was revisited. For comparative purposes, the same weekly Bloomberg data sources were utilized (C101 and C302). In light of the recent credit crisis and in order to obtain greater longitudinal data, the historic period for analysis was extended from 5 to 10 years (note that aforementioned Bloomberg indices commenced October 2000 and as such became the starting point for the analysis). As indicated on the chart, the historic spread from October 2000 to October 2009 was just under 53 basis points. With the addition of transaction costs of 6 basis points, the historic average all-in cost to the Province of Manitoba was determined to be 59 basis points, which was rounded up to 60 basis points. A reversion to the historical all-in borrowing spread by the beginning of 2011/12 was assumed on the basis that the financial markets will return to a more normal environment in 2011/12. For the forecast quarters in 2009/10 and 2010/11, the assumption was an equal reduction in

the spread by quarter based on a linear interpolation between the all-in spread of 75 basis points at the end of 2009/10 Quarter 2 and the historical all-in spread of 60 basis points. A fiscal yearly rate is derived by averaging the quarters such that the annualized borrowing spreads for 2009/10, 2010/11 and 2011/12 are 90, 65 and 60 basis points respectively.

Given the magnitude of the crisis and the residual uncertainty in the financial markets, more time will be required to assess if the current levels are a new normal or if a return to pre-crisis spreads will occur. Manitoba Hydro will continue to monitor this spread relationship.

Long Term Credit Spread between 10yr+ Bloomberg Government of Canada Yield and 10yr+ Bloomberg Province of Manitoba Yield

(Actuals October 2000 - January 2010; Forecast to 2021; with all data excluding PGF and transaction costs)



- Notes:
1. Yield of 10 yr+ = average of 10yr yield and 30 yr yield.
 2. Data per Bloomberg weekly series, C10130y (30yr Canada), C30210y (10yr Manitoba), C30230y (30yr Manitoba).
 3. Spread = Manitoba - Canada.
 4. Forecasts commence on April 2010.

CAC/MSOS/MH I-135

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Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.0 line 18, and Section 5.1 page 2 of 8 line 17.

The Applicant attaches the 2009 Economic Outlook as an appendix.

CAC/MSOS notes that a document entitled “Appendix A – 2009 Economic Outlook – Manitoba Hydro Cost of Debt” was attached to the June 1, 2009 update, in the recent Centra proceeding. This document provides information on historic and forecast interest rates and borrowing spreads.

CAC/MSOS notes that this document or data drawn from it were the subject of IRs in a recent Centra proceeding. To expedite this proceeding, CAC/MSOS suggests that this document be confirmed by the Manitoba Hydro, or amended as required, and accepted into the record of this proceeding.

CAC/MSOS notes that the table in Section 5.1 of Tab 5, provides forecasts of short and long term base rates and the resulting Manitoba Hydro borrowing cost, presumably taking into account the guarantee fee and applicable spread.

CAC/MSOS observes that Manitoba Hydro, in the previous GRA, in Coalition/MH I-98(d), provided its then forecast of borrowing spreads for new long term issues.

- j) Please calculate the high, low and average spread between Bloomberg Canada Bond series C101 for each of 10, 15 and 20 year maturities, and the Manitoba specific series for C302 of the same term for the period of January 1, 1999 to of December 31, 2007 and from January 1, 1999 to January 31, 2010, and identify whether the Applicant prefers the monthly, weekly or daily, data comparison.**

ANSWER:

The following analysis shows yield differentials between Government of Canada and Province of Manitoba bonds utilizing weekly data from Bloomberg series C101 and series C302. These values do not include transactions costs (which are included in the forecasted all-in borrowing spread for long term debt) and the Provincial Debt Guarantee Fee.

For the period of January 1, 1999 to December 31, 2007:

	10 Year Spread	15 Year Spread	20 Year Spread	30 Year Spread	Ave of 10 & 30 Year Spread
High	0.67	0.84	0.86	1.09	0.81
Low	0.17	0.15	0.24	0.37	0.29
Average	0.35	0.37	0.42	0.53	0.44

For the period of January 1, 1999 to January 31, 2010:

	10 Year Spread	15 Year spread	20 Year Spread	30 Year Spread	Ave of 10 & 30 Year Spread
High	1.61	1.57	1.61	1.53	1.57
Low	0.17	0.15	0.24	0.37	0.29
Average	0.44	0.47	0.51	0.61	0.53

CAC/MSOS/MH I-136

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, and Section 5.1 page 2 of 8 line 17

CAC/MSOS notes that the table in Section 5.1 of Tab 5, provides forecasts of short and long term base rates and the resulting Manitoba Hydro borrowing cost, presumably taking into account the guarantee fee and applicable spread. By subtraction, the short term interest rate spread appears to be 20 basis points over the T-bill forecast rate, and does not revert to the historical credit spread of 10 basis points.

CAC/MSOS notes that a document entitled “Appendix A – 2009 Economic Outlook – Manitoba Hydro Cost of Debt” was attached to the June 1, 2009 update in the recent Centra proceeding. This document provides information on historic and forecast interest rates and borrowing spreads. The short term interest rate credit spread appears to be 10 basis points over the T-bill forecast rate.

CAC/MSOS notes that in both the table in Section 5.1 of Tab 5, and the document entitled “Appendix A – 2009 Economic Outlook – Manitoba Hydro Cost of Debt” the long term interest rate credit spread appears to be 60 basis points.

CAC/MSOS also notes that in the June 1, 2009 revision to PUB/Centra 2-198, it was indicated that “The level of current credit spreads influences the first two years of the forecast period, after which historical credit spreads are utilized.”

CAC/MSOS notes that these documents or data drawn from it were the subject of IRs in a recent Centra proceeding. To expedite this proceeding, CAC/MSOS suggests that this document be confirmed by the Manitoba Hydro, or amended as required, and accepted into the record of this proceeding.

- a) **Please explain the methodology used to determine the “historical credit spreads” from time to time, as mentioned in the June 1, 2009 revision to PUB/Centra 2-198, indicating**
- i. **whether the spreads are calculated using daily, business day, weekly, monthly data or data from some other period, (2) whether the borrowing spreads are calculated between two Bloomberg data series, two Bank of Canada data series, or some other data sources,**
 - ii. **whether Manitoba Hydro uses internally prepared weighted average interest costs in the analysis,**
 - iii. **the term in years for which the data is collected and analysed and whether this is a rolling period {perhaps 15 years} or a period from a set start date which extends with each passing year, and**
 - iv. **any changes in the methodology in the past 6 financial years.**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-135(f).

CAC/MSOS/MH I-136

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, and Section 5.1 page 2 of 8 line 17

CAC/MSOS notes that the table in Section 5.1 of Tab 5, provides forecasts of short and long term base rates and the resulting Manitoba Hydro borrowing cost, presumably taking into account the guarantee fee and applicable spread. By subtraction, the short term interest rate spread appears to be 20 basis points over the T-bill forecast rate, and does not revert to the historical credit spread of 10 basis points.

CAC/MSOS notes that a document entitled “Appendix A – 2009 Economic Outlook – Manitoba Hydro Cost of Debt” was attached to the June 1, 2009 update in the recent Centra proceeding. This document provides information on historic and forecast interest rates and borrowing spreads. The short term interest rate credit spread appears to be 10 basis points over the T-bill forecast rate.

CAC/MSOS notes that in both the table in Section 5.1 of Tab 5, and the document entitled “Appendix A – 2009 Economic Outlook – Manitoba Hydro Cost of Debt” the long term interest rate credit spread appears to be 60 basis points.

CAC/MSOS also notes that in the June 1, 2009 revision to PUB/Centra 2-198, it was indicated that “The level of current credit spreads influences the first two years of the forecast period, after which historical credit spreads are utilized.”

CAC/MSOS notes that these documents or data drawn from it were the subject of IRs in a recent Centra proceeding. To expedite this proceeding, CAC/MSOS suggests that this document be confirmed by the Manitoba Hydro, or amended as required, and accepted into the record of this proceeding.

- b) **Please identify the period of borrowing during which the 10 basis point credit spread, indicated in “Appendix A – 2009 Economic Outlook – Manitoba Hydro Cost of Debt”, from 90 day T-bills was calculated.**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-135(f).

CAC/MSOS/MH I-136

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, and Section 5.1 page 2 of 8 line 17

CAC/MSOS notes that the table in Section 5.1 of Tab 5, provides forecasts of short and long term base rates and the resulting Manitoba Hydro borrowing cost, presumably taking into account the guarantee fee and applicable spread. By subtraction, the short term interest rate spread appears to be 20 basis points over the T-bill forecast rate, and does not revert to the historical credit spread of 10 basis points.

CAC/MSOS notes that a document entitled “Appendix A – 2009 Economic Outlook – Manitoba Hydro Cost of Debt” was attached to the June 1, 2009 update in the recent Centra proceeding. This document provides information on historic and forecast interest rates and borrowing spreads. The short term interest rate credit spread appears to be 10 basis points over the T-bill forecast rate.

CAC/MSOS notes that in both the table in Section 5.1 of Tab 5, and the document entitled “Appendix A – 2009 Economic Outlook – Manitoba Hydro Cost of Debt” the long term interest rate credit spread appears to be 60 basis points.

CAC/MSOS also notes that in the June 1, 2009 revision to PUB/Centra 2-198, it was indicated that “The level of current credit spreads influences the first two years of the forecast period, after which historical credit spreads are utilized.”

CAC/MSOS notes that these documents or data drawn from it were the subject of IRs in a recent Centra proceeding. To expedite this proceeding, CAC/MSOS suggests that this document be confirmed by the Manitoba Hydro, or amended as required, and accepted into the record of this proceeding.

- c) **Please provide the mathematical proof of the 10 basis point credit spread over 90 day T-bills, perhaps through a comparison of the Bloomberg Manitoba specific 3 month borrowing rate, perhaps C3023m, and a Bloomberg 90 day T-bill series, perhaps C1013M, or other superior methodology.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-135(f).

CAC/MSOS/MH I-136

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, and Section 5.1 page 2 of 8 line 17

CAC/MSOS notes that the table in Section 5.1 of Tab 5, provides forecasts of short and long term base rates and the resulting Manitoba Hydro borrowing cost, presumably taking into account the guarantee fee and applicable spread. By subtraction, the short term interest rate spread appears to be 20 basis points over the T-bill forecast rate, and does not revert to the historical credit spread of 10 basis points.

CAC/MSOS notes that a document entitled “Appendix A – 2009 Economic Outlook – Manitoba Hydro Cost of Debt” was attached to the June 1, 2009 update in the recent Centra proceeding. This document provides information on historic and forecast interest rates and borrowing spreads. The short term interest rate credit spread appears to be 10 basis points over the T-bill forecast rate.

CAC/MSOS notes that in both the table in Section 5.1 of Tab 5, and the document entitled “Appendix A – 2009 Economic Outlook – Manitoba Hydro Cost of Debt” the long term interest rate credit spread appears to be 60 basis points.

CAC/MSOS also notes that in the June 1, 2009 revision to PUB/Centra 2-198, it was indicated that “The level of current credit spreads influences the first two years of the forecast period, after which historical credit spreads are utilized.”

CAC/MSOS notes that these documents or data drawn from it were the subject of IRs in a recent Centra proceeding. To expedite this proceeding, CAC/MSOS suggests that this document be confirmed by the Manitoba Hydro, or amended as required, and accepted into the record of this proceeding.

- d) **Please identify the period of borrowing during which the 20 basis point credit spread, from 90 day T-bills was calculated, as indicated in table in Section 5.1 of Tab 5 of the application.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-135(f).

CAC/MSOS/MH I-136

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, and Section 5.1 page 2 of 8 line 17

CAC/MSOS notes that the table in Section 5.1 of Tab 5, provides forecasts of short and long term base rates and the resulting Manitoba Hydro borrowing cost, presumably taking into account the guarantee fee and applicable spread. By subtraction, the short term interest rate spread appears to be 20 basis points over the T-bill forecast rate, and does not revert to the historical credit spread of 10 basis points.

CAC/MSOS notes that a document entitled “Appendix A – 2009 Economic Outlook – Manitoba Hydro Cost of Debt” was attached to the June 1, 2009 update in the recent Centra proceeding. This document provides information on historic and forecast interest rates and borrowing spreads. The short term interest rate credit spread appears to be 10 basis points over the T-bill forecast rate.

CAC/MSOS notes that in both the table in Section 5.1 of Tab 5, and the document entitled “Appendix A – 2009 Economic Outlook – Manitoba Hydro Cost of Debt” the long term interest rate credit spread appears to be 60 basis points.

CAC/MSOS also notes that in the June 1, 2009 revision to PUB/Centra 2-198, it was indicated that “The level of current credit spreads influences the first two years of the forecast period, after which historical credit spreads are utilized.”

CAC/MSOS notes that these documents or data drawn from it were the subject of IRs in a recent Centra proceeding. To expedite this proceeding, CAC/MSOS suggests that this document be confirmed by the Manitoba Hydro, or amended as required, and accepted into the record of this proceeding.

- e) **Please provide the mathematical proof of the 20 basis point credit spread over 90 day T-bills, perhaps through a comparison of the Bloomberg Manitoba specific 3 month borrowing rate, perhaps C3023m, and a Bloomberg 90 day T-bill series, perhaps C1013M, or other superior methodology.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-135(f).

CAC/MSOS/MH I-136

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, and Section 5.1 page 2 of 8 line 17

CAC/MSOS notes that the table in Section 5.1 of Tab 5, provides forecasts of short and long term base rates and the resulting Manitoba Hydro borrowing cost, presumably taking into account the guarantee fee and applicable spread. By subtraction, the short term interest rate spread appears to be 20 basis points over the T-bill forecast rate, and does not revert to the historical credit spread of 10 basis points.

CAC/MSOS notes that a document entitled “Appendix A – 2009 Economic Outlook – Manitoba Hydro Cost of Debt” was attached to the June 1, 2009 update in the recent Centra proceeding. This document provides information on historic and forecast interest rates and borrowing spreads. The short term interest rate credit spread appears to be 10 basis points over the T-bill forecast rate.

CAC/MSOS notes that in both the table in Section 5.1 of Tab 5, and the document entitled “Appendix A – 2009 Economic Outlook – Manitoba Hydro Cost of Debt” the long term interest rate credit spread appears to be 60 basis points.

CAC/MSOS also notes that in the June 1, 2009 revision to PUB/Centra 2-198, it was indicated that “The level of current credit spreads influences the first two years of the forecast period, after which historical credit spreads are utilized.”

CAC/MSOS notes that these documents or data drawn from it were the subject of IRs in a recent Centra proceeding. To expedite this proceeding, CAC/MSOS suggests that this document be confirmed by the Manitoba Hydro, or amended as required, and accepted into the record of this proceeding.

- f) **Please explain why a 20 basis point T-bill credit spread is the new “normal”, and why after “two years of the forecast period, ... historical credit spreads” are not employed .**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-135(f).

CAC/MSOS/MH I-136

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, and Section 5.1 page 2 of 8 line 17

CAC/MSOS notes that the table in Section 5.1 of Tab 5, provides forecasts of short and long term base rates and the resulting Manitoba Hydro borrowing cost, presumably taking into account the guarantee fee and applicable spread. By subtraction, the short term interest rate spread appears to be 20 basis points over the T-bill forecast rate, and does not revert to the historical credit spread of 10 basis points.

CAC/MSOS notes that a document entitled “Appendix A – 2009 Economic Outlook – Manitoba Hydro Cost of Debt” was attached to the June 1, 2009 update in the recent Centra proceeding. This document provides information on historic and forecast interest rates and borrowing spreads. The short term interest rate credit spread appears to be 10 basis points over the T-bill forecast rate.

CAC/MSOS notes that in both the table in Section 5.1 of Tab 5, and the document entitled “Appendix A – 2009 Economic Outlook – Manitoba Hydro Cost of Debt” the long term interest rate credit spread appears to be 60 basis points.

CAC/MSOS also notes that in the June 1, 2009 revision to PUB/Centra 2-198, it was indicated that “The level of current credit spreads influences the first two years of the forecast period, after which historical credit spreads are utilized.”

CAC/MSOS notes that these documents or data drawn from it were the subject of IRs in a recent Centra proceeding. To expedite this proceeding, CAC/MSOS suggests that this document be confirmed by the Manitoba Hydro, or amended as required, and accepted into the record of this proceeding.

- g) Please identify the period of borrowing during which the 60 basis point long term credit spread from Canada bonds, indicated in “Appendix A – 2009 Economic Outlook – Manitoba Hydro Cost of Debt”, was calculated.**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-135(i).

CAC/MSOS/MH I-136

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, and Section 5.1 page 2 of 8 line 17

CAC/MSOS notes that the table in Section 5.1 of Tab 5, provides forecasts of short and long term base rates and the resulting Manitoba Hydro borrowing cost, presumably taking into account the guarantee fee and applicable spread. By subtraction, the short term interest rate spread appears to be 20 basis points over the T-bill forecast rate, and does not revert to the historical credit spread of 10 basis points.

CAC/MSOS notes that a document entitled “Appendix A – 2009 Economic Outlook – Manitoba Hydro Cost of Debt” was attached to the June 1, 2009 update in the recent Centra proceeding. This document provides information on historic and forecast interest rates and borrowing spreads. The short term interest rate credit spread appears to be 10 basis points over the T-bill forecast rate.

CAC/MSOS notes that in both the table in Section 5.1 of Tab 5, and the document entitled “Appendix A – 2009 Economic Outlook – Manitoba Hydro Cost of Debt” the long term interest rate credit spread appears to be 60 basis points.

CAC/MSOS also notes that in the June 1, 2009 revision to PUB/Centra 2-198, it was indicated that “The level of current credit spreads influences the first two years of the forecast period, after which historical credit spreads are utilized.”

CAC/MSOS notes that these documents or data drawn from it were the subject of IRs in a recent Centra proceeding. To expedite this proceeding, CAC/MSOS suggests that this document be confirmed by the Manitoba Hydro, or amended as required, and accepted into the record of this proceeding.

- h) Please identify the term to maturity of the instruments, perhaps 10, 15 or 20 years, from which the 60 basis point long term credit spread from Canada bonds, indicated in “the table in Section 5.1 of Tab 5, was calculated.**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-135(i).

CAC/MSOS/MH I-136

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, and Section 5.1 page 2 of 8 line 17

CAC/MSOS notes that the table in Section 5.1 of Tab 5, provides forecasts of short and long term base rates and the resulting Manitoba Hydro borrowing cost, presumably taking into account the guarantee fee and applicable spread. By subtraction, the short term interest rate spread appears to be 20 basis points over the T-bill forecast rate, and does not revert to the historical credit spread of 10 basis points.

CAC/MSOS notes that a document entitled “Appendix A – 2009 Economic Outlook – Manitoba Hydro Cost of Debt” was attached to the June 1, 2009 update in the recent Centra proceeding. This document provides information on historic and forecast interest rates and borrowing spreads. The short term interest rate credit spread appears to be 10 basis points over the T-bill forecast rate.

CAC/MSOS notes that in both the table in Section 5.1 of Tab 5, and the document entitled “Appendix A – 2009 Economic Outlook – Manitoba Hydro Cost of Debt” the long term interest rate credit spread appears to be 60 basis points.

CAC/MSOS also notes that in the June 1, 2009 revision to PUB/Centra 2-198, it was indicated that “The level of current credit spreads influences the first two years of the forecast period, after which historical credit spreads are utilized.”

CAC/MSOS notes that these documents or data drawn from it were the subject of IRs in a recent Centra proceeding. To expedite this proceeding, CAC/MSOS suggests that this document be confirmed by the Manitoba Hydro, or amended as required, and accepted into the record of this proceeding.

- i) **Please provide the mathematical proof of the 60 basis point credit spread 90 day T-bills, perhaps through a comparison of the Bloomberg Manitoba specific 15 year borrowing rate, perhaps using C30215Y, and a Bloomberg Canada series of equivalent term, perhaps C10115Y, or another superior methodology.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-135(i).

CAC/MSOS/MH I-137

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 line 17 and following

The Applicant presents a table of revised variables which appears to indicate a T-bill rate for an unstated term, and the “MH Cost of Debt” for short term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the historical support for the relationship between the T-bill rate and the “MH Cost of Debt”.

- a) Please indicate the date, perhaps a date in October 2009, at which the variables in the table were “revised”.**

ANSWER:

The forecast of CPI was reviewed in July 2009 for years 2009/10 through to and including 2012/13 and based on that review CPI was updated for 2009/10 and 2010/11 only.

Forecasts for interest rates as well as Cdn/US exchange rates were reviewed in July 2009 for years 2009/10 through to and including 2012/13 resulting in changes in each of those years relative to the spring Economic Outlook (EO09-1).

Forecasts for interest rates and exchange rates were again reviewed in October for years 2009/10 through to and including 2012/13 and the forecast of the Cdn/US exchange rate and the Manitoba Hydro long-term cost of debt were revised for 2009/10 and 2010/11 following that review. The short-term interest rate for the period 2009/10 to 2012/13 plus the long-term interest rate and exchange rate for 2011/12 to 2012/13 were unchanged relative to the July 2009 review as the October 2009 information either resulted in no changes or immaterial changes.

CAC/MSOS/MH I-137

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 line 17 and following

The Applicant presents a table of revised variables which appears to indicate a T-bill rate for an unstated term, and the “MH Cost of Debt” for short term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the historical support for the relationship between the T-bill rate and the “MH Cost of Debt”.

- b) Please provide the average T-bill rate for the Bank of Canada 1 month Treasury bill data series V39063 for the period March 1, 2009 to the date at which the 2009/10 value of 0.25% was determined.**

ANSWER:

The T-Bill rate of 0.25% for the year 2009/10 in Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 line 17, is for a 90 day term and not a one month term.

At the time of the October update to the Economic Outlook EO09-1, the actual rates from the Bank of Canada for Q2 and Q3 of 2009 were available and were used in the determination of the 0.25% rate for year 2009/10. The rates for Q4 2009 and Q1 2010 were determined by calculating the average of the 90 day T-Bill rates from a range of forecasters.

The actual 90 day T-Bill rates from the Bank of Canada, monthly series V122541, for each month of Q2 2009 to Q3 2009 are provided below as are the average forecasted rates for Q4 2009 and Q1 2010:

Q2 2009 - actuals, %		Q3 2009 - actuals, %		Q4 2009 -forecast, %		Q1 2010 - forecast, %	
Apr	0.25	Jul	0.24				
May	0.20	Aug	0.24				
Jun	0.24	Sep	0.22				
Average	0.23	Average	0.23	Average	0.25	Average	0.33

The T-Bill rate of 0.25% for the year 2009/10 in Tab 5, “Integrated Financial Forecast & Economic Outlook”, Section 5.1 line 17 was determined by taking the average of each of the quarterly averages for the fiscal year April 1, 2009 through to March 31, 2010. The resultant average for the fiscal year 2009/10 was the rounded to 0.25%.

Refer to Manitoba Hydro’s response to PUB/MH I-46(b) for the details of the forecasts used and the calculations.

CAC/MSOS/MH I-137

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 line 17 and following

The Applicant presents a table of revised variables which appears to indicate a T-bill rate for an unstated term, and the “MH Cost of Debt” for short term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the historical support for the relationship between the T-bill rate and the “MH Cost of Debt”.

c) Please indicate the term to maturity of the forecast T-bill rates.

ANSWER:

The term to maturity of the forecast T-Bill rate is 90 days.

CAC/MSOS/MH I-137

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 line 17 and following

The Applicant presents a table of revised variables which appears to indicate a T-bill rate for an unstated term, and the “MH Cost of Debt” for short term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the historical support for the relationship between the T-bill rate and the “MH Cost of Debt”.

- d) Please provide the T-bill rate for 2005/6 through 2008/9 and the MH Cost of Debt, indicating the applicable guarantee fee and resulting credit spread.**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-135(a) for historical information regarding the 3 month Bloomberg BA rate for Manitoba Hydro’s interest rate resets on its Canadian long term floating rate debt.

CAC/MSOS/MH I-137

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 line 17 and following

The Applicant presents a table of revised variables which appears to indicate a T-bill rate for an unstated term, and the “MH Cost of Debt” for short term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the historical support for the relationship between the T-bill rate and the “MH Cost of Debt”.

- e) Please confirm that the Bank of Canada 1 month treasury bill data series V39063 for the period March 1, 2009 to January 27, 2010 averages 0.16%, with a low of 0.08% occurring on August 19, 2009.**

ANSWER:

The Bank of Canada 1 month treasury bill data series V39063 for the period March 1, 2009 to January 27, 2010 had an average of 0.18%, with a high of 0.50% on March 2, 2009 and a low of 0.08% on August 19, 2009. The 0.16% average cannot be confirmed.

CAC/MSOS/MH I-137

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 line 17 and following

The Applicant presents a table of revised variables which appears to indicate a T-bill rate for an unstated term, and the “MH Cost of Debt” for short term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the historical support for the relationship between the T-bill rate and the “MH Cost of Debt”.

- f) Please confirm that the Bank of Canada 3 month treasury bill data series V39065 for the period March 1, 2009 to January 27, 2010 averages 0.22%, with a low of 0.16% occurring on January 27, 2010.**

ANSWER:

The Bank of Canada 3 month treasury bill data series V39055 for the period March 1, 2009 to January 27, 2010 had an average of 0.24%, with a high of 0.59% on February 27, 2009 and a low of 0.16% on January 27, 2010. The 0.22% average cannot be confirmed.

CAC/MSOS/MH I-138

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 line 17 and following

The Applicant presents a table of revised variables which appears to indicate a T-bill rate for an unstated term, and the “MH Cost of Debt” for short term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the methodology employed in the development of the forecast.

- a) Please provide a table of the forecasters’ data points used in the development of the T-bill forecast, similar to that appearing on page 2 of PUB/Centra 2-198 as revised June 1, 2009, setting out;
- i. the name of the forecaster,
 - ii. the date of the forecast,
 - iii. each of the actual or forecast quarterly data points for the financial years 2009/10 through 2012/13, and
 - iv. show the calculation of the average resulting therefrom.

ANSWER:

Please see Manitoba Hydro’s responses to PUB/MH I-46(b), (c), and (d).

CAC/MSOS/MH I-138

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 line 17 and following

The Applicant presents a table of revised variables which appears to indicate a T-bill rate for an unstated term, and the “MH Cost of Debt” for short term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the methodology employed in the development of the forecast.

- b) Please confirm that at the date of the revision, that the data used from each of the forecasters, was the then most current data and had not been superseded, or provide the updated data point that existed at the time of the revision that was not used in the analysis of forecast T-bill rates.**

ANSWER:

Manitoba Hydro can confirm that to the best of its knowledge, the data used from each of the forecasters was the then most current data.

CAC/MSOS/MH I-138

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 line 17 and following

The Applicant presents a table of revised variables which appears to indicate a T-bill rate for an unstated term, and the “MH Cost of Debt” for short term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the methodology employed in the development of the forecast.

- c) For each of the forecasters, please identify whether their forecast was “end of period” data or “period average” data and if “end of period” data, has been employed, explain the manner in which it has been adjusted to be made comparable to any “period average” data.

ANSWER:

Please see Manitoba Hydro’s response to PUB/MH I-46(b).

CAC/MSOS/MH I-138

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 line 17 and following

The Applicant presents a table of revised variables which appears to indicate a T-bill rate for an unstated term, and the “MH Cost of Debt” for short term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the methodology employed in the development of the forecast.

- d) If the October revision includes additional forecasters not named in PUB/Centra 2-198 as revised June 1, 2009, or excludes forecasters that were named in PUB/Centra 2-198 as revised June 1, 2009, please provide the rationale for the changes in the forecasters used.**

ANSWER:

With respect to the forecast of 90 Day T-bill rates, the following forecasters were excluded in the rates for 2009/10 - 2012/13 that had been included in the response to PUB/Centra 2-198:

Federal Finance
Province of British Columbia
Informetrica
Spatial Economics

Federal Finance and Province of British Columbia forecasts were excluded because they were not statistically independent. Informetrica and Spatial Economics were excluded as quarterly forecast information was not available from them.

CAC/MSOS/MH I-138

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 line 17 and following

The Applicant presents a table of revised variables which appears to indicate a T-bill rate for an unstated term, and the “MH Cost of Debt” for short term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the methodology employed in the development of the forecast.

- e) Please discuss the process, if any, undertaken in the recent update to review the relative success of each of the various forecasters of T-bill rates, by comparing their historical forecasts with the actual results in the market subsequent to the time of the forecast.**

ANSWER:

Manitoba Hydro is in the process of reviewing the methodology for interest rate forecasts including the recommendation to retrospectively test forecast accuracy as directed by the PUB in Order 128/09 and will file its response in advance of the next natural gas general rate application.

As identified in Manitoba Hydro’s response to PUB/MH I-46(a), several ongoing enhancements have been incorporated in the forecast of interest rates for years 2009/10 through to and including 2012/13. For these years, the forecasts used were from widely recognized, statistically independent sources.

CAC/MSOS/MH I-139

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 lines 11 and 17 and following

The Applicant presents a table of revised variables which appears to indicate a T-bill rate for an unstated term, and the “MH Cost of Debt” for short term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the methodology employed in the development of the forecast. CAC/MSOS notes that the list of forecasters provided in PUB/Centra 2-198 as revised June 1, 2009 included forecasters which prepared independent forecasts and those that had aggregated data from other forecasters including Consensus and the Federal and BC governments.

The Applicant indicates that rates were reviewed in “October 2009” at line 11 on page 2 of 8 of Section 5.1. CAC/MSOS notes that CAC/MSOS/Centra 2-75 j, in the recent Centra proceeding, it was indicated that “Please note that Consensus Economics provides an annual average forecast (Long-Term Forecasts sheet) only two times per year (typically in October and April). The monthly 10 forecasts simply provide two points in time forecasts (three months forward and a year forward)”.

To expedite this proceeding, CAC/MSOS suggests that CAC/MSOS/Centra 2-75 j CAC/MSOS/Centra 2-76 f and CAC/MSOS/Centra 2-158 from that proceeding be confirmed by the Manitoba Hydro, or amended as required, and accepted into or placed on the record of this proceeding.

- a) Please place on the record of this proceeding CAC/MSOS/Centra 2-75, and CAC/MSOS/Centra 2-158.

ANSWER:

CAC/MSOS/Centra 2-75(j) and CAC/MSOS/Centra 2-158 are attached and referenced as file CAC/MSOS/MH I-139(a)-Attachment 1 and CAC/MSOS/MH I-139(a)-Attachment 2.

CENTRA GAS MANITOBA INC.**2009/10 & 2010/11 GRA****RESPONSE TO INFORMATION REQUESTS OF
CONSUMERS ASSOCIATION OF CANADA (MANITOBA) LTD. AND
MANITOBA SOCIETY OF SENIORS**

CAC/MSOS/CENTRA 2 - 75***Reference: CAC/MSOS-Centra 1-2 (a)***

In the above noted IR, CAC/MSOS addressed the Applicant's forecast of a 4.05% average one month Banker's Acceptance Rate.

Centra indicated that it's forecast of the 1 month rate was derived using an undisclosed methodology on a forecast of the 3 month rate and that the forecast presented was estimated in March 2008. CAC/MSOS wishes to understand who made and approved the forecast 4.05% average one month Banker's Acceptance Rate.

(a) Please describe the level of administration, the Centra Board, Centra Senior management, and or Centra Financial management, which approved the forecast 4.05% average one month Banker's Acceptance Rate;

The preamble to this question incorrectly presumes that Centra forecasts a one month banker's acceptance rate. Centra forecasts a three month banker's acceptance rate. The actual charge to Centra is based on the one month Bloomberg banker's acceptance rate. Typically, the difference between the one month and three month banker's acceptance rate is immaterial. It is noted that the Bank of Canada, for the period from December 31, 1999 to March 18, 2009 reports only a four basis point difference between the average one

1 month banker's acceptance rate (3.49%) and average three month banker's acceptance
2 rate (3.53%).

3
4 Please see the response to CAC/MSOS/Centra 74(a), (b) and (c) for a discussion of the
5 approval of the three months banker's acceptance rate forecast.

6
7 **(b) Please quantify the number of meetings of the group or groups identified in (a)**
8 **above, since March 2008, in which they have addressed matters relating to the**
9 **changing economic conditions and describe the changes or adjustments, if any, in**
10 **their financial plans as a result of the changing economic conditions;**

11
12 Centra monitors changes in economic conditions on an ongoing basis, and the economic
13 environment is considered during the approval process described in CAC/MSOS/Centra
14 74(a).

15
16 **(c) Please discuss fully Centra's methodology (and MH's methodology for the purpose**
17 **of this application) of estimating an average one month Banker's Acceptance Rate**
18 **from a forecast 3 month Banker's Acceptance Rate;**

19
20 **(d) Please explain why there appears to be no reflection of any spread between the one**
21 **month BA rate and the forecast 3 month Banker's Acceptance rate in the replies to**
22 **1-1(a) and 1-1(c);**

23
24 **(e) Please provide the data which was used to develop any "spread" adjustment**
25 **between one and three month rates and provide the analysis which lead to that**
26 **choice and a comparison to the spread that existed in March 2008;**

1 Response to parts (c), (d) and (e):

2 Please refer to the response to part (a).

3

4 **(f) Please provide the March average 2008 for series V39068 (1 month BA's) and V39071**
5 **(3 month BA's) from the Bank of Canada or confirm that in each case the monthly**
6 **average was 3.59%;**

7

8 **(g) Please provide the average 2007 for series V39068 and V39071 from the Bank of**
9 **Canada or confirm that in each case the average was respectively 4.51% and 4.57%;**

10

11 **(h) Please provide the average 2008 for series V39068 and V39071 from the Bank of**
12 **Canada or confirm that in each case the average was respectively 3.14% and 3.19%;**

13

14 **(i) Please provide the average from January 1 to April 3, 2009 for series V39068 and**
15 **V39071 from the Bank of Canada or confirm that in each case the average was**
16 **respectively 0.84% and 0.81%;**

17

18 Response to parts (f), (g), (h) and (i):

19 Confirmed, but as noted in the response to CAC/MSOS/Centra 8(b), Centra does not use
20 the short term interest rates from the Bank of Canada for actual or forecasting purposes,
21 and instead utilizes Bloomberg data.

22

23 The Bank of Canada and Bloomberg have different sources for market pricing information.

24 The following is an overview describing the approach used by the Bank of Canada and
25 Bloomberg:

26

1 Bank of Canada Description for One Month Banker's Acceptance

2 "v39068 - 176-0048 Bank of Canada, money market and other interest rates, daily;
3 Canada; Bankers' acceptances rate, 1-month (daily, 1995-01-01 to 2009-03-19) [B114028]
4 This is non-Statistics Canada information., CANSIM table 176-0048." The data contains
5 statistics used in the preparation of the Bank of Canada Review, mostly made up of data
6 series on activities of financial institutions and financial markets and some general
7 economic and international statistics.

8
9 Bloomberg One Month Canada Banker's Acceptance Description

10 Bloomberg outlines that this is calculated as "Average Rates from nine Canadian
11 Banks/contributors. The high and low rates are omitted and the remaining seven are
12 averaged. Reported on a M-Mkt Yield Basis. Date convention is Actual/365. The
13 contributors are as follows: Bank of Montreal, HSBC, CIBC, RBC, Merrill Lynch, Scotia
14 Capital, TD, National Bank and Deutsche Bank."

15
16 As the methodologies and data sources utilized by Bloomberg and the Bank of Canada are
17 slightly different, it is not unusual for them to derive slightly different interest rates. For
18 example, on March 19, 2009 the Bloomberg one month banker's acceptance rate was
19 0.66% as compared to the Bank of Canada one month banker's acceptance rate of 0.55%.

20
21 Manitoba Hydro has floating rate debt in its debt portfolio and the interest rates charged on
22 each floating rate debt series are reset between 2 and 4 times per year. Bloomberg is used
23 as Manitoba Hydro's interest rate data source due to the fact that the rates are verifiable,
24 readily available, and because Bloomberg is the source used by the Province of Manitoba
25 (and the Province's counterparties who reset the rates). By utilizing the information
26 provided by Bloomberg, Manitoba Hydro and Centra data exactly agree to the information

1 used by the Province of Manitoba and its counterparties when rate resets occur. For
2 internal consistency, Manitoba Hydro therefore utilizes Bloomberg data for obtaining the
3 interest rates set on the intercompany short term loans to Centra.
4

5 **(j) Please provide the page of the Consensus Economics Forecast for February, March**
6 **and April 2008 showing the Treasury Bill rates and Canada Bond yields.**

7
8 Please note that Consensus Economics provides an annual average forecast (Long-Term
9 Forecasts sheet) only two times per year (typically in October and April). The monthly
10 forecasts simply provide two point in time forecasts (three months forward and a year
11 forward). Please see the attached for the point forecasts for February, March and April
12 2008. Note that the Long-Term Forecasts sheet for October 2007, which was the most
13 recent available forecast available at the time the Economic Outlook for 2008 was
14 prepared, was provided in the response to CAC/MSOS/Centra 74(d).

	Average % Change on Previous Calendar Year														Annual Total			
	Gross Domestic Product		Personal Expenditure		Machinery & Equipment Investment		Pre - Tax Corporate Profits		Industrial Production		Consumer Prices		Industrial Product Prices		Average Hourly Earnings		Housing Starts (thousand units)	
	<i>Produit Intérieur Brut</i>		<i>Dépenses de Consommation des Ménages</i>		<i>Investissement Productif</i>		<i>Bénéfices des Sociétés avant impôts</i>		<i>Production Industrielle</i>		<i>Prix à la Consommation</i>		<i>Prix des Produits Industriels</i>		<i>Rémunération Horaire Moyenne</i>		<i>Construction de Logements mis en chantier, milliers</i>	
Economic Forecasters	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
Conf Board of Canada	2.8	3.0	3.5	3.1	9.9	7.0	8.2	6.4	na	na	1.3	2.0	0.1	1.6	na	na	203	192
Caisse de Depot	2.2	2.8	3.4	3.3	6.0	6.0	na	na	na	na	1.8	2.1	na	na	na	na	195	205
Informetrica	2.2	2.5	2.8	2.6	6.0	7.3	5.5	3.5	0.2	1.4	1.8	1.8	-0.5	1.5	3.5	3.0	195	182
CIBC World Markets	2.1	2.5	3.1	2.7	8.8	6.7	5.9	6.5	na	na	1.9	2.5	na	na	na	na	230	218
EDC Economics	2.0	2.3	3.5	2.9	7.3	4.7	-1.3	6.6	na	na	1.6	1.9	na	na	na	na	211	196
Desjardins	1.9	3.0	3.9	4.2	8.6	7.1	5.7	5.2	na	na	1.6	2.1	-2.4	1.1	3.4	3.0	211	197
Global Insight	1.9	2.5	3.4	2.7	9.3	7.1	5.1	6.0	-0.1	1.4	1.7	2.0	-0.6	0.2	na	na	205	195
Scotia Economics	1.9	2.2	3.2	2.6	7.5	6.0	-2.0	3.0	0.5	1.5	1.6	2.0	na	na	na	na	204	192
Toronto Dominion Bank	1.9	2.5	3.4	3.1	7.1	5.3	3.8	4.2	na	na	1.4	2.0	na	na	na	na	210	205
Royal Bank of Canada	1.7	2.5	2.9	3.2	7.9	5.8	1.5	3.6	na	na	1.3	2.0	na	na	na	na	210	184
Economap	1.6	2.3	2.9	3.1	4.2	5.0	-1.5	4.5	-0.2	0.8	1.6	2.0	-0.5	1.6	3.3	2.9	200	190
National Bank Financial	1.5	1.8	3.0	2.5	9.1	7.4	-6.5	1.5	na	na	1.0	1.7	na	na	na	na	na	na
BMO Capital Markets	1.5	2.5	2.8	3.0	4.0	3.7	-1.6	4.5	-0.7	1.1	1.9	1.9	1.0	1.5	4.2	3.7	201	190
University of Toronto	1.5	2.7	3.4	2.4	10.6	5.8	2.4	4.9	na	na	1.1	1.9	na	na	na	na	202	195
JP Morgan	1.3	2.6	2.7	2.9	7.6	5.2	-5.0	7.0	-1.6	4.0	1.4	1.9	-1.3	3.0	3.5	3.5	195	210
Merrill Lynch Canada	1.1	1.6	3.7	3.2	na	na	na	na	na	na	1.3	1.6	na	na	na	na	208	190
Consensus (Mean)	1.8	2.5	3.2	3.0	7.6	6.0	1.4	4.8	-0.3	1.7	1.5	2.0	-0.6	1.5	3.6	3.2	205	196
Last Month's Mean	2.1	2.5	3.4	3.0	7.8	6.0	2.5	4.6	0.5	1.2	1.6	2.0	0.1	1.4	3.3	3.2	205	195
3 Months Ago	2.4		3.2		6.9		4.0		0.7		1.9		1.3		3.3		202	
High	2.8	3.0	3.9	4.2	10.6	7.4	8.2	7.0	0.5	4.0	1.9	2.5	1.0	3.0	4.2	3.7	230	218
Low	1.1	1.6	2.7	2.4	4.0	3.7	-6.5	1.5	-1.6	0.8	1.0	1.6	-2.4	0.2	3.3	2.9	195	182
Standard Deviation	0.4	0.4	0.4	0.4	1.9	1.1	4.5	1.6	0.7	1.2	0.3	0.2	1.1	0.8	0.4	0.4	9	10
Comparison Forecasts																		
IMF (Oct. '07)	2.3		3.1								1.9							
OECD (Dec. '07)	2.4	2.7	3.7	3.2							1.7	1.8						

Government and Background Data

Prime Minister - Mr. Stephen Harper (Conservative). Government - The Conservatives lead a minority government, with 124 out of 308 seats in parliament (155 seats are needed for a clear majority). Next Election - By 2011 (general election). Nominal GDP - C\$1,446bn (2006). Population - 32.6mn (mid-year, 2006). C\$/US\$ Exchange Rate - 1.134 (average, 2006).

Quarterly Consensus Forecasts

Historical Data and Forecasts (bold italics) From Survey of December 10, 2007

	2007		2008				2009			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Gross Domestic Product	1.9	2.5	2.9	2.7	2.3	2.2	2.0	2.1	2.5	2.6
Personal Expenditure	4.0	4.5	4.0	3.7	3.7	3.2	3.2	3.2	3.1	3.0
Consumer Prices	1.9	2.0	2.1	2.5	1.7	1.1	1.4	1.6	1.9	1.9

Percentage Change (year-on-year).

Historical Data

* % change on previous year	2004	2005	2006	2007
Gross Domestic Product*	3.1	3.1	2.8	2.6 e
Personal Expenditure*	3.4	3.8	4.2	4.1 e
Machinery & Eqpt Investment*	9.3	10.8	7.4	4.3 e
Pre - Tax Corporate Profits*	17.1	11.9	5.0	5.8 e
Industrial Production*	1.9	1.6	-0.2	0.1 e
Consumer Prices*	1.8	2.2	2.0	2.2
Industrial Product Prices*	3.2	1.5	2.3	1.6
Average Hourly Earnings*	2.7	3.2	2.7	3.7 e
Housing Starts, '000 units	233	225	227	228
Unemployment Rate, %	7.2	6.8	6.3	6.0
Current Account, C\$ bn	29.1	27.9	23.6	15.3 e
Federal Govt Budget Balance, fiscal years, C\$ bn	1.5	13.2	13.8	9.9 e
3 mth Trsy Bill, % (end yr)	2.5	3.4	4.2	3.8
10 Yr Govt Bond, % (end yr)	4.3	4.0	4.1	4.0

e = consensus estimate based on latest survey

Year Average	Annual Total		Fiscal Years (Apr-Mar)		Rates on Survey Date			
					3.3%		3.8%	
Unemployment Rate (%)	Current Account (C\$ bn)	Federal Govt Budget Balance (C\$ bn)	3 month Treasury Bill Rate (%)	10 Year Government Bond Yield (%)				
Taux de Chômage (%)	Balance Courante (C\$ md)	Balance Budgétaire (C\$ md)	Rendement sur les Bons du Trésor de 3 mois %	Rendement des Obligations d'État de 10 ans %				
2008 2009	2008 2009	FY 08-09 FY 09-10	End May'08 End Feb'09	End May'08 End Feb'09	End May'08 End Feb'09	End May'08 End Feb'09	End May'08 End Feb'09	
5.8 5.8	19.4 21.0	10.5 10.3	3.4 3.6	3.8 4.2				
6.3 6.1	7.0 17.0	2.0 7.0	3.4 4.0	4.0 4.7				
5.8 5.9	6.0 13.0	5.0 6.0	3.2 3.6	3.7 3.9				
6.1 6.0	17.0 20.5	0.0 2.0	3.0 na	3.5 na				
5.8 5.8	6.2 15.5	na na	3.5 3.5	4.1 4.3				
6.1 5.8	0.0 -5.6	12.0 9.0	2.8 3.4	3.7 4.1				
6.2 6.2	-0.1 -7.8	na na	3.4 3.6	3.5 3.6				
6.1 6.2	2.0 -10.0	4.4 5.0	2.9 3.2	3.7 4.0				
6.0 6.1	4.6 6.9	na na	3.7 3.8	4.1 4.4				
6.3 6.4	0.7 2.1	na na	3.0 na	3.9 na				
6.2 6.5	1.0 -7.5	1.0 2.0	3.0 3.2	3.4 3.7				
6.2 6.5	0.6 6.7	na na	3.2 3.6	3.7 4.1				
6.2 6.2	0.0 -8.0	3.0 4.0	3.1 3.2	3.6 4.2				
6.3 6.3	-1.5 -1.9	na na	3.0 3.8	3.6 4.4				
6.2 6.3	-2.1 -3.3	4.5 3.0	na na	3.9 na				
6.3 6.4	-20.4 -36.1	na na	2.8 na	3.6 na				
6.1 6.2	2.5 1.4	4.7 5.4	3.2 3.5	3.7 4.1				
6.1 6.1	5.4 3.2	4.9 5.6						
6.1	19.5	7.5						
6.3 6.5	19.4 21.0	12.0 10.3	3.7 4.0	4.1 4.7				
5.8 5.8	-20.4 -36.1	0.0 2.0	2.8 3.2	3.4 3.6				
0.2 0.2	8.7 14.7	4.1 3.0	0.3 0.3	0.2 0.3				
5.8 5.8								

Canadian Economy Will Likely be Hit by US Woes

Stock market upheaval and fears of a US recession spurred the Federal Reserve on an aggressive round of interest rate cuts at the end of January. Unsurprisingly, a deteriorating economic picture for the US has affected Canada's 2008 GDP growth outlook which has seen a downgrade from 2.1% last month to 1.8%. The economy was already on a slowing bent during Q4 last year, with output-based GDP growing by only 0.1% (m-o-m) in November. Activity was supported by gains in services and a 0.4% (m-o-m) increase in retail trade. However, industry remained weak, falling by 0.2%, while manufacturing declined by 0.3% from October's 0.5% increase. A 0.9% (m-o-m) contraction in durable goods' output impacted heavily on the sector. Elsewhere, though, new manufacturing orders surged from zero growth in October to a whopping 8.1% (m-o-m) gain in November, thanks to transport equipment. However, despite the upbeat report, the outlook for industry is shaky at best. Already, auto output has plunged, with many influential US carmakers in the closely-linked auto industry announcing shift cutbacks and plans for retooling. Moreover, January's forward-looking Business Conditions Survey points to weaker manufacturing production and employment to come. Indeed, the sector may have already fallen into recession on the back of an appreciating currency, high oil prices and weakening US demand. The 2008 production forecast has fallen into negative territory this month.

Headline consumer price inflation eased to 0.1% (m-o-m) in December, bringing the y-o-y rate down from 2.5% to 2.4%. Core inflation, meanwhile, fell by 0.3% (m-o-m), adding to calls for the central bank to lower interest rates. The Fed's unscheduled 75 basis-point cut on January 22 took the Bank of Canada by surprise and overshadowed its own 25 basis-point reduction of the overnight lending rate. A second rate cut south of the border on January 30 has translated into a 100 basis-point rate differential between Canada and the US, leading to further upward pressure on the C\$. The Bank of Canada has stressed that policy will be executed in a "measured" way; still, the recent easing in growth and inflation fundamentals has given the bank more leeway to loosen monetary conditions (see box, below).

Direction of Trade – First Half 2007

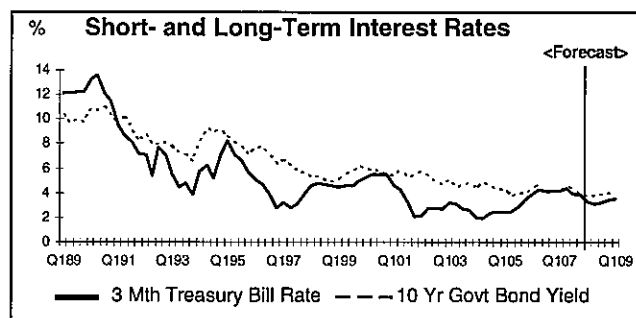
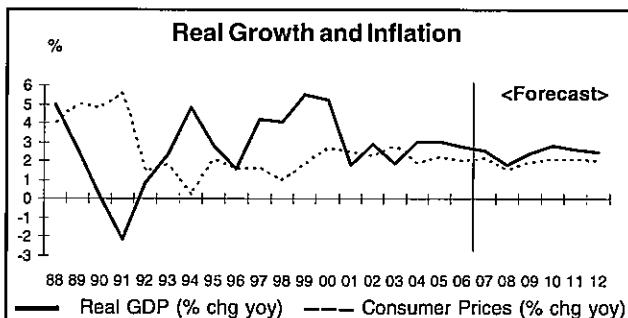
Major Export Markets (% of Total)		Major Import Suppliers (% of Total)	
United States	76.4	United States	60.3
China	3.0	China	7.5
United Kingdom	2.8	Mexico	3.5
Asia (ex. Japan)	6.1	Asia (ex. Japan)	12.4
Latin America	3.1	Latin America	6.1
Eastern Europe	0.8	Africa	1.6

Likelihood of a Bank of Canada Interest Rate Change

Our panel's estimated average probability of a change in the overnight lending rate (4.0% on survey date) at or before the next key policy meeting is:

INCREASE	NO CHANGE	DECREASE	
0.4	+ 14.6	+ 84.9	= 100 %

Most likely rate change mentioned: -0.25 %



CANADA

MARCH 2008

	Average % Change on Previous Calendar Year														Annual Total			
	Gross Domestic Product		Personal Expenditure		Machinery & Equipment Investment		Pre - Tax Corporate Profits		Industrial Production		Consumer Prices		Industrial Product Prices		Average Hourly Earnings		Housing Starts (thousand units)	
	<i>Produit Intérieur Brut</i>		<i>Dépenses de Consommation des Ménages</i>		<i>Investissement Productif</i>		<i>Bénéfices des Sociétés avant impôts</i>		<i>Production Industrielle</i>		<i>Prix à la Consommation</i>		<i>Prix des Produits Industriels</i>		<i>Rémunération Horaire Moyenne</i>		<i>Construction de Logements mis en chantier, milliers</i>	
Economic Forecasters	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
Conf Board of Canada	2.8	3.0	3.5	3.1	9.9	7.0	8.2	6.4	na	na	1.3	2.0	0.1	1.6	na	na	203	192
Caisse de Depot	1.8	2.7	3.4	3.1	7.0	6.0	na	na	na	na	1.8	2.1	na	na	na	na	212	205
Royal Bank of Canada	1.7	2.5	2.9	3.2	7.9	5.8	1.5	3.6	na	na	1.3	2.0	na	na	na	na	210	184
CIBC World Markets	1.6	2.4	4.1	2.8	9.5	6.7	5.1	6.8	na	na	2.3	2.2	na	na	na	na	230	218
Economap	1.6	2.3	3.9	3.1	6.8	5.5	-1.0	4.5	-2.1	1.2	1.8	2.0	-0.2	1.5	3.5	3.0	200	190
Global Insight	1.6	2.3	5.3	3.0	11.3	8.1	2.3	4.9	-1.2	1.3	1.7	2.0	-2.2	0.7	na	na	207	195
Informetrica	1.6	2.3	4.5	2.6	7.0	7.3	4.0	3.5	-4.0	1.4	1.7	1.8	1.0	1.5	3.8	3.0	195	182
Scotia Economics	1.5	2.0	4.2	2.5	8.4	4.2	-2.0	3.0	-1.0	2.0	2.1	2.0	na	na	na	na	208	192
Toronto Dominion Bank	1.5	2.8	4.5	3.3	8.5	5.3	3.7	3.1	na	na	1.5	1.9	na	na	na	na	210	205
BMO Capital Markets	1.4	2.5	4.2	3.0	7.8	4.0	1.0	4.8	-2.0	1.0	2.2	1.9	0.5	1.0	4.4	3.9	205	190
National Bank Financial	1.4	1.8	3.9	2.5	9.5	7.4	-5.5	1.5	na	na	1.1	2.3	na	na	na	na	na	na
JP Morgan	1.3	2.6	3.5	2.9	8.1	5.2	-5.0	7.0	-1.6	4.0	1.4	1.9	-0.9	3.0	3.5	3.5	195	210
Desjardins	1.2	2.2	5.2	4.6	10.8	6.8	5.7	5.2	na	na	1.8	1.3	-3.8	2.0	4.2	2.7	212	197
EDC Economics	1.0	2.3	4.6	3.5	7.5	3.3	-2.8	4.1	na	na	1.6	1.9	na	na	na	na	208	194
Merrill Lynch Canada	0.9	1.6	3.8	3.2	na	na	na	na	na	na	1.3	1.6	na	na	na	na	208	190
University of Toronto	0.9	2.2	4.1	2.0	9.7	5.4	2.0	2.9	na	na	1.4	2.0	na	na	na	na	210	195
Consensus (Mean)	1.5	2.3	4.1	3.0	8.6	5.9	1.2	4.4	-2.0	1.8	1.6	1.9	-0.8	1.6	3.9	3.2	208	196
Last Month's Mean	1.8	2.5	3.2	3.0	7.6	6.0	1.4	4.8	-0.3	1.7	1.5	2.0	-0.6	1.5	3.6	3.2	205	196
3 Months Ago	2.2		3.4		7.3		3.0		0.6		1.6		0.3		3.3		203	
High	2.8	3.0	5.3	4.6	11.3	8.1	8.2	7.0	-1.0	4.0	2.3	2.3	1.0	3.0	4.4	3.9	230	218
Low	0.9	1.6	2.9	2.0	6.8	3.3	-5.5	1.5	-4.0	1.0	1.1	1.3	-3.8	0.7	3.5	2.7	195	182
Standard Deviation	0.4	0.4	0.6	0.6	1.4	1.4	4.1	1.6	1.1	1.1	0.3	0.2	1.7	0.7	0.4	0.5	8	10
Comparison Forecasts																		
IMF (Oct. '07)	2.3		3.1								1.9							
OECD (Dec. '07)	2.4	2.7	3.7	3.2							1.7	1.8						

Government and Background Data

Prime Minister - Mr. Stephen Harper (Conservative). Government - The Conservatives lead a minority government, with 124 out of 308 seats in parliament (155 seats are needed for a clear majority). Next Election - By 2011 (general election). Nominal GDP - C\$1,446bn (2006). Population - 32.6mn (mid-year, 2006). C\$/US\$ Exchange Rate - 1.134 (average, 2006).

Quarterly Consensus Forecasts

Historical Data and Forecasts (bold italics) From Survey of March 10, 2008

	2007				2008				2009					
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Gross Domestic Product	3.1	2.9	1.9	1.4	1.3	1.6	2.1	2.5	2.5	2.7				
Personal Expenditure	4.5	5.4	5.0	4.4	4.0	3.1	3.0	3.0	3.1	3.2				
Consumer Prices	2.1	2.5	1.7	1.5	1.8	1.9	1.9	1.8	1.9	2.0				

Percentage Change (year-on-year).

Historical Data

* % change on previous year	2004	2005	2006	2007
Gross Domestic Product*	3.1	3.1	2.8	2.7
Personal Expenditure*	3.4	3.8	4.2	4.7
Machinery & Eqpt Investment*	9.3	10.8	7.4	5.1
Pre - Tax Corporate Profits*	17.1	11.9	5.0	5.8
Industrial Production*	1.9	1.6	-0.2	0.3
Consumer Prices*	1.8	2.2	2.0	2.2
Industrial Product Prices*	3.2	1.5	2.3	1.6
Average Hourly Earnings*	2.7	3.2	2.7	3.7
Housing Starts, '000 units	233	225	227	228
Unemployment Rate, %	7.2	6.8	6.3	6.0
Current Account, C\$ bn	29.1	27.9	23.6	14.2
Federal Govt Budget Balance, fiscal years, C\$ bn	1.5	13.2	13.8	10.3 e
3 mth Trsy Bill, % (end yr)	2.5	3.4	4.2	3.8
10 Yr Govt Bond, % (end yr)	4.3	4.0	4.1	4.0

e = consensus estimate based on latest survey

MARCH 2008

CANADA

Year Average	Annual Total		Fiscal Years (Apr-Mar)		Rates on Survey Date				
					2.4%		3.5%		
Unemployment Rate (%)	Current Account (C\$ bn)	Federal Govt Budget Balance (C\$ bn)		3 month Treasury Bill Rate (%)		10 Year Government Bond Yield (%)			
Taux de Chômage (%)	Balance Courante (C\$ md)	Balance Budgétaire (C\$ md)		Rendement sur les Bons du Trésor de 3 mois %		Rendement des Obligations d'Etat de 10 ans %			
2008 2009	2008 2009	FY 08-09	FY 09-10	End Jun'08	End Mar'09	End Jun'08	End Mar'09		
5.8	5.8	19.4	21.0	10.5	10.3	2.8	3.0	3.7	4.1
6.2	6.1	0.0	12.0	2.0	7.0	2.9	3.5	3.7	4.6
6.3	6.4	0.7	2.1	na	na	3.0	3.5	3.7	4.1
6.2	6.1	1.4	11.6	2.5	2.0	2.6	na	3.3	na
6.2	6.3	-11.0	-15.0	2.0	3.0	2.8	3.1	3.6	4.0
6.1	6.2	-19.5	-22.5	na	na	3.1	3.4	3.7	3.9
5.8	5.9	-20.0	13.0	5.0	6.0	2.5	3.5	3.8	4.3
6.0	6.2	-4.0	13.0	2.3	1.3	2.3	2.5	3.3	4.0
6.0	6.2	1.9	6.4	na	na	2.9	3.0	3.8	3.9
6.1	6.2	-10.0	-18.0	2.0	3.0	2.7	2.8	3.5	3.7
6.2	6.2	0.6	6.8	na	na	3.0	3.0	3.7	4.2
6.2	6.3	-5.3	-6.7	4.5	3.0	2.9	3.3	na	na
6.0	5.9	-2.0	-6.0	5.0	8.0	2.8	3.4	3.5	4.0
6.1	6.1	-16.3	na	na	na	2.7	3.0	3.6	4.3
6.3	6.4	-20.4	-36.1	na	na	2.7	na	3.5	na
6.2	6.3	-3.2	-2.6	na	na	2.2	2.8	3.5	3.9
6.1	6.2	-5.5	-1.4	4.0	4.8	2.7	3.1	3.6	4.1
6.1	6.2	2.5	1.4	4.7	5.4				
6.1		8.9		7.3					
6.3	6.4	19.4	21.0	10.5	10.3	3.1	3.5	3.8	4.6
5.8	5.8	-20.4	-36.1	2.0	1.3	2.2	2.5	3.3	3.7
0.2	0.2	10.5	16.0	2.8	3.1	0.2	0.3	0.2	0.2
5.8	5.8								

Panellists Make Sweeping Changes to their Forecasts

This month's consensus forecasts present a diverging picture of economic activity. Large increases in our panel's 2008 expectations for personal expenditure and investment contrast with massive downgrades in the industrial production and current account outlook. In spite of the upbeat impetus from domestic demand, economic sentiment as a whole has become noticeably more pessimistic this month. Already, data from the end of last year confirmed the marked downturn in Canadian activity. GDP grew by a solid 2.9% (y-o-y) in the fourth quarter of 2007, but this was due to base year effects following a weak end to 2006. In q-o-q terms, the economy slowed from 0.7% in Q3 to 0.2% on the back of a marked decline in exports. Indeed, value-based exports fell by 3.1% (m-o-m) in December alone, leading to another narrowing in the current account and forecasts now pointing to a C\$5.5bn deficit for this year. Domestic demand over the final three months of 2007, though, was exceptionally resilient, with personal spending growth accelerating from 1.1% (q-o-q) to 1.8%. This benefited auto sales and the services sector (while also fuelling import growth) and the upbeat trend is expected to continue into this year. Indeed, the 2008 personal expenditure forecast has jumped from 3.2% to 4.1% this month. Moreover, Canada's modest inflation outlook – in contrast with most of the G-7 – bodes well and has provided the central bank with room for further rate cuts.

The national accounts report was particularly disappointing on the industrial front. While the strong C\$ has helped to keep inflation manageable, it has also hit exporters. The US downturn (destination for over 75% of Canadian exports) is of particular concern. GDP growth contracted by a sharp 0.7% (m-o-m) in December on the back of a 3.2% monthly decline in export-oriented manufacturing (partly triggered by a massive 27% collapse in automobile output due to holiday plant shutdowns). Manufacturing sales and shipments also returned to negative territory at the end of 2007. With the US outlook progressively worsening, consensus expectations for 2008 GDP growth and industrial production have dropped this month, with production downgraded from -0.3% to predict a massive 2.0% decline.

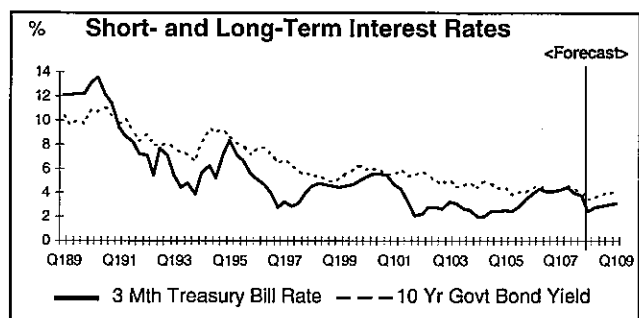
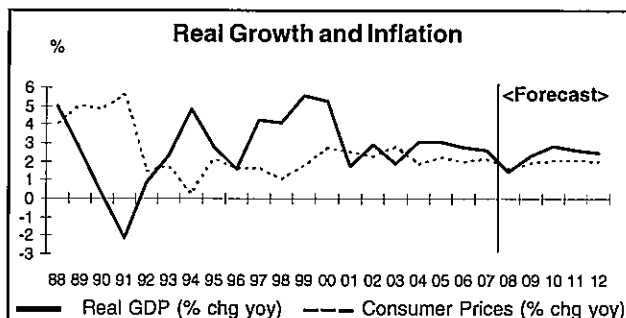
Direction of Trade – First Half 2007

Major Export Markets (% of Total)		Major Import Suppliers (% of Total)	
United States	76.4	United States	60.3
China	3.0	China	7.5
United Kingdom	2.8	Mexico	3.5
Asia (ex. Japan)	6.1	Asia (ex. Japan)	12.4
Latin America	3.1	Latin America	6.1
Eastern Europe	0.8	Africa	1.6

Likelihood of a Bank of Canada Interest Rate Change

Our panel's estimated average probability of a change in the overnight lending rate (3.50% on survey date) at or before the next key policy meeting is:

INCREASE	NO CHANGE	DECREASE	
0.8	+ 8.8	+ 90.4	= 100 %
Most likely rate change mentioned:			-0.50 %



CANADA

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	Average % Change on Previous Calendar Year														Annual Total			
	Gross Domestic Product		Personal Expenditure		Machinery & Equipment Investment		Pre - Tax Corporate Profits		Industrial Production		Consumer Prices		Industrial Product Prices		Average Hourly Earnings		Housing Starts (thousand units)	
	<i>Produit Intérieur Brut</i>		<i>Dépenses de Consommation des Ménages</i>		<i>Investissement Productif</i>		<i>Bénéfices des Sociétés avant impôts</i>		<i>Production Industrielle</i>		<i>Prix à la Consommation</i>		<i>Prix des Produits Industriels</i>		<i>Rémunération Horaire Moyenne</i>		<i>Construction de Logements mises en chantier, milliers</i>	
Economic Forecasters	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
Conf Board of Canada	2.2	3.0	4.2	3.1	10.5	6.2	7.9	6.7	na	na	1.3	1.9	-0.2	1.3	na	na	211	194
Caisse de Depot	1.7	2.5	3.7	3.1	8.0	6.0	na	na	na	na	1.7	2.0	na	na	na	na	212	205
CIBC World Markets	1.6	3.0	4.3	2.9	9.8	6.7	5.1	9.2	na	na	2.4	3.0	na	na	na	na	230	220
Informetrica	1.6	2.3	4.5	2.6	7.0	7.3	4.0	3.5	-4.0	1.4	1.7	1.8	1.0	1.5	3.8	3.0	204	182
Royal Bank of Canada	1.6	2.3	4.3	3.1	8.3	5.5	1.4	3.4	na	na	1.4	1.9	na	na	na	na	216	184
Global Insight	1.6	2.3	5.3	3.0	11.3	8.1	2.1	3.9	-0.8	1.3	1.8	2.1	-3.2	0.5	na	na	209	195
Economap	1.5	2.3	3.8	3.1	6.8	5.5	1.0	4.5	-2.1	1.0	1.9	1.8	-0.5	1.5	3.7	3.0	205	190
Scotia Economics	1.5	2.0	4.3	2.4	8.4	3.9	-2.0	3.0	-1.0	2.0	2.1	2.0	na	na	na	na	215	192
BMO Capital Markets	1.4	2.4	4.2	3.0	7.8	4.0	1.0	4.7	-2.0	0.7	2.0	1.9	0.5	1.0	4.7	4.0	210	200
National Bank Financial	1.4	1.8	3.9	2.5	6.4	7.4	-5.5	1.5	na	na	1.3	2.3	na	na	na	na	200	180
Desjardins	1.3	2.1	5.2	4.6	10.8	6.8	1.2	4.1	na	na	1.9	1.3	-3.8	2.0	4.0	2.7	220	197
JP Morgan	1.1	2.3	3.9	2.5	7.7	5.1	-6.0	7.0	-2.7	2.7	1.8	2.1	-0.9	3.0	3.7	3.5	195	210
Toronto Dominion Bank	1.1	1.8	4.3	2.6	5.2	4.9	2.9	2.6	na	na	1.5	1.9	na	na	na	na	214	205
EDC Economics	1.0	2.3	4.6	3.4	7.5	3.2	-3.3	4.6	na	na	1.6	1.9	na	na	na	na	208	194
Merrill Lynch Canada	0.9	1.4	5.5	3.7	na	na	na	na	na	na	1.6	1.7	na	na	na	na	213	190
University of Toronto	0.9	2.2	4.1	2.0	9.7	5.4	2.0	2.9	na	na	1.5	2.0	na	na	na	na	217	198
Consensus (Mean)	1.4	2.3	4.4	3.0	8.3	5.7	0.8	4.4	-2.1	1.5	1.7	2.0	-1.0	1.5	4.0	3.2	211	196
Last Month's Mean	1.5	2.3	4.1	3.0	8.6	5.9	1.2	4.4	-2.0	1.8	1.6	1.9	-0.8	1.6	3.9	3.2	208	196
3 Months Ago	2.1	2.5	3.4	3.0	7.8	6.0	2.5	4.6	0.5	1.2	1.6	2.0	0.1	1.4	3.3	3.2	205	195
High	2.2	3.0	5.5	4.6	11.3	8.1	7.9	9.2	-0.8	2.7	2.4	3.0	1.0	3.0	4.7	4.0	230	220
Low	0.9	1.4	3.7	2.0	5.2	3.2	-6.0	1.5	-4.0	0.7	1.3	1.3	-3.8	0.5	3.7	2.7	195	180
Standard Deviation	0.3	0.4	0.5	0.6	1.8	1.4	3.9	2.0	1.2	0.7	0.3	0.3	1.8	0.8	0.4	0.5	8	10
Comparison Forecasts																		
IMF (Apr. '08)	1.3	1.9	3.5	2.3							1.6	2.0						
OECD (Dec. '07)	2.4	2.7	3.7	3.2							1.7	1.8						

Government and Background Data

Prime Minister - Mr. Stephen Harper (Conservative). Government - The Conservatives lead a minority government, with 124 out of 308 seats in parliament (155 seats are needed for a clear majority). Next Election - By 2011 (general election). Nominal GDP - C\$1,446bn (2006). Population - 32.6mn (mid-year, 2006). C\$/S Exchange Rate - 1.134 (average, 2006).

Quarterly Consensus Forecasts

Historical Data and Forecasts (bold italics) From Survey of March 10, 2008

	2007		2008				2009			
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Gross Domestic Product	3.1	2.9	1.9	1.4	1.3	1.6	2.1	2.5	2.5	2.7
Personal Expenditure	4.5	5.4	5.0	4.4	4.0	3.1	3.0	3.0	3.1	3.2
Consumer Prices	2.1	2.5	1.7	1.5	1.8	1.9	1.9	1.8	1.9	2.0

Percentage Change (year-on-year).

Historical Data

* % change on previous year	2004	2005	2006	2007
Gross Domestic Product*	3.1	3.1	2.8	2.7
Personal Expenditure*	3.4	3.8	4.2	4.7
Machinery & Eqpt Investment*	9.3	10.8	7.4	5.1
Pre - Tax Corporate Profits*	17.1	11.9	5.0	5.8
Industrial Production*	1.9	1.6	-0.2	0.3
Consumer Prices*	1.8	2.2	2.0	2.2
Industrial Product Prices*	3.2	1.5	2.3	1.6
Average Hourly Earnings*	2.7	2.8	2.9	3.9
Housing Starts, '000 units	233	225	227	228
Unemployment Rate, %	7.2	6.8	6.3	6.0
Current Account, C\$ bn	29.1	27.9	23.6	14.2
Federal Govt Budget Balance, fiscal years, C\$ bn	1.5	13.2	13.8	9.8 e
3 mth Trsy Bill, % (end yr)	2.5	3.4	4.2	3.8
10 Yr Govt Bond, % (end yr)	4.3	4.0	4.1	4.0

e = consensus estimate based on latest survey

APRIL 2008

CANADA

Year Average	Annual Total		Fiscal Years (Apr-Mar)		Rates on Survey Date			
					2.4%		3.6%	
Unemployment Rate (%)	Current Account (C\$ bn)	Federal Govt Budget Balance (C\$ bn)	3 month Treasury Bill Rate (%)	10 Year Government Bond Yield (%)				
Taux de Chômage (%)	Balance Courante (C\$ md)	Balance Budgétaire (C\$ md)	Rendement sur les Bons du Trésor de 3 mois %	Rendement des Obligations d'Etat de 10 ans %				
2008 2009	2008 2009	FY 08-09 FY 09-10	End Jul'08 End Apr'09	End Jul'08 End Apr'09				
5.8 5.8	7.0 5.9	1.6 4.4	3.1 3.5	4.1 4.4				
6.2 6.1	0.0 12.0	2.0 7.0	2.7 3.1	3.6 4.5				
6.2 6.2	-1.4 2.1	2.5 2.0	2.1 2.7	3.4 3.9				
6.1 6.0	-15.0 13.0	5.0 6.0	2.1 2.5	3.6 3.8				
6.2 6.5	-2.7 -8.8	na na	2.3 2.9	3.6 3.9				
6.1 6.2	-22.5 -26.6	na na	2.7 3.5	3.6 3.7				
6.2 6.4	-11.0 -15.0	2.0 3.0	2.2 2.9	3.4 3.8				
6.0 6.2	-6.0 -15.0	2.3 1.3	1.5 2.1	3.4 4.0				
6.1 6.2	-10.0 -18.0	3.0 4.0	2.5 2.8	3.4 3.7				
6.2 6.5	0.6 6.7	2.0 2.0	2.4 2.5	3.6 3.9				
5.9 5.7	-21.3 -36.0	5.0 8.0	2.5 3.4	3.7 4.1				
6.2 6.3	0.7 -2.0	4.5 3.0	2.7 2.9	3.5 3.7				
6.0 6.3	-8.6 0.1	na na	1.9 2.0	3.5 3.8				
6.0 6.1	-16.1 na	na na	2.5 3.0	3.7 3.9				
6.1 6.1	-17.0 -33.3	na na	1.7 2.0	3.4 3.5				
6.2 6.3	-2.5 -2.5	na na	1.8 2.6	3.5 3.9				
6.1 6.2	-7.9 -7.8	3.0 4.1	2.3 2.8	3.6 3.9				
6.1 6.2	-5.5 -1.4	4.0 4.8						
6.1 6.1	5.4 3.2	4.9 5.6						
6.2 6.5	7.0 13.0	5.0 8.0	3.1 3.5	4.1 4.5				
5.8 5.7	-22.5 -36.0	1.6 1.3	1.5 2.0	3.4 3.5				
0.1 0.2	8.7 15.7	1.3 2.3	0.4 0.5	0.2 0.3				
6.1 6.3								
5.8 5.8								

Resilience Characterises Economic Outlook

Despite the uncertainty surrounding global growth prospects, latest Canadian data have been surprisingly resilient and, in a few cases, even upbeat. January GDP growth rebounded by 0.6% (m-o-m) following December's 0.7% contraction, thanks to broad-based gains in both the household and industrial sectors. Retail trade rose by 1.2% on clothing, furniture, car, electronics and food purchases, highlighting the underlying strength of consumer spending. The credit crunch will undoubtedly have an impact on purchasing decisions this year, though, as will recent signs that the job market may be faltering. Indeed, March payrolls moderated from a barn-storming 43,300 rise in the previous month to only a 14,600 increase, while unemployment jumped from 5.8% to 6.0%. Our panel's forecast for the jobless rate is unchanged, however, while observers point out that employment is still growing – in contrast with US indicators of job creation. Personal expenditure forecasts have therefore been upgraded to an impressive 4.4% for this year. Moreover, while the global economy is plagued by rising inflation concerns (especially food and fuel prices), Canadian consumer price inflation remains noticeably muted. Indeed, increases in the headline CPI moderated from 2.2% (y-o-y) in January to 1.8% in the following month as a 1%-point cut in the federal Goods and Services tax took effect. With automobile retailers slashing car prices to compete with more competitive US sellers and the C\$ remaining strong, inflation is not expected to pick up significantly. Our panel's 2008 consumer price expectations have consequently edged up only moderately this month, to 1.7%. This hints at the Bank of Canada's flexibility in terms of potential monetary loosening; indeed, a 50 basis-point rate cut is expected soon (see below).

Industry saw an unexpected turnaround in fortunes, at odds with its closely-linked US neighbour. January's 1.7% (m-o-m) jump in manufacturing went some way towards halving December's sharp 3.4% drop, while industrial production as a whole rose by 1.1%. This compared favourably with a muted 0.1% rise in US production during the same month. Elsewhere, January saw a rebound in factory shipments and new orders. This year's production expectations remain in sharply negative territory, though.

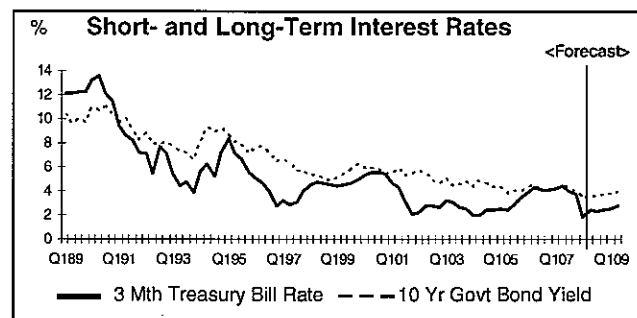
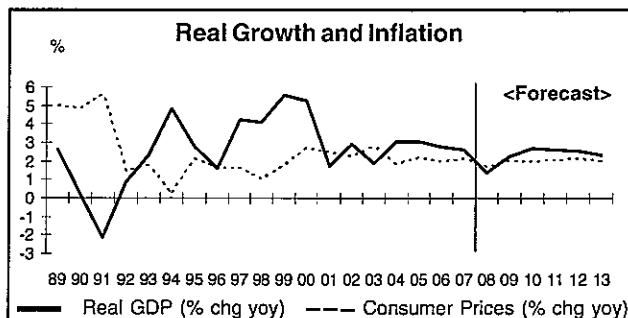
Direction of Trade – First Half 2007

Major Export Markets (% of Total)		Major Import Suppliers (% of Total)	
United States	76.4	United States	60.3
China	3.0	China	7.5
United Kingdom	2.8	Mexico	3.5
Asia (ex. Japan)	6.1	Asia (ex. Japan)	12.4
Latin America	3.1	Latin America	6.1
Eastern Europe	0.8	Africa	1.6

Likelihood of a Bank of Canada Interest Rate Change

Our panel's estimated average probability of a change in the overnight lending rate (3.50% on survey date) at or before the next key policy meeting is:

INCREASE	NO CHANGE	DECREASE	
0.0	+ 16.1	+ 83.9	= 100 %
Most likely rate change mentioned:			-0.50 %



LONG-TERM FORECASTS**OCTOBER 2007**

continued from page 3

France											
* % change over previous year	Historical				Consensus Forecasts						
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013-2017 ¹
Gross Domestic Product*	1.1	2.3	1.7	2.2	1.8	1.9	2.1	2.2	2.2	2.2	2.1
Household Consumption*	2.1	2.5	2.2	2.3	1.9	2.3	2.1	2.2	2.3	2.3	2.3
Business Investment*	0.4	3.6	2.7	4.6	4.6	3.2	3.9	4.0	4.0	4.1	3.8
Industrial Production*	-0.8	2.3	0.3	1.3	1.4	1.6	1.7	1.9	1.8	1.9	1.9
Consumer Prices*	2.1	2.1	1.7	1.7	1.4	1.7	1.8	1.9	1.9	1.9	1.9
Current Account Balance (Euro bn)	13.0	8.5	-15.7	-22.5	-21.9	-20.6	-25.0	-24.0	-21.0	-19.8	-15.1
10 Year Treasury Bond Yield, % ²	4.4	3.7	3.3	4.0	4.3 ³	4.4 ⁴	4.6	4.6	4.6	4.8	4.7

United Kingdom											
* % change over previous year	Historical				Consensus Forecasts						
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013-2017 ¹
Gross Domestic Product*	2.8	3.3	1.8	2.8	2.9	2.0	2.3	2.6	2.6	2.5	2.5
Household Consumption*	3.0	3.5	1.5	2.0	2.8	1.7	2.1	2.4	2.3	2.4	2.5
Gross Fixed Investment*	1.1	5.9	1.5	8.2	5.6	2.6	2.8	3.5	3.4	3.4	3.7
Manufacturing Production*	0.2	2.0	-1.2	1.3	0.9	0.9	1.0	0.9	0.9	0.8	0.9
Retail Prices (underlying rate)*	2.8	2.2	2.3	2.9	3.2	2.6	2.5	2.5	2.6	2.6	2.5
Consumer Prices*	1.4	1.3	2.1	2.3	2.3	2.0	2.0	2.1	2.1	2.1	2.0
Current Account Balance (£ bn)	-14.9	-19.3	-30.5	-41.9	-43.7	-45.8	-49.7	-48.3	-46.8	-45.0	-45.0
10 Year Treasury Bond Yield, % ²	4.8	4.5	4.1	4.7	5.0 ³	5.1 ⁴	5.1	5.1	5.1	5.2	5.0

Italy											
* % change over previous year	Historical				Consensus Forecasts						
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013-2017 ¹
Gross Domestic Product*	0.1	1.0	0.2	1.9	1.8	1.4	1.6	1.5	1.4	1.5	1.6
Household Consumption*	1.0	0.7	0.6	1.5	2.0	1.6	1.7	1.5	1.5	1.6	1.7
Gross Fixed Investment*	-1.5	1.3	-0.2	2.4	2.3	1.7	2.1	2.2	2.3	1.9	1.9
Industrial Production*	-0.6	-0.3	-0.8	2.6	0.9	1.3	1.4	1.0	0.8	1.1	1.1
Consumer Prices*	2.7	2.2	2.0	2.1	1.8	2.0	2.0	2.0	2.0	2.0	2.1
Current Account Balance (Euro bn)	-17.4	-13.1	-23.4	-37.9	-32.9	-29.6	-26.3	-25.9	-26.2	-21.3	-18.5
10 Year Treasury Bond Yield, % ²	4.5	3.8	3.5	4.2	4.4 ³	4.6 ⁴	4.7	4.8	4.8	5.0	5.0

Canada											
* % change over previous year	Historical				Consensus Forecasts						
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013-2017 ¹
Gross Domestic Product*	1.9	3.1	3.1	2.8	2.5	2.4	2.7	2.8	2.6	2.5	2.4
Personal Expenditure*	3.0	3.4	3.8	4.2	3.8	3.0	2.6	2.7	2.6	2.4	2.3
Machinery & Eqpt Investment*	7.7	9.3	10.8	7.4	2.8	6.7	4.7	4.4	4.2	3.6	3.4
Industrial Production*	0.2	1.8	1.0	-0.5	0.0	1.4	2.4	2.8	2.9	2.8	2.6
Consumer Prices*	2.8	1.8	2.2	2.0	2.3	2.1	2.0	2.0	2.1	2.0	2.0
Current Account Balance (C\$ bn)	14.7	29.1	27.9	23.6	28.4	23.1	19.9	19.1	16.7	17.8	18.1
10 Year Treasury Bond Yield, % ²	4.8	4.3	4.0	4.1	4.4 ³	4.7 ⁴	5.1	5.1	5.0	5.2	5.1

Euro zone											
* % change over previous year	Historical				Consensus Forecasts						
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013-2017 ¹
Gross Domestic Product*	0.8	1.8	1.6	2.9	2.6	2.0	2.1	2.0	2.0	2.0	2.0
Private Consumption*	1.2	1.5	1.5	1.9	1.5	2.0	2.0	1.9	1.8	1.9	1.8
Gross Fixed Investment*	1.2	1.9	2.8	5.3	4.9	2.7	2.9	2.6	2.7	2.7	2.7
Industrial Production*	0.3	2.1	1.3	4.0	3.0	2.2	2.0	1.9	2.2	2.0	1.9
Consumer Prices*	2.1	2.1	2.2	2.2	2.0	2.0	2.0	1.9	1.9	1.9	1.9
Current Account Balance (Euro bn)	32.7	59.5	-0.1	-8.4	1.0	6.3	12.6	5.0	5.9	6.5	7.5

¹Signifies average for period ²End period ³End January, 2008 ⁴End October, 2008

CENTRA GAS MANITOBA INC.

2009/10 & 2010/11 GRA

**RESPONSE TO INFORMATION REQUESTS OF
CONSUMERS ASSOCIATION OF CANADA (MANITOBA) LTD. AND
MANITOBA SOCIETY OF SENIORS**

1 **CAC/MSOS/CENTRA 2 - 158**

2 ***Reference: June 12, 2009 Update to IR's***

3

4 **CAC/MSOS notes that in CAC/MSOS/Centra II-75 (J), Centra advised that the Consensus**

5 **Economics long term forecast was updated in April and October. CAC/MSOS requests**

6 **the April 2008 and 2009 updates, so as to provide the Board with the trend and most**

7 **recent Consensus forecast data.**

8

9 The Consensus Economics long term forecasts for April 2008 and April 2009 are attached.

10

11

continued from page 3

France											
* % change over previous year	Historical				Consensus Forecasts						
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014-2018 ¹
Gross Domestic Product*	2.3	1.7	2.2	1.9	1.5	1.7	2.1	2.1	2.1	2.1	2.1
Household Consumption*	2.5	2.2	2.3	2.1	1.9	2.0	2.3	2.3	2.2	2.2	2.2
Business Investment*	3.6	2.7	4.6	5.1	2.7	2.6	3.8	3.5	3.4	3.4	3.4
Industrial Production*	2.3	0.4	1.3	1.8	1.4	1.5	2.7	2.2	2.1	2.1	2.0
Consumer Prices*	2.1	1.8	1.6	1.5	2.5	1.8	1.8	1.8	1.9	1.8	1.8
Current Account Balance (Euro bn)	8.5	-15.7	-22.5	-24.4	-30.8	-32.6	-24.8	-23.7	-20.4	-15.0	-12.5
10 Year Treasury Bond Yield, % ²	3.7	3.3	4.0	4.4	4.0 ³	4.2 ⁴	4.4	4.5	4.5	4.5	4.5

United Kingdom											
* % change over previous year	Historical				Consensus Forecasts						
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014-2018 ¹
Gross Domestic Product*	3.3	1.8	2.9	3.0	1.6	1.7	2.0	2.2	2.3	2.4	2.4
Household Consumption*	3.5	1.5	1.9	3.0	1.5	1.4	1.7	2.0	2.1	2.2	2.3
Gross Fixed Investment*	5.9	1.5	7.6	6.2	2.1	1.5	1.7	1.9	2.6	2.9	3.2
Manufacturing Production*	2.0	-1.2	1.5	0.6	0.2	0.7	0.4	0.9	1.1	1.2	1.1
Retail Prices (underlying rate)*	2.2	2.3	2.9	3.2	3.4	2.5	2.7	2.7	2.6	2.6	2.7
Consumer Prices*	1.3	2.1	2.3	2.3	2.6	2.0	2.2	2.2	2.1	2.1	2.1
Current Account Balance (£ bn)	-19.3	-31.0	-50.7	-57.8	-58.9	-52.8	-51.8	-51.2	-51.9	-53.7	-60.7
10 Year Treasury Bond Yield, % ²	4.5	4.1	4.7	4.6	4.4 ³	4.5 ⁴	4.9	5.1	5.1	5.0	5.0

Italy											
* % change over previous year	Historical				Consensus Forecasts						
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014-2018 ¹
Gross Domestic Product*	1.0	0.2	1.9	1.6	0.6	1.1	1.5	1.4	1.4	1.4	1.4
Household Consumption*	0.7	0.6	1.5	1.6	0.8	1.1	1.4	1.4	1.5	1.4	1.4
Gross Fixed Investment*	1.3	-0.2	2.4	1.8	0.9	1.2	1.7	1.7	1.5	1.4	1.4
Industrial Production*	-0.3	-0.8	2.6	-0.2	-0.1	0.9	1.2	1.2	1.1	1.0	1.0
Consumer Prices*	2.2	2.0	2.1	1.8	2.9	2.1	2.0	1.9	1.9	2.0	2.0
Current Account Balance (Euro bn)	-13.1	-23.4	-38.2	-36.5	-37.6	-36.2	-32.5	-26.5	-25.2	-24.3	-22.3
10 Year Treasury Bond Yield, % ²	3.8	3.5	4.2	4.6	4.1 ³	4.2 ⁴	4.6	4.7	4.8	4.7	4.7

Canada											
* % change over previous year	Historical				Consensus Forecasts						
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014-2018 ¹
Gross Domestic Product*	3.1	3.1	2.8	2.7	1.4	2.3	2.7	2.6	2.6	2.3	2.3
Personal Expenditure*	3.4	3.8	4.2	4.7	4.4	3.0	2.7	2.6	2.4	2.3	2.2
Machinery & Eqpt Investment*	9.3	10.8	7.4	5.1	8.3	5.7	4.5	4.0	4.0	3.8	3.3
Industrial Production*	1.9	1.6	-0.2	0.3	-2.1	1.5	2.3	2.3	2.4	2.3	2.3
Consumer Prices*	1.8	2.2	2.0	2.2	1.7	2.0	2.0	2.1	2.1	2.0	2.0
Current Account Balance (C\$ bn)	29.1	27.9	23.6	14.2	-7.9	-7.8	-9.2	-6.1	-6.1	-5.4	-9.7
10 Year Treasury Bond Yield, % ²	4.3	4.0	4.1	4.0	3.6 ³	3.9 ⁴	5.0	5.2	5.2	5.1	5.1

Euro zone											
* % change over previous year	Historical				Consensus Forecasts						
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014-2018 ¹
Gross Domestic Product*	1.9	1.7	2.9	2.6	1.5	1.7	1.9	2.0	2.0	2.0	2.0
Private Consumption*	1.5	1.6	1.8	1.5	1.3	1.6	1.8	1.8	1.9	1.9	1.8
Gross Fixed Investment*	2.0	3.1	5.3	4.2	2.4	2.2	2.7	3.0	2.9	2.8	2.8
Industrial Production*	2.1	1.4	4.0	3.4	2.0	1.9	2.2	2.3	2.1	2.0	1.9
Consumer Prices*	2.1	2.2	2.2	2.1	2.9	2.1	2.0	2.0	2.0	2.0	2.0
Current Account Balance (Euro bn)	59.8	7.1	-13.7	14.9	-2.7	-2.1	-2.8	-2.8	-1.5	-5.0	-5.0

¹Signifies average for period ²End period ³End July, 2008 ⁴End April, 2009

continued from page 3

France											
* % change over previous year	Historical				Consensus Forecasts						
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015-2019 ¹
Gross Domestic Product*	1.9	2.4	2.1	0.7	-2.5	0.3	1.4	1.8	1.9	1.9	1.9
Household Consumption*	2.6	2.5	2.5	1.3	0.1	0.7	1.5	1.8	1.9	1.9	1.9
Business Investment*	3.8	5.3	7.3	1.4	-6.7	-1.6	2.5	3.8	3.5	3.5	3.3
Consumer Prices*	1.7	1.7	1.5	2.8	0.3	1.2	1.7	1.9	1.8	1.9	1.9
Current Account Balance (Euro bn)	-10.9	-10.2	-19.6	-39.2	-39.6	-39.4	-47.5	-51.0	na	na	na
10 Year Treasury Bond Yield, % ²	3.3	4.0	4.4	3.5	3.2 ³	3.4 ⁴	3.7	4.1	4.0	4.0	3.9

United Kingdom											
* % change over previous year	Historical				Consensus Forecasts						
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015-2019 ¹
Gross Domestic Product*	2.1	2.8	3.0	0.7	-3.3	0.3	1.9	2.2	2.4	2.3	2.3
Household Consumption*	2.0	2.0	3.0	1.4	-2.4	-0.3	1.4	1.8	2.1	2.1	2.3
Gross Fixed Investment*	2.2	6.0	6.8	-3.1	-10.0	-3.3	1.7	3.8	4.4	3.5	3.8
Manufacturing Production*	-0.2	1.5	0.2	-2.6	-9.2	0.7	2.1	1.9	1.7	1.5	1.5
Retail Prices (underlying rate)*	2.3	2.9	3.2	4.3	0.5	1.8	2.2	2.5	2.6	2.8	2.6
Consumer Prices*	2.1	2.3	2.3	3.6	1.4	1.7	1.9	2.0	2.1	2.3	2.2
Current Account Balance (£ bn)	-31.0	-45.0	-40.3	-24.5	-32.6	-30.4	-43.8	-37.6	-29.3	-30.8	-30.6
10 Year Treasury Bond Yield, % ²	4.1	4.7	4.6	3.0	3.1 ³	3.5 ⁴	4.5	4.8	4.8	4.8	4.7

Italy											
* % change over previous year	Historical				Consensus Forecasts						
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015-2019 ¹
Gross Domestic Product*	0.8	2.1	1.5	-1.0	-3.6	0.0	0.9	1.3	1.2	1.2	1.2
Household Consumption*	1.1	1.2	1.2	-0.9	-1.5	0.1	0.8	1.1	1.2	1.2	1.2
Gross Fixed Investment*	1.4	3.2	1.6	-2.9	-10.2	-0.9	1.2	1.7	1.8	1.4	1.5
Industrial Production*	-0.8	2.4	-0.2	-4.3	-12.4	-0.1	1.2	1.7	1.5	1.0	1.1
Consumer Prices*	1.8	2.0	1.8	3.3	0.8	1.6	2.1	1.9	1.8	1.9	2.0
Current Account Balance (Euro bn)	-23.6	-38.5	-37.4	-49.6	-36.3	-37.8	-32.1	-34.7	-35.9	-27.0	-25.0
10 Year Treasury Bond Yield, % ²	3.5	4.2	4.6	4.3	3.8 ³	3.8 ⁴	5.0	5.0	5.3	5.3	5.1

Canada											
* % change over previous year	Historical				Consensus Forecasts						
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015-2019 ¹
Gross Domestic Product*	2.9	3.1	2.7	0.5	-2.3	2.1	3.3	3.6	3.0	2.8	2.4
Personal Expenditure*	3.7	4.3	4.5	3.0	-0.9	1.7	3.0	3.7	3.1	2.5	2.2
Machinery & Eqpt Investment*	13.8	10.6	7.1	2.0	-13.0	-0.4	5.3	7.2	5.3	4.1	3.3
Industrial Production*	1.6	0.2	0.2	-4.1	-8.7	1.6	5.6	5.1	3.3	2.8	2.4
Consumer Prices*	2.2	2.0	2.1	2.4	0.2	1.7	2.2	2.1	2.1	2.1	2.1
Current Account Balance (C\$ bn)	26.5	20.2	13.6	10.2	-35.8	-27.0	-24.6	-14.4	-10.1	-4.3	7.2
10 Year Treasury Bond Yield, % ²	4.0	4.1	4.0	2.9	2.8 ³	3.1 ⁴	4.4	5.0	5.1	5.1	5.1

Euro zone											
* % change over previous year	Historical				Consensus Forecasts						
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015-2019 ¹
Gross Domestic Product*	1.8	3.0	2.7	0.7	-3.4	0.3	1.5	2.0	2.0	2.0	1.9
Private Consumption*	1.8	2.1	1.6	0.4	-0.8	0.3	1.4	1.7	1.9	1.9	1.8
Gross Fixed Investment*	3.5	5.9	4.4	-0.1	-8.5	-1.0	2.7	3.2	3.3	3.0	2.7
Industrial Production*	1.4	4.0	3.5	-1.8	-13.7	0.4	2.4	2.4	2.4	2.2	2.0
Consumer Prices*	2.2	2.2	2.1	3.3	0.4	1.3	1.6	1.8	1.9	2.0	1.9
Current Account Balance (Euro bn)	13.0	8.5	37.8	-61.1	-60.7	-44.5	-17.8	-23.1	-34.5	-15.0	-17.7

¹Signifies average for period ²End period ³End July 2009 ⁴End April 2010

CAC/MSOS/MH I-139

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 lines 11 and 17 and following

The Applicant presents a table of revised variables which appears to indicate a T-bill rate for an unstated term, and the “MH Cost of Debt” for short term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the methodology employed in the development of the forecast. CAC/MSOS notes that the list of forecasters provided in PUB/Centra 2-198 as revised June 1, 2009 included forecasters which prepared independent forecasts and those that had aggregated data from other forecasters including Consensus and the Federal and BC governments.

The Applicant indicates that rates were reviewed in “October 2009” at line 11 on page 2 of 8 of Section 5.1. CAC/MSOS notes that CAC/MSOS/Centra 2-75 j, in the recent Centra proceeding, it was indicated that “Please note that Consensus Economics provides an annual average forecast (Long-Term Forecasts sheet) only two times per year (typically in October and April). The monthly 10 forecasts simply provide two points in time forecasts (three months forward and a year forward)”.

To expedite this proceeding, CAC/MSOS suggests that CAC/MSOS/Centra 2-75 j CAC/MSOS/Centra 2-76 f and CAC/MSOS/Centra 2-158 from that proceeding be confirmed by the Manitoba Hydro, or amended as required, and accepted into or placed on the record of this proceeding.

- b) Please confirm the information contained in CAC/MSOS/Centra 2-75 j, or if unable to confirm the accuracy of the replies therein, please respond to each question, identifying the further updates.

ANSWER:

The response to CAC/MSOS/Centra 2-75 j should be revised to read as follows:

Please note that Consensus Economics provides a long term forecast of end period Canada 10 Year Treasury Bond Yields two times per year (typically in October and April). The monthly forecasts provide two end period point-in-time forecasts (three months forward and a year forward). Please see attached for the point forecasts for February, March and April 2008. Note that the Long-Term Forecasts sheet for October 2007, which was the most recent available long term forecast at the time the Economic Outlook for 2008 was prepared, was provided in the response to CAC/MSOS/Centra 74(d).

CAC/MSOS/MH I-139

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 lines 11 and 17 and following

The Applicant presents a table of revised variables which appears to indicate a T-bill rate for an unstated term, and the “MH Cost of Debt” for short term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the methodology employed in the development of the forecast. CAC/MSOS notes that the list of forecasters provided in PUB/Centra 2-198 as revised June 1, 2009 included forecasters which prepared independent forecasts and those that had aggregated data from other forecasters including Consensus and the Federal and BC governments.

The Applicant indicates that rates were reviewed in “October 2009” at line 11 on page 2 of 8 of Section 5.1. CAC/MSOS notes that CAC/MSOS/Centra 2-75 j, in the recent Centra proceeding, it was indicated that “Please note that Consensus Economics provides an annual average forecast (Long-Term Forecasts sheet) only two times per year (typically in October and April). The monthly 10 forecasts simply provide two points in time forecasts (three months forward and a year forward)”.

To expedite this proceeding, CAC/MSOS suggests that CAC/MSOS/Centra 2-75 j CAC/MSOS/Centra 2-76 f and CAC/MSOS/Centra 2-158 from that proceeding be confirmed by the Manitoba Hydro, or amended as required, and accepted into or placed on the record of this proceeding.

- c) Please confirm the information contained in CAC/MSOS/Centra 2-158, or if unable to confirm the accuracy of the replies therein, please respond to each question, identifying the further updates.

ANSWER:

Confirmed.

CAC/MSOS/MH I-139

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 lines 11 and 17 and following

The Applicant presents a table of revised variables which appears to indicate a T-bill rate for an unstated term, and the “MH Cost of Debt” for short term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the methodology employed in the development of the forecast. CAC/MSOS notes that the list of forecasters provided in PUB/Centra 2-198 as revised June 1, 2009 included forecasters which prepared independent forecasts and those that had aggregated data from other forecasters including Consensus and the Federal and BC governments.

The Applicant indicates that rates were reviewed in “October 2009” at line 11 on page 2 of 8 of Section 5.1. CAC/MSOS notes that CAC/MSOS/Centra 2-75 j, in the recent Centra proceeding, it was indicated that “Please note that Consensus Economics provides an annual average forecast (Long-Term Forecasts sheet) only two times per year (typically in October and April). The monthly 10 forecasts simply provide two points in time forecasts (three months forward and a year forward)”.

To expedite this proceeding, CAC/MSOS suggests that CAC/MSOS/Centra 2-75 j CAC/MSOS/Centra 2-76 f and CAC/MSOS/Centra 2-158 from that proceeding be confirmed by the Manitoba Hydro, or amended as required, and accepted into or placed on the record of this proceeding.

- d) **Please provide the October 2009 Consensus forecast similar to those contained in CAC/MSOS/Centra 2-158, and identify whether the historical and forecast 10 year bond data is**
- i. **10 year or “10 Yr +” data, and,**
 - ii. **“End period” data for calendar years or represents another type of data.**

ANSWER:

The October 2009 Consensus long term forecast is attached.

- i) The historical and forecast information for Canada reflects 10 Year Treasury Bond Yields.
- ii) In the October 2009 forecast as noted by the footnotes:
 - the historical rates are end period for the calendar year.
 - the forecast rate for 2009 is the end January 2010 rate
 - the forecast rate for 2010 is the end October 2010 rate
 - the forecast rates for 2011 - 2014 are end period for the calendar year.
 - the forecast rate for the period 2015 through 2019 is the average of the end period for each of the calendar years 2015 through 2019.

LONG-TERM FORECASTS

OCTOBER 2009

continued from page 3

France											
* % change over previous year	Historical				Consensus Forecasts						
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015-2019 ¹
Gross Domestic Product*	1.9	2.4	2.3	0.3	-2.1	1.2	1.5	1.8	2.0	1.9	1.9
Household Consumption*	2.6	2.6	2.4	0.9	0.6	0.7	1.3	1.8	2.0	2.0	2.0
Business Investment*	3.8	4.7	8.6	2.4	-7.4	-0.8	2.6	3.3	3.4	3.6	3.4
Manufacturing Production*	0.1	1.7	1.5	-3.1	-12.4	2.3	3.1	1.7	2.0	2.0	1.9
Consumer Prices*	1.7	1.7	1.5	2.8	0.1	1.2	1.6	1.9	2.1	2.0	2.0
Current Account Balance (Euro bn)	-7.3	-9.2	-18.9	-44.0	-38.3	-38.3	-32.5	-40.8	-34.7	-32.2	-27.5
10 Year Treasury Bond Yield, % ²	3.3	4.0	4.4	3.5	3.6 ³	3.8 ⁴	4.1	4.3	4.4	4.2	3.9

United Kingdom											
* % change over previous year	Historical				Consensus Forecasts						
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015-2019 ¹
Gross Domestic Product*	2.2	2.9	2.6	0.7	-4.3	1.3	1.8	1.9	2.3	2.0	2.2
Household Consumption*	2.3	1.5	2.5	0.9	-2.9	0.3	1.3	1.7	1.9	2.1	2.4
Gross Fixed Investment*	2.4	6.5	7.8	-3.3	-14.4	-2.4	2.3	3.0	2.9	2.7	3.0
Manufacturing Production*	-0.2	1.5	0.6	-2.8	-10.2	1.8	2.3	1.6	1.2	0.9	0.9
Retail Prices (underlying rate)*	2.3	2.9	3.2	4.3	1.1	2.4	2.1	2.7	2.9	3.2	3.1
Consumer Prices*	2.1	2.3	2.3	3.6	2.0	2.0	1.8	2.1	2.8	2.7	2.5
Current Account Balance (£ bn)	-32.8	-43.8	-37.7	-23.6	-28.8	-25.2	-33.6	-29.7	-24.4	-19.5	-22.6
10 Year Treasury Bond Yield, % ²	4.1	4.7	4.6	3.0	3.6 ³	4.1 ⁴	4.5	4.9	4.9	4.7	5.0

Italy											
* % change over previous year	Historical				Consensus Forecasts						
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015-2019 ¹
Gross Domestic Product*	0.8	2.1	1.5	-1.0	-5.0	0.5	1.0	1.2	1.2	1.3	1.1
Household Consumption*	1.1	1.2	1.2	-0.9	-1.8	0.4	1.0	1.1	1.2	1.2	1.1
Gross Fixed Investment*	1.4	3.2	1.6	-2.9	-12.7	-0.4	1.6	1.7	1.8	1.7	1.5
Industrial Production*	-0.8	3.6	2.1	-3.3	-17.6	1.4	2.0	1.2	1.3	1.3	1.2
Consumer Prices*	2.0	2.1	1.8	3.4	0.7	1.5	1.8	1.9	1.9	1.9	1.9
Current Account Balance (Euro bn)	-23.6	-38.3	-37.7	-53.6	-42.1	-40.0	-30.9	-27.7	-26.7	-27.2	-24.3
10 Year Treasury Bond Yield, % ²	3.5	4.2	4.6	4.3	4.0 ³	4.3 ⁴	4.8	5.1	5.2	5.2	5.1

Canada											
* % change over previous year	Historical				Consensus Forecasts						
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015-2019 ¹
Gross Domestic Product*	3.0	2.9	2.5	0.4	-2.4	2.6	3.3	3.5	3.0	2.9	2.4
Personal Expenditure*	3.7	4.1	4.6	3.0	-0.1	2.1	2.9	3.3	3.0	2.8	2.2
Machinery & Eqpt Investment*	14.1	10.5	4.4	0.5	-19.6	1.3	7.2	8.7	7.9	5.5	3.7
Industrial Production*	1.7	-0.3	0.1	-4.2	-10.4	2.3	5.1	6.3	4.8	4.0	2.7
Consumer Prices*	2.2	2.0	2.1	2.4	0.4	1.8	2.1	2.2	2.2	2.0	2.0
Current Account Balance (C\$ bn)	25.9	20.3	15.6	8.1	-36.1	-27.1	-31.6	-19.8	-14.8	-5.9	-0.5
10 Year Treasury Bond Yield, % ²	4.0	4.1	4.0	2.9	3.5 ³	3.9 ⁴	4.5	5.0	5.1	5.1	5.0

Euro zone											
* % change over previous year	Historical				Consensus Forecasts						
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015-2019 ¹
Gross Domestic Product*	1.8	3.1	2.7	0.6	-3.9	1.1	1.5	2.0	2.0	1.9	1.8
Private Consumption*	1.9	2.1	1.6	0.3	-0.9	0.3	1.0	1.7	1.8	1.9	1.6
Gross Fixed Investment*	3.4	5.8	4.8	-0.6	-10.1	0.0	2.3	3.4	2.7	2.8	2.4
Industrial Production*	1.3	4.3	3.7	-1.8	-14.5	2.1	3.0	3.6	2.6	2.5	2.3
Consumer Prices*	2.2	2.2	2.1	3.3	0.3	1.2	1.5	1.8	2.1	2.0	1.9
Current Account Balance (Euro bn)	9.2	-10.5	11.1	-101	-77.5	-53.4	-23.4	-14.5	-25.7	-23.3	-15.0

¹Signifies average for period ²End period ³End January 2010 ⁴End October 2010
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CAC/MSOS/MH I-139

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 lines 11 and 17 and following

The Applicant presents a table of revised variables which appears to indicate a T-bill rate for an unstated term, and the “MH Cost of Debt” for short term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the methodology employed in the development of the forecast. CAC/MSOS notes that the list of forecasters provided in PUB/Centra 2-198 as revised June 1, 2009 included forecasters which prepared independent forecasts and those that had aggregated data from other forecasters including Consensus and the Federal and BC governments.

The Applicant indicates that rates were reviewed in “October 2009” at line 11 on page 2 of 8 of Section 5.1. CAC/MSOS notes that CAC/MSOS/Centra 2-75 j, in the recent Centra proceeding, it was indicated that “Please note that Consensus Economics provides an annual average forecast (Long-Term Forecasts sheet) only two times per year (typically in October and April). The monthly 10 forecasts simply provide two points in time forecasts (three months forward and a year forward)”.

To expedite this proceeding, CAC/MSOS suggests that CAC/MSOS/Centra 2-75 j CAC/MSOS/Centra 2-76 f and CAC/MSOS/Centra 2-158 from that proceeding be confirmed by the Manitoba Hydro, or amended as required, and accepted into or placed on the record of this proceeding.

- e) Please advise whether the use of both the Consensus forecast and an independent forecast from one of the individual banks which contributes to the Consensus forecast operates to “overweight” the importance of that particular independent forecast relative to others included in the calculation.

ANSWER:

Note that the forecast of interest rates for the test years of the rate application did not include the use of Consensus Economics. Manitoba Hydro will exclude Consensus Economics from consideration in future interest rate forecasts.

CAC/MSOS/MH I-139

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 lines 11 and 17 and following

The Applicant presents a table of revised variables which appears to indicate a T-bill rate for an unstated term, and the “MH Cost of Debt” for short term instruments for each of the financial years 2009/10, through 2012/13.

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To expedite this proceeding, CAC/MSOS suggests that CAC/MSOS/Centra 2-75 j CAC/MSOS/Centra 2-76 f and CAC/MSOS/Centra 2-158 from that proceeding be confirmed by the Manitoba Hydro, or amended as required, and accepted into or placed on the record of this proceeding.

- f) If the sample of forecasters in the revision included Consensus, and some of the forecasters on which Consensus relies, please advise why each of the excluded Consensus contributors were excluded.

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-139(e).

CAC/MSOS/MH I-140

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 line 17 and following

The Applicant presents a table of revised variables which appears to indicate a “10 Yr+” term, and the “MH Cost of Debt” for long term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the methodology employed in the development of the forecast.

To expedite this proceeding, CAC/MSOS suggests that CAC/MSOS/Centra 2-76 f and CAC/MSOS/Centra 2-156 from the recent Centra proceeding be confirmed by the Manitoba Hydro, or amended as required, and accepted into or placed on the record of this proceeding. CAC/MSOS/Centra 2-76 provides information about the forecast data review process, and CAC/MSOS/Centra 2-156 provides then current examples of the forecast inputs some of which indicate whether the data is “10 Yr+” or 10 year data, and some of which indicate whether the data is period average or end of period data.

CAC/MSOS also notes that in PUB/CENTRA 2-198 Revised June 1, 2009 contained a different set of 10 year forecasters from those used for T-bill rates.

- a) Please provide a table of the forecasters’ data points used in the development of the “10 Yr+” bond forecast, similar to that appearing on page 2 of PUB/Centra 2-198 as revised June 1, 2009, setting out;
- i. the name of the forecaster,
 - ii. the date of the forecast,
 - iii. each of the actual or forecast quarterly data points for the financial years 2009/10 through 2012/13, and
 - iv. show the calculation of the average resulting therefrom.

ANSWER:

Please see Manitoba Hydro's responses to PUB/MH I-46(b), (c), and (d).

CAC/MSOS/MH I-140

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 line 17 and following

The Applicant presents a table of revised variables which appears to indicate a “10 Yr+” term, and the “MH Cost of Debt” for long term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the methodology employed in the development of the forecast.

To expedite this proceeding, CAC/MSOS suggests that CAC/MSOS/Centra 2-76 f and CAC/MSOS/Centra 2-156 from the recent Centra proceeding be confirmed by the Manitoba Hydro, or amended as required, and accepted into or placed on the record of this proceeding. CAC/MSOS/Centra 2-76 provides information about the forecast data review process, and CAC/MSOS/Centra 2-156 provides then current examples of the forecast inputs some of which indicate whether the data is “10 Yr+” or 10 year data, and some of which indicate whether the data is period average or end of period data.

CAC/MSOS also notes that in PUB/CENTRA 2-198 Revised June 1, 2009 contained a different set of 10 year forecasters from those used for T-bill rates.

- b) Please confirm that at the date of the revision, that the data used from each of the forecasters, was the then most current data and had not been superseded, or provide the updated data point that existed at the time of the revision that was not used in the analysis of forecast “10 Yr+ bond” rates.

ANSWER:

Manitoba Hydro can confirm that to the best of its knowledge, the data used from each of the forecasters was the then most current data.

CAC/MSOS/MH I-140

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 line 17 and following

The Applicant presents a table of revised variables which appears to indicate a “10 Yr+” term, and the “MH Cost of Debt” for long term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the methodology employed in the development of the forecast.

To expedite this proceeding, CAC/MSOS suggests that CAC/MSOS/Centra 2-76 f and CAC/MSOS/Centra 2-156 from the recent Centra proceeding be confirmed by the Manitoba Hydro, or amended as required, and accepted into or placed on the record of this proceeding. CAC/MSOS/Centra 2-76 provides information about the forecast data review process, and CAC/MSOS/Centra 2-156 provides then current examples of the forecast inputs some of which indicate whether the data is “10 Yr+” or 10 year data, and some of which indicate whether the data is period average or end of period data.

CAC/MSOS also notes that in PUB/CENTRA 2-198 Revised June 1, 2009 contained a different set of 10 year forecasters from those used for T-bill rates.

- c) For each of the forecasters, please identify whether their forecast was “end of period” data or “period average” data and if “end of period” data, has been employed, explain the manner in which it has been adjusted to be made comparable to any “period average” data.

ANSWER:

Please see Manitoba Hydro’s response to PUB/MH I-46(b).

CAC/MSOS/MH I-140

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 line 17 and following

The Applicant presents a table of revised variables which appears to indicate a “10 Yr+” term, and the “MH Cost of Debt” for long term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the methodology employed in the development of the forecast.

To expedite this proceeding, CAC/MSOS suggests that CAC/MSOS/Centra 2-76 f and CAC/MSOS/Centra 2-156 from the recent Centra proceeding be confirmed by the Manitoba Hydro, or amended as required, and accepted into or placed on the record of this proceeding. CAC/MSOS/Centra 2-76 provides information about the forecast data review process, and CAC/MSOS/Centra 2-156 provides then current examples of the forecast inputs some of which indicate whether the data is “10 Yr+” or 10 year data, and some of which indicate whether the data is period average or end of period data.

CAC/MSOS also notes that in PUB/CENTRA 2-198 Revised June 1, 2009 contained a different set of 10 year forecasters from those used for T-bill rates.

- d) For each of the forecasters, please identify whether their forecast was “10 Yr+” data or “10 Year” Canada data, and if both types of data have been explain the manner in which it has been adjusted to be made comparable.

ANSWER:

Please see Manitoba Hydro’s responses to PUB/MH I-46(b) and CAC/MSOS/MH I-31(a). The long bond forecast consists of a blend of 10 year, 30 year and 10 year+ rates as it is intended to reflect a rate that is 10 years or longer.

CAC/MSOS/MH I-140

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 line 17 and following

The Applicant presents a table of revised variables which appears to indicate a “10 Yr+” term, and the “MH Cost of Debt” for long term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the methodology employed in the development of the forecast.

To expedite this proceeding, CAC/MSOS suggests that CAC/MSOS/Centra 2-76 f and CAC/MSOS/Centra 2-156 from the recent Centra proceeding be confirmed by the Manitoba Hydro, or amended as required, and accepted into or placed on the record of this proceeding. CAC/MSOS/Centra 2-76 provides information about the forecast data review process, and CAC/MSOS/Centra 2-156 provides then current examples of the forecast inputs some of which indicate whether the data is “10 Yr+” or 10 year data, and some of which indicate whether the data is period average or end of period data.

CAC/MSOS also notes that in PUB/CENTRA 2-198 Revised June 1, 2009 contained a different set of 10 year forecasters from those used for T-bill rates.

- e) To underscore the differences in “10 Yr+” data and “10 Year” data, please confirm that, for the period January 1, 2000 to January 31, 2010, that the average 10 year benchmark yield reported in the Bank of Canada series V39055 was 4.54%, while 4.86% was the average yield for Canada bonds “over 10 years” in series V39062.

ANSWER:

The Bank of Canada Government of Canada 10 year benchmark bond yield daily data series V39055 for the period January 1, 2000 to January 31, 2010 had an average of 4.54%, with a high of 6.60% on January 20, 2000 and a low of 2.55% on January 14, 2009.

The Bank of Canada Government of Canada marketable bonds over 10 years average yield daily data series V39062 for the period January 1, 2000 to January 31, 2010 had an average of 4.86%, with a high of 6.54% on January 20, 2000 and a low of 3.41% on December 29, 2008.

Please note that benchmark bonds have greater liquidity and would thus not have the liquidity premium attributable to Government of Canada marketable bonds. For comparison, Manitoba Hydro wishes to put on the record the Bank of Canada Government of Canada long term (30 year) benchmark bond yield daily data series V39056 for the period January 1, 2000 to January 31, 2010 that had an average of 4.85%, with a high of 6.49% on January 5, 2000 and a low of 3.40% on December 29, 2008.

CAC/MSOS/MH I-140

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 line 17 and following

The Applicant presents a table of revised variables which appears to indicate a “10 Yr+” term, and the “MH Cost of Debt” for long term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the methodology employed in the development of the forecast.

To expedite this proceeding, CAC/MSOS suggests that CAC/MSOS/Centra 2-76 f and CAC/MSOS/Centra 2-156 from the recent Centra proceeding be confirmed by the Manitoba Hydro, or amended as required, and accepted into or placed on the record of this proceeding. CAC/MSOS/Centra 2-76 provides information about the forecast data review process, and CAC/MSOS/Centra 2-156 provides then current examples of the forecast inputs some of which indicate whether the data is “10 Yr+” or 10 year data, and some of which indicate whether the data is period average or end of period data.

CAC/MSOS also notes that in PUB/CENTRA 2-198 Revised June 1, 2009 contained a different set of 10 year forecasters from those used for T-bill rates.

- f) To further underscore the differences in “10 Yr+” data and “10 Year” data, please confirm that, for the period January 1, 2000 to January 31, 2010, that the low 10 year benchmark yield reported in the Bank of Canada series V39055 was 2.55%, while 3.41% was the low yield for Canada bonds “over 10 years” in series V39062.

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-140(e).

CAC/MSOS/MH I-140

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 line 17 and following

The Applicant presents a table of revised variables which appears to indicate a “10 Yr+” term, and the “MH Cost of Debt” for long term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the methodology employed in the development of the forecast.

To expedite this proceeding, CAC/MSOS suggests that CAC/MSOS/Centra 2-76 f and CAC/MSOS/Centra 2-156 from the recent Centra proceeding be confirmed by the Manitoba Hydro, or amended as required, and accepted into or placed on the record of this proceeding. CAC/MSOS/Centra 2-76 provides information about the forecast data review process, and CAC/MSOS/Centra 2-156 provides then current examples of the forecast inputs some of which indicate whether the data is “10 Yr+” or 10 year data, and some of which indicate whether the data is period average or end of period data.

CAC/MSOS also notes that in PUB/CENTRA 2-198 Revised June 1, 2009 contained a different set of 10 year forecasters from those used for T-bill rates.

- g) If the October revision includes additional forecasters not named in PUB/Centra 2-198 as revised June 1, 2009, or excludes forecasters that were named in PUB/Centra 2-198 as revised June 1, 2009, please provide the rational for the changes in the forecasters used.

ANSWER:

With respect to the forecast of Canada 10 Year+ rates, the following forecasters were excluded in the rates for 2009/10 - 2012/13 that had been included in the response to PUB/Centra 2-198:

Federal Finance
Province of British Columbia
Consensus Economics
Informetrica
Spatial Economics

Federal Finance, Province of British Columbia, and Consensus Economics forecasts were excluded because they were not statistically independent. Informetrica and Spatial Economics were excluded as quarterly forecast information was not available from them.

CAC/MSOS/MH I-140

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 line 17 and following

The Applicant presents a table of revised variables which appears to indicate a “10 Yr+” term, and the “MH Cost of Debt” for long term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the methodology employed in the development of the forecast.

To expedite this proceeding, CAC/MSOS suggests that CAC/MSOS/Centra 2-76 f and CAC/MSOS/Centra 2-156 from the recent Centra proceeding be confirmed by the Manitoba Hydro, or amended as required, and accepted into or placed on the record of this proceeding. CAC/MSOS/Centra 2-76 provides information about the forecast data review process, and CAC/MSOS/Centra 2-156 provides then current examples of the forecast inputs some of which indicate whether the data is “10 Yr+” or 10 year data, and some of which indicate whether the data is period average or end of period data.

CAC/MSOS also notes that in PUB/CENTRA 2-198 Revised June 1, 2009 contained a different set of 10 year forecasters from those used for T-bill rates.

- h) Please place on the record of this proceeding CAC/MSOS/Centra 2-156 and if required, please correct the response, identifying the further updates.**

ANSWER:

Please see the following attachment.

CENTRA GAS MANITOBA INC.

2009/10 & 2010/11 GRA

**RESPONSE TO INFORMATION REQUESTS OF
CONSUMERS ASSOCIATION OF CANADA (MANITOBA) LTD. AND
MANITOBA SOCIETY OF SENIORS**

1 **CAC/MSOS/CENTRA 2 - 156**

2 ***Reference: June 12, 2009 Update to IR's***

3

4 **CAC/MSOS notes that various annual forecasts of T-bills and "10 Year +" interest rates**
5 **are referred to in the tables after line 8 on page 2 of 3 in the revised PUB/Centra II -198.**
6 **CAC/MSOS notes that Mr. McCormick has observed that many banks forecast the 10 year**
7 **government rate. CAC/MSOS observes that any doubt as to the consistent use of data**
8 **might be resolved without consuming time in the hearing room were Centra to produce**
9 **the forecasts upon which it relied. To allow confirmation of the correct usage of the data**
10 **CAC/MSOS requests that Centra supply copies of the forecasts used as data sources for**
11 **the tables, which owing to the recent date should be readily at hand.**

12

13 The forecasts used as data sources for the tables in the revised PUB/Centra II-198 are
14 attached.

15

16

Canadian Economic Outlook

BMO Capital Markets Economics

March 13, 2009

	2008				2009				2010				2007	2008	2009	2010
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
PRODUCTION																
	(quarter/quarter % change : a.r.)															
Real GDP (chain-weighted)	-0.9	0.6	0.9	-3.4	-6.2	-2.5	-0.0	1.7	2.6	2.7	2.8	2.9	2.7	0.5	-2.4	1.8
Final Sales	3.5	-1.3	0.5	-2.4	-3.4	-2.1	-0.2	1.3	2.3	2.4	2.6	2.7	2.6	0.6	-1.7	1.6
Final Domestic Demand	1.8	1.3	0.5	-4.9	-2.9	-1.4	0.2	1.7	2.4	2.3	2.7	2.8	4.2	2.5	-1.6	1.8
Consumer Spending	2.4	1.4	0.6	-3.3	-1.3	-0.4	0.3	1.8	1.9	2.2	2.6	2.9	4.5	3.0	-0.7	1.7
durables	16.8	-3.4	-0.7	-12.1	-10.0	-6.0	-5.0	-1.0	0.0	3.0	2.0	2.5	7.1	5.2	-7.0	-0.3
nondurables	-0.2	0.4	-0.4	-1.7	0.0	0.2	0.7	1.5	2.0	1.0	2.0	3.0	3.3	1.2	-0.1	1.5
services	0.1	2.4	1.1	-1.4	0.2	0.6	1.3	2.4	2.2	2.5	3.0	2.9	4.3	3.1	0.5	2.2
Government Spending	2.5	3.7	0.1	3.2	5.1	6.9	7.4	7.4	6.4	3.7	3.6	3.1	4.2	3.7	4.8	5.6
Business Investment	2.5	-0.2	2.4	-15.1	-13.0	-12.6	-9.5	-5.0	-0.5	1.0	1.8	2.5	3.5	1.7	-9.8	-2.6
non-residential construction	4.9	3.8	7.9	-0.1	-12.0	-14.0	-10.0	-5.0	-1.0	1.0	1.5	2.0	-0.4	1.1	-6.3	-3.0
machinery and equipment	0.4	-3.6	-2.4	-26.8	-14.0	-11.3	-9.0	-5.0	0.0	1.0	2.0	3.0	7.1	2.0	-13.0	-2.3
Residential Construction	-5.6	-4.6	-2.2	-22.1	-25.0	-20.0	-12.0	-11.0	-5.0	0.0	1.0	1.0	3.0	-2.9	-17.2	-6.2
Exports	-4.6	-3.2	-3.4	-17.5	-30.7	-6.1	0.2	2.0	2.7	4.1	4.6	5.5	1.0	-4.7	-13.5	2.4
Imports	-7.6	3.6	-3.7	-23.3	-28.7	-3.7	1.4	3.0	3.0	3.8	4.8	5.6	5.5	0.8	-13.1	2.9
	(billions of chained 2002 dollars : a.r.)															
Inventory Change	7.0	12.0	12.6	9.4	-0.8	-2.1	-1.4	-0.4	0.4	1.3	2.1	2.7	13.2	10.3	-1.2	1.6
Contribution to GDP Growth	-3.4	1.3	0.1	-0.9	-2.7	-0.4	0.2	0.3	0.2	0.3	0.2	0.2	0.1	-0.1	-0.8	0.2
Net Exports	-86.7	-95.9	-94.6	-80.2	-76.8	-78.7	-80.3	-81.9	-82.9	-83.3	-84.5	-85.7	-61.1	-89.4	-79.5	-84.1
Contribution to GDP Growth	1.0	-2.3	0.0	2.4	-0.6	-0.7	-0.4	-0.3	-0.1	0.1	-0.1	-0.1	-1.6	-1.9	-0.0	-0.2
	(billions of dollars : a.r.)															
Nominal GDP	1,579	1,620	1,634	1,577	1,537	1,529	1,533	1,545	1,562	1,579	1,598	1,618	1,536	1,602	1,536	1,589
(% chng : a.r.)	4.9	10.7	3.6	-13.4	-9.7	-2.1	1.1	3.3	4.3	4.4	4.9	5.2	5.9	4.4	-4.1	3.5
INFLATION																
	(quarter/quarter % change : a.r.)															
GDP Price Index	5.9	10.1	2.6	-10.3	-3.7	0.4	1.1	1.6	1.7	1.7	2.0	2.3	3.1	3.9	-1.8	1.6
CPI All Items	2.2	4.2	4.6	-3.1	-1.6	1.1	2.4	2.1	1.3	1.6	1.7	1.9	2.1	2.4	0.5	1.8
Excl. Food & Energy	0.7	1.7	1.5	1.1	0.3	1.5	1.7	1.7	1.1	1.3	1.4	1.4	2.0	1.2	1.2	1.4
Food Prices	2.4	7.2	9.8	8.3	3.0	1.9	3.9	3.0	2.7	2.8	2.2	2.6	2.6	3.5	5.0	2.8
Energy Prices	13.3	18.7	20.3	-42.1	-23.5	-4.1	6.0	3.8	0.5	2.0	3.0	5.2	2.3	9.8	-12.8	2.4
Services	1.6	6.2	3.8	1.5	-0.6	1.6	0.9	1.7	2.2	2.3	2.0	1.9	3.4	3.4	1.5	1.9
	(year/year % change)															
CPI All Items	1.8	2.4	3.4	1.9	1.0	0.2	-0.4	1.1	1.8	1.9	1.7	1.7				
BoC Core	1.4	1.5	1.7	2.2	1.8	1.3	1.2	1.0	1.3	1.4	1.4	1.4	2.1	1.7	1.3	1.4
FINANCIAL																
	(average for the quarter : %)															
Overnight Rate	3.83	3.00	3.00	2.00	0.83	0.25	0.25	0.25	0.25	0.58	1.08	1.58	4.35	2.96	0.40	0.88
3-Month T-Bill	2.99	2.54	2.31	1.47	0.68	0.36	0.25	0.25	0.32	0.81	1.25	1.70	4.14	2.33	0.38	1.02
90-Day BAs	3.89	3.24	3.25	2.36	0.85	0.46	0.35	0.35	0.42	0.91	1.35	1.80	4.57	3.18	0.50	1.12
10 Year Bond Yield	3.73	3.67	3.63	3.40	2.94	2.92	2.85	2.92	3.01	3.10	3.18	3.27	4.27	3.61	2.91	3.14
Canada/US spread: (bps)																
90 day	90	89	79	116	45	15	5	5	12	40	43	37	-34	94	17	33
10 year	7	-22	-23	14	18	29	35	25	13	3	-7	-17	-36	-6	27	-2
FOREIGN TRADE																
	(billions of dollars : a.r.)															
Current Account Balance	22.3	34.1	14.5	-29.9	-47.9	-48.3	-47.8	-48.1	-48.9	-50.0	-50.8	-50.3	13.6	10.2	-48.0	-50.0
Merchandise Balance	51.8	64.8	57.2	14.9	-5.0	-6.5	-7.1	-7.2	-7.1	-7.5	-7.1	-6.2	48.0	47.2	-6.4	-7.0
Non-Merchandise Balance	-29.5	-30.7	-42.7	-44.9	-42.9	-41.7	-40.7	-40.9	-41.8	-42.5	-43.8	-44.1	-34.4	-37.0	-41.6	-43.1
	(average for the quarter)															
Exchange Rate (US\$/C\$)	99.6	99.0	96.0	82.5	80.4	77.5	78.6	82.1	83.9	84.8	85.7	86.6	93.5	94.3	79.6	85.3
Exchange Rate (C\$/US\$)	1.004	1.010	1.042	1.212	1.244	1.291	1.272	1.218	1.192	1.179	1.167	1.154	1.069	1.067	1.256	1.173
Exchange Rate (¥/C\$)	104.8	103.6	103.3	79.5	74.5	73.6	76.0	81.4	85.3	88.3	91.4	94.6	110.0	97.8	76.4	89.9
Exchange Rate (C\$/Euro)	1.51	1.58	1.56	1.60	1.61	1.62	1.62	1.62	1.63	1.64	1.65	1.66	1.47	1.56	1.61	1.65
INCOMES																
	(billions of dollars : a.r.)															
Corporate Profits Before Tax	209.1	228.1	237.7	189.8	165.2	160.8	158.5	163.8	164.9	168.3	168.1	173.1	203.2	216.2	162.1	168.6
Corporate Profits After Tax	151.5	166.4	175.7	123.9	106.0	102.5	101.0	105.3	106.0	108.6	108.0	112.4	141.1	154.4	103.7	108.7
	(year/year % change)															
Corporate Profits Before Tax	4.3	12.5	16.1	-7.3	-21.0	-29.5	-33.3	-13.7	-0.2	4.6	6.0	5.7	3.3	6.4	-25.0	4.0
Personal Income	5.9	5.0	4.7	3.7	1.2	0.4	0.5	1.0	2.4	3.5	3.8	3.8	6.2	4.8	0.8	3.4
Real Disposable Income	4.7	5.1	3.7	3.4	0.9	0.7	1.3	1.1	1.8	2.4	2.5	2.3	4.1	4.2	1.0	2.2
	(average for the quarter : %)															
Savings Rate	3.5	3.5	3.2	4.7	5.0	5.1	5.4	5.7	5.9	5.9	5.7	5.6	2.7	3.7	5.3	5.8
OTHER INDICATORS																
	(quarter average or period end : a.r.)															
Unemployment Rate (%)	5.9	6.1	6.1	6.4	7.6	8.3	8.9	9.2	9.2	9.1	8.8	8.6	6.0	6.1	8.5	8.9
Housing Starts (thousands)	235	218	208	185	142	140	145	153	152	153	156	159	228	211	145	155
Motor Vehicle Sales (millions)	1.80	1.72	1.68	1.51	1.32	1.37	1.45	1.53	1.52	1.51	1.52	1.53	1.69	1.68	1.42	1.52
	(quarter/quarter % change : a.r.)															
Employment Growth	1.9	0.8	-0.1	0.5	-5.3	-3.7	-2.8	-0.0	1.2	1.7	2.3	2.3	2.3	1.5	-2.3	0.5
Industrial Production	-7.0	-2.9	0.4	-10.9	-16.3	-8.0	-2.5	1.3	2.3	2.2	3.5	3.2	0.2	-4.1	-8.2	1.0

Note: Outlined areas represent forecast periods

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MARKET CALL

- A final 50-bp cut, most likely in a single step, will mark the end of conventional easing from the Bank of Canada. Unlike the Fed, the BoC will leave direct lending and buying of spread product to other agencies —EDC, CMHC, etc.—restricting itself to making loans against a broader list of collateral to support market liquidity. Rates will stay on hold through 2009, but could rise in early 2010 as spreads narrow, making a near-zero overnight rate less essential.
- Bond yields reversed some of the earlier sell-off as investors sought a safe haven from renewed trouble in equities. While the front end of both the Canadian and US government yield curves could remain anchored by overnight rates, longer yields could return to their rising trend if, as we expect, the economy starts to show at least some signs of life this summer.
- The US dollar's strength rests on debt repayment and the lack of any clear alternative other than gold. The euro and yen are weakening in the face of even more dire economic risks, and the C\$ looks to soften through June, given commodity weakness. But rapid money printing by the Fed will see dollar devaluation begin to take hold in the second half, with C\$ gains extended by a resource price recovery in 2010.

INTEREST & FOREIGN EXCHANGE RATES

END OF PERIOD:	2009				2010
	27-Feb	Jun	Sep	Dec	Mar
CDA Overnight target rate	1.00	0.50	0.50	0.50	0.75
98-Day Treasury Bills	0.61	0.35	0.40	0.40	0.60
2-Year Gov't Bond (2.75% 12/10)	1.16	1.25	1.75	2.00	2.20
10-Year Gov't Bond (3.75% 06/19)	3.13	3.20	3.30	3.45	3.55
30-Year Gov't Bond (5% 06/37)	3.70	3.75	3.85	3.95	4.00
U.S. Federal Funds Rate	0.25	0.10	0.10	0.10	0.75
91-Day Treasury Bills	0.26	0.20	0.30	0.30	0.60
2-Year Gov't Note (0.88% 02/11)	0.99	0.95	1.05	1.45	1.95
10-Year Gov't Note (2.75% 02/19)	3.02	2.90	3.15	3.25	3.45
30-Year Gov't Bond (3.5% 02/39)	3.71	3.65	3.80	3.90	4.00
Canada - US T-Bill Spread	0.35	0.15	0.10	0.10	0.00
Canada - US 10-Year Bond Spread	0.11	0.30	0.15	0.20	0.10
Canada Yield Curve (30-Year — 2-Year)	2.54	2.50	2.10	1.95	1.80
US Yield Curve (30-Year — 2-Year)	2.71	2.70	2.75	2.45	2.05
EXCHANGE RATES					
— (US\$/C\$)	78.8	76.9	80.0	84.7	86.2
— (C\$/US\$)	1.269	1.300	1.250	1.180	1.160
— (Yen/US\$)	98	105	100	97	95
— (US\$/euro)	1.27	1.25	1.26	1.30	1.35
— (US\$/pound)	1.43	1.40	1.44	1.50	1.57
— (US\$/A\$)	64.1	63.0	68.0	72.0	75.0

PROTECTING CANADA'S **FUTURE**

ECONOMIC AND FISCAL STATEMENT, NOVEMBER 27, 2008





Economic and Fiscal Statement
Chapter 1

Table 1.1

Average Private Sector Forecasts

	2008	2009	2010	Average 2011-13
	(per cent, unless otherwise indicated)			
Real GDP growth				
February 2008 budget	1.7	2.4	2.9	2.6
November 2008 <i>Economic and Fiscal Statement</i>	0.6	0.3	2.6	2.9
GDP inflation				
February 2008 budget	1.8	1.9	1.8	1.6
November 2008 <i>Economic and Fiscal Statement</i>	3.8	0.5	1.8	2.2
Nominal GDP growth				
February 2008 budget	3.5	4.3	4.7	4.2
November 2008 <i>Economic and Fiscal Statement</i>	4.4	0.8	4.4	5.1
Nominal GDP level (billions of dollars)				
February 2008 budget ¹	1,590	1,659	1,738	1,890
November 2008 <i>Economic and Fiscal Statement</i>	1,603	1,615	1,687	1,870
3-month treasury bill rate				
February 2008 budget	3.2	3.8	4.5	4.5
November 2008 <i>Economic and Fiscal Statement</i>	2.4	1.9	2.7	4.2
10-year government bond rate				
February 2008 budget	3.6	4.2	4.8	5.0
November 2008 <i>Economic and Fiscal Statement</i>	3.7	3.7	4.2	5.0
Consumer Price Index (CPI) inflation				
February 2008 budget	1.5	1.9	2.0	2.1
November 2008 <i>Economic and Fiscal Statement</i>	2.6	1.7	1.9	2.1
Oil price level (US dollars per barrel)				
February 2008 budget	82.1	79.8	82.3	77.5
November 2008 <i>Economic and Fiscal Statement</i>	102.5	72.0	79.0	91.1
Exchange rate (US cents/C\$)				
February 2008 budget	98.0	95.5	95.5	96.2
November 2008 <i>Economic and Fiscal Statement</i>	94.9	85.6	88.7	95.8
Unemployment rate				
February 2008 budget	6.3	6.4	6.2	6.0
November 2008 <i>Economic and Fiscal Statement</i>	6.1	6.9	6.7	6.2
U.S. real GDP growth				
February 2008 budget	1.5	2.4	3.0	2.7
November 2008 <i>Economic and Fiscal Statement</i>	1.4	-0.4	2.1	3.0

¹ Nominal GDP levels have been adjusted to reflect 2008 revisions to Canada's National Income and Expenditure Accounts.

Source: Department of Finance survey of private sector forecasters.



Monthly **ECONOMIC** Monitor

Canada
Economic Forecast

Annualized rate of change*	2006	2007	2008	2009	2010	Q4/Q4	
						2009	2010
Gross domestic product (1997 \$)	3.1	2.7	0.6	(0.7)	2.4	0.3	3.0
Consumption	4.3	4.5	3.2	(0.2)	1.9	0.4	2.2
Residential construction	2.2	3.0	(2.0)	(9.8)	(0.9)	(9.0)	1.1
Business investment	9.9	3.5	2.6	(3.9)	6.1	(0.6)	7.8
Government expenditures	4.1	4.2	3.8	2.9	3.3	3.9	2.5
Exports	0.6	1.0	(4.3)	(3.4)	2.2	(1.6)	3.0
Imports	4.6	5.5	1.3	(2.8)	2.2	(1.0)	3.0
Change in inventories (millions \$)	10 766	13 181	8 962	9 625	7 500
Domestic demand	4.8	4.2	2.9	(0.6)	2.6	0.5	3.0
Real disposable income	5.5	4.1	4.1	(0.2)	1.9	(0.0)	2.5
Employment	1.9	2.3	1.6	(0.9)	0.6	(1.0)	1.0
Unemployment rate	6.3	6.0	6.1	7.7	7.8	8.0	7.7
Inflation	2.0	2.2	2.4	(0.0)	1.8	1.0	1.7
Before-tax profits	5.8	3.3	9.9	(9.4)	(0.9)	(5.4)	(3.0)
Federal balance (Public Acc., bil. \$)	\$13.8	\$9.6	\$0.0	(\$35.0)	(\$30.0)
Current account (bil. \$)	\$20.2	\$13.6	\$21.2	(\$11.6)	\$4.5	\$0.0	\$5.0

* or as noted

Financial Forecast

	Current	Q1/09	Q2	Q3	Q4	2009*	2010*
	2/20/09						
Overnight rate	1.00	0.75	0.75	0.75	1.00	1.00	3.00
Prime rate	3.00	2.75	6.75	2.75	2.75	2.75	4.75
3 month T-Bills	0.76	0.68	0.68	0.68	1.28	1.28	3.13
Treasury yield curve							
2-Year	1.23	1.12	1.24	1.34	1.94	1.94	4.10
5-Year	2.06	2.07	2.16	2.31	2.70	2.70	4.28
10-Year	2.87	2.90	2.96	3.13	3.33	3.33	4.36
30-Year	3.59	3.67	3.72	3.83	3.95	3.95	4.54
Exchange rates*							
USD per CAD	0.80	0.78	0.80	0.81	0.83	0.83	0.87

National Bank Financial

* end of period

** NBF forecast

Budget and Fiscal Plan

2009/10 – 2011/12

February 17, 2009



Ministry of
Finance

Table 3.9.4 Major Economic Assumptions

	2007	2008	2009	2010	Forecast		
					2011	2012	2013
GDP (billions)							
Canada real (2002 \$; chain-weighted)	1,320	1,328 ^e	1,312	1,337	1,370	1,404	1,439
(% change)	2.7	0.6	-1.2	1.9	2.5	2.5	2.5
US real (1996 US\$; chain-weighted)	11,524	11,671	11,405	11,612	11,908	12,214	12,535
(% change)	2.0	1.3	-2.3	1.8	2.6	2.6	2.6
Japan real (2000 Yen; chain-weighted) ...	561,403	562,940 ^e	550,680	554,073	562,689	572,893	583,119
(% change)	2.4	0.3	-2.2	0.6	1.6	1.8	1.8
Europe real ¹ (% change)	2.7	0.9 ^e	-1.9	0.5	2.0	2.0	2.0
Industrial production index							
US (2002 = 100)	111.4	109.5	102.8	104.2	106.8	109.6	112.4
(% change)	1.7	-1.7	-6.1	1.4	2.6	2.6	2.6
Japan (2000 = 100)	107.3	103.9	90.6	91.1	92.5	94.2	95.9
(% change)	2.9	-3.1	-12.8	0.5	1.6	1.8	1.8
Europe ¹ (2000 = 100)	111.7	111.4 ^e	105.3	105.7	107.8	109.9	112.1
(% change)	3.5	-0.3	-5.4	0.3	2.0	2.0	2.0
Housing starts² (000's)							
Canada	228	211	160	160	168	176	180
(% change)	0.4	-7.6	-24.2	0.0	5.0	4.8	2.3
US	1,341	902	650	815	1,100	1,300	1,300
(% change)	-26.0	-32.7	-28.0	25.4	35.0	18.2	0.0
Japan	1,061	1,093	1,020	1,020	1,047	1,065	1,065
(% change)	-17.8	3.1	-6.7	0.0	2.6	1.7	0.0
Consumer price index							
Canada (2001 = 100)	111.5	114.1	115.0	117.3	119.7	122.1	124.5
(% change)	2.2	2.3	0.8	2.0	2.0	2.0	2.0
Canadian interest rates (%)							
3-Month treasury bills	4.2	2.4	0.9	1.7	2.9	3.9	4.8
10-year government bonds	4.3	3.6	2.9	3.4	4.0	4.9	5.8
United States interest rates (%)							
3-Month treasury bills	4.4	1.4	0.2	1.1	2.8	3.9	4.8
10-year government bonds	4.7	3.7	2.4	3.1	3.8	4.9	5.8
Exchange rate (US cents / Canadian \$)	93.1	93.7	79.3	86.2	89.4	89.5	88.6
British Columbia goods and services							
Export price deflator (% change)	0.2	5.7 ^e	2.5	-0.8	1.8	2.2	3.1

¹ Euro zone (12) is Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal and Spain.

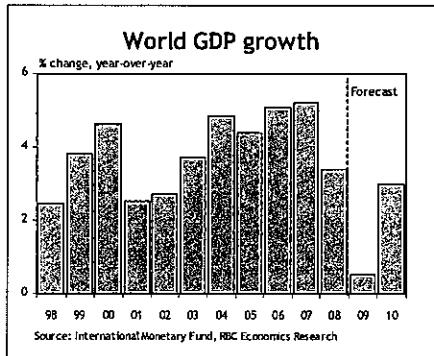
² British Columbia housing starts appear in Table 3.9.2.

^e Ministry of Finance estimate.



ECONOMIC & FINANCIAL MARKET OUTLOOK

March 2009



Fasten your seatbelts, 2009 is going to be a bumpy ride!

- ▲ Advanced economies to contract in 2009, while emerging economies likely to grow at the slowest pace in more than a decade.
- ▲ Inflation concerns fade as economic slack grows and commodity prices slump.
- ▲ Central bankers and government officials aim policies at restoring the financial system to health and putting the economy on the road to recovery.
- ▲ Aggressive policy actions to foster recovery in 2010.
- ▲ U.S. recession deepens as confidence erodes and consumers and businesses re-trench.
- ▲ Weakening global economy puts downward pressure on exports.
- ▲ Obama Administration unveils US\$787-billion fiscal stimulus plan.
- ▲ Fed to maintain extraordinarily low funds rate and support distressed markets.
- ▲ Canada succumbs to downward pressure and dips into recession.
- ▲ Households face job losses and balance sheet concerns.
- ▲ Falling commodity prices and sapped auto demand present problems for two key areas of Canadian business.
- ▲ Government of Canada gets worried and provides plan to help economy through the downturn.
- ▲ Bank of Canada cuts policy rate to record low and provides support to credit markets.
- ▲ Canada’s recovery to start in second half of 2009 and gain momentum in 2010.

Ranks of economies in recession swell

More countries joined the U.S. recession party in late 2008 and early 2009 including Canada, which suffered the biggest quarterly contraction in real output in 17 years in the final quarter of 2008. The IMF revised its world growth forecast and is now looking for real GDP to increase by just one-half of one percent in 2009 (with recent comments suggesting this could be revised lower to show a decline), the slowest pace of increase in the post-war period. The combination of the collapse in world exports, a fractured financial system, tightening credit conditions and damaged confidence saw the momentum in the global economy fade and an increasing number of countries sink into recession.

The IMF forecasts that the advanced economies will contract by 2% this year, a downgrade to their previous prediction that these economies would eke out a marginal 0.3% gain. The emerging economies’ outlook was also downgraded, with growth expected to average 3.3% this year, much slower than 2008’s 6.3% and 2007’s 8.3% pace. The growing slack in the global economy and plummeting commodity prices are exerting downward pressure on prices, resulting in headline inflation rates falling into negative territory, although core rates, which exclude food and energy prices, will remain mildly positive.

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Financial market forecast detail

Interest rates

%, end of period

	Actual				Forecast								Forecast		
	Q108	Q208	Q308	Q408	Q109	Q209	Q309	Q409	Q110	Q210	Q310	Q410	2008	2009	2010
Canada															
Overnight rate	3.50	3.00	3.00	1.50	0.50	0.50	0.50	0.50	0.50	0.50	1.00	1.50	1.50	0.50	1.50
Three-month T-bills	1.87	2.48	1.89	0.83	0.80	0.75	1.00	1.10	1.25	1.40	1.65	2.00	0.83	1.10	2.00
Two-year GoC bonds	2.58	3.24	2.78	1.09	1.10	1.25	1.50	1.75	1.90	2.05	2.35	2.75	1.09	1.75	2.75
Five-year GoC bonds	2.91	3.45	3.17	1.69	2.00	1.90	2.10	2.50	2.60	2.75	2.95	3.25	1.69	2.50	3.25
10-year GoC bonds	3.45	3.74	3.75	2.69	2.75	2.50	2.55	2.60	3.00	3.15	3.20	3.35	2.69	2.60	3.35
30-year GoC bonds	3.96	4.05	4.13	3.45	3.50	3.25	3.05	3.10	3.40	3.55	3.60	3.75	3.45	3.10	3.75
Yield curve (10s-2s)	87	50	97	160	165	125	105	85	110	110	85	60	160	85	60
United States															
Fed funds rate	2.25	2.00	2.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.13	0.00	0.50
Three-month T-bills	1.28	1.89	1.15	0.03	0.25	0.35	0.50	0.65	0.75	0.85	1.00	1.10	0.03	0.65	1.10
Two-year bonds	1.62	2.77	2.08	0.82	1.00	0.75	0.75	1.00	1.10	1.25	1.35	1.60	0.82	1.00	1.60
Five-year bonds	2.48	3.49	2.88	1.52	1.75	1.60	1.50	1.75	1.90	2.00	2.00	2.25	1.52	1.75	2.25
10-year bonds	3.51	4.10	3.69	2.42	2.75	2.30	2.20	2.00	2.05	2.15	2.25	2.50	2.42	2.00	2.50
30-year bonds	4.39	4.70	4.27	2.90	3.35	3.10	2.90	2.80	2.80	2.90	3.00	3.30	2.90	2.80	3.30
Yield curve (10s-2s)	189	133	161	160	175	155	145	100	95	90	90	90	160	100	90
Yield spreads															
Three-month T-bills	0.59	0.59	0.74	0.80	0.55	0.40	0.50	0.45	0.50	0.55	0.65	0.90	0.80	0.45	0.90
Two-year	0.96	0.47	0.70	0.27	0.10	0.50	0.75	0.75	0.80	0.80	1.00	1.15	0.27	0.75	1.15
Five-year	0.43	-0.04	0.29	0.17	0.25	0.30	0.60	0.75	0.70	0.75	0.95	1.00	0.17	0.75	1.00
10-year	-0.06	-0.36	0.06	0.27	0.00	0.20	0.35	0.60	0.95	1.00	0.95	0.85	0.27	0.60	0.85
30-year	-0.43	-0.65	-0.14	0.55	0.15	0.15	0.15	0.30	0.60	0.65	0.60	0.45	0.55	0.30	0.45

Exchange rates

%, end of period

	Actual				Forecast								Forecast		
	Q108	Q208	Q308	Q408	Q109	Q209	Q309	Q409	Q110	Q210	Q310	Q410	2008	2009	2010
Australian dollar	0.91	0.96	0.79	0.70	0.58	0.50	0.53	0.58	0.61	0.64	0.65	0.65	0.70	0.58	0.65
Brazilian real	1.76	1.30	1.91	2.31	2.65	2.60	2.55	2.50	2.50	2.45	2.40	2.40	2.31	2.50	2.40
Canadian dollar	1.03	1.02	1.06	1.23	1.29	1.31	1.27	1.25	1.22	1.19	1.17	1.15	1.23	1.25	1.15
Chinese renminbi	7.01	6.85	6.82	6.84	6.85	6.85	6.85	6.85	6.80	6.70	6.60	6.50	6.84	6.85	6.50
Euro	1.58	1.58	1.41	1.35	1.25	1.18	1.15	1.15	1.16	1.18	1.20	1.22	1.35	1.15	1.22
Japanese yen	100	106	106	91	95	96	97	98	97	95	94	93	91	98	93
Mexican peso	10.64	10.31	10.94	13.10	15.00	15.00	14.50	14.00	13.75	13.50	13.25	13.00	13.10	14.00	13.00
New Zealand dollar	0.79	0.76	0.67	0.58	0.45	0.38	0.40	0.45	0.50	0.52	0.55	0.55	0.58	0.45	0.55
Swiss franc	0.99	1.02	1.12	1.07	1.20	1.31	1.36	1.37	1.38	1.34	1.30	1.27	1.07	1.37	1.27
U.K. pound sterling	1.98	1.99	1.80	1.48	1.40	1.37	1.35	1.37	1.36	1.39	1.41	1.44	1.48	1.37	1.44

Rates are expressed in currency units per U.S. dollar except the Euro, U.K. pound sterling, Australian dollar which are expressed in U.S. dollar per currency unit.

Source: Bank of Canada, Federal Reserve Board, Reuters, RBC Economics Research forecasts

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Financial Markets	08Q4e	09Q1f	09Q2f	09Q3f	09Q4f	10Q1f	10Q2f	10Q3f	10Q4f
	(%, end of period)								
Canada									
BoC Overnight Target Rate	1.50	0.50	0.25	0.25	0.25	0.25	0.25	0.25	0.75
3-month T-bill	0.86	0.40	0.20	0.25	0.30	0.35	0.35	0.55	1.30
2-year Canada	1.09	0.80	0.70	0.60	1.00	1.10	1.35	1.70	2.10
5-year Canada	1.69	1.80	1.70	1.60	2.05	2.30	2.55	2.90	3.25
10-year Canada	2.68	2.90	2.35	2.20	2.55	2.95	3.25	3.40	3.60
30-year Canada	3.45	3.40	3.20	3.15	3.30	3.40	3.60	3.85	4.15
Real GDP (q/q, ann. % change)	-3.4	-6.0	-2.5	0.0	1.5	2.0	2.5	2.7	3.0
Real GDP (y/y, % change)	-0.7	-2.0	-2.8	-3.0	-1.8	0.2	1.5	2.2	2.6
Consumer Prices (y/y, % change)	1.9	1.1	-0.7	-1.5	0.3	1.0	1.3	1.6	1.6
Core CPI (y/y % change)	2.2	1.8	1.2	0.9	0.6	0.8	1.1	1.4	1.5
United States									
Fed Funds Target Rate	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.75
3-month T-bill	0.03	0.20	0.20	0.25	0.25	0.30	0.40	0.65	1.35
2-year Treasury	0.76	0.85	0.75	0.65	1.05	1.20	1.45	1.80	2.25
5-year Treasury	1.55	1.85	1.75	1.65	2.15	2.40	2.70	3.10	3.45
10-year Treasury	2.21	2.90	2.45	2.35	2.70	3.10	3.40	3.55	3.75
30-year Treasury	2.68	3.55	3.30	3.25	3.50	3.65	3.85	4.10	4.35
Real GDP (q/q, ann. % change)	-6.2	-7.0	-2.0	1.0	2.0	1.5	2.5	3.0	3.0
Real GDP (y/y, % change)	-0.8	-2.8	-4.0	-3.6	-1.6	0.6	1.7	2.3	2.5
Consumer Prices (y/y, % change)	1.5	-0.1	-1.2	-2.5	0.3	1.2	1.4	1.5	1.6
Core CPI (y/y % change)	2.0	1.5	1.1	0.5	0.6	0.8	1.0	1.2	1.3
Spreads									
Target Rate	1.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3-month T-bill	0.84	0.20	0.00	0.00	0.05	0.05	-0.05	-0.10	-0.05
2-year	0.33	-0.05	-0.05	-0.05	-0.05	-0.10	-0.10	-0.10	-0.15
5-year	0.14	-0.05	-0.05	-0.05	-0.10	-0.10	-0.15	-0.20	-0.20
10-year	0.47	0.00	-0.10	-0.15	-0.15	-0.15	-0.15	-0.15	-0.15
30-year	0.77	-0.15	-0.10	-0.10	-0.20	-0.25	-0.25	-0.25	-0.20
Central Bank Rates									
Bank of England	2.00	0.50	0.50	0.50	0.50	0.75	1.00	1.25	1.50
European Central Bank	2.50	1.50	1.00	1.00	1.00	1.25	1.50	1.75	2.00
Bank of Japan	0.10	0.10	0.10	0.10	0.10	0.10	0.25	0.25	0.25
Reserve Bank of Australia	4.25	3.25	2.75	2.75	3.00	3.25	3.50	3.75	4.00
Swiss National Bank	0.50	0.25	0.25	0.25	0.25	0.50	0.75	1.00	1.25
Exchange Rates									
Canadian Dollar (USD/CAD)	1.22	1.30	1.33	1.32	1.27	1.23	1.20	1.18	1.15
Canadian Dollar (CAD/USD)	0.82	0.77	0.75	0.76	0.79	0.81	0.83	0.85	0.87
Yen (USD/JPY)	91	97	98	98	95	92	90	88	85
Euro (EUR/USD)	1.40	1.27	1.25	1.30	1.33	1.38	1.42	1.45	1.48
Euro (EUR/GBP)	0.96	0.90	0.90	0.92	0.92	0.93	0.93	0.92	0.91
Sterling (GBP/USD)	1.46	1.41	1.39	1.41	1.45	1.48	1.53	1.58	1.63
Australian Dollar (AUD/USD)	0.70	0.62	0.60	0.60	0.62	0.64	0.66	0.69	0.72
Mexican Peso (USD/MXN)	13.5	14.9	14.6	14.3	14.1	13.9	13.8	13.9	14.0
Chinese Yuan (USD/CNY)	32.8	34.9	35.0	35.0	35.0	34.4	33.7	33.1	32.5

Forecast Changes

Financial

- We expect the Bank of Canada to cut its overnight rate once more on April 21st by 25 bps to 0.25%, and remain at that level until late 2010.
- The Federal Reserve is expected to leave its target range at 0-25 bps until late 2010.
- In the near-term, government bond yields are forecast to move lower in response to the continuing loss of economic momentum, deflating price pressures, the risk aversion of investors, and the increasing likelihood that central banks will purchase government bonds as they shift to 'quantitative easing'.
- As the U.S. and Canadian economies eventually recover, renewed inflation concerns over the monetary and fiscal stimulus are likely to surface. Along with the effects of rising debt issuance, we anticipate that longer-term interest rates are likely to move higher again.
- Major overseas central banks are under increasing pressure to complement interest rate relief with direct intervention in capital markets; the BoE is about to do so. Nevertheless, fearing the longer-term inflationary risks, the monetary authorities will be quick to reverse course once they see signs of some normalization in credit markets.
- The U.S. dollar will continue to find near-term support from a 'flight to liquidity'. Longer-term, however, renewed U.S. dollar weakness will be evident alongside heightened investor concerns regarding the rapid build-up in U.S. government debt.

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	Spot Rate 3/9/2009	2008				2009				2010			
		Q1	Q2	Q3	Q4	Q1F	Q2F	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F
CANADIAN FIXED INCOME													
Overnight Target Rate (%)	0.50	3.50	3.00	3.00	1.50	0.50	0.25	0.25	0.25	0.25	0.25	0.75	1.25
3-mth T-Bill Rate (%)	0.43	1.97	2.52	1.79	0.80	0.40	0.30	0.30	0.40	0.40	0.70	1.25	1.80
2-yr Govt. Bond Yield (%)	0.95	2.62	3.25	2.78	1.10	1.00	0.90	1.10	1.20	1.35	1.60	1.80	2.00
5-yr Govt. Bond Yield (%)	1.86	2.91	3.43	3.16	1.69	1.85	1.70	1.90	2.00	2.10	2.30	2.45	2.60
10-yr Govt. Bond Yield (%)	2.93	3.44	3.73	3.76	2.88	2.85	2.65	2.80	2.85	2.90	3.05	3.15	3.25
30-yr Govt. Bond Yield (%)	3.63	3.94	4.03	4.23	3.46	3.50	3.25	3.35	3.35	3.35	3.45	3.50	3.55
10-yr-2-yr Govt. Spread (%)	1.98	0.82	0.43	0.93	1.58	1.85	1.75	1.70	1.65	1.55	1.45	1.35	1.25
U.S. FIXED INCOME													
Fed Funds Target Rate (%)	0.00	2.25	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	1.00
3-mth T-Bill Rate (%)	0.23	1.37	1.61	0.75	0.09	0.20	0.20	0.30	0.30	0.30	0.40	1.00	1.60
2-yr Govt. Bond Yield (%)	0.96	1.53	2.62	1.93	0.76	0.85	0.75	1.00	1.10	1.30	1.55	1.75	1.95
5-yr Govt. Bond Yield (%)	1.90	2.44	3.33	2.93	1.55	1.75	1.60	1.85	1.95	2.10	2.35	2.55	2.75
10-yr Govt. Bond Yield (%)	2.89	3.41	3.97	3.62	2.21	2.65	2.45	2.70	2.75	2.90	3.15	3.35	3.55
30-yr Govt. Bond Yield (%)	3.59	4.29	4.52	4.31	2.63	3.30	3.05	3.25	3.30	3.45	3.65	3.85	4.00
10-yr-2-yr Govt. Spread (%)	1.93	1.83	1.35	1.83	1.45	1.80	1.70	1.70	1.65	1.60	1.60	1.60	1.60
CANADA-U.S. SPREADS													
3-mth T-Bill Rate (%)	0.20	0.60	0.71	1.04	0.71	0.20	0.10	0.00	0.10	0.10	0.30	0.25	0.20
2-yr Govt. Bond Yield (%)	-0.01	1.04	0.63	0.82	0.84	0.15	0.15	0.10	0.10	0.05	0.05	0.05	0.05
5-yr Govt. Bond Yield (%)	-0.04	0.47	0.13	0.13	0.14	0.10	0.10	0.05	0.05	0.00	-0.05	-0.10	-0.15
10-yr Govt. Bond Yield (%)	0.04	0.03	-0.24	-0.03	0.47	0.20	0.20	0.10	0.10	0.00	-0.10	-0.20	-0.30
30-yr Govt. Bond Yield (%)	0.04	-0.35	-0.44	-0.03	0.73	0.20	0.20	0.10	0.05	-0.10	-0.20	-0.35	-0.45

f: Forecast by TD Bank as at Mar 4 2009; All forecasts are for end of period. Source: Bloomberg, TD Economics

Currency	Exchange Rate	Spot Price 3/9/2009	2008				2009				2010			
			Q1	Q2	Q3	Q4	Q1F	Q2F	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F
Canadian dollar	USD per CAD	0.770	0.992	0.979	0.940	0.820	0.800	0.820	0.830	0.870	0.870	0.880	0.880	0.890
Canadian dollar	CAD per USD	1.299	1.003	1.021	1.034	1.219	1.250	1.220	1.205	1.149	1.149	1.136	1.136	1.124
Japanese yen	JPY per USD	98.9	104	103	103	91	95	100	102	102	104	108	110	110
Euro	USD per EUR	1.261	1.532	1.576	1.403	1.397	1.300	1.400	1.450	1.500	1.500	1.450	1.400	1.300
U.K. pound	USD per GBP	1.379	1.937	1.993	1.731	1.463	1.444	1.556	1.629	1.685	1.705	1.648	1.609	1.494
Swiss franc	CHF per USD	1.159	1.034	1.021	1.122	1.059	1.138	1.107	1.097	1.080	1.080	1.117	1.143	1.215
Australian dollar	USD per AUD	0.632	0.944	0.959	0.792	0.703	0.610	0.570	0.580	0.600	0.620	0.640	0.660	0.680
NZ dollar	USD per NZD	0.493	0.733	0.732	0.670	0.579	0.490	0.450	0.450	0.460	0.480	0.500	0.520	0.540
Mexican peso	MXN per USD	15.52	10.47	10.31	10.94	13.67	15.00	14.50	14.00	13.50	13.30	13.10	12.80	12.50

f: Forecast by TD Economics as at March 4, 2009; All forecasts are for end of period; Source: Federal Reserve of New York, TD Economics

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LONG-TERM FORECASTS

OCTOBER 2008

continued from page 3

France											
* % change over previous year	Historical				Consensus Forecasts						
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014-2018 ¹
Gross Domestic Product*	2.2	1.9	2.4	2.1	0.9	0.5	1.7	2.1	2.2	2.1	2.1
Household Consumption*	2.5	2.6	2.5	2.5	1.0	0.8	1.9	2.2	2.2	2.1	2.1
Business Investment*	3.6	3.8	5.4	7.3	2.3	-0.4	2.9	3.8	3.8	3.8	3.8
Industrial Production*	2.1	0.4	1.3	1.4	-0.2	-0.3	1.9	2.1	2.1	2.2	2.1
Consumer Prices*	2.1	1.7	1.7	1.5	3.1	2.0	1.9	2.0	2.0	1.9	1.9
Current Account Balance (Euro bn)	10.0	-10.9	-12.3	-22.3	-35.1	-36.2	-33.6	-32.0	-30.6	-16.2	-15.7
10 Year Treasury Bond Yield, % ²	3.7	3.3	4.0	4.4	4.1 ³	4.1 ⁴	4.2	4.4	4.5	4.5	4.6

United Kingdom											
* % change over previous year	Historical				Consensus Forecasts						
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014-2018 ¹
Gross Domestic Product*	2.8	2.1	2.8	3.0	1.1	-0.2	1.2	1.8	2.0	2.2	2.4
Household Consumption*	3.1	2.0	2.0	3.0	1.9	-0.4	0.8	1.2	1.4	1.6	2.1
Gross Fixed Investment*	4.9	2.2	6.0	7.1	-3.3	-4.0	0.6	0.9	2.1	2.5	3.2
Manufacturing Production*	2.2	-0.2	1.5	0.7	-0.6	-1.2	0.1	0.7	1.0	1.2	1.3
Retail Prices (underlying rate)*	2.2	2.3	2.9	3.2	4.6	3.2	2.7	3.0	3.1	3.0	3.0
Consumer Prices*	1.3	2.1	2.3	2.3	3.7	2.9	2.2	2.3	2.4	2.4	2.3
Current Account Balance (£ bn)	-19.3	-31.0	-45.0	-52.6	-41.8	-42.5	-52.5	-49.6	-44.2	-42.2	-47.1
10 Year Treasury Bond Yield, % ²	4.5	4.1	4.7	4.6	4.3 ³	4.3 ⁴	4.6	4.9	4.9	4.8	4.9

Italy											
* % change over previous year	Historical				Consensus Forecasts						
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014-2018 ¹
Gross Domestic Product*	1.4	0.7	1.9	1.4	0.0	0.0	1.0	1.3	1.4	1.4	1.4
Household Consumption*	0.7	0.9	1.1	1.5	-0.3	0.2	1.0	1.3	1.3	1.5	1.4
Gross Fixed Investment*	1.6	1.2	2.7	0.8	-0.3	-0.5	0.7	1.4	1.5	1.6	1.5
Industrial Production*	-0.3	-0.8	2.4	-0.2	-1.8	-0.7	1.0	1.1	1.0	1.3	1.1
Consumer Prices*	2.1	1.8	2.0	1.8	3.5	2.4	2.0	1.9	2.0	2.0	2.0
Current Account Balance (Euro bn)	-13.1	-23.6	-38.5	-37.4	-43.2	-34.7	-28.9	-22.3	-18.9	-23.5	-23.2
10 Year Treasury Bond Yield, % ²	3.8	3.5	4.2	4.6	4.1 ³	4.3 ⁴	4.5	4.7	4.8	4.8	4.7

Canada											
* % change over previous year	Historical				Consensus Forecasts						
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014-2018 ¹
Gross Domestic Product*	3.1	2.9	3.1	2.7	0.7	1.1	2.8	2.8	2.6	2.4	2.3
Personal Expenditure*	3.3	3.7	4.3	4.5	3.9	2.3	2.7	2.7	2.5	2.4	2.2
Machinery & Eqpt Investment*	9.1	13.8	10.6	7.1	5.2	2.0	5.4	4.6	3.7	2.9	2.9
Industrial Production*	1.5	1.6	0.2	0.2	-3.4	0.2	3.1	4.1	3.3	2.3	2.2
Consumer Prices*	1.8	2.2	2.0	2.2	2.7	2.1	2.0	2.1	2.1	2.0	2.0
Current Account Balance (C\$ bn)	29.8	26.5	20.2	13.6	17.1	1.9	-4.0	-8.2	-4.0	0.5	2.9
10 Year Treasury Bond Yield, % ²	4.3	4.0	4.1	4.0	3.5 ³	3.8 ⁴	4.5	4.9	5.2	5.2	5.1

Euro zone											
* % change over previous year	Historical				Consensus Forecasts						
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014-2018 ¹
Gross Domestic Product*	1.9	1.8	3.0	2.6	1.2	0.5	1.6	2.0	2.0	2.0	1.9
Private Consumption*	1.5	1.8	2.0	1.6	0.4	0.6	1.4	1.9	2.0	2.0	1.9
Gross Fixed Investment*	1.9	3.4	5.9	4.3	1.8	-0.3	2.2	2.8	2.9	2.5	2.4
Industrial Production*	2.1	1.4	4.0	3.4	0.3	0.1	1.5	1.8	1.7	1.7	1.6
Consumer Prices*	2.1	2.2	2.2	2.1	3.4	2.2	2.0	2.0	2.0	2.0	2.0
Current Account Balance (Euro bn)	62.1	18.1	-1.3	26.6	-39.1	-26.2	-38.5	-26.2	-19.2	-15.5	-10.5

¹Signifies average for period ²End period ³End January, 2009 ⁴End October, 2009

The Conference Board of Canada
Forecast Completed: December 18, 2008

TABLE 33: SELECTED CANADIAN AND U.S. INTEREST RATES

	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>
CANADA							
PERSONAL SAVINGS DEPOSITS	0.05	0.05	0.08	0.09	0.02	0.06	0.10
3-MONTH TREASURY BILL	2.73	4.03	4.15	2.56	2.25	3.91	4.55
90-DAY PRIME CORPORATE PAPER	2.84	4.21	4.63	3.20	2.91	4.58	5.18
PRIME LENDING RATE	4.42	5.81	6.10	4.79	4.26	5.69	6.25
5-YEAR GIC	2.71	3.16	3.31	2.96	2.86	3.69	4.29
5-YEAR CONVENTIONAL MORTGAGE	5.99	6.66	7.07	6.89	6.13	7.00	7.59
FEDERAL BONDS: 1-3 YEARS	3.18	4.07	4.22	2.78	2.63	3.84	4.57
FEDERAL BONDS:3-10 YEARS	3.72	4.15	4.24	3.36	3.34	4.31	4.96
FEDERAL BONDS: 10 YEARS AND OVER	4.39	4.30	4.34	3.97	3.84	4.57	5.16
SCOTIA MCLEOD 10 PROVINCIALS	4.83	4.78	4.79	4.62	4.23	5.07	5.71
SCOTIA MCLEOD 10 INDUSTRIALS	5.36	5.40	5.52	5.22	4.62	5.42	6.05
SCOTIA MCLEOD 10 MUNICIPALS	5.19	5.23	5.23	4.89	4.36	5.20	5.84
TSE EARNINGS-PRICE RATIO	5.36	5.68	5.76	5.39	3.84	3.45	3.79
BANK RATE	2.92	4.31	4.60	3.29	2.76	4.19	4.75
UNITED STATES							
FEDERAL FUND RATE	3.21	4.96	5.02	2.06	1.20	3.43	4.21
3-MONTH TREASURY BILL	3.21	4.85	4.47	1.56	0.94	2.72	3.52
MOODY'S AAA CORPORATE BOND	5.23	5.59	5.56	5.50	4.94	5.08	5.36



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Canadian A Forecast Tables [2006 8 16] - (XLS; 1Mb)	16 Aug
Canadian A Forecast Tables [2006 7 7] - (XLS; 1Mb)	07 Jul

Table 24						
Interest Rates						
(Percent)						
	2006	2007	2008	2009	2010	2011
Overnight Money	4.02	4.34	2.96	0.41	0.69	2.37
Bank Rate	4.31	4.60	3.21	0.66	0.94	2.62
Government of Canada						
Treasury Bills						
3 Months	4.03	4.15	2.39	0.38	0.72	2.36
6 Months	4.11	4.26	2.52	0.49	0.83	2.47
Bonds						
1-3 Years	4.07	4.22	2.66	1.33	1.65	3.01
3-5 Years	4.10	4.21	2.96	2.08	2.31	3.48
5 Years	4.12	4.22	3.01	2.16	2.38	3.52
5-10 Years	4.18	4.25	3.36	2.69	2.84	3.85
10 Years	4.22	4.28	3.58	2.92	3.04	3.99
10+ Years	4.30	4.34	4.04	3.50	3.49	4.38
30 Years	4.28	4.32	4.05	3.60	3.61	4.48
Prime Corporate Paper						
30 Days	4.15	4.57	3.17	0.49	0.83	2.47
90 Days	4.21	4.63	3.23	0.51	0.85	2.49
Bankers' Acceptances						
30 Days	4.13	4.51	3.04	0.48	0.82	2.46
90 Days	4.19	4.57	3.08	0.50	0.84	2.48
Chartered Bank						
Non-Chequable Deposits	0.05	0.08	0.10	0.08	0.08	0.08
5-Yr Personal Fixed Term	2.91	3.09	2.81	1.30	1.53	3.08
Chartered Bank Prime	5.81	6.10	4.73	2.16	2.44	4.12
Chartered Bank Mortgage Rate						
1 Year	6.28	6.90	6.70	4.86	5.31	6.29
5 Years	6.66	7.07	7.06	5.35	5.16	5.92
3-Month Euro Deposit Rate	4.11	4.57	3.38	0.59	0.81	2.45

Canada: Major Indicators

Informetrica

IL Reference Feb 8, 2009

		2008	2009	2010	2011
GDPMP	GDP Deflator (Chained, 1997=1)	1.32	1.3	1.33	1.36
gdpmp#p	Inflation (% change year-to-year)	4.9	-0.9	1.3	2.1
CPITLI	Consumer Price Index (1992=100)	136.06	136.83	139.46	142.33
cpitli#p	Inflation (% change year-to-year)	2.6	0.6	1.9	2.1
TOLWAR	Wage & Salary Rate (\$000 nominal per emplo	39.46	40.16	41.86	43.71
TOTULC	Unit Labour Costs (Nominal Labour Income pe	0.69	0.7	0.72	0.73
ITGSBP	Import Price Deflator (Chained, 1997=1)	0.97	1	1.01	1.04
termmr	Merchandise Terms of Trade (1997=1)	1.32	1.22	1.24	1.25
EOWGO6	International Crude Oil Price (WTI \$U.S. per b	105.96	50	65	78.8
REXCUR	Exchange Rate (\$Can per \$U.S.)	1.06	1.16	1.18	1.18
rrxcu	Real Exchange Rate [2]	0.97	1.09	1.07	1.06
rexcu	Exchange Rate (cents U.S. per \$Can)	94	86	84.8	84.6
PCP90I	Commercial Paper - 90 day (%)	3.3	3.0	3.8	4.3
INDLBI	AAA Industrial Bonds	5.5	5.4	5.5	5.8
FGVLBI	Government of Canada Bonds (10+ years)	4.1	4.0	4.3	4.7
FGVLBR	10+ Years Canada Bonds (real [3])	0.7	1.4	2.0	2.5
INDLBR	AAA Industrial Bonds (real)	2.1	2.9	3.3	3.6

Notes:

Model Variables in CAPs

Transformations in lower case

[1] Paper, Chemicals, Primary Metals, & Non-metallic Min

[2] Canadian & U.S. GDP deflators aligned at 1997

[3] Adjusted for 5-year moving average of GDP deflator

Source: Statistics Canada & Informetrica Limited

I90TRU	US Treasury Bill	1.5	0.6	0.5	1.2
TRB3MI	Canadian Treasury Bill	2.4	2.4	3.3	3.8

Spatial Economics - Financial Markets
November 26 2008

<u>Variable/Date</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>
Interest Rates %				
Canada				
3-Month T-Bills	2.6	2.6	3.1	4.0
10-Year GOCs	3.8	4.0	4.0	5.3
30-Year GOCs	4.0	4.2	4.3	5.6
10+ Year GOCs	4.0	4.2	4.2	5.5
Prime Rate	4.4	4.3	4.8	5.6
1-Year Mortgages	4.6	4.4	4.8	5.7
5-year Mortgages	5.5	5.4	5.9	6.7
Real Rates				
3-Month T-Bills	.4	.3	.8	1.6
10-Year Bonds	1.6	1.7	1.7	2.9
United States				
3-Month T-Bills	1.5	1.0	1.8	2.7
10-Year Treasury Bonds	3.7	3.4	3.7	4.5
Canada-U.S. Differentials (Unadjusted)				
3-Month T-Bills	1.1	1.6	1.3	1.3
10-Year Bonds	.1	.6	.3	.8
Monetary Aggregates \$B				
M1	437701	451401	466967	482444
% Change	5.9	3.1	3.4	3.3
Canada-U.S. Exchange Rate				
\$US	.960	.901	.871	.856
\$C	1.042	1.109	1.148	1.168
PPP	.819	.821	.821	.821

CAC/MSOS/MH I-140

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 line 17 and following

The Applicant presents a table of revised variables which appears to indicate a “10 Yr+” term, and the “MH Cost of Debt” for long term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the methodology employed in the development of the forecast.

To expedite this proceeding, CAC/MSOS suggests that CAC/MSOS/Centra 2-76 f and CAC/MSOS/Centra 2-156 from the recent Centra proceeding be confirmed by the Manitoba Hydro, or amended as required, and accepted into or placed on the record of this proceeding. CAC/MSOS/Centra 2-76 provides information about the forecast data review process, and CAC/MSOS/Centra 2-156 provides then current examples of the forecast inputs some of which indicate whether the data is “10 Yr+” or 10 year data, and some of which indicate whether the data is period average or end of period data.

CAC/MSOS also notes that in PUB/CENTRA 2-198 Revised June 1, 2009 contained a different set of 10 year forecasters from those used for T-bill rates.

- i) Please place on the record of this proceeding CAC/MSOS/Centra 2-76 and if required, please correct the response, identifying the further updates.

ANSWER:

CAC/MSOS/Centra 2-76 is attached and referenced as file CAC/MSOS/MH I-140(i)-Attachment.

This information is current as of June 1, 2009.

CENTRA GAS MANITOBA INC.

2009/10 & 2010/11 GRA

**RESPONSE TO INFORMATION REQUESTS OF
CONSUMERS ASSOCIATION OF CANADA (MANITOBA) LTD. AND
MANITOBA SOCIETY OF SENIORS**

1 **CAC/MSOS/CENTRA 2 - 76**

2 ***Reference: CAC/MSOS-Centra 1-2 (c)***

3

4 **In the above noted IR, requested documents and analysis related to the derivation of the**

5 **forecast short-term debt rate of 4.05% for 2009/10. In its reply, Centra appeared to rely**

6 **on unnamed forecasters that had forecast t-bill rates rather than BA rates. CAC/MSOS**

7 **wishes to better understand whether Centra ignored forecasts of BA rates available to it.**

8 **CAC/MSOS also wishes to understand how Centra selected or derived its forecasts from**

9 **the various competing estimates available to it.**

10

11 **(a) Please advise the methodology that Centra used to evaluate the various forecasts**

12 **available to it and derive its own forecast;**

13

14 **(b) Please identify the BA and T-bill rates from each of the forecasters that estimated**

15 **both BA and T-bill rates;**

16

17 **Response to parts (a) and (b):**

18 The Corporation collects forecast data for the upcoming year and for the next 20 years on

19 the Canadian 90 day T-Bill rate from independent forecasters as well as from major

20 Canadian chartered banks. This T-Bill rate is selected for the forecasting process as the

21 majority of forecasters that it relies upon to produce the short term forecast rates provide a

1 90 day T-Bill rate and not a three month banker's acceptance rate For example, for the
2 2008 Economic Outlook, only two of the forecasters provided a forecast of banker's
3 acceptance rates. Manitoba Hydro then determines the appropriate credit spread to reflect
4 the difference in cost for Manitoba Hydro to borrow in the short term relative to 90 day T-bill
5 rates, and calculates the Manitoba Hydro short term debt rate by adding the forecast 90
6 day T-bill rate plus the credit spread. The weighted average rate of three quarters of one
7 calendar year and one quarter of the following calendar year are utilized to prepare the
8 forecast on a fiscal year basis. Please see the response to PUB/Centra 198 for the table of
9 the forecaster's rates that were used to derive the 2008 Economic Outlook.

10
11 **(c) Identify the percentage BA (if any) and T-bill rates forecast and the source of the low**
12 **forecast from among the group of competing estimates available to Centra;**

13
14 As indicated in the table shown in the response to PUB/Centra 198, the low forecast
15 among the group forecasters for the 2009 calendar year was 2.53%.

16
17 **(d) Identify the percentage BA (if any) and T-bill rates forecast and the source of the**
18 **high forecast from among the group of competing estimates available to Centra;**

19
20 As indicated in the table shown in the response to PUB/Centra 198, the high forecast
21 among the group forecasters for the 2009 calendar year was 4.70%.

22
23 **(e) Please advise as to the number of forecasts considered and the median forecast rate**
24 **and the average forecast rate;**

25

1 Ten independent forecasts were considered for the 90 day T-Bill rate forecast for the
2 2009/10 period. The median and average forecast rate for the 2009 calendar year was
3 3.7%.

4

5 **(f) Please discuss the process, if any, undertaken by Centra to review the relative**
6 **success of each of the various forecasters of BA or T-bill rates, by comparing their**
7 **historical forecasts with the actual results in the market subsequent to the time of**
8 **the forecast;**

9

10 The Corporation does not review the relative success of each forecast included in its
11 forecast of T-Bill rates by comparing their historical forecasts with actual market results.

12

13 The initial economic forecast is developed in March and is based on the most recent
14 information available from a variety of forecasters. This economic forecast is reviewed
15 again in June as part of the development of the IFF. In June 2008, the T-Bill forecast rate
16 indications from the independent forecasters had dropped to 3.45%, however the actual
17 spread between the 90 day T-Bill rate and the three month banker's acceptance rate had
18 increased to approximately 65 basis points, up significantly from historical levels of 10
19 basis points. The all-in short-term forecast for the 2009/10 period thus remained
20 unchanged at 4.05%.

21

22 **(g) Please confirm that the 4.14% calendar year 90 day Canadian T-bill rate shown in the**
23 **table for 2007 is an actual rate conforming to the Bank of Canada series V39065**
24 **average for the year;**

25

1 **(h) Please confirm that the average calendar year 90 day Canadian T-bill rate for 2008 in**
2 **series V39065 is 2.33%, or supply the correct rate;**

3

4 Response to parts (g) and (h):

5 Confirmed.

6

7 **(i) Please confirm that the average calendar year 90 day Canadian T-bill rate for 2008**
8 **shown in the table was a forecast rate, which resulted in an overpayment by**
9 **consumers of interest costs on short term debt of approximately 92 basis points;**

10

11 As previously indicated, the Bank of Canada is not a source for Centra's forecast
12 calculation. The 90 day Canadian T-Bill rate for 2008 of 3.25% as shown in the table was a
13 calendar year forecast rate. Note that the average one month Bloomberg banker's
14 acceptance rate for the same period, which represents the actual costs charged to Centra
15 from Manitoba Hydro was 3.19%, and the one month banker's acceptance rate according
16 to the Bank of Canada series V39068 was 3.14%. Consequently, there is not a large
17 variance from the original forecast.

18

19 **(j) Please confirm that the average 90 day Canadian T-bill rate for January 1, 2009**
20 **through March 31, 2009, in series V39065 is 0.64%, or supply the correct rate;**

21

22 Confirmed.

23

24 **(k) Please confirm that the average 90 day Canadian T-bill rate for 2009 shown in the**
25 **table was 3.75%, and if adopted, while the year has not yet ended, will result in an**

1 **overpayment by consumers of interest costs on short term debt of approximately**
2 **311 basis points, or 3.11%, during the first calendar quarter.**

3
4 As previously indicated, the Bank of Canada is not a source for Centra's forecast
5 calculation.

6
7 Each year Centra applies a consistent economic forecasting methodology that utilizes high
8 quality inputs from numerous independent forecasters. By their inherent nature, these
9 forecasts cannot perfectly predict changing future events and circumstances. For example,
10 financial market conditions may fluctuate over a broad range on any given day.

11
12 Centra's General Rate Application considers a wide range of future oriented issues in the
13 formulation of the revenue requirement. Within an abbreviated time frame, actual
14 experience may vary from forecasts as the short duration of time will often not consider the
15 wider range of economic cycles that may be experienced throughout the test years and
16 beyond. Consequently, Centra adopts a longer term view which incorporates high quality
17 data sources and sound forecasting methodologies.

CAC/MSOS/MH I-140

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, “Integrated Financial Forecast & Economic Outlook”, section 5.1 line 17 and following

The Applicant presents a table of revised variables which appears to indicate a “10 Yr+” term, and the “MH Cost of Debt” for long term instruments for each of the financial years 2009/10, through 2012/13.

CAC/MSOS wishes to better understand the methodology employed in the development of the forecast.

To expedite this proceeding, CAC/MSOS suggests that CAC/MSOS/Centra 2-76 f and CAC/MSOS/Centra 2-156 from the recent Centra proceeding be confirmed by the Manitoba Hydro, or amended as required, and accepted into or placed on the record of this proceeding. CAC/MSOS/Centra 2-76 provides information about the forecast data review process, and CAC/MSOS/Centra 2-156 provides then current examples of the forecast inputs some of which indicate whether the data is “10 Yr+” or 10 year data, and some of which indicate whether the data is period average or end of period data.

CAC/MSOS also notes that in PUB/CENTRA 2-198 Revised June 1, 2009 contained a different set of 10 year forecasters from those used for T-bill rates.

- j) Please discuss the process, if any, undertaken in the recent update to review the relative success of each of the various forecasters of “10 Yr +” or 10 year rates, by comparing their historical forecasts with the actual results in the market subsequent to the time of the forecast.

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-138(e).

CAC/MSOS/MH I-141

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, Appendix 5.1 “2009 Economic Outlook”, page 1 and page 8

The Applicant presents indicates that the long term Canada “bond rate is expected to be 5.50%”. The 5.50% forecast rate represented a 35 basis point reduction from the 5.85% rate forecast in 2008. In the Spring 2006 Economic Outlook, the applicant then indicated that the long term Canada “bond rate is expected to be 6.00%”,

CAC/MSOS wishes to better understand the process for the determination of the forecast for the long term Canada rate.

CAC/MSOS observes that many of the forecasters identified as contributors to the Economic Outlook forecasts, as identified in the recent Centra proceeding in the June 1, 2009 revision to PUB/Centra 2-198, only provide forecasts of T-bill rates and 10 year Canada bond rates for approximately 2 years.

CAC/MSOS also observes that in the “2009 Economic Outlook” the forecast of T-bill rates and Canada rates only reached the long term value in the fifth year of the forecast. In the 2009 Economic Outlook, it was in the sixth year of the forecast that those rates reached the constant long term value.

- a) Please identify which, if any, of the forecasters upon which the Economic Outlooks rely, provide forecasts beyond 2 years.

ANSWER:

The following forecasters provided forecasts of interest rates beyond two years for the Spring 2009 Economic Outlook:

Global Insight
Conference Board
Informetrica
Spatial Economics
Province of BC
Federal Finance
Consensus Economics

CAC/MSOS/MH I-141

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, Appendix 5.1 “2009 Economic Outlook”, page 1 and page 8

The Applicant presents indicates that the long term Canada “bond rate is expected to be 5.50%”. The 5.50% forecast rate represented a 35 basis point reduction from the 5.85% rate forecast in 2008. In the Spring 2006 Economic Outlook, the applicant then indicated that the long term Canada “bond rate is expected to be 6.00%”,

CAC/MSOS wishes to better understand the process for the determination of the forecast for the long term Canada rate.

CAC/MSOS observes that many of the forecasters identified as contributors to the Economic Outlook forecasts, as identified in the recent Centra proceeding in the June 1, 2009 revision to PUB/Centra 2-198, only provide forecasts of T-bill rates and 10 year Canada bond rates for approximately 2 years.

CAC/MSOS also observes that in the “2009 Economic Outlook” the forecast of T-bill rates and Canada rates only reached the long term value in the fifth year of the forecast. In the 2009 Economic Outlook, it was in the sixth year of the forecast that those rates reached the constant long term value.

- b) For those forecasters named in (a) above, please identify the length of the forecast and whether the forecast is an “independent” forecast, or identify the other forecasters upon which those named forecasters relied.

ANSWER:

Forecaster	Forecast End Year	Independent
Global Insight	2037	Yes
Conference Board	2030	Yes
Informetrica	2030	Yes
Spatial Economics	2030	Yes
Province of BC	2013	No
Federal Finance	2013	No
Consensus Economics	2018	No

Refer to PUB/MH I-46(b), Table 1 and Table 3 for sources used to derive the forecast of interest rates for 2009/10 - 2012/13. In the update for those years, Global Insight's most current monthly short term forecast of quarterly interest rates was used and Conference Board's most current quarterly short term forecast of quarterly interest rates was used.

For 2013/14 and beyond, rates are from the Spring 2009 Economic Outlook. Global Insight and Conference Board's most current available long term annual forecasts were used for those years.

Three forecasters were used in the Spring 2009 Economic Outlook that were not independent. They are as follows:

Province of BC - This information is reflected in the forecast of interest rates for only 2013/14 as their forecast period ended in 2013. In British Columbia's "Budget and Fiscal Plan 2009/10 to 2011/12" they identify that for calendar years 2009 and 2010, the following sources were used to derive the forecast of 3-month T-bills and 10 year government bonds:

- Global Insight
- Bank of Montreal
- Scotiabank
- TD Economics
- RBC Capital Markets

For the period 2011 to 2013, it is not clearly specified what the sources are.

Federal Finance - This information is reflected in the forecast of interest rates for only 2013/14 as their forecast period ended in 2013. This forecaster does not reveal their sources in their survey of private forecasters.

Consensus Economics - This information is reflected in the forecast of interest rates for long bonds for 2013/14 to 2018/19 as their forecast period ended in 2018. This forecaster does not reveal their sources in their survey of private forecasters.

The inclusion of the above three forecasts did not impact the test years of the rate application. Forecasts from the Province of BC, Federal Finance and Consensus Economics will be excluded from future interest rate forecasts.

CAC/MSOS/MH I-141

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, Appendix 5.1 “2009 Economic Outlook”, page 1 and page 8

The Applicant presents indicates that the long term Canada “bond rate is expected to be 5.50%”. The 5.50% forecast rate represented a 35 basis point reduction from the 5.85% rate forecast in 2008. In the Spring 2006 Economic Outlook, the applicant then indicated that the long term Canada “bond rate is expected to be 6.00%”,

CAC/MSOS wishes to better understand the process for the determination of the forecast for the long term Canada rate.

CAC/MSOS observes that many of the forecasters identified as contributors to the Economic Outlook forecasts, as identified in the recent Centra proceeding in the June 1, 2009 revision to PUB/Centra 2-198, only provide forecasts of T-bill rates and 10 year Canada bond rates for approximately 2 years.

CAC/MSOS also observes that in the “2009 Economic Outlook” the forecast of T-bill rates and Canada rates only reached the long term value in the fifth year of the forecast. In the 2009 Economic Outlook, it was in the sixth year of the forecast that those rates reached the constant long term value.

- c) For those forecasters named in (a) above, which provide “period average” forecasts, please provide the document which confirms that their forecast is a “period average” forecast.

ANSWER:

The forecast tables for Global Insight, Conference Board, Informetrica and Spatial Economics do not specify if they provide period average forecasts. It has been confirmed with each of these forecasters that the interest rate forecasts they provide reflect period average rates.

Consensus Economics forecast is end of period. The forecast tables from Federal Finance and the Province of BC do not specify if they are end of period or average period. As noted in the response to CAC/MSOS/MH I-141(b), forecasts from the Province of BC, Federal Finance and Consensus Economics will be excluded from future interest rate forecasts.

CAC/MSOS/MH I-141

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, Appendix 5.1 “2009 Economic Outlook”, page 1 and page 8

The Applicant presents indicates that the long term Canada “bond rate is expected to be 5.50%”. The 5.50% forecast rate represented a 35 basis point reduction from the 5.85% rate forecast in 2008. In the Spring 2006 Economic Outlook, the applicant then indicated that the long term Canada “bond rate is expected to be 6.00%”,

CAC/MSOS wishes to better understand the process for the determination of the forecast for the long term Canada rate.

CAC/MSOS observes that many of the forecasters identified as contributors to the Economic Outlook forecasts, as identified in the recent Centra proceeding in the June 1, 2009 revision to PUB/Centra 2-198, only provide forecasts of T-bill rates and 10 year Canada bond rates for approximately 2 years.

CAC/MSOS also observes that in the “2009 Economic Outlook” the forecast of T-bill rates and Canada rates only reached the long term value in the fifth year of the forecast. In the 2009 Economic Outlook, it was in the sixth year of the forecast that those rates reached the constant long term value.

- d) Please provide the method of calculation both of the 2009 Economic Outlook long term rates, 4.25% and 5.50%, identifying any particular forecasts which were averaged, or extrapolated to develop the particular rate, beginning with the 2011 year and explaining the derivation of the rates for 2012 and the decision that the final rate would be achieved in the 2013 as opposed to the sixth year of the forecast as in the 2006 Economic Outlook.

ANSWER:

Refer to PUB/MH I-46(b) (Tables 1 and 3) and (d) for details of the T-bill and GOC 10 year+ interest rate forecasts, respectively, for 2009/10 - 2012/13. Tables 2 and 4 in PUB/MH I-46(b) provide information on the forecasts for T-bill and GOC 10 year+ rates, respectively, for 2013/14 - 2019/20. The consensus of the forecasters over the long term forecast period was reviewed and the rate was smoothed over the longer term to achieve a constant rate. Professional judgement was applied in smoothing the rates over the longer term and there was no specific calculation to determine the exact year of the forecast when the final rate was achieved.

CAC/MSOS/MH I-141

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 5, Appendix 5.1 “2009 Economic Outlook”, page 1 and page 8

The Applicant presents indicates that the long term Canada “bond rate is expected to be 5.50%”. The 5.50% forecast rate represented a 35 basis point reduction from the 5.85% rate forecast in 2008. In the Spring 2006 Economic Outlook, the applicant then indicated that the long term Canada “bond rate is expected to be 6.00%”,

CAC/MSOS wishes to better understand the process for the determination of the forecast for the long term Canada rate.

CAC/MSOS observes that many of the forecasters identified as contributors to the Economic Outlook forecasts, as identified in the recent Centra proceeding in the June 1, 2009 revision to PUB/Centra 2-198, only provide forecasts of T-bill rates and 10 year Canada bond rates for approximately 2 years.

CAC/MSOS also observes that in the “2009 Economic Outlook” the forecast of T-bill rates and Canada rates only reached the long term value in the fifth year of the forecast. In the 2009 Economic Outlook, it was in the sixth year of the forecast that those rates reached the constant long term value.

- e) In PUB/Centra 2-198, on page 2 at line 13, it was indicated that “The level of current credit spreads influences the first two years of the forecast period, after which historical credit spreads are utilized”. To what extent do historic T-bill and Canada debt rates influence the determination of the long term rate for T-bills and 10 year Canada bonds?

ANSWER:

As noted in the response to CACMSOS/MH I-141(d), the forecast for T-bills and GOC 10 Yr+ rates relied on the consensus of the forecasters over the longer term period.

CAC/MSOS/MH I-142

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Appendix 5.2, “Integrated Financial Forecast”, section 6.0, page 14,

The Applicant presents a chart of new and refinancing requirements.

CAC/MSOS wishes to better understand the financing plan for the forecast 2010/11, 2011/12 period.

- a) Please provide a debt maturity schedule for a current date, in the format used in the previous GRA, in response to Coalition/MH I-98 (c).**

ANSWER:

Please see the debt maturity schedule as at December 31, 2009.

Note that the maturity dates listed in the schedule provide the most outward obligation dates on any debt series (the latter of physical debt or forward interest rate swap maturity dates). Therefore in cases where the maturity of a forward interest rate swap for a debt series is beyond the maturity date of the associated physical debt, a refinancing of the underlying physical debt will be required in advance of the maturity date listed in the schedule. Consequently, this schedule should not be utilized to determine the commitment dates for the refinancing of the existing physical debt.

Also, the interest rates shown in this schedule indicate the coupon rates on the debt and not the all-in yield cost to Manitoba Hydro.

**MANITOBA HYDRO
DEBT MATURITY SCHEDULE
AT DECEMBER 31, 2009
(IN MILLIONS \$)**

SHORT TERM DEBT

SERIES	CURRENCY	MATURITY	INTEREST RATE	CANADIAN \$	US \$	TOTAL CANADIAN (US @ 1.0466)
NO SHORT TERM DEBT DECEMBER 31, 2009				\$ -	\$ -	\$ -
TOTAL SHORT TERM DEBT				\$ -	\$ -	\$ -

LONG TERM DEBT

SERIES	CURRENCY	MATURITY	INTEREST RATE	CANADIAN \$	US \$	TOTAL CANADIAN (US @ 1.0466)
EM-3	CAD	02/22/2010	6.350%	\$ 50.0		50.0
EM-4	CAD	02/22/2010	6.350%	25.0		25.0
EM-1	CAD	02/22/2010	3BA + 0.18375%	66.5		66.5
EM	USD	02/22/2010	3LIBOR + 0.0974%		50.0	52.3
EM-6	USD	02/22/2010	3LIBOR + 3.7129%		100.0	104.7
EM-5	USD	02/22/2010	5.973%		97.1	101.6
FD-2	CAD	04/12/2010	3BA + 0.0469%	4.0		4.0
HB10-3FX	CAD	06/15/2010	4.600%	84.6		84.6
CO94	USD	02/22/2011	6LIBOR -0.155%		200.0	209.3
HB9-FL	CAD	06/15/2011	1.000%	10.7		10.7
HB9-5FX	CAD	06/15/2011	4.350%	14.9		14.9
HB10-FL	CAD	06/15/2012	1.000%	6.8		6.8
HB10-5FX	CAD	06/15/2012	4.650%	15.3		15.3
C107	CAD	09/04/2012	3BA + 0.40%	100.0		100.0
ER-2	CAD	12/03/2012	3BA + 0.192%	50.0		50.0
4I	CAD	02/11/2013	9.375%	10.0		10.0
5A	CAD	06/30/2013	5.750%	40.0		40.0
5B	CAD	06/30/2013	5.750%	4.3		4.3
DE	USD	07/22/2013	8.120%		188.4	197.2
C101	CAD	09/16/2013	5.744%	200.0		200.0
EZ4	CAD	12/03/2013	3BA + 0.0925%	9.5		9.5
EZ3	CAD	12/03/2013	6LIBOR - 0.0645%	208.3		208.3
4J	CAD	01/20/2014	8.000%	15.0		15.0
EZ-1	USD	01/21/2014	5.989%		50.0	52.3
EZ	USD	01/21/2014	5.929%		100.0	104.7
FM-4	CAD	09/01/2014	3BA + 0.484%	100.0		100.0
4K	CAD	05/12/2015	9.125%	12.0		12.0
EY	CAD	12/03/2015	5.490%	200.0		200.0
EY2	CAD	12/03/2015	3BA + 0.0455%	50.0		50.0
AZ	CAD	07/17/2016	3BA + 1.08%	200.6		200.6
ER-1	CAD	09/03/2017	7.467%	200.0		200.0
C-011	CAD	09/22/2017	7.525%	55.5		55.5
4L	CAD	11/17/2017	6.250%	20.0		20.0
BM	CAD	01/15/2018	3BA + 3.29%	255.0		255.0
FC-3	CAD	06/02/2018	7.169%	200.0		200.0
C097-1	CAD	06/02/2018	7.123%	100.0		100.0
C097-2	CAD	06/02/2018	7.233%	100.0		100.0
EE	USD	09/15/2018	9.500%		200.0	209.3
BU	USD	12/01/2018	9.625%		200.0	209.3
3X	CAD	12/30/2018	10.000%	5.0		5.0
3V	CAD	12/30/2018	10.000%	3.5		3.5

LONG TERM DEBT (CONTINUED)

SERIES	CURRENCY	MATURITY	INTEREST RATE	CANADIAN \$	US \$	TOTAL CANADIAN (US @ 1.0466)
3W	CAD	12/30/2018	10.000%	2.0		2.0
3Y	CAD	12/30/2018	10.000%	2.0		2.0
CO77-2	CAD	02/11/2020	4.455%	100.0		100.0
CO77-3	CAD	02/11/2020	3BA - 0.175%	50.0		50.0
EM-2	USD	03/15/2020	9.398%		150.0	157.0
FD	USD	10/02/2020	6.766%		203.1	212.5
CO32	USD	10/02/2020	6.806%		47.0	49.1
CO	USD	09/15/2021	8.875%		300.0	314.0
4A	CAD	12/31/2021	9.100%	3.5		3.5
FH-1	USD	02/01/2022	6.405%		250.0	261.7
FH-2	USD	02/01/2022	6.406%		100.0	104.7
FH-3	USD	09/16/2022	6LIBOR + 0.1295%		150.0	157.0
DT	CAD	12/22/2025	7.750%	170.0		170.0
DT	CAD	12/22/2025	7.750%	130.0		130.0
4M	CAD	02/02/2029	5.900%	30.0		30.0
4N	CAD	02/02/2029	5.900%	30.0		30.0
C108	CAD	09/01/2029	6.150%	100.0		100.0
FM-1	CAD	09/01/2029	6.634%	25.0		25.0
FM-2	CAD	09/01/2029	6.734%	75.0		75.0
FM-3	CAD	09/01/2029	6.689%	50.0		50.0
CL	CAD	03/05/2031	10.500%	300.0		300.0
CLW	CAD	03/05/2031	10.500%	299.9		299.9
4B	CAD	04/01/2031	5.840%	3.5		3.5
4C	CAD	04/01/2031	5.840%	1.4		1.4
4Y	CAD	05/01/2031	5.650%	4.2		4.2
CO52	CAD	10/29/2032	6.300%	30.0		30.0
FD-1	CAD	04/12/2035	5.289%	175.0		175.0
EZ2	CAD	12/03/2035	4.774%	54.0		54.0
EZ5	CAD	12/03/2035	4.774%	46.0		46.0
FA	CAD	03/05/2037	4.687%	150.0		150.0
FA-4	CAD	03/05/2037	4.505%	50.0		50.0
FJ	CAD	09/12/2037	5.104%	250.0		250.0
PB-2	CAD	03/05/2038	4.600%	300.0		300.0
C100-1	CAD	11/01/2038	4.707%	85.0		85.0
C100-2	CAD	11/01/2038	4.637%	100.0		100.0
C099-1	CAD	12/01/2038	4.771%	50.0		50.0
C099-2	CAD	12/01/2038	4.758%	25.0		25.0
C099-3A	CAD	12/01/2038	4.758%	25.0		25.0
C099-3B	CAD	12/01/2038	4.770%	15.0		15.0
C102	CAD	03/01/2039	4.988%	100.0		100.0
FK-2	CAD	03/05/2040	4.650%	300.0		300.0
CO40	CAD	03/05/2042	3BA + 0.179%	50.0		50.0
CO68	CAD	03/05/2044	4.565%	50.0		50.0
FN	CAD	03/05/2050	4.700%	200.0		200.0
4Z	CAD	06/09/2057	7.100%	7.0		7.0
C110	CAD	03/05/2060	5.200%	125.0		125.0
C109	CAD	03/05/2063	4.625%	50.0		50.0
WINNIPEG HYDRO PREMIUM				5.8		5.8
UNAMORTIZED COMMISSIONS, FEES AND EXPENSES				(28.9)		(28.9)
UNAMORTIZED DEBT PREMIUMS AND DISCOUNTS				(26.0)		(26.0)
TOTAL LONG TERM DEBT				\$ 5,981.0	\$ 2,385.5	\$ 8,477.6

CAC/MSOS/MH I-142

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Appendix 5.2, “Integrated Financial Forecast”, section 6.0, page 14,

The Applicant presents a chart of new and refinancing requirements.

CAC/MSOS wishes to better understand the financing plan for the forecast 2010/11, 2011/12 period.

- b) Please provide the assumptions of the interest rates under which the maturing issues would be refinanced, identifying the quarter in which that would take place, the term intended to sought, and the spread assumed from the risk free rate for the relevant term in the appropriate currency for the refinancing.**

ANSWER:

The forecasted annual long term debt interest rates for refinancings and new borrowings are as per the interest rates previously stated in the Application.

Actual financings on a quarterly basis will consider the timing, dollar value, denomination, and fixed versus floating nature of the issue depending on a number of factors including: the cash and liquidity requirements in existence at the time of financing; refinancing requirements on forward interest rate swaps; the term dependent on the current maturity schedule, interest rate expectations and the mitigation of refinancing risk; the management of foreign exchange risk; and the market appetite and economic environment.

CAC/MSOS/MH I-142

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Appendix 5.2, “Integrated Financial Forecast”, section 6.0, page 14,

The Applicant presents a chart of new and refinancing requirements.

CAC/MSOS wishes to better understand the financing plan for the forecast 2010/11, 2011/12 period.

- c) Please provide the assumptions of the interest rates under which the new issues would be financed, identifying the quarter in which that would take place, the term intended to sought, and the spread assumed from the risk free rate for the relevant term in the appropriate currency for the financing.**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-142(b).

CAC/MSOS/MH I-143

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Appendix 5.2, “Integrated Financial Forecast”, section 6.0, page 14,

The Applicant presents a chart of new and refinancing requirements.

CAC/MSOS understands that the 2007/08 2008/09 Debt Management Strategy anticipated a \$200 million Canadian dollar financing in September, 2008 and a further \$200 million Canadian dollar financing in March, 2009 and \$100 million to be funded through the short-term note program.

CAC/MSOS wishes to better understand the financing plan for the forecast 2010/11, 2011/12 period by reviewing the congruency of the prior forecast with the executed financings.

- a) Was the anticipated \$200 million Canadian dollar financing undertaken in September, 2008, and if so, please discuss how the term, interest rate and spread aligned with the forecast, but if the issue was not undertaken at that time and in that amount, please explain the variance in time of execution, term, interest rate and spread.**

ANSWER:

For forecasting purposes only, the timing of the issuance of long term debt follows the convention of utilizing the first \$200 million of the Corporation’s \$500 million Commercial Paper Program to provide short term capital bridge financing, at which point the accumulated short term debt is converted to long term debt through the issuance of new long term financing. For the purposes of the forecast, all new long term debt is assumed to be Canadian dollar 30 year fixed rate financing so that finance expense is recorded over the term of the forecast at the Manitoba Hydro long term forecast interest rate. As a result, the forecasted financings were depicted as Canadian dollar increments of \$200 million. The forecasted \$100 million short term balance reflected the aforementioned bridge amount between long term debt issues that would have been forecasted at that point in time.

Actual financings will vary from forecasts and consider the timing, dollar value, denomination, and fixed versus floating nature of the issue depending on a number of factors including: the cash and liquidity requirements in existence at the time of financing; refinancing requirements on forward interest rate swaps; the term dependent on the current maturity schedule, interest rate expectations and the mitigation of refinancing risk; the management of foreign exchange risk; and the market appetite and economic environment.

With regards to new financing between September 2008 and March 2009, forward interest rate swaps had previously been transacted to fix the interest rates for a term of 30 years. In order to accommodate the forward interest rate swaps, new floating rate notes totalling CAD \$400 million were issued between September 17, 2008 and January 15, 2009. As a result of the underlying floating rate debt being issued, the weighted average all-in initial coupon rate on these issues was 4.776%, below both the IFF07 target of 5.60% and the subsequent IFF08 target of 4.90% for new long-term debt issuance in 2008/09 (all rates excluding the provincial debt guarantee fee). The weighted average of the spreads on these issues was 78 basis points higher than both the IFF07 forecasted spread of 45 basis points and the IFF08 forecasted spread of 75 basis points.

CAC/MSOS/MH I-143

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Appendix 5.2, “Integrated Financial Forecast”, section 6.0, page 14,

The Applicant presents a chart of new and refinancing requirements.

CAC/MSOS understands that the 2007/08 2008/09 Debt Management Strategy anticipated a \$200 million Canadian dollar financing in September, 2008 and a further \$200 million Canadian dollar financing in March, 2009 and \$100 million to be funded through the short-term note program.

CAC/MSOS wishes to better understand the financing plan for the forecast 2010/11, 2011/12 period by reviewing the congruency of the prior forecast with the executed financings.

- b) Was the anticipated \$200 million Canadian dollar financing undertaken in March 2009, and if so, please discuss how the term, interest rate and spread aligned with the forecast, but if they did not, please explain the variance in time of execution, term, interest rate and spread.**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-143(a).

CAC/MSOS/MH I-143

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Appendix 5.2, “Integrated Financial Forecast”, section 6.0, page 14,

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CAC/MSOS wishes to better understand the financing plan for the forecast 2010/11, 2011/12 period by reviewing the congruency of the prior forecast with the executed financings.

- c) Please provide the assumptions of the interest rates under which the maturing issues would be refinanced, identifying the quarter in which that would take place, the term intended to sought, and the spread assumed from the risk free rate for the relevant term in the appropriate currency for the refinancing.**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-142(b).

CAC/MSOS/MH I-143

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Appendix 5.2, “Integrated Financial Forecast”, section 6.0, page 14,

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CAC/MSOS wishes to better understand the financing plan for the forecast 2010/11, 2011/12 period by reviewing the congruency of the prior forecast with the executed financings.

- d) Please provide the assumptions of the interest rates under which the new issues would be financed, identifying the quarter in which that would take place, and the spread assumed from the risk free rate for the relevant term in the appropriate currency for the financing.**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-142(b).

CAC/MSOS/MH I-144

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the changes in content from the similar report, the July 2007 Manitoba Hydro Debt Management Strategy, filed in the 2008/2009 GRA.

- a) **In the current Debt Management Strategy report in the last paragraph on page 3, the Applicant indicates that debt had grown to approximately \$7.5 billion as at March 2009, while the prior report indicated that the 2007 debt number was approximately \$6.6 billion. Each report indicates that the “Temporary Borrowing Authority” remains at \$500 million. Please provide the amount of debt which existed as at the year-end in which the \$500 million level of the Temporary Borrowing Authority was established, and identify the year.**

ANSWER:

The \$500 million level was in effect during the 1992/93 fiscal year. The net long term debt balance at March 31, 1993 was approximately \$4.5 billion.

CAC/MSOS/MH I-144

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the changes in content from the similar report, the July 2007 Manitoba Hydro Debt Management Strategy, filed in the 2008/2009 GRA.

- b) To assist in the comparative discussion of these matters, please add the July 2007 Manitoba Hydro Debt Management Strategy to the record.**

ANSWER:

Please see the attached *Manitoba Hydro Debt Management Strategy for 2007/08 and 2008/09*.

MANITOBA HYDRO DEBT MANAGEMENT STRATEGY

2007/08
2008/09



Finance & Administration
July 2007

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1.0 Purpose of this Document

The financing of important core infrastructure projects through long-term debt is a central and necessary function of Manitoba Hydro and other crown-owned utilities in Canada. As a Crown Corporation owned by the Province of Manitoba, Manitoba Hydro does not have access to share capital as a source of funds. Therefore, it must rely on debt as its primary source of capital to finance growth.

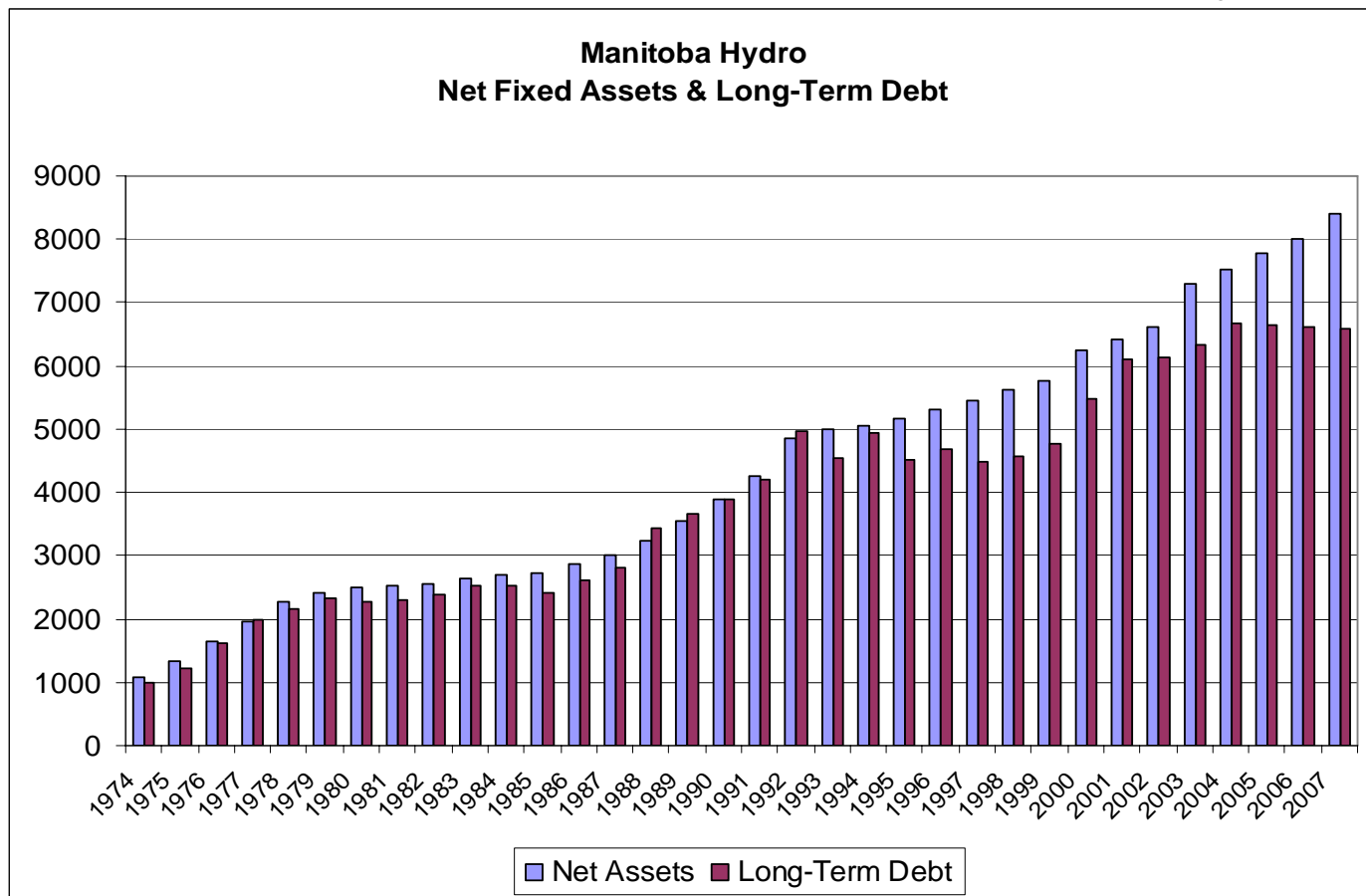
As with most energy utilities, debt is a significant component of Manitoba Hydro's corporate capital structure. This Debt Management Strategy document provides information on the historical build-up of the Corporation's investment in fixed assets and corresponding increase in Manitoba Hydro's long-term debt. The document also summarizes the statutes that govern the Corporation's financing programs, and outlines the debt management strategies that will address the Corporation's borrowing requirements for the 2007/08 and 2008/09 fiscal years.

2.0 Overview of Manitoba Hydro's Capital Financing Program

Debt financing has been very beneficial for Manitoba Hydro and its ratepayers. It has fueled the growth of the Corporation from the early days of farm electrification and the development of the Winnipeg River generation system, through the years of development of the Nelson River generation and transmission system, right up to the current development and construction of the Wuskwatim Generating station in northern Manitoba. None of this would have been possible without debt financing.

Over the past ten years, debt financing has provided approximately 40% of the total amount required by the Corporation to fund its annual capital construction program. The largest portion, or approximately 60% of capital construction requirements, is provided from cash generated from operations. Utilizing funds from operations reduces the amount that would otherwise need to be borrowed each year by the Corporation. To ensure that borrowing is kept to the minimum required levels, Manitoba Hydro has set a target to fund all routine capital construction from internally generated funds. Non-routine capital includes major new generation and transmission projects and the new downtown Head Office project.

The following chart illustrates the growth in net assets and net long-term debt that has occurred over the past 30 years. While debt has grown to approximately \$6.6 billion as at March 31, 2007, the corresponding investment in generation, transmission, distribution and other assets has grown at a much greater pace to a net book value of approximately \$8.4 billion at March 31, 2007. The current market or replacement value of Manitoba Hydro's assets is many multiples of the net book value.



In managing Manitoba Hydro’s debt portfolio, the Corporation works closely with the Province of Manitoba to structure the optimum balance of short and long-term debt denominated in both Canadian and US currencies. The Province of Manitoba manages the borrowing programs and investment activities on behalf of Manitoba Hydro directly within the financial markets and advances the necessary funds to Manitoba Hydro. Administering the borrowing program through the Provincial Government provides lower cost financing to Manitoba Hydro due to the province's strong credit rating and its ability to borrow at lower interest rates.

3.0 *Borrowing Authority of Manitoba Hydro*

Manitoba Hydro’s authority to issue debt for new capital borrowing purposes is provided through The Manitoba Hydro Act, the Loan Act, and The Financial Administration Act. The following is a synopsis of the authority received by Manitoba Hydro through this legislation:

3.1. The Manitoba Hydro Act

The Manitoba Hydro Act grants the following powers to the Corporation for issuing debt in the name of the Manitoba Hydro-Electric Board:

1. **Temporary Borrowing Authority**
The principal amount of short-term promissory notes outstanding at any one time shall not exceed in the aggregate the sum of \$500 million in Canadian and/or United States and/or equivalent Canadian funds in other foreign currencies at the time of issue.
2. **Government Guarantee**
The debt of the Corporation may, subject to the Corporation's request and approval, be unconditionally guaranteed as to principal and interest by the Government of Manitoba.
3. **Power of the Corporation to Borrow and Issue Securities**
The Corporation may raise money by way of loan, notes, bonds and debentures in the name of The Manitoba Hydro-Electric Board subject to the approval of the Lieutenant Governor in Council for purposes provided in the Manitoba Hydro Act or to refund any loan or advance previously made by the Corporation.

Borrowing authority, under Section 35 of the Manitoba Hydro Act or any other act, will treat Canadian and US borrowings on a one for one par value basis.

Borrowing authority, under Section 35 of the Manitoba Hydro Act, will be abated for the Canadian dollar equivalent using the nominal rate of exchange when the loan is denominated in a currency other than Canadian or US dollars.

3.2. Loan Act

The Loan Act is approved each year and grants Manitoba Hydro borrowing authority to meet the Corporation's projected financing requirements. Authority granted under the Loan Act is for new investment requirements. Refunding authority to refinance maturing long-term debt is provided through the Financial Administration Act.

3.3. The Financial Administration Act

The Financial Administration Act authorizes the Minister of Finance to borrow money for any purpose authorized by any Act of the Legislature or for the payment, refunding, refinancing or renewal, from time to time, of the whole or any part of any loan made or provincial securities issued under any Act.

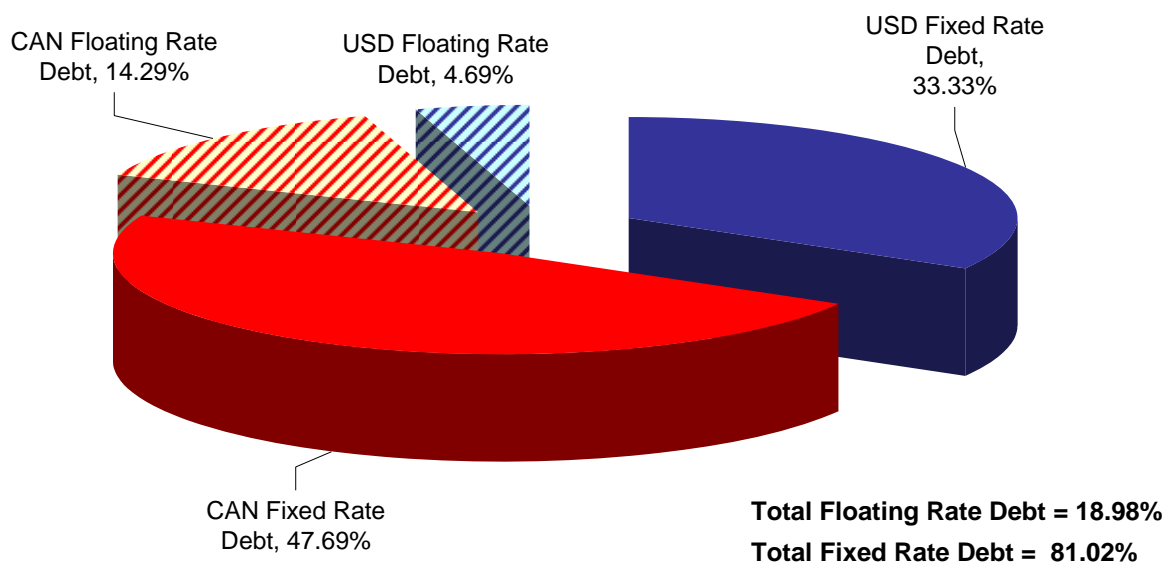
4.0 Debt Management Objectives

Manitoba Hydro manages its level of outstanding debt to achieve a capital structure with the appropriate balance between debt and equity. The Manitoba Hydro-Electric Board has approved a long-term debt to equity ratio of 75:25 as the optimal balance for the corporation. This capital structure has been reviewed and accepted as reasonable by the Public Utilities Board.

The fundamental debt management objective of Manitoba Hydro's Treasury Division is to provide stable, low-cost funding to meet the financial obligations and liquidity needs of the Corporation. To meet this objective, Manitoba Hydro structures its debt to balance low financing

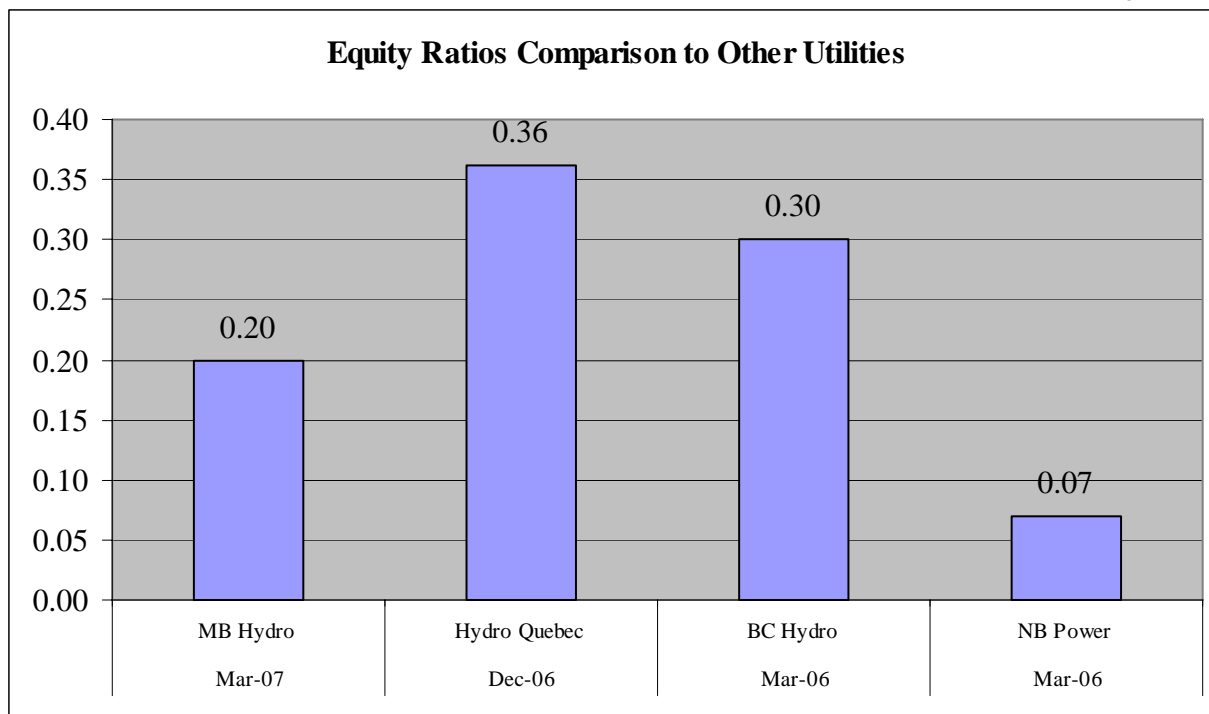
cost with refinancing risk under a wide range of potential future interest rate environments. The Corporation also takes advantage of opportunities to swap various debt instruments for lower cost alternatives where the benefits of such transactions are determined to outweigh any associated cost and risks, and utilizes fixed rate debt financing and interest rate derivatives to manage interest rates and the level of floating rate debt. Manitoba Hydro's long-term objective is to maintain a floating rate debt portfolio that does not exceed 30% of total debt. A summary of Manitoba Hydro's debt portfolio at March 31, 2007 follows:

Manitoba Hydro Debt Portfolio Summary As at March 31, 2007



According to an industry study conducted by DBRS in 2004, government owned Canadian electrical utilities had an average debt ratio of 71%¹ for that year. Manitoba Hydro's debt ratio of 75% is, therefore, a reasonable capital structure for a government owned electric/gas utility. At March 31, 2007, Manitoba Hydro's debt/equity ratio was 80:20. A comparison of Manitoba Hydro's equity ratio to similar publicly-owned hydraulic utilities in Canada is provided in the following chart:

¹ The 2004 industry study is the most recent information available. DBRS is currently in the process of updating the information for 2007. Results will be available in the Fall.



Manitoba Hydro operates as a going concern through the construction of facilities to produce and distribute energy and energy related services to Manitoba consumers and to support profitable extra-provincial electricity sales. The debt financing used to fund these revenue producing assets is viewed to be self supported as evidenced by the investment grade credit ratings that the Corporation and Province receive on their short and long-term debt from the various rating agencies such as Dominion Bond Rating Service, Moody's Investors Service and Standard and Poors.

In order to maintain the self supported nature of the Corporation's debt obligations and the attractive financing rates associated with the Corporation's debt, Manitoba Hydro places a great deal of emphasis on attaining the following financial targets:

Interest Coverage – Maintain a gross interest coverage ratio greater than 1.20. The interest coverage ratio indicates the extent to which net income is sufficient to pay gross interest on debt.

Capital Coverage – Attain and maintain a capital coverage ratio of greater than 1.00 (except for major new generation and transmission). The capital coverage ratio measures the extent to which internally generated funds are sufficient to fund capital expenditures during the year.

Debt/Equity – Achieve a minimum debt/equity ratio of 75:25 by no later than 2012. The debt/equity ratio indicates the relative percentage of assets financed through debt versus equity.

When the debt:equity target was approved by the Manitoba Hydro-Electric Board in 2002, it was recognized that there could be temporary setbacks if a prolonged drought was encountered or if the Corporation embarked on a major generation/transmission construction program. A serious drought did occur over the 2003 and 2004 fiscal years, and beginning with the construction of the Wuskwatim Generating Station in 2006, the Corporation entered a period of major construction which is anticipated to continue for many years. As a result, progress toward achieving the long-term debt:equity target of 75:25 has been delayed. With a return to normal water conditions, the Corporation will continue to make progress toward achieving the financial targets. Based on the IFF06, it is anticipated that Manitoba Hydro will achieve its 75:25 debt to equity ratio by 2017.

5.0 Debt Management Strategy for the Balance of 2007/08

5.1. Debt Issues

Manitoba Hydro utilized its short-term borrowing program to finance its forecasted net cash requirements until May of 2007 when new CAD\$300 million was issued at 4.759%. These proceeds were used to pay down the short-term note balance. An additional \$150 million CAD was issued in June, at 3-month BA's minus 17.5 basis points, of which \$100 million was used to refinance an existing debt series that matured in June of 2007. Additional financing was obtained through the sale of Manitoba Hydro Savings Bonds Series 10 in June, which generated approximately \$135 million, and the issuance of Manitoba Hydro Electric Board bonds in the amount \$47 million to Nisichawayasihk Cree Nation in July 2007. These proceeds were used to fund part of Manitoba Hydro's financing requirements, including the maturity of Manitoba Hydro Savings Bonds Series 8 of \$270 million, and Manitoba Hydro Savings Bond Series 9 redemptions of \$37 million.

Manitoba Hydro's financing requirements for the remainder of the 2007/08 fiscal year are approximately \$400 million. Manitoba Hydro will utilize the Corporation's short-term borrowing program to finance its forecasted cash requirements until a new debt issue with proceeds of approximately CAD\$200 million is arranged during the September to December timeframe. The balance of the Corporation's cash requirements for 2007/08 will be financed through the short-term borrowing program until a new long-term debt issued with proceeds of approximately CAD \$200 million is arranged in the fourth quarter of 2007/08.

5.2. Sinking Fund Management (2007/08)

Sinking Fund Contributions for the 2007/08 fiscal year will be equal to the legislated minimum contributions requirement of 1% of long-term debt outstanding at the end of the previous year plus 4% of the balance in the sinking fund at that date. For 2007/08, this will amount to approximately \$100.6 million. Manitoba Hydro will make withdrawals from the sinking fund to meet debt repayment obligations.

6.0 Debt Management Strategy for 2008/09

6.1. Debt Issues

Manitoba Hydro's financing requirements for the 2008/09 fiscal year consists of new capital requirements of approximately \$500 million. The financing strategy is to arrange new debt issues that would generate proceeds of approximately CAD \$200 million in September 2008 and a further CAD \$200 million in March 2009. The balance of the cash requirements will be funded through the Corporation's short-term note program.

6.2. Sinking Fund Management (2008/09)

Sinking Fund Contributions for the 2008/09 fiscal year will be equal to the legislated minimum contributions requirement of approximately \$109 million. Manitoba Hydro has \$246.5 million of US dollar debt maturities during 2008/09 that are forecast to be fully retired through sinking fund withdrawals. The following list identifies these maturities:

<u>Debt Series</u>	<u>Principal</u>	<u>Maturity Date</u>
Series EF	USD \$200.0	October 1, 2008
Series EF-2	USD \$46.5	October 1, 2008

CAC/MSOS/MH I-145

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the changes in content from the similar report, the July 2007 Manitoba Hydro Debt Management Strategy, filed in the 2008/2009 GRA.

Each of the November 2009 and July 2007 Manitoba Hydro Debt Management Strategy reports, on page 6, provide a pie graph showing the proportion of fixed and floating rate debt in Canada and US currencies. In the 2007 report, US fixed and floating debt represented approximately 38% of total debt {38%x6.6=\$2.5}. In the 2009 report, US fixed and floating debt represented approximately 30% of total debt {30%x7.5=\$2.25}.

- a) **Please discuss the strategy which gave rise to the reduction in US dollar debt in absolute terms. In that response, please identify the US dollar issues maturing over the relevant period, the new US dollar issues undertaken, in each case providing the**
- i. date,**
 - ii. coupon rate, or, reference rate if a floating issue,**
 - iii. yield and spread at issue, and**
 - iv. term to maturity.**

ANSWER:

The primary difference was related to the translational impact of a strengthening Canadian dollar on the US denominated debt.

In the Debt Management Strategy dated July 2007, the amount of US debt in US dollars was \$2,432 million as at March 31, 2007. This was translated into CAD\$2,804 million at the month-end market foreign exchange rate of \$1.1529.

In the Debt Management Strategy dated November 2009, the amount of US debt in US dollars was \$2,386 million as at October 31, 2009. This was translated into CAD\$2,570 million at the month-end market foreign exchange rate of \$1.0774.

Balance Sheet Date	USD (millions)	FX Rate	CAD (millions)
March 31, 2007	\$2,432	1.1529	\$2,804
October 31, 2009	2,386	1.0774	2,570
	46		234

In absolute terms, CAD\$184 million of the CAD\$234 million total difference was due to a foreign exchange rate variance (1.1529-1.0774) on the March 31, 2007 US debt balance of \$2,432 million. The remaining variance was due to a small net reduction of USD debt in the amount of \$46.5 million (CAD\$50 million) between March 31, 2007 and October 1, 2009 as a result of the following:

New USD Debt Issue

Series CO94 USD\$200 million:

- i. Issued February 22, 2008.
- ii. Floating rate of 6 Month LIBOR - 0.16%.
- iii. Yield to Manitoba Hydro, including commissions, was 6 Month LIBOR - 0.155%.
- iv. Term to maturity is three years.

USD Debt Maturities

Series EF USD\$200 million and EF-2 USD\$46.5 million:

- i. Matured October 1, 2008. A sinking fund withdrawal of USD\$246.5 million was made to retire the debt.

CAC/MSOS/MH I-145

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the changes in content from the similar report, the July 2007 Manitoba Hydro Debt Management Strategy, filed in the 2008/2009 GRA.

Each of the November 2009 and July 2007 Manitoba Hydro Debt Management Strategy reports, on page 6, provide a pie graph showing the proportion of fixed and floating rate debt in Canada and US currencies. In the 2007 report, US fixed and floating debt represented approximately 38% of total debt { $38\% \times 6.6 = \$2.5$ }. In the 2009 report, US fixed and floating debt represented approximately 30% of total debt { $30\% \times 7.5 = \$2.25$ }.

- b) At the date at which each new issue was announced, please provide the indicated spread for a short term issue in each currency (from the relevant base rate, (perhaps, BAs, T-bills, or LIBOR), and in the case of a long term instrument a spread over the risk free bond of comparable currency and term, and the then prevailing rate for a Manitoba 15 year fixed instrument (against Canada, or Treasury bonds).**

ANSWER:

At the date the USD floating rate issue series CO94 was announced, the indicative rates from the agent showed that a three year floating USD issue was approximately 2 basis points less expensive than a floating domestic issue of similar term.

CAC/MSOS/MH I-145

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the changes in content from the similar report, the July 2007 Manitoba Hydro Debt Management Strategy, filed in the 2008/2009 GRA.

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- c) **Please discuss the strategy which gave rise to the reduction in US dollar debt in absolute terms. In that response, please address the**
- i. **concept that US borrowing represents a natural hedge of export revenues, and**
 - ii. **discuss the absolute reduction of US dollar debt compared to the long and short term expectations for US dollar revenues.**

ANSWER:

A natural hedge has been established between USD cash inflows (from net export revenues and sinking fund income) and USD cash outflows (from USD interest payments, sinking fund payments and USD purchases) such that changes in foreign exchange rates will be offset to the extent that period cash flows are in balance.

Every month the US long term debt principal is translated into a Canadian equivalent utilizing the month end foreign exchange rate. In the absence of an accounting cash flow

hedge, the resultant gain or loss would be realized through finance expense and lead to significant income statement volatility. Therefore, accounting hedges have been established on the US debt principal so that monthly foreign exchange translation gains or losses do not flow through the income statement, and instead are recorded as unrealized foreign exchange gains (losses) in Other Comprehensive Income (OCI).

As indicated in CAC/MSOS/MH I-145(a), the change in the Canadian dollar equivalent of US dollar debt from March 31, 2007 to October 31, 2009 is predominantly due to a foreign currency rate variance upon revaluation of the US debt balances at those balance sheet dates. The absolute level of US dollar debt in US dollars was at similar levels at both March 31, 2007 and October 31, 2009.

To tactically bridge timing differences that will occur due to the variability in the volume and timing of factors such net export revenues, Manitoba Hydro may utilize FX forward contracts or sell/ buy US dollars as required during long/ short positions. The tactical variations in net positions during the past few years did not justify a strategic restructuring of US long term debt portfolio during that time.

As the net long positions become larger in the medium term, for example with the in-service of new major generation or the maturity of existing US long term debt, new US long term debt/ interest payments may be secured to structurally rebalance the net position. As the precise timing and volume of these future rebalancings is not yet known, the IFF maintains the assumption that all new financings will be in Canadian dollars.

CAC/MSOS/MH I-145

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the changes in content from the similar report, the July 2007 Manitoba Hydro Debt Management Strategy, filed in the 2008/2009 GRA.

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- d) Having regard to changes in the forecast for US dollar revenues, at each of the dates of the 2007 and 2009 reports, at which time was Manitoba Hydro US dollar debt, and interest obligations thereon, most symmetrical with the then expectation for US dollar revenues?**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-145(c).

CAC/MSOS/MH I-145

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the changes in content from the similar report, the July 2007 Manitoba Hydro Debt Management Strategy, filed in the 2008/2009 GRA.

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- e) **In response to Coalition MH I-95 f, in the last GRA, Manitoba Hydro indicated “Under the exposure management program, the portion of the additional revenues that will be in US dollars will be hedged with \$US denominated debt.” In that both the quantum and the proportion of US dollar denominated debt appear to have decreased, does this represent**
- i. a policy change,**
 - ii. that the forecast US dollar revenues are reduced, or**
 - iii. some other policy or factor has come into play?**

In any case, please identify the change in policy, forecast or other factor and provide a comparison of the relevant policy, forecast or other factor as at the time Coalition MH I-95 f was prepared and the current time.

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-145(c).

CAC/MSOS/MH I-146

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the changes in content from the similar report, the July 2007 Manitoba Hydro Debt Management Strategy, filed in the 2008/2009 GRA.

Each of the November 2009 and July 2007 Manitoba Hydro Debt Management Strategy reports, on page 6, provide a pie graph showing the proportion of fixed and floating rate debt in Canada and US currencies. In the previous GRA, certain IRs discussed aspects of the fixed and floating rate debt policies. To efficiently get certain disclosures on the record of this proceeding, CAC/MSOS requests that certain IRs from the previous proceeding be entered in this record and updated as required

- a) Please add Coalition/MH II-85 (c) from the previous GRA to the record of this proceeding, and if required, please correct the response, identifying the further updates.**

ANSWER:

Manitoba Hydro notes that there was no question COALITION/MH II-85(c) from the previous GRA and assumes CAC/MSOS is referring to round 1 question COALITION/MH I-85(c).

Please find the question and response to COALITION/MH I-85(c) from the previous GRA attached.

There are no changes to the response as previously filed.

COALITION/MH I-85

Subject: Debt and Debt Management

Reference: Manitoba Hydro 2008/09 GRA, Appendix 6.2, “Debt Management Strategy”, page 6

On page 6 of Appendix 6.2, Manitoba Hydro notes, “The Corporation also takes advantage of opportunities to swap various debt instruments for lower cost alternatives where the benefits of such transactions are determined to outweigh any associated cost and risks, and utilizes fixed rate debt financing and interest rate derivatives to manage interest rates and the level of floating rate debt. Manitoba Hydro’s long-term objective is to maintain a floating rate debt portfolio that does not exceed 30% of total debt.” [emphasis added]

On page 13 of Appendix 5.2 Manitoba Hydro refers to its March 31, 2007 proportion of floating rate debt as “projected to be about 17.6% by March 31, 2007, well within target guidelines (between 15% and 25%) for floating rate debt.” [emphasis added]

c) At what date did Manitoba Hydro last have a floating rate portion above 30%, and why?

ANSWER:

Please see Manitoba Hydro’s response to COALITION/MH I-85(b). Manitoba Hydro has not had floating rate debt above 30% in recent history.

CAC/MSOS/MH I-146

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the changes in content from the similar report, the July 2007 Manitoba Hydro Debt Management Strategy, filed in the 2008/2009 GRA.

Each of the November 2009 and July 2007 Manitoba Hydro Debt Management Strategy reports, on page 6, provide a pie graph showing the proportion of fixed and floating rate debt in Canada and US currencies. In the previous GRA, certain IRs discussed aspects of the fixed and floating rate debt policies. To efficiently get certain disclosures on the record of this proceeding, CAC/MSOS requests that certain IRs from the previous proceeding be entered in this record and updated as required

- b) Please add Coalition/MH II-85 (g) from the previous GRA to the record of this proceeding, and if required, please correct the response, identifying the further updates.**

ANSWER:

Manitoba Hydro notes that there was no question Coalition/MH II-85(g) from the previous GRA and assumes CAC/MSOS is referring to Round 1 question Coalition/MH I-85(g). The question and response to Coalition/MH-I-85(g) from the previous GRA is attached.

The attached response has been revised as noted.

COALITION/MH I-85

Subject: Debt and Debt Management

Reference: Manitoba Hydro 2008/09 GRA, Appendix 6.2, “Debt Management Strategy”, page 6

On page 6 of Appendix 6.2, Manitoba Hydro notes, “The Corporation also takes advantage of opportunities to swap various debt instruments for lower cost alternatives where the benefits of such transactions are determined to outweigh any associated cost and risks, and utilizes fixed rate debt financing and interest rate derivatives to manage interest rates and the level of floating rate debt. Manitoba Hydro’s long-term objective is to maintain a floating rate debt portfolio that does not exceed 30% of total debt.” [emphasis added]

On page 13 of Appendix 5.2 Manitoba Hydro refers to its March 31, 2007 proportion of floating rate debt as “projected to be about 17.6% by March 31, 2007, well within target guidelines (between 15% and 25%) for floating rate debt.” [emphasis added]

g) Please advise whether there are, and supply copies of, any “target guidelines” or “long-term objectives” for the proportions of Canadian dollar denominated debt, US dollar denominated debt, for the range of maturities or average maturities in the debt portfolio, the fixed or floating portion of debt denominated in any particular currency, or swaps or interest rate derivatives used to manage portions of the debt portfolio.

ANSWER:

Manitoba Hydro’s policies with respect to debt are to limit:

- a) Floating rate financing to an amount that will not exceed 30% of total debt outstanding;
- b) ~~Debt to a term that will not exceed 40 years;~~ and,
- c) Net USD exposure to an amount that will not exceed 20% of total debt.

CAC/MSOS/MH I-146

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the changes in content from the similar report, the July 2007 Manitoba Hydro Debt Management Strategy, filed in the 2008/2009 GRA.

Each of the November 2009 and July 2007 Manitoba Hydro Debt Management Strategy reports, on page 6, provide a pie graph showing the proportion of fixed and floating rate debt in Canada and US currencies. In the previous GRA, certain IRs discussed aspects of the fixed and floating rate debt policies. To efficiently get certain disclosures on the record of this proceeding, CAC/MSOS requests that certain IRs from the previous proceeding be entered in this record and updated as required

- c) Please revise the table provided in Coalition/MH II-76 (g) from the previous GRA, correcting any disclosure if required, and adding for each issue, the fixed or initial rate if floating, the year of maturity, and augmenting the data through to December 2009.**

ANSWER:

Please see the attached schedule that outlines the end of period floating rate percentage immediately prior to and after each new long term debt financing. Also note that amount for debt series HB9-5FX issued in 2006-2007 has been corrected from \$30.0 million to \$15.0 million.

MANITOBA HYDRO
Floating Rate % of Total Debt Portfolio
Before and After New Long Term Debt Financings
CAC/MSOS/MH I - 146 (c)

Fiscal Year	Debt Series	Currency	Amount (\$Millions)	Settlement Date	Maturity Date	Initial Floating Rate or All-in Yield to Borrower	Fixed or Floating	Floating % End Of	Floating % End of		
2004-2005	CO66	CAD	100.0	23-Jun-2004	16-Jun-2014	4.631%	Fixed	May-04	Jun-04		
2004-2005	CO68	CAD	50.0	28-Jun-2004	5-Mar-2044	4.550%	Fixed			22.67%	19.33%
2004-2005	FA	CAD	150.0	21-Jul-2004	5-Mar-2037	4.692%	Fixed	Jun-04	Jul-04		
								19.33%	18.33%		
2005-2006	FD-1	CAD	175.0	12-Apr-2005	12-Apr-2035	5.327%	Fixed	Mar-05	Apr-05		
2005-2006	FD-2	CAD	4.0	12-Apr-2005	12-Apr-2010	2.671%	Floating			18.76%	17.62%
2005-2006	FD	USD	1.0	12-Apr-2005	2-Oct-2020	6.576%	Fixed				
2006-2007	4Z	CAD	7.0	9-Jun-2006	9-Jun-2057	7.100%	Fixed	May-06	Jun-06		
2006-2007	HB9-FL	CAD	71.7	15-Jun-2006	15-Jun-2011	4.000%	Floating			16.70%	17.52%
2006-2007	HB9-3FX	CAD	29.0	15-Jun-2006	15-Jun-2009	4.497%	Fixed				
2006-2007	HB9-5FX	CAD	15.0	15-Jun-2006	15-Jun-2011	4.613%	Fixed				
2006-2007	FA-4	CAD	50.0	13-Dec-2006	5-Mar-2037	4.505%	Fixed	Nov-06	Dec-06		
								17.92%	18.20%		
2007-2008	PB-2	CAD	300.0	30-May-2007	5-Mar-2038	4.759%	Fixed	Apr-07	May-07		
								20.23%	17.77%		
2007-2008	C077-3	CAD	50.0	11-Jun-2007	11-Feb-2020	4.262%	Floating	May-07	Jun-07		
2007-2008	HB10-FL	CAD	34.5	15-Jun-2007	15-Jun-2012	4.200%	Floating			17.77%	19.54%
2007-2008	HB10-3FX	CAD	85.1	15-Jun-2007	15-Jun-2010	4.898%	Fixed				
2007-2008	HB10-5FX	CAD	15.4	15-Jun-2007	15-Jun-2012	4.883%	Fixed				
2007-2008	5A	CAD	40.0	12-Jul-2007	30-Jun-2013	5.750%	Fixed	Jun-07	Jul-07		
2007-2008	5B	CAD	6.9	12-Jul-2007	30-Jun-2013	5.750%	Fixed	19.54%	19.02%		
2007-2008	FJ	CAD	250.0	12-Sep-2007	12-Sep-2037	5.104%	Fixed	Aug-07	Sep-07		
								20.70%	20.03%		
2007-2008	C094	USD	200.0	11-Feb-2008	11-Feb-2011	2.864%	Floating	Jan-08	Feb-08		
								18.62%	20.51%		
2008-2009	C099-1	CAD	50.0	17-Sep-2008	1-Dec-2038	4.668%	Fixed	Aug-08	Sep-08		
2008-2009	C099-2	CAD	25.0	22-Sep-2008	1-Dec-2038	4.656%	Fixed			20.65%	21.38%
2008-2009	C099-3A	CAD	25.0	29-Sep-2008	1-Dec-2038	4.658%	Fixed				
2008-2009	C099-3B	CAD	15.0	29-Sep-2008	1-Dec-2038	4.670%	Fixed				
2008-2009	C100-1	CAD	85.0	3-Nov-2008	1-Nov-2038	4.707%	Fixed	Oct-08	Nov-08		
2008-2009	C100-2	CAD	100.0	3-Nov-2008	1-Nov-2038	4.637%	Fixed	21.61%	20.57%		
2008-2009	C102	CAD	100.0	15-Jan-2009	1-Mar-2039	4.848%	Fixed	Dec-08	Jan-09		
								20.93%	21.27%		
2009-2010	C107	CAD	100.0	2-Jun-2009	4-Sep-2012	0.833%	Floating	May-09	Jun-09		
2009-2010	FK-2	CAD	300.0	5-Jun-2009	5-Mar-2040	5.175%	Fixed	20.33%	19.69%		
2009-2010	FM-4	CAD	100.0	1-Sep-2009	1-Sep-2014	0.921%	Floating	Aug-09	Sep-09		
								19.67%	20.83%		
2009-2010	FN	CAD	200.0	27-Oct-2009	5-Mar-2050	4.726%	Fixed	Sep-09	Oct-09		
								20.83%	20.67%		
2009-2010	C109	CAD	50.0	13-Nov-2009	5-Mar-2063	4.638%	Fixed	Oct-09	Nov-09		
2009-2010	C110	CAD	125.0	23-Nov-2009	5-Mar-2060	4.629%	Fixed	20.67%	19.73%		

CAC/MSOS/MH I-146

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the changes in content from the similar report, the July 2007 Manitoba Hydro Debt Management Strategy, filed in the 2008/2009 GRA.

Each of the November 2009 and July 2007 Manitoba Hydro Debt Management Strategy reports, on page 6, provide a pie graph showing the proportion of fixed and floating rate debt in Canada and US currencies. In the previous GRA, certain IRs discussed aspects of the fixed and floating rate debt policies. To efficiently get certain disclosures on the record of this proceeding, CAC/MSOS requests that certain IRs from the previous proceeding be entered in this record and updated as required

- d) Please revise the table provided in Coalition/MH II-79 (a) from the previous GRA, correcting any disclosure if required, and augmenting the quarterly data through to December 2009. CAC/MSOS would also appreciate receiving this table in electronic form**

ANSWER:

Please see the attached schedule that derives historical gross interest expense scenarios under varying percentages of floating rate debt.

Note that varying the debt composition of the total debt portfolio will change the portfolio's weighted average interest rate, thereby affecting the capitalized interest rate. For example, a decreasing portfolio weighted average interest rate will lead to a lower capitalized interest rate. While the gross interest expense will decrease in this example, the amount of offsetting capitalized interest credits will also decrease. Consequently, the incremental gross interest

expense variances derived in the schedule are not representative of the net income impact as the scenarios do not consider the counterbalancing impact of capitalized interest.

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(in \$ millions)

	Quarter Ended Mar-2004	Quarter Ended Jun-2004	Quarter Ended Sep-2004	Quarter Ended Dec-2004	Quarter Ended Mar-2005	Quarter Ended Jun-2005	Quarter Ended Sep-2005	Quarter Ended Dec-2005	Quarter Ended Mar-2006	Quarter Ended Jun-2006	Quarter Ended Sep-2006	Quarter Ended Dec-2006	Quarter Ended Mar-2007
Canadian Short Term Notes (CAD)	81.0	60.0	57.0	110.0	59.0	-	15.0	-	-	-	18.0	80.0	148.0
Canadian Floating Long Term Debt (CAD)	1,148.8	941.3	941.2	940.5	940.5	940.6	940.5	940.4	840.3	905.9	905.8	905.8	905.8
Total Canadian: Short Term Notes & Floating Long Term Debt (CAD)	1,229.8	1,001.3	998.2	1,050.5	999.5	940.6	955.5	940.4	840.3	905.9	923.8	985.8	1,053.8
Percentage of Total Debt	16.4%	13.3%	13.5%	14.4%	13.8%	12.9%	13.3%	13.1%	11.7%	12.8%	13.0%	13.4%	14.3%
US Short Term Notes (USD)	9.5	35.0	-	-	-	-	-	-	-	-	-	-	-
US Floating Long Term Debt (USD)	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
Total US: Short Term Notes & Floating Long Term Debt (USD)	309.5	335.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
Exchange Rate for USD/ CAD at period end	1.31	1.34	1.26	1.20	1.21	1.23	1.16	1.17	1.17	1.12	1.12	1.17	1.15
Total US: Short Term Notes & Floating Long Term Debt (CAD)	405.6	449.0	379.2	361.1	362.9	367.7	348.3	349.8	350.1	334.5	334.6	349.6	345.9
Percentage of Total Debt	5.4%	6.0%	5.1%	4.9%	5.0%	5.0%	4.9%	4.9%	4.9%	4.7%	4.7%	4.8%	4.7%
Canadian Fixed Long Term Debt (CAD)	3,055.7	3,194.9	3,344.2	3,323.3	3,322.8	3,394.9	3,394.4	3,390.9	3,490.4	3,463.5	3,470.0	3,518.2	3,517.6
Percentage of Total Debt	40.8%	42.6%	45.1%	45.5%	45.8%	46.4%	47.3%	47.3%	48.7%	48.9%	48.8%	47.9%	47.7%
US Fixed Long Term Debt (USD)	2,131.0	2,131.0	2,131.0	2,131.0	2,131.0	2,131.0	2,132.0	2,132.0	2,132.0	2,132.0	2,132.0	2,132.0	2,132.0
Exchange Rate for USD/ CAD at period end	1.31	1.34	1.26	1.20	1.21	1.23	1.16	1.17	1.17	1.12	1.12	1.17	1.15
US Fixed Long Term Debt (CAD)	2,792.6	2,856.3	2,693.3	2,564.8	2,577.6	2,611.7	2,475.5	2,485.7	2,488.3	2,377.2	2,377.8	2,484.4	2,458.0
Percentage of Total Debt	37.3%	38.1%	36.3%	35.1%	35.5%	35.7%	34.5%	34.7%	34.7%	33.6%	33.5%	33.9%	33.3%
Total Short Term Notes & Floating Long Term Debt (CAD)	1,635.4	1,450.3	1,377.4	1,411.6	1,362.4	1,308.2	1,303.9	1,290.1	1,190.5	1,240.4	1,258.4	1,335.4	1,399.6
Total Fixed Long Term Debt (CAD)	5,848.3	6,051.3	6,037.5	5,888.1	5,900.3	6,006.6	5,869.8	5,876.6	5,840.6	5,847.8	6,002.6	5,975.6	5,975.6
Total Debt (CAD)	7,483.7	7,501.6	7,415.0	7,299.6	7,262.7	7,314.8	7,173.7	7,166.8	7,169.1	7,081.1	7,106.2	7,338.0	7,375.2
Total Short Term Notes & Floating Long Term Debt (%)	21.9%	19.3%	18.6%	19.3%	18.8%	17.9%	18.2%	18.0%	16.6%	17.5%	17.7%	18.2%	19.0%
Total Fixed Long Term Debt (%)	78.1%	80.7%	81.4%	80.7%	81.2%	82.1%	81.8%	82.0%	83.4%	82.5%	82.3%	81.8%	81.0%
Canadian Percentage of Total Debt	57.3%	55.9%	58.6%	59.9%	59.5%	59.3%	60.6%	60.4%	60.4%	61.7%	61.8%	61.4%	62.0%
US Percentage of Total Debt	42.7%	44.1%	41.4%	40.1%	40.5%	40.7%	39.4%	39.6%	39.6%	38.3%	38.2%	38.6%	38.0%
Weighted Average Interest Rates (based on debt balances outstanding at period end)													
Canadian Short Term Notes (%)	2.04%	2.01%	2.22%	2.45%	2.50%		2.62%				4.19%	4.20%	4.21%
Canadian Floating Long Term Debt (%)	3.29%	3.49%	3.65%	3.73%	3.88%	4.19%	4.30%	4.70%	5.50%	5.60%	5.88%	5.92%	5.85%
Weighted Average of CAD: Short Term Notes & Floating Long Term Debt (%)	3.21%	3.40%	3.57%	3.60%	3.80%	4.19%	4.27%	4.70%	5.50%	5.60%	5.85%	5.78%	5.62%
Weighted Average Canadian Fixed Rate (%)	7.24%	7.12%	7.02%	7.00%	7.00%	7.00%	7.00%	7.00%	6.93%	6.92%	6.92%	6.89%	6.89%
US Short Term Notes (%)	0.95%	1.25%											
US Floating Long Term Debt (%)	2.83%	2.59%	3.44%	3.46%	4.52%	4.57%	5.32%	5.48%	6.26%	6.45%	6.87%	6.71%	6.59%
Weighted Average of US: Short Term Notes & Floating Long Term Debt (%)	2.77%	2.45%	3.44%	3.46%	4.52%	4.57%	5.32%	5.48%	6.26%	6.45%	6.87%	6.71%	6.59%
Weighted Average US Fixed Long Term Debt (%)	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.65%	7.62%	7.62%
Derived Quarterly Gross Interest Expense (based on period ending interest rates, FX rates and debt proportions)													
Canadian: Short Term Notes & Floating Long Term Debt (CAD)	9.9	8.5	8.9	9.4	9.5	9.9	10.2	11.0	11.6	12.7	13.5	14.3	14.8
Canadian Fixed Long Term Debt (CAD)	55.3	56.9	58.7	58.2	58.2	59.4	59.4	59.3	60.5	59.9	60.0	60.6	60.6
Derived Canadian Gross Interest Expense (CAD)	65.2	65.4	67.6	67.6	67.7	69.2	69.6	70.3	72.0	72.6	73.5	74.8	75.4
US: Short Term Notes & Floating Long Term Debt (USD)	2.1	2.0	2.6	2.6	3.4	3.4	4.0	4.1	4.7	4.8	5.2	5.0	4.9
US Fixed Long Term Debt (USD)	40.8	40.8	40.8	40.8	40.8	40.7	40.8	40.8	40.8	40.8	40.8	40.6	40.6
US Gross Interest Expense Interest Expense (USD)	42.9	42.8	43.4	43.4	44.2	44.2	44.7	44.9	45.4	45.6	45.9	45.6	45.5
Exchange Rate for USD/ CAD at period end	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.1	1.1	1.2	1.2
Derived US Gross Interest Expense (CAD)	56.2	57.4	54.8	52.2	53.4	54.1	52.0	52.3	53.0	50.8	51.2	53.2	52.5
Derived Quarterly Gross Interest Expense in CAD at Quarter End Actual %	121.4	122.8	122.4	119.8	121.1	123.4	121.5	122.6	125.1	123.4	124.7	128.0	127.9

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(in \$ millions)

Assumption: Move Debt Portfolio to 25% Floating and 75% Fixed

	Quarter Ended Mar-2004	Quarter Ended Jun-2004	Quarter Ended Sep-2004	Quarter Ended Dec-2004	Quarter Ended Mar-2005	Quarter Ended Jun-2005	Quarter Ended Sep-2005	Quarter Ended Dec-2005	Quarter Ended Mar-2006	Quarter Ended Jun-2006	Quarter Ended Sep-2006	Quarter Ended Dec-2006	Quarter Ended Mar-2007
Total Debt	7,483.7	7,501.6	7,415.0	7,299.6	7,262.7	7,314.8	7,173.7	7,166.8	7,169.1	7,081.1	7,106.2	7,338.0	7,375.2
Short Term Notes & Floating Long Term Debt based on 25% proportion of Total Debt	1,870.9	1,875.4	1,853.7	1,824.9	1,815.7	1,828.7	1,793.4	1,791.7	1,792.3	1,770.3	1,776.5	1,834.5	1,843.8
Fixed Long Term Debt based on 75% proportion of Total Debt	5,612.8	5,626.2	5,561.2	5,474.7	5,447.0	5,486.1	5,380.3	5,375.1	5,376.8	5,310.8	5,329.6	5,503.5	5,531.4
Assume % Canadian Debt from period ending Historical Portfolio	57.3%	55.9%	58.6%	59.9%	59.5%	59.3%	60.6%	60.4%	60.4%	61.7%	61.8%	61.4%	62.0%
Assume % US Debt from period ending Historical Portfolio	42.7%	44.1%	41.4%	40.1%	40.5%	40.7%	39.4%	39.6%	39.6%	38.3%	38.2%	38.6%	38.0%
Calculated Amount of Canadian Short Term Notes & Floating Long Term Debt (CAD)	1,071.4	1,049.1	1,085.6	1,093.4	1,080.6	1,083.9	1,087.5	1,082.8	1,082.7	1,092.3	1,098.4	1,126.0	1,142.8
Calculated Amount of Canadian Fixed Long Term Debt (CAD)	3,214.1	3,147.2	3,256.9	3,280.3	3,241.7	3,251.6	3,262.4	3,248.5	3,248.0	3,277.0	3,295.3	3,378.0	3,428.5
Calculated Amount of US Short Term Notes & Floating Long Term Debt (CAD)	799.6	826.3	768.1	731.5	735.1	744.8	705.9	708.9	709.6	677.9	678.1	708.5	701.0
Calculated Amount of US Fixed Long Term Debt (CAD)	2,398.7	2,479.0	2,304.4	2,194.4	2,205.4	2,234.5	2,117.8	2,126.6	2,128.8	2,033.8	2,034.3	2,125.5	2,102.9
Total Debt under Assumptions	7,483.7	7,501.6	7,415.0	7,299.6	7,262.7	7,314.8	7,173.7	7,166.8	7,169.1	7,081.1	7,106.2	7,338.0	7,375.2

Derived Quarterly Gross Interest Expense

(based on period ending interest rates, FX rates and debt proportions)

Canadian: Short Term Notes & Floating Long Term Debt (CAD)	8.6	8.9	9.7	9.8	10.3	11.4	11.6	12.7	14.9	15.3	16.1	16.3	16.0
Canadian Fixed Long Term Debt (CAD)	58.2	56.1	57.1	57.4	56.8	56.9	57.1	56.8	56.3	56.7	57.0	58.1	59.0
US: Short Term Notes & Floating Long Term Debt (CAD)	5.5	5.1	6.6	6.3	8.3	8.5	9.4	9.7	11.1	10.9	11.6	11.9	11.5
US Fixed Long Term Debt (CAD)	45.9	47.4	44.1	42.0	42.2	42.7	40.5	40.7	40.7	38.9	38.9	40.5	40.0
Derived Quarterly Gross Interest Expense in CAD at 25% Floating	118.2	117.5	117.5	115.6	117.5	119.5	118.5	119.9	123.0	121.8	123.6	126.8	126.7
Calculated Variance in Gross Interest Expense (25% Floating to Quarter End Actual %)	(3.2)	(5.4)	(4.8)	(4.2)	(3.6)	(3.9)	(3.0)	(2.8)	(2.1)	(1.6)	(1.1)	(1.2)	(1.2)

Assumption: Move Debt Portfolio to 15% Floating and 85% Fixed

Total Debt	7,483.7	7,501.6	7,415.0	7,299.6	7,262.7	7,314.8	7,173.7	7,166.8	7,169.1	7,081.1	7,106.2	7,338.0	7,375.2
Short Term Notes & Floating Long Term Debt based on 15% proportion of Total Debt	1,122.6	1,125.2	1,112.2	1,094.9	1,089.4	1,097.2	1,076.1	1,075.0	1,075.4	1,062.2	1,065.9	1,100.7	1,106.3
Fixed Long Term Debt based on 85% proportion of Total Debt	6,361.2	6,376.3	6,302.7	6,204.7	6,173.3	6,217.6	6,097.7	6,091.7	6,093.7	6,018.9	6,040.3	6,237.3	6,268.9
Assume % Canadian Debt from period ending Historical Portfolio	57.3%	55.9%	58.6%	59.9%	59.5%	59.3%	60.6%	60.4%	60.4%	61.7%	61.8%	61.4%	62.0%
Assume % US Debt from period ending Historical Portfolio	42.7%	44.1%	41.4%	40.1%	40.5%	40.7%	39.4%	39.6%	39.6%	38.3%	38.2%	38.6%	38.0%
Calculated Amount of Canadian Short Term Notes & Floating Long Term Debt (CAD)	642.8	629.4	651.4	656.1	648.3	650.3	652.5	649.7	649.6	655.4	659.1	675.6	685.7
Calculated Amount of Canadian Fixed Long Term Debt (CAD)	3,642.7	3,566.8	3,691.1	3,717.7	3,673.9	3,685.1	3,697.4	3,681.6	3,681.1	3,714.0	3,734.7	3,828.4	3,885.6
Calculated Amount of US Short Term Notes & Floating Long Term Debt (CAD)	479.7	495.8	460.9	438.9	441.1	446.9	423.6	425.3	425.8	406.8	406.9	425.1	420.6
Calculated Amount of US Fixed Long Term Debt (CAD)	2,718.5	2,809.6	2,611.6	2,487.0	2,499.4	2,532.5	2,400.2	2,410.2	2,412.6	2,304.9	2,305.6	2,408.9	2,383.3
Total Debt under Assumptions	7,483.7	7,501.6	7,415.0	7,299.6	7,262.7	7,314.8	7,173.7	7,166.8	7,169.1	7,081.1	7,106.2	7,338.0	7,375.2

Derived Quarterly Gross Interest Expense

(based on period ending interest rates, FX rates and debt proportions)

Canadian: Short Term Notes & Floating Long Term Debt (CAD)	5.2	5.3	5.8	5.9	6.2	6.8	7.0	7.6	8.9	9.2	9.6	9.8	9.6
Canadian Fixed Long Term Debt (CAD)	66.0	63.5	64.8	65.1	64.3	64.4	64.7	64.4	63.8	64.2	64.6	65.9	66.9
US: Short Term Notes & Floating Long Term Debt (CAD)	3.3	3.0	4.0	3.8	5.0	5.1	5.6	5.8	6.7	6.6	7.0	7.1	6.9
US Fixed Long Term Debt (CAD)	52.0	53.8	50.0	47.6	47.8	48.4	45.9	46.1	46.1	44.1	44.1	45.9	45.4
Derived Quarterly Gross Interest Expense in CAD at 15% Floating	126.5	125.7	124.5	122.4	123.3	124.8	123.2	123.9	125.5	124.0	125.3	128.7	128.8
Calculated Variance in Gross Interest Expense (15% Floating to Quarter End Actual %)	5.0	2.9	2.1	2.5	2.2	1.4	1.6	1.3	0.4	0.6	0.6	0.7	1.0

Summary of Derived Floating and Fixed Gross Interest Expense

(in \$ millions)

Derived Quarterly Interest Expense in CAD at Actual % Floating (at period end)	121.4	122.8	122.4	119.8	121.1	123.4	121.5	122.6	125.1	123.4	124.7	128.0	127.9
Derived Quarterly Interest Expense in CAD at 25% Floating	118.2	117.5	117.5	115.6	117.5	119.5	118.5	119.9	123.0	121.8	123.6	126.8	126.7
Calculated Variance in Gross Interest Expense (25% Floating to Quarter End Actual %)	(3.2)	(5.4)	(4.8)	(4.2)	(3.6)	(3.9)	(3.0)	(2.8)	(2.1)	(1.6)	(1.1)	(1.2)	(1.2)
Derived Quarterly Interest Expense in CAD at 15% Floating	126.5	125.7	124.5	122.4	123.3	124.8	123.2	123.9	125.5	124.0	125.3	128.7	128.8
Calculated Variance in Gross Interest Expense (15% Floating to Quarter End Actual %)	5.0	2.9	2.1	2.5	2.2	1.4	1.6	1.3	0.4	0.6	0.6	0.7	1.0

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(in \$ millions)

	Quarter Ended Jun-2007	Quarter Ended Sep-2007	Quarter Ended Dec-2007	Quarter Ended Mar-2008	Quarter Ended Jun-2008	Quarter Ended Sep-2008	Quarter Ended Dec-2008	Quarter Ended Mar-2009	Quarter Ended Jun-2009	Quarter Ended Sep-2009	Quarter Ended Dec-2009
Canadian Short Term Notes (CAD)	177.0	155.0	15.0	-	21.0	165.0	100.0	100.0	-	20.0	-
Canadian Floating Long Term Debt (CAD)	942.8	1,042.8	1,042.7	1,042.7	994.8	994.8	994.8	964.8	1,061.6	1,161.6	1,161.5
Total Canadian: Short Term Notes & Floating Long Term Debt (CAD)	1,119.8	1,197.8	1,057.7	1,042.7	1,015.8	1,159.8	1,094.8	1,064.8	1,061.6	1,181.6	1,161.5
Percentage of Total Debt	15.2%	16.0%	14.5%	13.7%	13.4%	14.7%	13.4%	12.8%	12.7%	14.3%	13.6%
US Short Term Notes (USD)	-	-	-	-	-	-	-	-	-	-	-
US Floating Long Term Debt (USD)	300.0	300.0	300.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0
Total US: Short Term Notes & Floating Long Term Debt (USD)	300.0	300.0	300.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0
Exchange Rate for USD/ CAD at period end	1.06	1.00	0.99	1.03	1.02	1.06	1.22	1.26	1.16	1.07	1.05
Total US: Short Term Notes & Floating Long Term Debt (CAD)	319.0	298.9	296.4	514.0	509.3	530.0	612.3	630.1	581.3	536.1	523.3
Percentage of Total Debt	4.3%	4.0%	4.1%	6.8%	6.7%	6.7%	7.5%	7.6%	7.0%	6.5%	6.1%
Canadian Fixed Long Term Debt (CAD)	3,655.9	3,852.4	3,851.5	3,851.1	3,865.0	3,954.0	4,138.5	4,238.4	4,508.8	4,508.7	4,868.5
Percentage of Total Debt	49.7%	51.5%	52.7%	50.7%	51.1%	50.0%	50.8%	51.0%	54.0%	54.7%	57.1%
US Fixed Long Term Debt (USD)	2,132.0	2,132.0	2,132.0	2,132.0	2,132.0	2,132.0	1,885.5	1,885.5	1,885.5	1,885.5	1,885.5
Exchange Rate for USD/ CAD at period end	1.06	1.00	0.99	1.03	1.02	1.06	1.22	1.26	1.16	1.07	1.05
US Fixed Long Term Debt (CAD)	2,267.2	2,124.1	2,106.6	2,191.5	2,171.7	2,259.7	2,309.0	2,376.1	2,191.9	2,021.6	1,973.4
Percentage of Total Debt	30.8%	28.4%	28.8%	28.8%	28.7%	28.6%	28.3%	28.6%	26.3%	24.5%	23.1%
Total Short Term Notes & Floating Long Term Debt (CAD)	1,438.8	1,496.7	1,354.2	1,556.7	1,525.1	1,689.7	1,707.1	1,694.9	1,642.8	1,717.7	1,684.8
Total Fixed Long Term Debt (CAD)	5,923.1	5,976.5	5,958.1	6,042.5	6,036.7	6,213.7	6,447.5	6,614.5	6,700.7	6,530.3	6,841.9
Total Debt (CAD)	7,361.9	7,473.1	7,312.3	7,599.2	7,561.8	7,903.5	8,154.6	8,309.4	8,343.5	8,248.0	8,526.7
Total Short Term Notes & Floating Long Term Debt (%)	19.5%	20.0%	18.5%	20.5%	20.2%	21.4%	20.9%	20.4%	19.7%	20.8%	19.8%
Total Fixed Long Term Debt (%)	80.5%	80.0%	81.5%	79.5%	79.8%	78.6%	79.1%	79.6%	80.3%	79.2%	80.2%
Canadian Percentage of Total Debt	64.9%	67.6%	67.1%	64.4%	64.5%	64.7%	64.2%	63.8%	66.8%	69.0%	70.7%
US Percentage of Total Debt	35.1%	32.4%	32.9%	35.6%	35.5%	35.3%	35.8%	36.2%	33.2%	31.0%	29.3%
Weighted Average Interest Rates (based on debt balances outstanding at period end)											
Canadian Short Term Notes (%)	4.39%	4.24%	3.90%		2.57%	2.36%	1.41%	0.33%		0.18%	
Canadian Floating Long Term Debt (%)	5.61%	5.20%	5.35%	4.88%	4.31%	4.34%	3.85%	2.50%	1.84%	1.44%	1.29%
Weighted Average of CAD: Short Term Notes & Floating Long Term Debt (%)	5.42%	5.08%	5.33%	4.88%	4.27%	4.06%	3.63%	2.30%	1.84%	1.42%	1.29%
Weighted Average Canadian Fixed Rate (%)	6.73%	6.67%	6.68%	6.68%	6.69%	6.62%	6.54%	6.51%	6.40%	6.41%	6.28%
US Short Term Notes (%)											
US Floating Long Term Debt (%)	6.68%	6.71%	6.71%	3.98%	3.61%	4.09%	3.65%	2.46%	2.30%	1.49%	1.35%
Weighted Average of US: Short Term Notes & Floating Long Term Debt (%)	6.68%	6.71%	6.71%	3.98%	3.61%	4.09%	3.65%	2.46%	2.30%	1.49%	1.35%
Weighted Average US Fixed Long Term Debt (%)	7.62%	7.62%	7.62%	7.62%	7.62%	7.62%	7.87%	7.87%	7.87%	7.87%	7.87%
Derived Quarterly Gross Interest Expense (based on period ending interest rates, FX rates and debt proportions)											
Canadian: Short Term Notes & Floating Long Term Debt (CAD)	15.2	15.2	14.1	12.7	10.8	11.8	9.9	6.1	4.9	4.2	3.7
Canadian Fixed Long Term Debt (CAD)	61.5	64.2	64.3	64.3	64.7	65.4	67.7	68.9	72.1	72.2	76.4
Derived Canadian Gross Interest Expense (CAD)	76.7	79.4	78.4	77.1	75.5	77.2	77.6	75.1	77.0	76.4	80.1
US: Short Term Notes & Floating Long Term Debt (USD)	5.0	5.0	5.0	5.0	4.5	5.1	4.6	3.1	2.9	1.9	1.7
US Fixed Long Term Debt (USD)	40.6	40.6	40.6	40.6	40.6	40.6	37.1	37.1	37.1	37.1	37.1
US Gross Interest Expense Interest Expense (USD)	45.6	45.6	45.6	45.6	45.1	45.7	41.7	40.2	40.0	39.0	38.8
Exchange Rate for USD/ CAD at period end	1.1	1.0	1.0	1.0	1.0	1.1	1.2	1.3	1.2	1.1	1.0
Derived US Gross Interest Expense (CAD)	48.5	45.5	45.1	46.8	45.9	48.4	51.0	50.6	46.5	41.8	40.6
Derived Quarterly Gross Interest Expense in CAD at Quarter End Actual %	125.2	124.9	123.5	123.9	121.5	125.6	128.6	125.7	123.5	118.2	120.7

CAC/MSOS/MH I - 146 (d)
(in \$ millions)

Assumption: Move Debt Portfolio to 25% Floating and 75% Fixed

	Quarter Ended Jun-2007	Quarter Ended Sep-2007	Quarter Ended Dec-2007	Quarter Ended Mar-2008	Quarter Ended Jun-2008	Quarter Ended Sep-2008	Quarter Ended Dec-2008	Quarter Ended Mar-2009	Quarter Ended Jun-2009	Quarter Ended Sep-2009	Quarter Ended Dec-2009
Total Debt	7,361.9	7,473.1	7,312.3	7,599.2	7,561.8	7,903.5	8,154.6	8,309.4	8,343.5	8,248.0	8,526.7
Short Term Notes & Floating Long Term Debt based on 25% proportion of Total Debt	1,840.5	1,868.3	1,828.1	1,899.8	1,890.5	1,975.9	2,038.6	2,077.3	2,085.9	2,062.0	2,131.7
Fixed Long Term Debt based on 75% proportion of Total Debt	5,521.4	5,604.9	5,484.2	5,699.4	5,671.4	5,927.6	6,115.9	6,232.0	6,257.6	6,186.0	6,395.0
Assume % Canadian Debt from period ending Historical Portfolio	64.9%	67.6%	67.1%	64.4%	64.5%	64.7%	64.2%	63.8%	66.8%	69.0%	70.7%
Assume % US Debt from period ending Historical Portfolio	35.1%	32.4%	32.9%	35.6%	35.5%	35.3%	35.8%	36.2%	33.2%	31.0%	29.3%
Calculated Amount of Canadian Short Term Notes & Floating Long Term Debt (CAD)	1,193.9	1,262.5	1,227.3	1,223.4	1,220.2	1,278.4	1,308.3	1,325.8	1,392.6	1,422.6	1,507.5
Calculated Amount of Canadian Fixed Long Term Debt (CAD)	3,581.8	3,787.6	3,681.9	3,670.3	3,660.6	3,835.3	3,924.9	3,977.4	4,177.8	4,267.7	4,522.5
Calculated Amount of US Short Term Notes & Floating Long Term Debt (CAD)	646.5	605.8	600.8	676.4	670.2	697.4	730.3	751.6	693.3	639.4	624.2
Calculated Amount of US Fixed Long Term Debt (CAD)	1,939.6	1,817.3	1,802.3	2,029.1	2,010.7	2,092.2	2,191.0	2,254.7	2,079.9	1,918.3	1,872.5
Total Debt under Assumptions	7,361.9	7,473.1	7,312.3	7,599.2	7,561.8	7,903.5	8,154.6	8,309.4	8,343.5	8,248.0	8,526.7

Derived Quarterly Gross Interest Expense

(based on period ending interest rates, FX rates and debt proportions)

Canadian: Short Term Notes & Floating Long Term Debt (CAD)	16.2	16.0	16.3	14.9	13.0	13.0	11.9	7.6	6.4	5.1	4.9
Canadian Fixed Long Term Debt (CAD)	60.3	63.1	61.5	61.3	61.3	63.4	64.2	64.7	66.8	68.4	71.0
US: Short Term Notes & Floating Long Term Debt (CAD)	10.8	10.2	10.1	6.7	6.0	7.1	6.7	4.6	4.0	2.4	2.1
US Fixed Long Term Debt (CAD)	36.9	34.6	34.3	38.6	38.3	39.8	43.1	44.4	40.9	37.7	36.8
Derived Quarterly Gross Interest Expense in CAD at 25% Floating	124.2	123.9	122.3	121.6	118.6	123.4	125.8	121.3	118.1	113.5	114.8
Calculated Variance in Gross Interest Expense (25% Floating to Quarter End Actual %)	(1.0)	(0.9)	(1.3)	(2.3)	(2.9)	(2.2)	(2.8)	(4.4)	(5.3)	(4.7)	(6.0)

Assumption: Move Debt Portfolio to 15% Floating and 85% Fixed

Total Debt	7,361.9	7,473.1	7,312.3	7,599.2	7,561.8	7,903.5	8,154.6	8,309.4	8,343.5	8,248.0	8,526.7
Short Term Notes & Floating Long Term Debt based on 15% proportion of Total Debt	1,104.3	1,121.0	1,096.8	1,139.9	1,134.3	1,185.5	1,223.2	1,246.4	1,251.5	1,237.2	1,279.0
Fixed Long Term Debt based on 85% proportion of Total Debt	6,257.6	6,352.2	6,215.4	6,459.3	6,427.5	6,717.9	6,931.4	7,063.0	7,092.0	7,010.8	7,247.7
Assume % Canadian Debt from period ending Historical Portfolio	64.9%	67.6%	67.1%	64.4%	64.5%	64.7%	64.2%	63.8%	66.8%	69.0%	70.7%
Assume % US Debt from period ending Historical Portfolio	35.1%	32.4%	32.9%	35.6%	35.5%	35.3%	35.8%	36.2%	33.2%	31.0%	29.3%
Calculated Amount of Canadian Short Term Notes & Floating Long Term Debt (CAD)	716.4	757.5	736.4	734.1	732.1	767.1	785.0	795.5	835.6	853.5	904.5
Calculated Amount of Canadian Fixed Long Term Debt (CAD)	4,059.3	4,292.6	4,172.8	4,159.7	4,148.7	4,346.7	4,448.3	4,507.7	4,734.8	4,836.7	5,125.5
Calculated Amount of US Short Term Notes & Floating Long Term Debt (CAD)	387.9	363.5	360.5	405.8	402.1	418.4	438.2	450.9	416.0	383.7	374.5
Calculated Amount of US Fixed Long Term Debt (CAD)	2,198.3	2,059.6	2,042.6	2,299.6	2,278.8	2,371.2	2,483.1	2,555.3	2,357.2	2,174.1	2,122.2
Total Debt under Assumptions	7,361.9	7,473.1	7,312.3	7,599.2	7,561.8	7,903.5	8,154.6	8,309.4	8,343.5	8,248.0	8,526.7

Derived Quarterly Gross Interest Expense

(based on period ending interest rates, FX rates and debt proportions)

Canadian: Short Term Notes & Floating Long Term Debt (CAD)	9.7	9.6	9.8	9.0	7.8	7.8	7.1	4.6	3.8	3.0	2.9
Canadian Fixed Long Term Debt (CAD)	68.3	71.5	69.7	69.5	69.4	71.9	72.8	73.3	75.7	77.5	80.4
US: Short Term Notes & Floating Long Term Debt (CAD)	6.5	6.1	6.1	4.0	3.6	4.3	4.0	2.8	2.4	1.4	1.3
US Fixed Long Term Debt (CAD)	41.9	39.2	38.9	43.8	43.4	45.1	48.9	50.3	46.4	42.8	41.7
Derived Quarterly Gross Interest Expense in CAD at 15% Floating	126.3	126.5	124.5	126.3	124.2	129.1	132.7	130.9	128.3	124.7	126.4
Calculated Variance in Gross Interest Expense (15% Floating to Quarter End Actual %)	1.2	1.6	0.9	2.4	2.8	3.5	4.1	5.3	4.9	6.5	5.6

Summary of Derived Floating and Fixed Gross Interest Expense

(in \$ millions)

Derived Quarterly Interest Expense in CAD at Actual % Floating (at period end)	125.2	124.9	123.5	123.9	121.5	125.6	128.6	125.7	123.5	118.2	120.7
Derived Quarterly Interest Expense in CAD at 25% Floating	124.2	123.9	122.3	121.6	118.6	123.4	125.8	121.3	118.1	113.5	114.8
Calculated Variance in Gross Interest Expense (25% Floating to Quarter End Actual %)	(1.0)	(0.9)	(1.3)	(2.3)	(2.9)	(2.2)	(2.8)	(4.4)	(5.3)	(4.7)	(6.0)
Derived Quarterly Interest Expense in CAD at 15% Floating	126.3	126.5	124.5	126.3	124.2	129.1	132.7	130.9	128.3	124.7	126.4
Calculated Variance in Gross Interest Expense (15% Floating to Quarter End Actual %)	1.2	1.6	0.9	2.4	2.8	3.5	4.1	5.3	4.9	6.5	5.6

CAC/MSOS/MH I-146

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the changes in content from the similar report, the July 2007 Manitoba Hydro Debt Management Strategy, filed in the 2008/2009 GRA.

Each of the November 2009 and July 2007 Manitoba Hydro Debt Management Strategy reports, on page 6, provide a pie graph showing the proportion of fixed and floating rate debt in Canada and US currencies. In the previous GRA, certain IRs discussed aspects of the fixed and floating rate debt policies. To efficiently get certain disclosures on the record of this proceeding, CAC/MSOS requests that certain IRs from the previous proceeding be entered in this record and updated as required

- e) **Please revise the tables provided in Coalition/MH II-77 (a) and (b) from the previous GRA, correcting any disclosure if required, and augmenting the quarterly data through to December 2009 with the addition of 2 data series, average 1 month BA rates, and average 3 month BA rates. CAC/MSOS would also appreciate receiving these table in electronic form to allow for more efficient analysis of the data.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-146(d) for updated information to the table provided in COALITION/MH II-77(a).

Please see the attached schedule for updated information to the table provided in COALITION/MH II-77(b). The requested average 1 month BA rates and average 3 month BA rates were derived from the quarterly average of daily points using Bloomberg data indices CDOR01 and CDOR03.

Manitoba Hydro observes that the information requested by CAC/MSOS utilizes end of period and average data. In order to enhance comparability of the data, the weighted average interest rate on all short term notes issued or outstanding during the quarter has been added to the response.

Manitoba Hydro acknowledges that its cost of short term notes will vary from the 1 month or 3 month Bloomberg BA rates for a variety of reasons including the requirement to apply Manitoba credit spreads on its short term borrowings and the fact that the duration of Manitoba Hydro's issues short term notes will vary from either the 1 or 3 month BA terms.

Short term debt is defined as debt issued with maturities of less than one year. The \$500 million short term borrowing program is a credit facility to safeguard Manitoba Hydro from liquidity risk and to provide sufficient liquidity for the Corporation's temporary cash requirements. Short term borrowings are not intended as a financing vehicle to reduce Manitoba Hydro's overall debt servicing costs. Manitoba Hydro uses its short term notes to fund seasonal working capital requirements and to bridge the timing between long term debt issues. It is inappropriate to utilize the Corporation's overdraft credit facilities and Commercial Paper Program to permanently fund capital construction that should more appropriately be financed through long term debt.

Short Term Notes Outstanding (in \$Millions)	Quarter Ended Mar-2004	Quarter Ended Jun-2004	Quarter Ended Sep-2004	Quarter Ended Dec-2004	Quarter Ended Mar-2005	Quarter Ended Jun-2005	Quarter Ended Sep-2005	Quarter Ended Dec-2005	Quarter Ended Mar-2006	Quarter Ended Jun-2006	Quarter Ended Sep-2006	Quarter Ended Dec-2006	Quarter Ended Mar-2007
Short Term Notes (CAD)	81.0	60.0	57.0	110.0	59.0	-	15.0	-	-	-	18.0	80.0	148.0
Short Term Notes (USD)	9.5	35.0	-	-	-	-	-	-	-	-	-	-	-
Total of Notional \$CAD and \$USD	90.5	95.0	57.0	110.0	59.0	-	15.0	-	-	-	18.0	80.0	148.0
Maximum Short Term Debt Limit of \$500 Million Total Notional CAD or USD	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0
Proportion of Maximum Short Term Limit	18.10%	19.00%	11.40%	22.00%	11.80%	0.00%	3.00%	0.00%	0.00%	0.00%	3.60%	16.00%	29.60%
Weighted Average Interest Rate on Short Term Notes Outstanding at Quarter End													
CAD\$ Short Term Notes	2.04%	2.01%	2.22%	2.45%	2.50%		2.62%				4.19%	4.20%	4.21%
USD\$ Short Term Notes	0.95%	1.25%											
Weighted Average Interest Rate on All Short Term Notes Outstanding During the Quarter													
CAD\$ Short Term Notes	2.39%	1.98%	2.02%	2.40%	2.43%	2.50%	2.61%	2.65%			4.19%	4.20%	4.20%
USD\$ Short Term Notes	0.97%	1.03%	1.25%									5.28%	
Average Bloomberg Bankers Acceptance Rate for the Quarter													
Average 1 month Bloomberg Bankers Acceptance Rate	2.42%	2.06%	2.14%	2.55%	2.57%	2.56%	2.67%	3.15%	3.64%	4.19%	4.33%	4.33%	4.34%
Average 3 month Bloomberg Bankers Acceptance Rate	2.33%	2.09%	2.24%	2.63%	2.61%	2.61%	2.80%	3.30%	3.79%	4.28%	4.36%	4.34%	4.35%

Short Term Notes Outstanding (in \$Millions)	Quarter Ended Jun-2007	Quarter Ended Sep-2007	Quarter Ended Dec-2007	Quarter Ended Mar-2008	Quarter Ended Jun-2008	Quarter Ended Sep-2008	Quarter Ended Dec-2008	Quarter Ended Mar-2009	Quarter Ended Jun-2009	Quarter Ended Sep-2009	Quarter Ended Dec-2009
Short Term Notes (CAD)	177.0	155.0	15.0	-	21.0	165.0	100.0	100.0	-	20.0	-
Short Term Notes (USD)	-	-	-	-	-	-	-	-	-	-	-
Total of Notional \$CAD and \$USD	177.0	155.0	15.0	-	21.0	165.0	100.0	100.0	-	20.0	-
Maximum Short Term Debt Limit of \$500 Million Total Notional CAD or USD	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0
Proportion of Maximum Short Term Limit	35.40%	31.00%	3.00%	0.00%	4.20%	33.00%	20.00%	20.00%	0.00%	4.00%	0.00%
Weighted Average Interest Rate on Short Term Notes Outstanding at Quarter End											
CAD\$ Short Term Notes	4.39%	4.24%	3.90%		2.57%	2.36%	1.43%	0.33%		0.18%	
USD\$ Short Term Notes											
Weighted Average Interest Rate on All Short Term Notes Outstanding During the Quarter											
CAD\$ Short Term Notes	4.25%	4.37%	4.23%	3.66%	2.57%	2.40%	1.87%	0.75%	0.26%	0.18%	0.17%
USD\$ Short Term Notes							1.12%				
Average Bloomberg Bankers Acceptance Rate for the Quarter											
Average 1 month Bloomberg Bankers Acceptance Rate	4.37%	4.77%	4.70%	3.97%	3.26%	3.16%	2.40%	0.98%	0.45%	0.40%	0.40%
Average 3 month Bloomberg Bankers Acceptance Rate	4.43%	4.83%	4.79%	3.96%	3.29%	3.30%	2.44%	0.94%	0.48%	0.44%	0.43%

CAC/MSOS/MH I-147

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the changes in content from the similar report, the July 2007 Manitoba Hydro Debt Management Strategy, filed in the 2008/2009 GRA.

Each of the November 2009 and July 2007 Manitoba Hydro Debt Management Strategy reports, on page 6, provide a pie graph showing the proportion of fixed and floating rate debt in Canada and US currencies. In the 2007 report, US floating rate debt represented approximately 12% of the total US fixed and floating debt $\{4.69\% / (4.69\% + 33.33\%) = 12\%\}$. In the 2009 report, US floating rate debt represented approximately 21% of the total US fixed and floating debt $\{6.3\% / (6.3\% + 23.9\%) = 21\%\}$.

- a) Please discuss the strategy which gave rise to the increase in the proportion of the floating rate US dollar debt. In that response, please discuss the market conditions for both fixed and floating rate instruments over the relevant period.**

ANSWER:

Please see the response to CAC/MSOS/MH I-148(b) for a discussion of the financial market conditions over the relevant period that resulted in an upward movement in the total floating rate percentage within Manitoba Hydro's targeted range.

The increase in US dollar floating rate debt was a result of a 3 year USD \$200 million floating rate debt issue that was secured in February 2008. This USD debt issue fit well into the debt maturity profile at that time and assisted in decreasing the long position that had developed in the Foreign Exchange Exposure Management Program. This USD issue was also cost effective relative to a Canadian debt issue. At the date of announcement, the

indicative rates from the underwriter showed that a floating USD issue versus a floating domestic issue was less expensive by approximately 2 basis points.

CAC/MSOS/MH I-147

Subject: Debt and Debt Management Strategy

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- b) Manitoba Hydro had indicated certain policy ranges for floating rate debt including a 15% to 25% range and a 30% maximum. In light of those ranges, please discuss that rationale for the 12% level in 2007 US floating rate debt which allowed the floating rate debt in one of the currencies in which Hydro borrows to drop below minimum range and even below the minimum range identified in the NBF report.**

ANSWER:

The targeted ranges for floating rate debt apply to the total debt portfolio on a consolidated basis, not to debt in a particular currency, as there is a very high correlation between Canadian and US short term interest rates (0.91 as per the NBF report on Table 12 page 32).

At the time of the 2007 Debt Management Strategy report, the floating rate percentage for the total portfolio was 19% and therefore within the targeted range.

CAC/MSOS/MH I-147

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

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- c) Manitoba Hydro had indicated that there has been significant volatility in its opportunity and dependable volumes and revenues. In light of that volatility, please discuss that rationale for the 12% level in 2007 US floating rate debt, and 20% in 2009.**

ANSWER:

The fixed versus floating interest rate target is applied on the total debt portfolio, not to debt in a particular currency.

At the time of the 2007 and 2009 reports, the floating rate percentages for the total debt portfolio were 19% and 21% respectively, and therefore within the targeted range.

CAC/MSOS/MH I-147

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the changes in content from the similar report, the July 2007 Manitoba Hydro Debt Management Strategy, filed in the 2008/2009 GRA.

Each of the November 2009 and July 2007 Manitoba Hydro Debt Management Strategy reports, on page 6, provide a pie graph showing the proportion of fixed and floating rate debt in Canada and US currencies. In the 2007 report, US floating rate debt represented approximately 12% of the total US fixed and floating debt $\{4.69\% / (4.69\% + 33.33\%) = 12\%\}$. In the 2009 report, US floating rate debt represented approximately 21% of the total US fixed and floating debt $\{6.3\% / (6.3\% + 23.9\%) = 21\%\}$.

- d) Manitoba Hydro had indicated that there has been significant volatility in its opportunity and dependable volumes and revenues. In light of that volatility, please quantify the proportion of opportunity sales revenues which are denominated in US currency for years 2007/08 through to the end of the forecast 2011/12 year, and compare the US dollar Opportunity sales revenues to the anticipated US interest and principal repayments for the years 2007/08 through to the end of the 2011/12 year.**

ANSWER:

Over 90% of opportunity sales revenues in 2007/08 and 2008/09 were denominated in US currency.

These US opportunity revenues form a significant portion of the cash inflows that are considered within the Foreign Exchange Exposure Management Program. The anticipated

export revenues in a cash flow hedge with US debt are considered on an aggregated basis and are not specifically identified as opportunity or dependable revenues.

CAC/MSOS/MH I-148

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the changes in content from the similar report, the July 2007 Manitoba Hydro Debt Management Strategy, filed in the 2008/2009 GRA.

Each of the November 2009 and July 2007 Manitoba Hydro Debt Management Strategy reports, on page 6, provide a pie graph showing the proportion of fixed and floating rate debt in Canada and US currencies. In the 2007 report, US floating rate debt represented approximately 23% of the total Canadian fixed and floating debt $\{14.29\% / (14.29\% + 47.69\%) = 23\%\}$. In the 2009 report, Canadian floating rate debt represented approximately 21% of the total Canadian fixed and floating debt $\{14.5\% / (14.5\% + 55.3\%) = 21\%\}$.

- a) Please discuss the strategy which gave rise to the decrease in the proportion of the floating rate Canadian dollar debt from 2007 to 2009. In that response, please discuss the market conditions for both fixed and floating rate instruments over the relevant period.**

ANSWER:

The targeted ranges for floating rate debt apply to the total debt portfolio on a consolidated basis, not to debt in a particular currency, as there is a very high correlation between Canadian and US short term interest rates (0.91 as per the NBF report on Table 12 page 32).

As described in response to CAC/MSOS/MH I-147(a), Manitoba Hydro increased its proportion of US dollar floating rate debt as a result of a 3 year USD \$200 million floating rate debt issue that was secured in February 2008. On a total portfolio basis, this USD floating rate financing was considered with other incremental Canadian floating rate

issuances such that the total floating rate percentage on the entire debt portfolio increased from 19% and 21% between the time of the 2007 and 2009 reports.

Please see the response to CAC/MSOS/MH I-148(b) for a discussion of the financial market conditions over the relevant period that resulted in an upward movement in the total floating rate percentage within Manitoba Hydro's targeted range.

CAC/MSOS/MH I-148

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the changes in content from the similar report, the July 2007 Manitoba Hydro Debt Management Strategy, filed in the 2008/2009 GRA.

Each of the November 2009 and July 2007 Manitoba Hydro Debt Management Strategy reports, on page 6, provide a pie graph showing the proportion of fixed and floating rate debt in Canada and US currencies. In the 2007 report, US floating rate debt represented approximately 23% of the total Canadian fixed and floating debt $\{14.29\% / (14.29\% + 47.69\%) = 23\%$. In the 2009 report, Canadian floating rate debt represented approximately 21% of the total Canadian fixed and floating debt $\{14.5\% / (14.5\% + 55.3\%) = 21\%$.

- b) Manitoba Hydro had indicated certain policy ranges for floating rate debt including a 15% to 25% range and a 30% maximum. In light of those ranges, and the significant increases in the then spreads for between short term and longer term rates please discuss that rational for not materially increasing the proportion of short term and floating rate Canadian debt from 2007 to 2009.**

ANSWER:

As stated in response to CAC/MSOS/MH I-148(a), the targeted floating rate debt range is not applied to specific currencies but rather to the total debt portfolio on a consolidated basis. Between the time of the 2007 and 2009 reports, short term interest reset rates on floating rate debt dropped to unprecedented low levels as can be evidenced by the historical interest rate Charts 1 and 2 attached to this response. Consequently, Manitoba Hydro increased its proportion of total floating rate debt from 19% at March 31, 2007 to 21% at October 31, 2009. Although the increased percentage of floating rate debt elevated interest rate refinancing risk and income statement volatility, by staying within the Corporation's targeted

floating rate risk tolerances, Manitoba Hydro prudently took advantage of the steepening yield curve, thereby:

- reducing financing costs in the *near* term.

Term spread is not the only consideration affecting the movement of the proportion of floating rate debt in Manitoba Hydro's total debt portfolio. As stated in the November 2009 Debt Management Strategy on page 6, "Manitoba Hydro's fundamental debt management objective is to provide stable, low-cost funding to meet the financial obligations and liquidity needs of the Corporation. Manitoba Hydro continually monitors its liquidity needs and interest rate environment and acts to secure stable, low-cost financing with terms to maturity that meet investor appetite and fit the Corporation's debt maturity schedule."

As can be seen on the blue line in Chart 1 - *Historical Short Term and Long Term Interest Rate Comparison*, Manitoba Hydro's long term debt rates over the past few years have not been this low since the late 1950's. Consequently, in view of the prevailing interest rate environment, Manitoba Hydro seized the opportunity to secure long fixed rate bonds at these exceptionally low rates, thereby:

- lowering the Corporation's embedded cost of debt,
- reducing financing costs over a *long* period of time, and
- decreasing/ eliminating interest rate refinancing risk on these debt streams.

For a prolonged period of time from the mid-1970's to the early 1990's, the long term interest rates were in excess of 10%, and in 1981 the Province of Manitoba long term interest rate exceeded 18%. The average 10 year long term fixed debt rate for the Province of Manitoba from 1948 - 1988 was 7.76%, and the average 10 year+ rate for the Province of Manitoba from March 1992 - January 2010 was 6.31%.

In contrast, the average financing rate for Province of Manitoba's 10 year+ debt from March 2007 to October 2009 was 4.69%. As can be seen on Chart 3, although long term fixed rate debt costs for the Province of Manitoba have been relatively constant since 2005, by 2013/14 the long term fixed interest rates are forecast to return to higher levels approximately in line with the average experience from 1992 - 2007.

With respect to the interest rate environment for Manitoba Hydro's Canadian long term floating rate debt, there has been significant volatility in interest reset rates. As depicted on

Chart 1, the average 3 month T-Bill interest rate from January 1948 - January 2010 was 6.24% and during 1974 - 1992, the 3 month T-Bill interest rate averaged over 10% with a high of over 20% in 1981.

As noted in Chart 2, the short term interest rates are now at an all time low and currently carry an asymmetrical risk profile as short term interest rates are more likely to rise than to fall. By 2012/13, short term interest rates are forecast to rapidly return to the interest rate levels that existed prior to the financial crisis, and in line with the average experience from 1992 - 2007. As short term interest rates are projected to rise faster than the long term interest rates, a financing strategy with an overweighting of shorter dated debt maturities will increase the risk that the Corporation's future gross interest expense will be significantly higher upon refinancing the debt stream.

Manitoba Hydro's actual long term financing included issuance in various terms throughout the curve, including the issuance of floating rate notes. However, careful consideration must also be given to the debt maturity schedule and the total level of annual borrowings so that Manitoba Hydro can readily maintain access to low cost financing and retain financing flexibility during the decade of investment. Given the significant refinancing requirements that will occur in the next 10 years within the existing debt maturity schedule and the forecasted new borrowing requirements during the decade of investment, the introduction of additional shorter dated debt issues with maturities prior to 2020 will accentuate the aforementioned challenges. Therefore in order to mitigate refinancing risk, to maintain financing flexibility during the decade of investment, and in keeping with the concept of matching the Corporation's long-lived assets with long term debt, Manitoba Hydro will continue to favour long term financings with maturities 10 years+ (while maintaining floating rate debt within policy limits).

Investor appetite within the capital markets will also have a significant affect on the cost, availability and timing of Manitoba Hydro's financing. This was especially the case during the past few years as investors increasingly sought safety in liquid, high quality, government debt instruments. As discussed in response to CAC/MSOS/MH I-135 (f) and (i), the impact of the recent financial credit crisis had a dramatic affect on the short and long term spreads required by investors on Manitoba Hydro's borrowings. As depicted in Chart 3, although the benchmark Government of Canada rates dropped to unprecedented lows during this time, this was counterbalanced by a sharp elevation in the credit spread between benchmark Government of Canada bonds and the all-in cost to the Province of Manitoba. Consequently, the all-in cost for Manitoba Hydro's long bonds remained at historically low levels in spite of

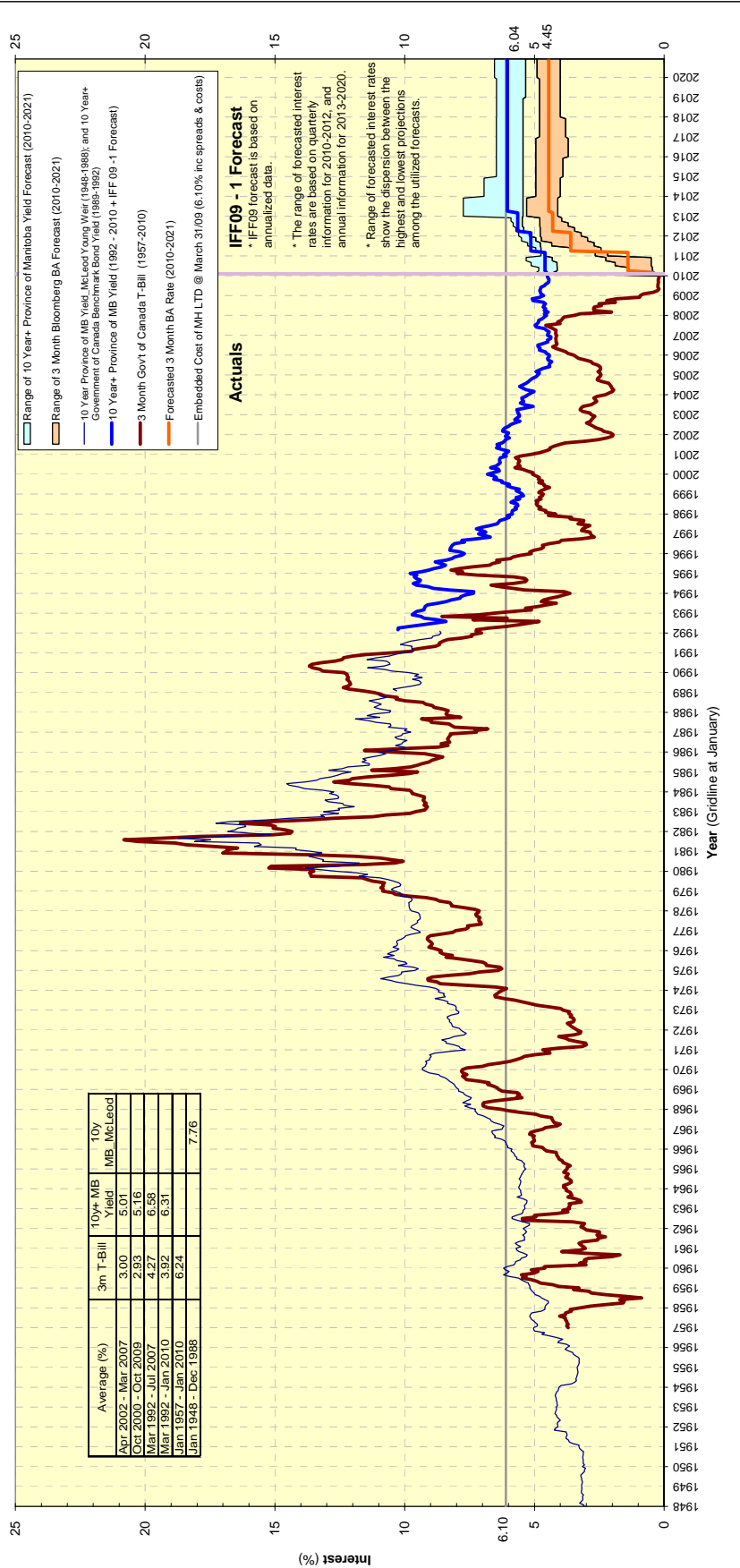
the steep increase in the borrowing spread. By 2009 the spreads had decreased sharply and have since showed preliminary signs of stabilization, although still remaining elevated above the pre-crisis levels.

The uncertainty in the financial markets during the recession also had an impact on the availability and timing of capital financing. In order to provide adequate cash resources for smooth business continuity, provincial issuers and Manitoba Hydro increasingly undertook pre-financing activities. Most of Manitoba Hydro's debt instruments were secured in Canada as the international capital markets were not cost effective as compared to domestic issues. The tactical execution of financing considerations such as cost, timing, terms and volumes were highly affected by investor appetite.

With respect to short term borrowings, as noted in response to CAC/MSOS/MH I-175(a), Manitoba Hydro's short term promissory notes are theoretically fixed rate financings, although for practical purposes these borrowings are considered part of the floating rate debt portfolio.

CHART 1 Historical Short Term and Long Term Interest Rate Comparison

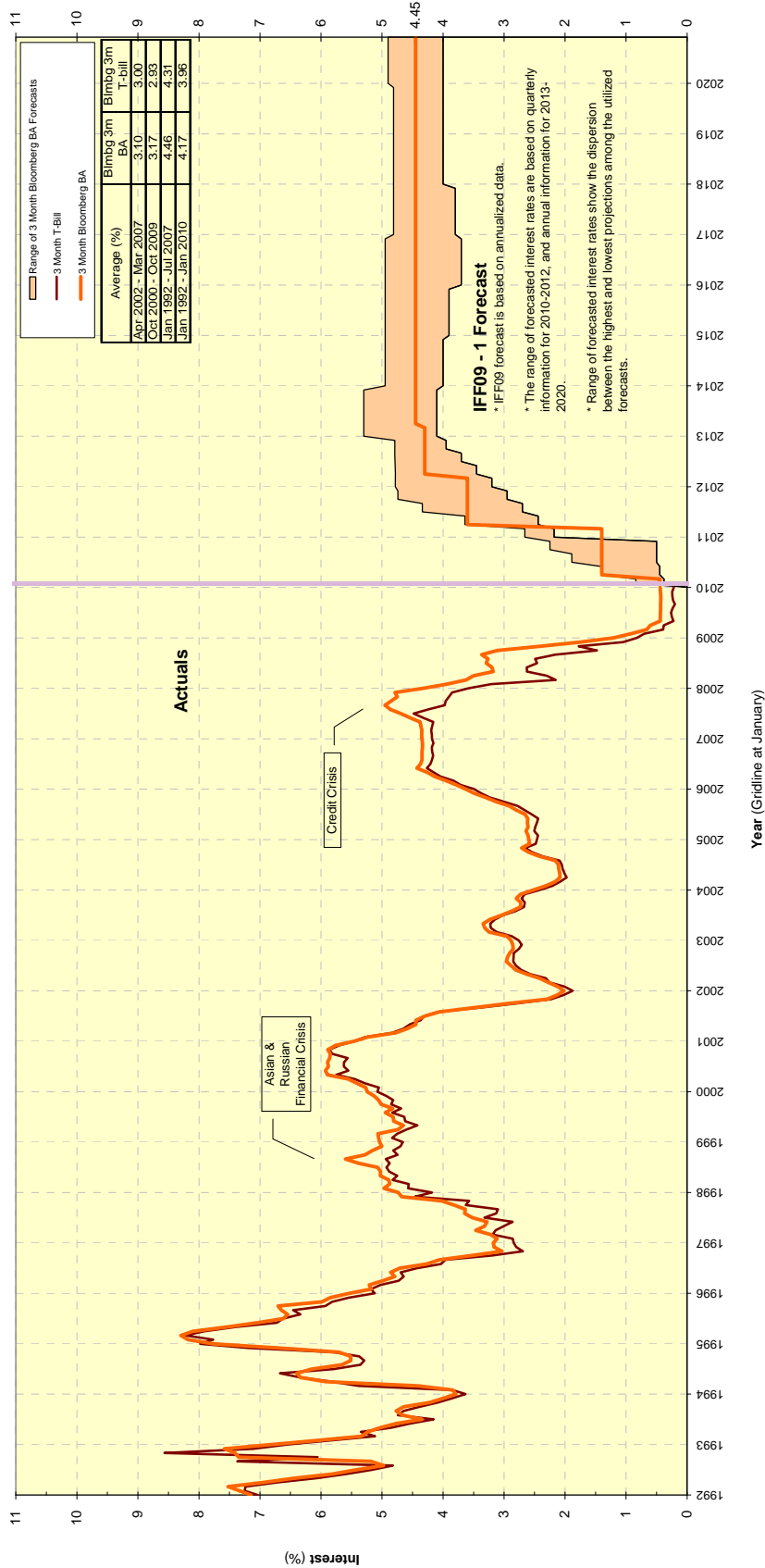
January 1948 - January 2010
(excluding PGF and transaction costs)



Note 1: The forecasted long term debt credit spread of 54 basis points between the Government of Canada and the Province of Manitoba has been added to each of the forecasters' Government of Canada long term debt forecasts, so that all of the long term debt interest rate projections illustrate Province of Manitoba yields.
 Note 2: The forecasted long term interest rates exclude PGF and transaction costs, the estimated transaction cost for Manitoba Hydro's long term borrowing is 6 basis points or 0.06%.
 Note 3: The forecasted short term debt credit spread of 20 basis points between the 3 month Government of Canada T-Bill rate and the 3 month Bloomberg BA rate has been added to each of the forecasters' Government of Canada 3 month T-Bill forecasts, so that all of the short term debt interest rate projections illustrate the 3 month BA rate.
 Note 4: 10 Year MB Yield_McLeod Young Weir data per Bank of Canada. 3 Month T-Bill data per Bank of Canada. 10 Year+ Province of MB data is calculated as averages of Bloomberg 10 Year MB yield and Bloomberg 30 Year MB yield.
 Note 5: 10 Year+ Government of Canada Benchmark Bond Yield has been used as an indicative proxy for the data gap for period Jan 1989 - Feb 1992 where no data was available for Province of Manitoba bond yield. The use of this proxy is only for illustration purposes, and it does not affect Manitoba Hydro's spreads calculation.

CHART 2

Short Term Interest Rate Comparison between the 3 Month Bloomberg T-Bill Rate and the 3 Month Bloomberg BA Rate (Actuals March 1992 - January 2010; Forecast to 2021; with all data excluding PGF and transaction costs)



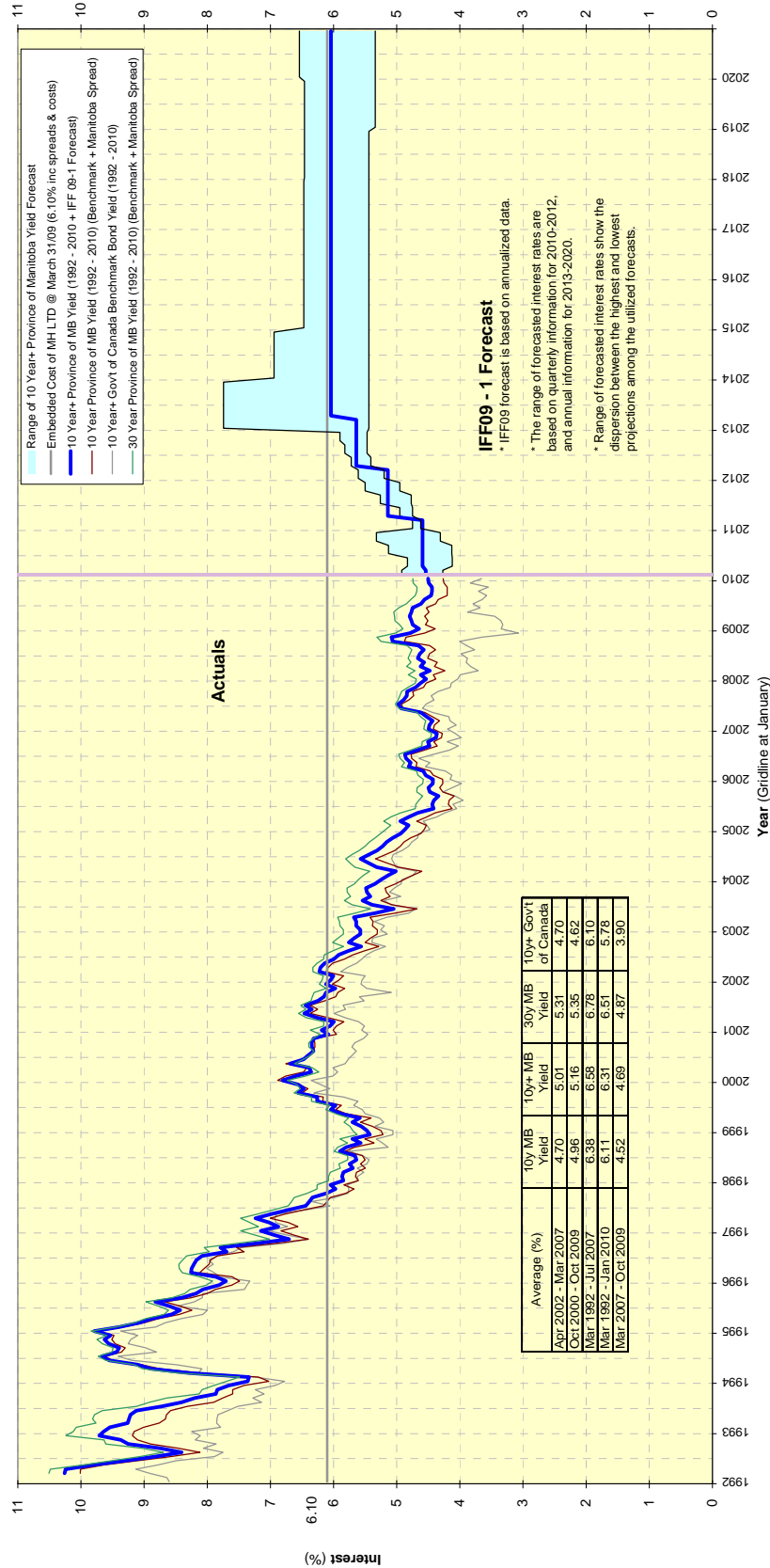
Note 1: 3 month BA data per Bloomberg weekly series (CDQR03).
 Note 2: 3 month T-Bill rates per Bloomberg weekly series (C1033m) for Oct 2000 - Jan 2010.
 Note 3: 3 month T-Bill rates per Bank of Canada monthly series (V122541) for Jan. 1992 - Sept 2000 as Bloomberg (C1033m) for Oct 2000 - Jan 2010.
 Note 4: The forecasted short term debt credit spread of 20 basis points between the 3 month Bloomberg BA rate and the 3 month T-Bill forecasts, so that all of the short term debt interest rate projections illustrate the 3 month BA rate.

CHART 3

Long Term Interest Rate Comparison between

10 Year, 10 Year +, and 30 Year Province of Manitoba Yields

(Actuals March 1992 - January 2010; Forecast to 2021; with all data excluding PGF and Transaction Costs)



Note 1: Manitoba data per Bloomberg daily series C30210y (10 Yr MB), C30230y (30 Yr MB), Govt of Canada data per Bank of Canada monthly series v122543 (10 Yr Govt of Canada) and monthly series v122544 (10 Yr Govt of Canada).
 Note 2: 10 Yr+ = average of 10 Yr yield and 30 Yr yield.
 Note 3: The use of Bloomberg daily series and Bank of Canada monthly series is only for illustration purposes. It does not affect the spread calculation method used by Manitoba Hydro. Actual plotting of the chart uses monthly averages of daily data, and monthly data where applicable.
 Note 4: The forecasted long term debt credit spread of 54 basis points between the Government of Canada and the Province of Manitoba has been added to each of the forecasters. Government of Canada long term debt forecasts, so that all of the long term debt interest rate projections illustrate Province of Manitoba yields.
 Note 5: The forecasted long term interest rates exclude PGF and transaction costs, the estimated transaction cost for Manitoba Hydro's long term borrowing is 6 basis points or 0.06%.

CAC/MSOS/MH I-149

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the changes in content from the similar report, the July 2007 Manitoba Hydro Debt Management Strategy, filed in the 2008/2009 GRA.

Each of the November 2009 and July 2007 Manitoba Hydro Debt Management Strategy reports, on page 7, discusses “capital coverage”. In the 2007 report, the Capital coverage target ratio is indicated to be “1.00”. In the 2009 report, the Capital coverage target ratio is indicated to be “1.20”, although described in differing language.

In PUB/MH I-64 (d) in the previous GRA, Manitoba Hydro indicated “The capital coverage ratio reflects the extent to which routine and recurring capital expenditures (referred to as base capital) is funded from internal sources. Any shortfall in the achievement of the capital coverage target will result in rising debt levels and higher interest expense that will need to be borne by customers in future years.”

a) Please discuss the implications of this change in the Capital Coverage ratio.

ANSWER:

The more stringent capital coverage target of 1.20 will assist in ensuring that all capital construction expenditures (excepting major new generation and transmission) will be met from internally generated funds.

CAC/MSOS/MH I-149

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

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In PUB/MH I-64 (d) in the previous GRA, Manitoba Hydro indicated “The capital coverage ratio reflects the extent to which routine and recurring capital expenditures (referred to as base capital) is funded from internal sources. Any shortfall in the achievement of the capital coverage target will result in rising debt levels and higher interest expense that will need to be borne by customers in future years.”

b) Provide a detailed explanation of what gave rise to the change in this ratio?

ANSWER:

As a result of Manitoba Hydro’s ongoing review of its financial targets, a recommendation was made to strengthen the capital coverage target from the current approved target of greater than 1.00 to greater than 1.20. On May 21, 2009, the Manitoba Hydro Electric Board approved this recommendation.

CAC/MSOS/MH I-149

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

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In PUB/MH I-64 (d) in the previous GRA, Manitoba Hydro indicated “The capital coverage ratio reflects the extent to which routine and recurring capital expenditures (referred to as base capital) is funded from internal sources. Any shortfall in the achievement of the capital coverage target will result in rising debt levels and higher interest expense that will need to be borne by customers in future years.”

- c) Please provide a segmentation of capital expenditures for the 2010/11 and 2011/12 forecast periods dividing the total capital expenditures between “major new generation and transmission” and other capital expenditures, and those numbers to “internally generated funds” for those years.**

ANSWER:

Electric Capital Expenditures - CEF09	2011	2012
New Major Generation & Transmission	\$ 612.1	\$ 554.8
Base Capital	\$ 434.8	\$ 439.7
Internally Generated Funds	\$ 493.0	\$ 516.0

CAC/MSOS/MH I-149

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

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In PUB/MH I-64 (d) in the previous GRA, Manitoba Hydro indicated “The capital coverage ratio reflects the extent to which routine and recurring capital expenditures (referred to as base capital) is funded from internal sources. Any shortfall in the achievement of the capital coverage target will result in rising debt levels and higher interest expense that will need to be borne by customers in future years.”

- d) Please explain the importance of this change during “the decade of investment” discussed in Section 2.2 of the application.**

ANSWER:

During the decade of investment, the target of financing base capital expenditures (i.e., excluding major new generation and transmission) by internally generated funds establishes financial parameters for capital rationing and reduces the need for debt. Of course, the paramount considerations are public and employee safety, security of energy supply and environmental protection.

CAC/MSOS/MH I-149 (REVISED)

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

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In PUB/MH I-64 (d) in the previous GRA, Manitoba Hydro indicated “The capital coverage ratio reflects the extent to which routine and recurring capital expenditures (referred to as base capital) is funded from internal sources. Any shortfall in the achievement of the capital coverage target will result in rising debt levels and higher interest expense that will need to be borne by customers in future years.”

- e) Please discuss whether the incremental debt for expansion operates to effectively create the same situation which will “result in rising debt levels and higher interest expense that will need to be borne by customers in future years.”?**

ANSWER:

Although incremental new debt will be secured in support of Manitoba Hydro’s capital investment, interest will be capitalized during construction. Upon project in-service, the associated future finance expense will be more than offset by returns on this investment as indicated by the strengthening debt/equity ratio during the “decade of returns.”

CAC/MSOS/MH I-150

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the changes in content from the similar report, the July 2007 Manitoba Hydro Debt Management Strategy, filed in the 2008/2009 GRA.

The July 2007 Manitoba Hydro Debt Management Strategy report, on page 8 and 9, in Section 5 and 6, discusses certain “Debt Issues” for the balance of the then financial year and forecast periods. In the 2009 report, those topics are not addressed.

- a) Please provide a description of the short and long term issues undertaken in 2009/10 and their use of proceeds, and the manner in which anticipated financing requirements are expected to be addressed including the timing of any long term issues and their anticipated maturities, similar to that provided in Section 5 of the 2007 Manitoba Hydro Debt Management Strategy report.**

ANSWER:

Manitoba Hydro has completed all of its financing for the 2009/10 fiscal year.

A total of \$400 million CAD was issued in June 2009 and was predominately used to finance new capital construction requirements.

In September 2009, two debt issues totalling \$350 million CAD were issued, of which \$250 million was used to refinance an existing debt series and \$100 million to finance new capital construction requirements.

In the third quarter, \$200 million CAD was issued in October and a total of \$175 million CAD was issued in two debt issues in November. The total third quarter financing of \$375 million CAD was used to finance new capital construction requirements.

In the fourth quarter, there were three debt issues. \$400 million USD was issued in January 2010, \$150 million of which was to refinance an existing USD debt issue in 2009/10 and the balance of \$250 million USD will be to refinance USD debt issues maturing in 2010/11. In February, \$300 million CAD was issued to refinance an existing debt series in the amount of \$175 million and the remainder of \$125 million to finance new capital construction requirements. In March 2010, \$200 million CAD was issued to refinance an existing debt series.

CAC/MSOS/MH I-150

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

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The July 2007 Manitoba Hydro Debt Management Strategy report, on page 8 and 9, in Section 5 and 6, discusses certain “Debt Issues” for the balance of the then financial year and forecast periods. In the 2009 report, those topics are not addressed.

- b) Please provide a description of the sinking fund management in 2009/10, similar to that provided in Section 5 of the 2007 Manitoba Hydro Debt Management Strategy report.**

ANSWER:

Sinking Fund Contributions for the 2009/10 fiscal year will be equal to the legislated minimum contributions of 1% of eligible long term debt outstanding at the end of the previous year plus 4% of the balance in the sinking fund at that date. For 2009/10, this amount is forecasted to be approximately \$94 million CAD.

Manitoba Hydro made withdrawals from the sinking fund on February 22, 2010 to repay the following maturing debt:

Debt Series	Principal
EM	USD \$50.0 million
EM5	USD \$97.0 million
EM6	USD \$100.0 million

CAC/MSOS/MH I-150

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

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The July 2007 Manitoba Hydro Debt Management Strategy report, on page 8 and 9, in Section 5 and 6, discusses certain “Debt Issues” for the balance of the then financial year and forecast periods. In the 2009 report, those topics are not addressed.

- c) Please provide a description of the forecast long term issues to be undertaken in 2010/11 and 2011/12 including the timing, identifying the financial quarter for which they are forecast, and their anticipated maturities in a manner similar to that found in Section 6 of the 2007 report and the June 2004 report.**

ANSWER:

Manitoba Hydro’s financing requirements for the 2010/11 fiscal year consists of new capital requirements of about \$800 million. Actual financings will consider the timing, dollar value, denomination, and fixed versus floating nature of the issue depending on a number of factors including: the cash and liquidity requirements in existence at the time of financing; refinancing requirements on forward interest rate swaps; the term dependent on the current maturity schedule, interest rate expectations and the mitigation of refinancing risk; the management of foreign exchange risk; and the market appetite and economic environment.

CAC/MSOS/MH I-150

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the changes in content from the similar report, the July 2007 Manitoba Hydro Debt Management Strategy, filed in the 2008/2009 GRA.

The July 2007 Manitoba Hydro Debt Management Strategy report, on page 8 and 9, in Section 5 and 6, discusses certain “Debt Issues” for the balance of the then financial year and forecast periods. In the 2009 report, those topics are not addressed.

- d) Please provide a description of the forecast sinking fund activity to be undertaken in 2010/11 and 2011/12 including anticipated maturities in a manner similar to that found in Section 6 of the 2007 report.**

ANSWER:

Sinking Fund Contributions for each fiscal year will be equal to the legislated minimum contributions of 1% of eligible long term debt outstanding at the end of the previous year plus 4% of the balance in the sinking fund at that date. For 2010/11, this amount is forecasted to be approximately \$98 million CAD. For 2011/12, this amount is forecasted to be approximately \$98 million CAD.

Manitoba Hydro has the equivalent of \$227 million CAD maturities during 2010/11 that are forecast to be fully retired through sinking fund withdrawals as follows:

Debt Series	Principal	Maturity Date
Hydro Bond, Series 10	CAD \$ 13.0 million	June 15, 2010
CO94	USD \$200.0 million	February 22, 2011

Manitoba Hydro has the equivalent of \$27 million CAD maturities during 2011/12 that are forecast to be fully retired through sinking fund withdrawals as follows:

Debt Series	Principal	Maturity Date
Hydro Bond, Series 9	CAD \$ 26 million	June 15, 2011
Series 5B	CAD \$ 1 million	June and December, 2011

CAC/MSOS/MH I-150

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the changes in content from the similar report, the July 2007 Manitoba Hydro Debt Management Strategy, filed in the 2008/2009 GRA.

The July 2007 Manitoba Hydro Debt Management Strategy report, on page 8 and 9, in Section 5 and 6, discusses certain “Debt Issues” for the balance of the then financial year and forecast periods. In the 2009 report, those topics are not addressed.

- e) **Please update the weighted average interest chart found in the June 2004 for the period 2000 to 2009, and augment the chart, by providing a weighted average interest line for each of Canadian dollar denominated long term fixed obligations, Canadian dollar denominated short term and floating obligations, US dollar denominated long term fixed obligations, and US dollar denominated short term and floating obligations.**

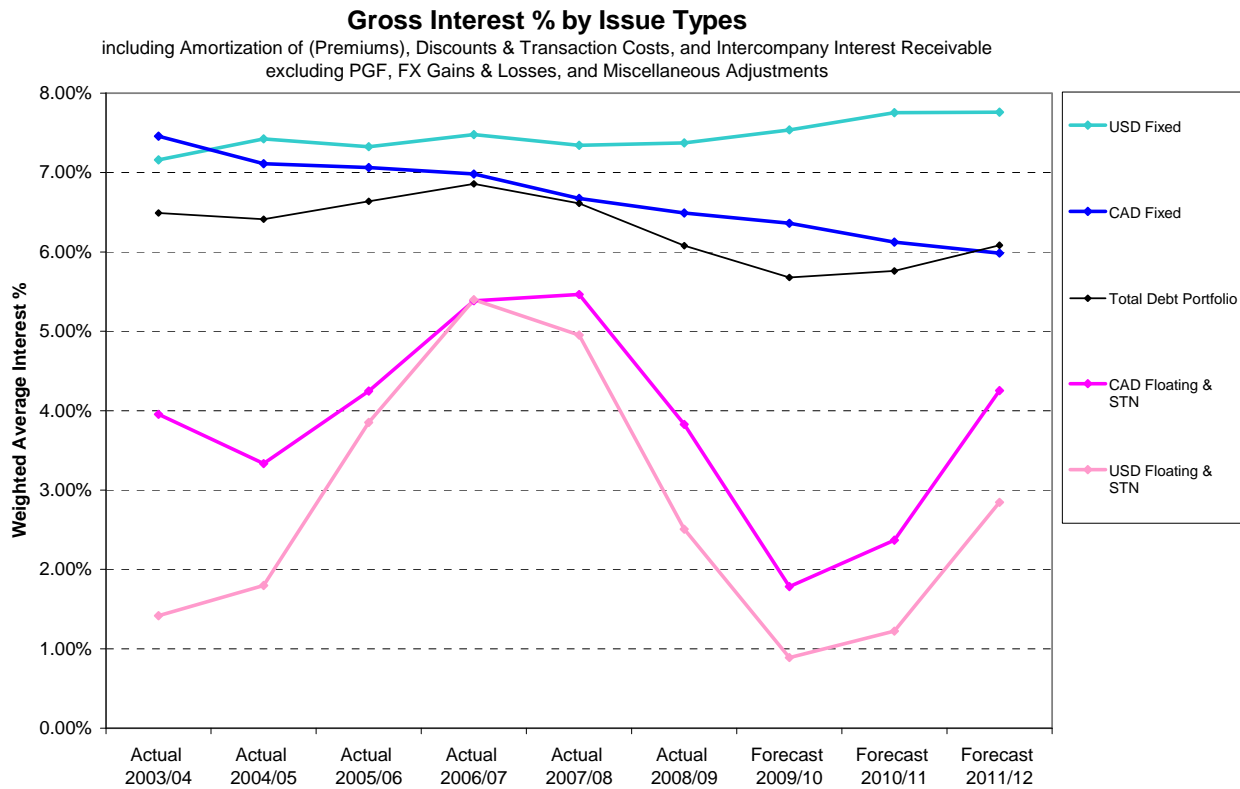
ANSWER:

The interest rates presented in the June 2004 document depicted a weighted average embedded cost of debt that represented the total Canadian dollar equivalent interest and Canadian dollar equivalent principal amount of all finance expense items before interest allocated to construction, with the exception of gains or losses on sinking fund investment dispositions. The weighted average interest rate chart shown in the Finance Expense section of Tab 4 of the current General Rate Application utilizes a more refined methodology to present the weighted average cost of debt and has been utilized in response to CAC/MSOS/MH I-150(e).

Please see the attached chart depicting the consolidated weighted average interest rates, augmented with the requested segmented interest rates commencing with the 2003/04 fiscal

year. The total annual interest expense for each of the segmented components was divided by the CAD principal equivalent in order to derive the weighted average interest rates. Each of the components included the associated discounts and premiums. The provincial debt guarantee fee amounts (based on the eligible debt volumes at the previous year end), as well as other foreign exchange gains or losses and miscellaneous adjustments were excluded in order to enhance comparability to financial market indicators. Short term debt only utilized short term note data (thereby excluding bank overdraft and temporary investments balances).

The general upward trend in USD fixed interest rates primarily reflects the impact of maturities of USD fixed rate debt issues that had lower interest rates than the weighted average of the USD fixed rate pool, thereby elevating the weighted average interest rate of the remaining USD fixed rate debt. The downward trend in CAD fixed interest rates primarily reflects the addition of new long term debt issues to the pool of CAD fixed rate debt at interest rates that are lower than the previous year's weighted average rate. The movement in the weighted average of the floating long term debt & short term note (STN) issue types was primarily affected by the changing floating interest reset rates.



CAC/MSOS/MH I-151

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2 and Appendix 13.3

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the “study” to which it refers.

The November 2009 Manitoba Hydro Debt Management Strategy report observes, on page 6, “Manitoba Hydro recently commissioned a study regarding the Corporation’s optimal mix of fixed versus floating interest rate debt. According to relevant business and market factors, and based on an asset/ liability management framework, Manitoba Hydro’s optimal range of floating rate debt is 14 - 27% of the debt portfolio”.

- a) Please define “optimal” as the term is used throughout the mandate document and the resulting report and provide the criteria used to determine optimality.**

ANSWER:

The following response was provided by National Bank Financial:

“The optimal range of portfolios contain a mix of fixed and floating rate debt that allows Manitoba Hydro to increase both its net income and returns to shareholders at a lower level of risk (i.e. variance to net income) than that of the 100% Fixed and the Fixed Equivalent portfolios.”

CAC/MSOS/MH I-151

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2 and Appendix 13.3

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the “study” to which it refers.

The November 2009 Manitoba Hydro Debt Management Strategy report observes, on page 6, “Manitoba Hydro recently commissioned a study regarding the Corporation’s optimal mix of fixed versus floating interest rate debt. According to relevant business and market factors, and based on an asset/ liability management framework, Manitoba Hydro’s optimal range of floating rate debt is 14 - 27% of the debt portfolio”.

- b) Figure 1 and Figure 10, provide charts of Risk scaled from 80 to 120, against Return, scaled from 0 to 150. Return is referred to in the text as parenthetically following the words “net income”. Please identify the units of risk and return being depicted, by way of example, is the unit of Return a dollar unit, a basis point change, a percentage change from some assumed base, an annual variation, or the average of the results of over a period of years.**

ANSWER:

The following response was provided by National Bank Financial:

“The units in the chart are on a percentage basis of the fixed equivalent portfolio (which is assumed to be the base case), and both risk and return are plotted for all the other portfolios based on their risk and return as a percentage of the fixed equivalent portfolio’s risk/return profile.”

CAC/MSOS/MH I-151

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2 and Appendix 13.3

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the “study” to which it refers.

The November 2009 Manitoba Hydro Debt Management Strategy report observes, on page 6, “Manitoba Hydro recently commissioned a study regarding the Corporation’s optimal mix of fixed versus floating interest rate debt. According to relevant business and market factors, and based on an asset/ liability management framework, Manitoba Hydro’s optimal range of floating rate debt is 14 - 27% of the debt portfolio”.

- c) Please provide the unit value, to one decimal point accuracy, at which a horizontal line drawn through the minimum variance point would intersect the return axis.**

ANSWER:

The following response was provided by National Bank Financial:

“51.0%”

CAC/MSOS/MH I-151

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2 and Appendix 13.3

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the “study” to which it refers.

The November 2009 Manitoba Hydro Debt Management Strategy report observes, on page 6, “Manitoba Hydro recently commissioned a study regarding the Corporation’s optimal mix of fixed versus floating interest rate debt. According to relevant business and market factors, and based on an asset/ liability management framework, Manitoba Hydro’s optimal range of floating rate debt is 14 - 27% of the debt portfolio”.

- d) Please provide the unit value, to one decimal point accuracy, at which the upper and lower bands of the 15%-25% guidance range intersect the return axis.**

ANSWER:

The following response was provided by National Bank Financial:

“56.6% and 94.3%”

CAC/MSOS/MH I-151

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2 and Appendix 13.3

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the “study” to which it refers.

The November 2009 Manitoba Hydro Debt Management Strategy report observes, on page 6, “Manitoba Hydro recently commissioned a study regarding the Corporation’s optimal mix of fixed versus floating interest rate debt. According to relevant business and market factors, and based on an asset/ liability management framework, Manitoba Hydro’s optimal range of floating rate debt is 14 - 27% of the debt portfolio”.

- e) Please provide the unit value, to one decimal point accuracy, at which a horizontal line drawn through the 27% floating point would intersect the return axis.**

ANSWER:

The following response was provided by National Bank Financial:

“100.0%”

CAC/MSOS/MH I-151

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2 and Appendix 13.3

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the “study” to which it refers.

The November 2009 Manitoba Hydro Debt Management Strategy report observes, on page 6, “Manitoba Hydro recently commissioned a study regarding the Corporation’s optimal mix of fixed versus floating interest rate debt. According to relevant business and market factors, and based on an asset/ liability management framework, Manitoba Hydro’s optimal range of floating rate debt is 14 - 27% of the debt portfolio”.

- f) Please provide the unit value, to one decimal point accuracy, at which the 30% maximum line intersects the return axis.**

ANSWER:

The following response was provided by National Bank Financial:

“113.2%”

CAC/MSOS/MH I-151

Subject: Debt and Debt Management Strategy

Reference: Manitoba Hydro Debt Management Strategy, Appendix 6.2 and Appendix 13.3

The Applicant addresses certain aspects of its debt management. The report is dated November, 2009.

CAC/MSOS wishes to better understand this report and the “study” to which it refers.

The November 2009 Manitoba Hydro Debt Management Strategy report observes, on page 6, “Manitoba Hydro recently commissioned a study regarding the Corporation’s optimal mix of fixed versus floating interest rate debt. According to relevant business and market factors, and based on an asset/ liability management framework, Manitoba Hydro’s optimal range of floating rate debt is 14 - 27% of the debt portfolio”.

- g) Table 2, immediately above Figure 1 on page 6, does not use the same title for Risk and Return used in Figures 1 and Figure 10, but rather refers to “Adjusted Risk” and “Adjusted Return”. How have these measures**
- i. been calculated, and**
 - ii. in what manner have they been adjusted?**

ANSWER:

The following response was provided by National Bank Financial:

“They have been adjusted to reflect units as a % of risk and return of the fixed equivalent portfolio.”

CAC/MSOS/MH I-152

Subject: Debt and Debt Management Fixed vs. Floating

**Reference: Independent Assessment of Corporate Policy Fixed vs. Floating,
Appendix 13.3**

The Applicant indicated that a request for tender was sent to several financial institutions and the low bid received was from National Bank Financial in the amount of \$200,000. The report is dated July 16, 2009.

a) Please provide a copy of the request for tender.

ANSWER:

Please see the attached Request for Tender.



REQUEST FOR TENDER 029457

CONSULTING SERVICES - INDEPENDENT
ASSESSMENT OF CORPORATE POLICY - FIXED
VS FLOATING RATE DEBT

IMPORTANT

THIS REQUEST FOR TENDER IS THE EXCLUSIVE PROPERTY OF MANITOBA HYDRO AND ALL RIGHTS ARE RESERVED. ANY RELEASE, REPRODUCTION OR OTHER USE THEREOF, WITHOUT THE EXPRESS WRITTEN CONSENT OF MANITOBA HYDRO IS STRICTLY PROHIBITED.

JANUARY 16, 2009

MANITOBA HYDRO DISCLAIMER

These electronic files and any content/part thereof are provided solely on an “as is” basis, without warranty of any kind, and Manitoba Hydro expressly disclaims all warranties, conditions, undertakings or terms, express or implied, written or oral, including warranties of merchantability, fitness for a particular purpose, and those arising by statute or from a course of dealing, usage or trade. Manitoba Hydro does not warrant, guarantee, or make any representations regarding the electronic files, including any contents/parts thereof or the use or the results of the use of the electronic files, in terms of their correctness, accuracy, reliability, currentness, safety, performance, integrity, compatibility, quality, completeness, timeliness, fitness for any particular purpose, non-infringement of any intellectual property rights or otherwise. Without restricting or limiting the effectiveness or scope of the immediate preceding sentence, Manitoba Hydro makes no representation or warranty that the electronic file(s) is/are error-free or is/are compatible or usable by or with, or in conjunction with, the recipient's computer systems or equipment and that the electronic file(s) is/are or will be error-free, free of viruses or other harmful or destructive properties or components. The entire risk as to the use, results, and performance of the electronic files is assumed by the recipient.

Manitoba Hydro works in the Acrobat 5.0.5/6.0.3/7, Excel 95-2003 and Word 2003 environments. The recipient may not be able to view or utilize the full software features of Manitoba Hydro's electronic files if the recipient has earlier versions of the aforementioned software.

INVITATION TO TENDER

To be accepted, one original of the responding Tender must be received and date and time stamped until 16:00 hours, Manitoba local time, **January 30, 2009** by Manitoba Hydro, complete as described in Request for Tender 029457. One photocopy of the Tender is also requested.

The Tender shall be enclosed in a sealed envelope marked: "CONSULTING SERVICES - INDEPENDENT ASSESSMENT OF CORPORATE POLICY - FIXED VS FLOATING DEBT" at Manitoba Hydro. If the Tender is to be mailed, it should be addressed to Mr. Glenn W. Gray, Manager, Purchasing Department, Manitoba Hydro, P.O. Box 1287, Winnipeg, Manitoba, R3C 2Z1, Canada. If the Tender is to be delivered by hand, it should be brought to the Security Officer, 1st Floor, 820 Taylor Avenue, Winnipeg, Manitoba, R3M 3T1, Canada.

ENQUIRIES

Any enquiry concerning the technical content should be directed in writing until:

January 27, 2009

12:00 (noon) Manitoba local time

Mr. Vince Warden,
Vice-President of Finance and Administration and CFO,
Manitoba Hydro,
P.O. Box 1287,
Winnipeg, Manitoba, R3C 2Z1, Canada
FAX number is (204) 474-4114
Email address is vawarden@hydro.mb.ca

Any enquiry concerning the tender procedures should be directed in writing to:

Peter Buscemi, C.P.P.
Purchasing Department
Manitoba Hydro
P.O. Box 1287
Winnipeg, Manitoba R3C 2Z1, Canada
Telephone number: (204) 474-3564
FAX number: (204) 474-4972
Email address: pbuscemi@hydro.mb.ca

The Tenderer shall not be entitled to rely on any response or interpretation received in respect of an enquiry unless that response or interpretation was provided via an addendum to this Request for Tender.

INSTRUCTIONS

FORM OF TENDER

The Tenderer is required to use the Form of Tender attached hereto. If any Form of Tender page is found to have insufficient space, the Tenderer is requested to attach a sheet or sheets immediately after such page.

The Tenderer is encouraged to include in their Tender thorough and sufficient information concerning matters under evaluation.

Where in the Form of Tender attached hereto the word "shall" is used, the requirement identified is mandatory.

Where in the Form of Tender attached hereto the word "requested" is used, the requirement identified is advisory and is not mandatory.

ADDENDA

The Purchaser may, at any time prior to the date and time of closing, issue addenda changing Request for Tender 029457, and such addenda shall be an integral part of Request for Tender 029457.

SIGNING OF TENDERS

A Tender submitted by an individual shall be signed by the individual in the presence of a subscribing witness.

A Tender submitted by a corporation shall be signed by the properly authorized signing officer or officers and the corporate seal affixed or by the properly authorized signing officer or officers in the presence of a subscribing witness or witnesses.

A Tender submitted by a partnership or joint venture shall be properly signed by all partners or joint ventures in the presence of a subscribing witness or witnesses. The Purchaser may require evidence of the authority of any person purporting to sign a Tender on behalf of a person, firm or corporation, whether as principal, agent or attorney. Each signature shall be accompanied by a printed name.

WITHDRAWAL/AMENDMENT OF TENDER

A Tenderer may withdraw its Tender any time prior to the time and date of closing by way of written notice of withdrawal to the Purchaser received by the Purchaser prior to said time.

A Tenderer may amend its Tender any time prior to the time and date of closing by providing a clear and detailed written notice to the Purchaser of such amendment as follows:

To the Attention of: Mr. Glenn W. Gray, Manager
Purchasing Department, Manitoba Hydro

If mailed: P.O. Box 1287
Winnipeg, Manitoba R3C 2Z1, Canada.

If Personal delivery: Security Officer
1st Floor, 820 Taylor Avenue, Winnipeg, Manitoba,
R3M 3T1, Canada.

If Faxed: (204) 474-4972

All amendments must be signed in accordance with the Instructions to Tenderers, and marked "Amendment of Tender 029457"

TENDERS

The Tender shall be irrevocable by the Tenderer until a date **60 days** after the closing date for the receipt of sealed Tenders.

Notwithstanding any industry or trade custom or past practices of the Purchaser to the contrary, the Purchaser does not represent that it will necessarily, and the Purchaser shall not be obliged to, accept any Tenders, accept the lowest Tenders, or be precluded from accepting any Tenders or other offer further in respect of any Tenders submitted. The Purchaser reserves the right in its sole discretion to accept any Tenders or to reject any and all Tenders received.

The Purchaser reserves the right in its sole discretion to cancel and / or re-tender this Request for Tender at any time regardless of whether or not any Tender(s) have been received for any reason whatsoever.

If any Tender is accepted, in whole or in part, the Purchaser shall notify the successful Tenderer in writing. The successful Tenderer cannot rely upon oral acceptance.

TENDERER'S EXPENSES

The Tenderer shall be responsible for all expenses concerning or related to the preparation of its Tender, including any proof of concept demonstration(s) and any subsequent discussions and/or negotiations.

LANGUAGE, DIMENSIONS AND WEIGHTS

All communication, including without limitation all notices, documents, notes on drawings, and submissions, required or permitted under the Contract, shall be in English.

Any Work shall be executed in the SI (Metric) System of Units. Dimensions shall be shown in metres and millimetres and weights shall be shown in kilograms and metric tonnes.

TENDERED PRICES

Proposed prices shall be stated in Canadian **currency** and shall include all customs duties, surcharges, insurance premiums, permit and licence fees, Workers Compensation and vacation pay assessments, and all other payroll benefits. Canadian Goods and Services Tax (GST) and Manitoba provincial retail sales tax (PST) shall be treated as specified in the Form of Tender for each ITEM. All other applicable taxes shall be included and shall not be subject to any adjustment.

No payment shall be made to the Contractor for sales tax (if any) which may be imposed by Canada or Manitoba in respect of the Contractor's plant, tools and any other items not included in the Work.

Prices in the accepted Tender, if any, shall be firm and not subject to adjustment for changes or unexpected contingencies of any kind whatsoever, including without restricting the generality of the foregoing, changes in wages, material costs, or taxes which may in future be imposed by lawful authority within or outside of Canada.

ERRORS AND OMISSIONS

The Tenderer shall be solely responsible for any errors, omissions or misunderstandings resulting from the Tenderer's failure to make a thorough examination of this Request for Tender. The Tenderer shall obtain all required information and shall not claim at any time after the submission of the Tender or the subsequent execution of a Contract, if any, that there was any misunderstanding with regard to the conditions imposed by the Contract.

EVALUATION CRITERIA

Tenders received will be evaluated in accordance with the following criteria (in no particular order of preference):

- a) Proposed fees, total hours and hourly rates.
- b) Experience of proposed key personnel to conduct the work.
- c) Qualifications and formal education of the Tenderer's
- d) Proposed key personnel.
- e) Primary office location of the Tenderer's key personnel.
- f) Experience and work performed by the key personnel at Manitoba Hydro or at other the electrical and gas utilities.
- g) Quality, relevance and completeness of the Tender.
- h) Perceived ability to recommend best practices and feasible, valuable and proven opportunities of improvement to add value to Manitoba Hydro.
- i) Interviews (phone or in-person) at Manitoba Hydro's request if required.
- j) Availability to expedite a timely completion of the engagement.

PROVISION OF CONSULTING SERVICES

GENERAL INFORMATION

Manitoba Hydro is requesting an independent assessment of the Corporation's policy regarding the relative weighting of fixed versus floating rate debt. Currently, the Corporation's policy limits the level of floating rate debt to no more than 30% of total debt outstanding. The Corporation's target range for floating rate debt is typically 15% to 25% of total debt.

BACKGROUND

Manitoba Hydro is a provincial Crown Corporation, providing electricity to 522,000 customers throughout the province and natural gas service to 261,000 customers in various communities. The Corporation also exports electricity to approximately 40 electric utilities through its participation in four wholesale markets in Canada and the mid-western United States. Manitoba Hydro offers its customers a wide range of energy services, either directly or through its subsidiaries and promotes energy conservation and savings through its many Power Smart programs.

The nature of the Corporation's business involves significant environmental and societal obligations, capital-intensive projects with long lead times, price-regulation and rate-recoverable costs.

SCOPE OF THE WORK

Manitoba Hydro is requesting Tenders for consulting services to provide Manitoba Hydro with an independent assessment of the Corporation's policy regarding the relative weighting of fixed versus floating rate debt. The deadline for final submission of the consultant report is April 30, 2009.

SPECIFIC REQUIREMENTS

The review of the policy should include all information pertinent to providing an in-depth understanding of policy formulation, implementation and subsequent measurement. At minimum, the review should include the following:

Identify Key Factors – Identify factors that should be considered when formulating a policy to achieve an optimal weighting of fixed vs floating

rate debt in the portfolio. Assess Manitoba Hydro's risks and conditions with respect to these factors.

Research – Provide a body of knowledge regarding the theory of portfolio optimization (e.g. efficient frontier) and the methodologies for achieving portfolio optimization including various tools available. Provide an analysis of the advantages and disadvantages of each methodology. Provide a comparative report detailing the policies of Manitoba Hydro's closest industry peers with respect to their relative weighting of fixed vs floating rate debt in their portfolios over the past five years. Identify the differences in business conditions for Manitoba Hydro's industry peers that could impact suggested optimal ranges for the portfolio mix.

Identify a Range – Define an optimal relative weighting of fixed vs floating rate debt for a variety of scenarios (i.e. increasing/ decreasing interest rate expectations, flat/ steep/ inverted yield curves). Identify a range that, based on varying interest rate expectations and other factors, will allow for an optimal weighting of fixed vs floating rate debt, given Manitoba Hydro's risks and conditions. Historical analysis should be presented to support the optimal mix.

Recommendation – Provide a recommended implementation plan and the necessary tools to assist Manitoba Hydro on an ongoing basis to ensure that the relative weighting of its portfolio mix is at an optimal level for a given economic situation.

Identify Impacts to Financial Statements – Compare the Manitoba Hydro-specific suggested range of floating rate debt to Manitoba Hydro's current policy range and identify potential financial statement impacts of the new suggested range vs the current target range for a variety of economic scenarios.

SUCCESSFUL TENDERER

The Successful Tenderer shall represent and warrant that it understands Manitoba Hydro's requirements under this Request for Tender and shall possess the expertise to properly perform the services and work described.

The Successful Tenderer shall comply with all reasonable directions and requests of Manitoba Hydro.

TENDER FORMAT

The Tender should be written in a concise manner and organized utilizing labelled tabs using the following headings:

- a) Introduction.
- b) Completed Form of Tender.
- c) Profile of Firm.
- d) Proposed fees, total hours and hourly rates (including disbursements).
- e) Work plans and methodology for the project.
- f) Personnel profiles/ resumes (which includes qualifications, formal education, previous experience and references).

NOTE: All personnel proposed and accepted for the work shall not be removed without the written permission of Manitoba Hydro. Manitoba Hydro shall have final approval of any replacements that become necessary.

TERMS AND CONDITIONS OF THE CONTRACT

The Consultant shall comply with all reasonable directions and requests of Hydro.

CONFLICTS - While this Agreement is in effect, the Consultant and its agents shall not provide services to any other person in a manner which conflicts with this agreement.

INVOICES - Invoices shall be satisfactory to Hydro in both form and content. The Consultant shall also provide supporting documents, and receipts as requested by Hydro. Approved invoices are due 30 days after receipt.

RECORDS - The Consultant shall keep proper records related to provision of the Services, and retain them for three years after this Agreement ends. The Consultant shall make the records available for review by Hydro or its auditors during normal office hours.

CONFIDENTIALITY - The Consultant and its agents shall:

- (a) treat as confidential all Hydro information, data, documents and materials ("Information") acquired or to which access has been given pursuant to this Agreement;
- (b) not disclose, or permit to be disclosed, to any person the Information without prior permission from Hydro; and
- (c) comply with any reasonable directions given by Hydro with respect to safeguarding or ensuring the confidentiality of the information.

OWNERSHIP - All reports, documents, research notes, data, photographs, materials and drawings produced by the Consultant in the course of the Services shall become the property of Hydro. The Consultant hereby grants to Hydro and any third party authorized by Hydro a perpetual and unlimited licence to use, amend, or modify the same for any purpose.

Any equipment and supplies provided by Hydro to the Consultant for use pursuant to this Agreement shall remain the property of Hydro and be returned to Hydro upon request.

LIABILITY - The Consultant shall use due care in the performance of this Agreement to ensure that no person is injured, no property damaged or lost and no rights are infringed.

Hydro shall not be liable for any injury, property loss or damage suffered by the Consultant arising out of this Agreement, unless caused by wrongful or negligent acts or omissions by Hydro.

The Consultant shall indemnify and save harmless Hydro against all claims and suits by third parties, resulting from breach of this Agreement or wrongful or negligent acts or omissions by the Consultant or its agents.

SUSPENSION - Hydro may, in writing and at its sole option, from time to time suspend the Services for such period of time as Hydro determines. Hydro shall reimburse the Consultant for costs and expenses actually incurred by the Consultant by reason of the suspension, but not for lost profit, up to a maximum of 25% of the total contract price.

TERMINATION - Hydro may terminate this Agreement at any time on 30 days written notice. Hydro shall pay for fees and expenses incurred to the date of termination.

Without restricting its other remedies, Hydro may immediately terminate this Agreement in writing if the Services are unsatisfactory, inadequate, or improperly performed, the Consultant fails to comply with this Agreement, or the Consultant becomes bankrupt or insolvent.

SURVIVAL OF TERMS - CONFIDENTIALITY, OWNERSHIP, AND LIABILITY shall survive termination or expiration of this Agreement.

INDEPENDENT CONTRACTOR - The Consultant is an independent contractor. This Agreement does not create the relationship of employer - employee or principal - agent, between Hydro and the Consultant. The Consultant is responsible for any deductions or remittances required by law.

INSURANCE - The Consultant shall maintain Comprehensive General Liability Insurance and Professional Liability Insurance in the minimum amount of \$2,000,000.00 for the duration of this Agreement. The Consultant shall supply a Certificate of Insurance to Hydro.

ASSIGNMENT - Neither party shall assign or transfer this Agreement or any rights or obligations hereunder without prior written permission from the other party.

TIME OF ESSENCE - Time is of the essence of this Agreement.

APPLICABLE LAW - This Agreement shall be governed by the laws of Manitoba.

ENUREMENT - This Agreement shall enure and be binding upon the parties and their executors, administrators, heirs, successors and permitted assigns.

FORM OF TENDER

The Tenderer indicated below hereby submits a tender and offers to enter into a contract to do all the work that is set out, described, or called for in Manitoba Hydro Request for Tender 029457 subject to the terms and conditions set forth therein and in this tender.

COMPANY LEGAL NAME: _____
hereinafter called the "Tenderer", a company duly incorporated under the laws of:

ADDRESS: _____

TELEPHONE: _____ FAX : _____

Enquiries to the TECHNICAL CONTACT of this tender should be directed to:

Name: _____

TELEPHONE: _____ FAX : _____

Email: _____

Enquiries to the NON-TECHNICAL CONTACT should be directed to:

Name: _____

TELEPHONE: _____ FAX : _____

Email: _____

SIGNATURE PAGE

The words used in this Request for Tender have the meanings ascribed to them in Manitoba Hydro's Request for Tender 029457.

We/I the undersigned, having examined all of Request for Tender 029457 together with all addenda issued prior to close of tenders, and having attended all mandatory meetings and mandatory site visits (if required), hereby submit this tender with all necessary enclosures, and hereby offer to enter into a contract to do all the work that is set out, described, or called for in Manitoba Hydro Request for Tender 029457 upon and subject to the terms and conditions set forth therein.

This tender is irrevocable and open for acceptance by the Purchaser at any time within **60 days** after the date on which tenders close, whether any other tender has previously been accepted or not.

If the Purchaser awards a Purchase Order to the Tenderer based on this tender, it shall constitute and be an acceptance of all or any stated portion of this tender without further communication with, or notice to, the Tenderer.

Dated _____ this _____ day of _____, 2009

Witness	Tenderer's Signature and Corporate Seal (if applicable)
_____	_____

Name _____ Name _____

Print Name in Full under Each Signature

CAC/MSOS/MH I-152

Subject: Debt and Debt Management Fixed vs. Floating

**Reference: Independent Assessment of Corporate Policy Fixed vs. Floating,
Appendix 13.3**

The Applicant indicated that a request for tender was sent to several financial institutions and the low bid received was from National Bank Financial in the amount of \$200,000. The report is dated July 16, 2009.

b) Please clarify whether the final cost for the 50 page report from NBF was equal to the tender amount of \$200,000? If not, please provide the amount.

ANSWER:

The final cost was \$200,000 plus expenses in the amount of \$5,281.

CAC/MSOS/MH I-152

Subject: Debt and Debt Management Fixed vs. Floating

**Reference: Independent Assessment of Corporate Policy Fixed vs. Floating,
Appendix 13.3**

The Applicant indicated that a request for tender was sent to several financial institutions and the low bid received was from National Bank Financial in the amount of \$200,000. The report is dated July 16, 2009.

c) Was the analysis concluded in July of 2009? If not, please explain.

ANSWER:

As per the response to CAC/MSOS/MH I-157(g), NBF completed its analysis of historical data on May 16, 2009 and progressed to qualitative interpretation of that data, concluding its analysis with the issuance of the report on July 16, 2009.

CAC/MSOS/MH I-152

Subject: Debt and Debt Management Fixed vs. Floating

**Reference: Independent Assessment of Corporate Policy Fixed vs. Floating,
Appendix 13.3**

The Applicant indicated that a request for tender was sent to several financial institutions and the low bid received was from National Bank Financial in the amount of \$200,000. The report is dated July 16, 2009.

- d) Do the terms of the assignment include their appearance before the regulator to address matters which arise from the report, and does the \$200,000 fee include that appearance? If not, please explain.**

ANSWER:

The terms of the Agreement indicate that if any representative of NBF is requested to attend any hearing or proceeding before any regulatory or judicial authority, Manitoba Hydro shall reimburse NBF. The \$200,000 fee does not include their appearance.

CAC/MSOS/MH I-153

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.2, page 3

The report indicates that the “first step” in the analysis was to identify “the sources of Manitoba Hydro’s cash inflow and outflow volatility.” Several “key factors” are identified and the authors note that factors are subject to US and “Canadian inflation risk”, fluctuations in prices, and “interest rate fluctuations”. The report also observes that “it is not possible to lower exposure to hydrology risk through determining a debt policy, and therefore hydrology was not considered a key factor in the asset/liability management framework.”

- a) Please discuss the manner in which each of the key factors described as being “subject to Canadian inflation risk” were incorporated into the analysis, and the range of assumptions which were explored or modeled.

ANSWER:

The following response was provided by National Bank Financial:

“It was observed that domestic utility rates and operation and maintenance expenses are impacted by macroeconomic growth in the form of historical inflation rates and historical CPI rates were used to model this assumption. These factors were analyzed and their correlation with other risk factors was utilized in our analysis in order to derive our conclusions.”

CAC/MSOS/MH I-153

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.2, page 3

The report indicates that the “first step” in the analysis was to identify “the sources of Manitoba Hydro’s cash inflow and outflow volatility.” Several “key factors” are identified and the authors note that factors are subject to US and “Canadian inflation risk”, fluctuations in prices, and “interest rate fluctuations”. The report also observes that “it is not possible to lower exposure to hydrology risk through determining a debt policy, and therefore hydrology was not considered a key factor in the asset/liability management framework.”

- b) Please discuss the manner in which each of the key factors not described as being “subject to Canadian inflation risk” were incorporated into the analysis, and the range of assumptions which were explored or modeled.

ANSWER:

The following response was provided by National Bank Financial:

“Extraprovincial revenues – short term power analysis was based on historical MISO spot market electricity prices, while long-term power prices were based on historical US CPI.

Purchased power – analysis based on historical MISO spot market electricity prices.

Interest expenses – analysis was based on historical interest rates.

Again, these factors were analyzed and their correlation with other risk factors was utilized in our analysis in order to derive our conclusions.”

CAC/MSOS/MH I-153

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.2, page 3

The report indicates that the “first step” in the analysis was to identify “the sources of Manitoba Hydro’s cash inflow and outflow volatility.” Several “key factors” are identified and the authors note that factors are subject to US and “Canadian inflation risk”, fluctuations in prices, and “interest rate fluctuations”. The report also observes that “it is not possible to lower exposure to hydrology risk through determining a debt policy, and therefore hydrology was not considered a key factor in the asset/liability management framework.”

- c) Since the report observes that “it is not possible to lower exposure to hydrology risk through determining a debt policy, and therefore hydrology was not considered a key factor in the asset/liability management framework”, but makes no similar statement with respect to other “key factors”. Please explain whether, and, how it is “possible to lower exposure” to the risk attached to each of the identified factors, including
- i. “fluctuations in spot electricity prices in the MISO grid for short-term contracts and spot transactions”,
 - ii. domestic utility rates,
 - iii. the cost of power purchases,
 - iv. extra provincial sales, and
 - v. O&M expenses, through “determining a debt policy”.

ANSWER:

The following response was provided by National Bank Financial:

“There is a value driving relationship between macroeconomic indicators and the identified key factors affecting Manitoba Hydro’s assets (domestic utility rates and extraprovincial revenues) and liabilities (purchased power, operation and maintenance expenses and interest expenses). This is why these key factors were considered by NBF in its technical analysis.

NBF was not mandated by Manitoba Hydro to advise the Company on how to lower exposure to the factors identified in the question.”

CAC/MSOS/MH I-153

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.2, page 3

The report indicates that the “first step” in the analysis was to identify “the sources of Manitoba Hydro’s cash inflow and outflow volatility.” Several “key factors” are identified and the authors note that factors are subject to US and “Canadian inflation risk”, fluctuations in prices, and “interest rate fluctuations”. The report also observes that “it is not possible to lower exposure to hydrology risk through determining a debt policy, and therefore hydrology was not considered a key factor in the asset/liability management framework.”

- d) CAC/MSOS observes that the Manitoba Hydro Corporate Risk Management Report of October 2008, identified a number of risk factors beyond those used by National Bank Financial, including “Loss of Plant” D1, and “Commodity Availability” A2.7. Please discuss how factors such as “Loss of Plant” and “Commodity Availability” might have been integrated into the analysis.

ANSWER:

The following response was provided by National Bank Financial:

“ “Loss of Plant” and “Commodity Availability” are not driven by macroeconomic factors, therefore NBF did not include them in its technical analysis.”

CAC/MSOS/MH I-154

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.4, page 4 & 5, Table 11 and Table 12, page 32, and the Manitoba Hydro Debt Management Strategy 2009/10 at page 6

The report indicates in Table 1, notes five Variables and identifies a Volatility Metric for each and reports that certain statistical measures were calculated including correlations.

Table 11 at page 32, presents a mean and standard deviation for the five variables and notes that the period of analysis is “2005-2009”. Table 12 presents correlation statistics for the five variables. CAC/MSOS observes that other Tables in the report provide statistical information for varying periods.

The Manitoba Hydro Debt Management Strategy 2009/10 at page 6 provides a chart which suggests that, as at October 2009, 6.3% of Total Debt was US Floating debt, US Fixed debt was 23.9%, Canadian Floating debt was 20.8% and Canadian Fixed debt was 55.3% of Total Debt. As of March 31, 2007, the composition of total debt was US Floating debt 4.69%, US Fixed debt was 33.3%, Canadian Floating debt was 14.29% and Canadian Fixed debt was 47.69% of Total Debt.

- a) Please explain why the period of analysis is “2005-2009” in Tables 11 and 12, while the period of analysis in Table 3 and Figure 2 is 1999-2009.

ANSWER:

The following response was provided by National Bank Financial:

“Lack of available public information for power prices prior to 2005 on Bloomberg.”

CAC/MSOS/MH I-154

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.4, page 4 & 5, Table 11 and Table 12, page 32, and the Manitoba Hydro Debt Management Strategy 2009/10 at page 6

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- b) Please list all interest rate periods which NBF analyzed during the process of preparing the report and provide the 100% fixed, minimum variance floating percentage (and its return improvement), and the indifference point or fixed equivalent percentage (and its return improvement).

ANSWER:

The following response was provided by National Bank Financial:

“NBF analyzed data based on the 2005-2009 timeframe only, and the results are as outlined in Table 13.”

CAC/MSOS/MH I-154

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.4, page 4 & 5, Table 11 and Table 12, page 32, and the Manitoba Hydro Debt Management Strategy 2009/10 at page 6

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The Manitoba Hydro Debt Management Strategy 2009/10 at page 6 provides a chart which suggests that, as at October 2009, 6.3% of Total Debt was US Floating debt, US Fixed debt was 23.9%, Canadian Floating debt was 20.8% and Canadian Fixed debt was 55.3% of Total Debt. As of March 31, 2007, the composition of total debt was US Floating debt 4.69%, US Fixed debt was 33.3%, Canadian Floating debt was 14.29% and Canadian Fixed debt was 47.69% of Total Debt.

- c) CAC/MSOS notes that Table 11 does not provide the correlation coefficient between the 15 Year Manitoba series for the period 2005-2009. CAC/MSOS notes that Table 4 displays a positive correlation for the period 1999—2003 and a negative correlation for the period 2004-2009. Please provide the 2005-2009 correlation for each of the liability variables, and discuss implications on the resulting determination of the optimal range of floating rate debt as a result of choosing a period with negative correlation as opposed to positive correlation between short term interest rates and long term interest rates.

ANSWER:

The following response was provided by National Bank Financial:

“Manitoba Hydro engaged NBF to provide an independent assessment of its fixed vs. floating rate debt policy, not an assessment of its short vs. long-term interest rate debt dynamic. As a result, in its assessment of its floating rate volatility NBF utilized 3 month BA and 3 month LIBOR as proxies for the interest reset rates for Manitoba Hydro’s floating rate debt. Consequently, the model did not incorporate a relationship between short term and long term interest rates and is independent of any such correlation. NBF recommends that Manitoba Hydro complement the asset/ liability management framework with a market timing component that allows the company to adjust its floating rate debt proportion within the identified optimal range in order to take advantage of the prevailing interest rate environment. This adjustment should take into account both the level and the slope of the yield curve.”

CAC/MSOS/MH I-154

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.4, page 4 & 5, Table 11 and Table 12, page 32, and the Manitoba Hydro Debt Management Strategy 2009/10 at page 6

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- d) Please identify whether the data analyzed in Tables 11 and 12 in each of the five series used was “business day data”, daily data, weekly data, or data from some other time period.

ANSWER:

The following response was provided by National Bank Financial:

“A: Monthly data

B: Monthly averages of daily data

C: Monthly data

D: Monthly averages of daily data

E: Monthly averages of daily data”

CAC/MSOS/MH I-154

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.4, page 4 & 5, Table 11 and Table 12, page 32, and the Manitoba Hydro Debt Management Strategy 2009/10 at page 6

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- e) Please provide the starting date and initial value for each data series analyzed in Tables 11 and 12.

ANSWER:

The following response was provided by National Bank Financial:

“Starting Date: April 2005

A: 0.28%

B: US\$36.70

C: 0.36%

D: 2.60%

E: 3.15%”

CAC/MSOS/MH I-154

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.4, page 4 & 5, Table 11 and Table 12, page 32, and the Manitoba Hydro Debt Management Strategy 2009/10 at page 6

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The Manitoba Hydro Debt Management Strategy 2009/10 at page 6 provides a chart which suggests that, as at October 2009, 6.3% of Total Debt was US Floating debt, US Fixed debt was 23.9%, Canadian Floating debt was 20.8% and Canadian Fixed debt was 55.3% of Total Debt. As of March 31, 2007, the composition of total debt was US Floating debt 4.69%, US Fixed debt was 33.3%, Canadian Floating debt was 14.29% and Canadian Fixed debt was 47.69% of Total Debt.

f) Please provide the ending date and final value for each data series analyzed in Tables 11 and 12.

ANSWER:

The following response was provided by National Bank Financial:

“A: 0.18% (March 2009)

B: US\$17.99 (May 2009)

C: -0.02% (April 2009)

D: 0.44% (May 2009)

E: 0.94% (May 2009)”

CAC/MSOS/MH I-154

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.4, page 4 & 5, Table 11 and Table 12, page 32, and the Manitoba Hydro Debt Management Strategy 2009/10 at page 6

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- g) **If the ending date of the analysis is other than a date in July 2009, please advise the reason for ending the analysis at a time which ignored some of the then most currently available data.**

ANSWER:

The following response was provided by National Bank Financial:

“May 16, 2009 is the date that NBF completed its analysis of historical data and progressed to qualitative interpretation of that data.”

CAC/MSOS/MH I-154

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.4, page 4 & 5, Table 11 and Table 12, page 32, and the Manitoba Hydro Debt Management Strategy 2009/10 at page 6

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- h) As CAC/MSOS understands that the CPI is available on a monthly basis for both Canada and a Manitoba specific index. Did this study use the Manitoba specific series, and if not why not?

ANSWER:

The following response was provided by National Bank Financial:

“No, NBF traditionally uses Canadian CPI index in its models. The table below shows that both Canada and Manitoba CPI indices are closely correlated and the use of Manitoba CPI would not have a material impact on our analysis.”

	2005	2006	2007	2008	2009
Canada	107.0	109.1	111.5	114.1	114.4
Manitoba	106.6	108.7	110.9	113.4	114.1
Correlation	0.9988				

CAC/MSOS/MH I-154

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.4, page 4 & 5, Table 11 and Table 12, page 32, and the Manitoba Hydro Debt Management Strategy 2009/10 at page 6

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- i) As CAC/MSOS understands that the CPI data may be monthly, and other series, including interest rates, may provide more frequent data points, please discuss any statistical methodological or tracking errors that may arise as a result of using series with data points of a differing frequency.

ANSWER:

The following response was provided by National Bank Financial:

“Over a five or ten year statistical period NBF did not find any methodological or tracking errors due to using series with data points of differing frequency as NBF consistently used monthly averages throughout its asset/liability model.”

CAC/MSOS/MH I-154

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.4, page 4 & 5, Table 11 and Table 12, page 32, and the Manitoba Hydro Debt Management Strategy 2009/10 at page 6

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j) In Table 12, CAC/MSOS observes that the correlation factor between US interest rates and Extra-provincial power is 0.19, while the correlation factor between Extra-provincial power and US interest rates is 0.00. Please explain.

ANSWER:

The following response was provided by National Bank Financial:

“The 0.00 is an editing mistake (typo). NBF confirms that it should be 0.19 and that this editing mistake does not impact the analysis, which used 0.19 to derive its conclusions.”

CAC/MSOS/MH I-154

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.4, page 4 & 5, Table 11 and Table 12, page 32, and the Manitoba Hydro Debt Management Strategy 2009/10 at page 6

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- k) The second greatest correlation factor in Table 12 occurs between what is described as Extra-provincial power and Domestic utility rates. Does this mean that long term Extra-provincial power sales operate to increase domestic utility rates, or, is this apparent correlation really just driven by the “Volatility Metric” of each of these “Asset Variables” being the high correlation of US and Canadian CPI.

ANSWER:

The following response was provided by National Bank Financial:

“The correlation is driven by the fact that Canadian and US CPI are strongly correlated.”

CAC/MSOS/MH I-154

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.4, page 4 & 5, Table 11 and Table 12, page 32, and the Manitoba Hydro Debt Management Strategy 2009/10 at page 6

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- l) **Having computed the correlations in Table 12, did the authors of the study test their significance, and if so, what was the result of that testing?**

ANSWER:

The following response was provided by National Bank Financial:

“The correlations provide sufficient statistical evidence.”

CAC/MSOS/MH I-154

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.4, page 4 & 5, Table 11 and Table 12, page 32, and the Manitoba Hydro Debt Management Strategy 2009/10 at page 6

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- m) In light of the relatively low but varying proportions of US floating rate debt in the debt capital structure relative to the income implications of the other key variables, please describe any weighting of the key variables which was incorporated in the modeling.

ANSWER:

The following response was provided by National Bank Financial:

“NBF did not apply any weighting of the key variables in its technical analysis, as NBF was not mandated to opine on the appropriate level of USD vs. CAD denominated debt.”

CAC/MSOS/MH I-154

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.4, page 4 & 5, Table 11 and Table 12, page 32, and the Manitoba Hydro Debt Management Strategy 2009/10 at page 6

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- n) In light of the varying proportions of Extra-provincial revenues in the total revenue as forecast in IFF09-1 relative to the net income implications of the other key variables, please describe any weighting of the key variables which was incorporated in the modeling.

ANSWER:

The following response was provided by National Bank Financial:

“NBF did not apply any weighting of the key variables in its technical analysis.”

CAC/MSOS/MH I-155

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.4 page 4, Table 1 among other references,

The report indicates in Table 1, uses “MISO Power Price” and “Change in US CPI” as the volatility metric for power sales.

CAC/MSOS would like to better understand the relative importance of these factors compared to other considerations which may have been available. The table below uses export volume data from sources from earlier proceedings including COALITION/MH I-33 in earlier Manitoba Hydro proceedings, to which the CAC/MSOS have added year over year changes in Dependable and Opportunity export volumes.

Export Volumes (MWh)	Dependable	Change	Opportunity	Change	Total
1999/00	5,514,764		5,395,980		10,910,744
2000/01	6,352,427	15.2%	5,801,273	7.5%	12,153,700
2001/02	6,276,519	-1.2%	6,021,834	3.8%	12,298,353
2002/03	6,544,481	4.3%	3,191,072	-47.0%	9,735,553
2003/04	6,231,042	-4.8%	734,737	-77.0%	6,965,779
2004/05	5,676,573	-8.9%	4,798,045	553.0%	10,474,618
2005/06	4,138,854	-27.1%	10,302,522	114.7%	14,441,376
2006/07	3,849,178	-7.0%	6,250,065	-39.3%	10,099,243
2007/08	2,780,000	-27.8%	5,676,000	-9.2%	8,456,000

CAC/MSOS notes that NBF excluded “hydrology risk” as a key factor in its analysis. In viewing this data, CAC/MSOS notes that in some years dependable sales drop while Opportunity sales increase which would be an improbable situation if hydrology was the cause.

CAC/MSOS observes that the Dependable sales volumes have dropped in 2007/08 to approximately half of the levels that existed in 1999/00. As such, the proportion of “Dependable” sales has fallen to approximately 30% of the recent export sales portfolio.

- a) Please update the table to include 2008/09 volumes, updating any data as required.

ANSWER:

**Export
Volumes
(MWh)**

	Dependable	Change	Opportunity	Change	Total
1999/00	5,514,764		5,395,980		10,910,744
2000/01	6,352,427	15.2%	5,801,273	7.5%	12,153,700
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2003/04	6,231,042	-4.8%	734,737	-77.0%	6,965,779
2004/05	5,632,898	-9.6%	4,798,045	553.0%	10,430,943
2005/06	4,043,506	-28.2%	10,302,522	114.7%	14,346,028
2006/07	3,653,788	-9.6%	6,250,065	-39.3%	9,903,853
2007/08	3,921,035	7.3%	7,813,807	25.0%	11,734,842
2008/09	4,087,091	4.2%	6,488,720	-17.0%	10,575,811

CAC/MSOS/MH I-155

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.4 page 4, Table 1 among other references,

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CAC/MSOS would like to better understand the relative importance of these factors compared to other considerations which may have been available. The table below uses export volume data from sources from earlier proceedings including COALITION/MH I-33 in earlier Manitoba Hydro proceedings, to which the CAC/MSOS have added year over year changes in Dependable and Opportunity export volumes.

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2006/07	3,849,178	-7.0%	6,250,065	-39.3%	10,099,243
2007/08	2,780,000	-27.8%	5,676,000	-9.2%	8,456,000

CAC/MSOS notes that NBF excluded “hydrology risk” as a key factor in its analysis. In viewing this data, CAC/MSOS notes that in some years dependable sales drop while Opportunity sales increase which would be an improbable situation if hydrology was the cause.

CAC/MSOS observes that the Dependable sales volumes have dropped in 2007/08 to approximately half of the levels that existed in 1999/00. As such, the proportion of “Dependable” sales has fallen to approximately 30% of the recent export sales portfolio.

b) Please discuss the relative volatility of Dependable sales volumes and US CPI.

ANSWER:

The following response was provided by National Bank Financial:

“Dependable sales volumes are a function of forecasted hydrology, which has no causal relationship with macroeconomic indicators such as CPI.”

CAC/MSOS/MH I-155

Subject: Debt and Debt Management Fixed vs. Floating

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CAC/MSOS observes that the Dependable sales volumes have dropped in 2007/08 to approximately half of the levels that existed in 1999/00. As such, the proportion of “Dependable” sales has fallen to approximately 30% of the recent export sales portfolio.

- c) While “US inflation risk” may be a “key factor” in other factors may be more important. Please provide monthly volume and revenues for Dependable sale for the period 1999-2009, the mean and standard deviation and their correlation to US CPI.

ANSWER:

	Dependable Sales	
	MWh	Revenues
1999/00	5,514,764	223,138,576
2000/01	6,352,427	258,192,037
2001/02	6,276,519	322,068,849
2002/03	6,544,481	339,221,224
2003/04	6,231,042	295,476,336
2004/05	5,632,898	289,749,063
2005/06	4,043,506	239,590,165
2006/07	3,653,788	218,013,802
2007/08	3,921,035	208,659,274
2008/09	4,087,091	233,468,426

The mean of the MWh is 5,225,755 and the mean of the Revenue is \$262,757,775. The standard deviation of the MWh is 1,166,194 and the standard deviation of the Revenue is \$46,040,198.

The following response was provided by National Bank Financial:

“There is no causal relationship between US CPI and dependable sales volumes, as dependable sales volumes are based on projected levels of hydrology at contracted prices.”

CAC/MSOS/MH I-155

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.4 page 4, Table 1 among other references,

The report indicates in Table 1, uses “MISO Power Price” and “Change in US CPI” as the volatility metric for power sales.

CAC/MSOS would like to better understand the relative importance of these factors compared to other considerations which may have been available. The table below uses export volume data from sources from earlier proceedings including COALITION/MH I-33 in earlier Manitoba Hydro proceedings, to which the CAC/MSOS have added year over year changes in Dependable and Opportunity export volumes.

Export Volumes (MWh)	Dependable	Change	Opportunity	Change	Total
1999/00	5,514,764		5,395,980		10,910,744
2000/01	6,352,427	15.2%	5,801,273	7.5%	12,153,700
2001/02	6,276,519	-1.2%	6,021,834	3.8%	12,298,353
2002/03	6,544,481	4.3%	3,191,072	-47.0%	9,735,553
2003/04	6,231,042	-4.8%	734,737	-77.0%	6,965,779
2004/05	5,676,573	-8.9%	4,798,045	553.0%	10,474,618
2005/06	4,138,854	-27.1%	10,302,522	114.7%	14,441,376
2006/07	3,849,178	-7.0%	6,250,065	-39.3%	10,099,243
2007/08	2,780,000	-27.8%	5,676,000	-9.2%	8,456,000

CAC/MSOS notes that NBF excluded “hydrology risk” as a key factor in its analysis. In viewing this data, CAC/MSOS notes that in some years dependable sales drop while Opportunity sales increase which would be an improbable situation if hydrology was the cause.

CAC/MSOS observes that the Dependable sales volumes have dropped in 2007/08 to approximately half of the levels that existed in 1999/00. As such, the proportion of “Dependable” sales has fallen to approximately 30% of the recent export sales portfolio.

- d) **Please discuss the relative volatility of Opportunity sales volumes and MISO power prices.**

ANSWER:

The following response was provided by National Bank Financial:

“Manitoba Hydro’s opportunity sales volumes are driven by actual hydrology, whereas MISO power prices are determined by prevailing conditions in that market. NBF observes that Manitoba Hydro’s opportunity sales volumes represent a relatively small portion of total MISO sales volumes, and therefore NBF believes that Manitoba Hydro’s opportunity sales volumes have no material effect on MISO power prices.”

CAC/MSOS/MH I-155

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.4 page 4, Table 1 among other references,

The report indicates in Table 1, uses “MISO Power Price” and “Change in US CPI” as the volatility metric for power sales.

CAC/MSOS would like to better understand the relative importance of these factors compared to other considerations which may have been available. The table below uses export volume data from sources from earlier proceedings including COALITION/MH I-33 in earlier Manitoba Hydro proceedings, to which the CAC/MSOS have added year over year changes in Dependable and Opportunity export volumes.

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2005/06	4,138,854	-27.1%	10,302,522	114.7%	14,441,376
2006/07	3,849,178	-7.0%	6,250,065	-39.3%	10,099,243
2007/08	2,780,000	-27.8%	5,676,000	-9.2%	8,456,000

CAC/MSOS notes that NBF excluded “hydrology risk” as a key factor in its analysis. In viewing this data, CAC/MSOS notes that in some years dependable sales drop while Opportunity sales increase which would be an improbable situation if hydrology was the cause.

CAC/MSOS observes that the Dependable sales volumes have dropped in 2007/08 to approximately half of the levels that existed in 1999/00. As such, the proportion of “Dependable” sales has fallen to approximately 30% of the recent export sales portfolio.

- e) **Is the variation in the volumes of Dependable sales not more important to the “cash flow volatility” than US CPI and MISO Prices?**

ANSWER:

The following response was provided by National Bank Financial:

“Dependable sales volume variation is a function of projected hydrology, which has no causal relationship with macroeconomic indicators and was therefore not part of the analysis. However, US CPI and MISO prices are affected by macroeconomic indicators and can be modeled against other macroeconomic drivers such as interest rates, which is why NBF used them in its analysis.”

CAC/MSOS/MH I-156

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.5, page 5 & 6,

The report indicates that 10,000 scenarios were run. Each scenario was then applied to a set of 100 portfolios of varying fixed and floating rate debt.

CAC/MSOS would like to better understand the limitations of the scenarios.

- a) Is time a limitation in the modeling to estimate the “cash inflow and outflow volatility”, and if so for how many periods was the model assigned to run?

ANSWER:

The following response was provided by National Bank Financial:

“The analysis was based on a single point in time utilizing historical data from 2005 to 2009.”

CAC/MSOS/MH I-156

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.5, page 5 & 6,

The report indicates that 10,000 scenarios were run. Each scenario was then applied to a set of 100 portfolios of varying fixed and floating rate debt.

CAC/MSOS would like to better understand the limitations of the scenarios.

b) Are export volumes assumed to be constant throughout the analysis, and if not, please describe the range?

ANSWER:

The following response was provided by National Bank Financial:

“Yes, export volumes are assumed to be constant throughout the analysis.”

CAC/MSOS/MH I-156

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.5, page 5 & 6,

The report indicates that 10,000 scenarios were run. Each scenario was then applied to a set of 100 portfolios of varying fixed and floating rate debt.

CAC/MSOS would like to better understand the limitations of the scenarios.

- c) Are any of the five “Volatility Metrics” subject to limits, ranges, or distribution constraints, and if so please describe the upper and lower limits or constraints?

ANSWER:

The following response was provided by National Bank Financial:

“Each one was modeled based on historical standard deviation, mean and correlation.”

CAC/MSOS/MH I-156

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, Appendix 13.3, Section 1.4.5, page 5 & 6,

The report indicates that 10,000 scenarios were run. Each scenario was then applied to a set of 100 portfolios of varying fixed and floating rate debt.

CAC/MSOS would like to better understand the limitations of the scenarios.

- d) Please describe each of the 100 portfolios, identifying the proportion of US floating rate debt, US fixed rate debt, Canadian Floating rate debt and Canadian fixed rate debt.

ANSWER:

The following response was provided by National Bank Financial:

“Each portfolio consisted of a different fixed and floating rate debt mix, starting from 0%/100% fixed/floating and increasing the fixed portion by one percentage point to arrive at the 100%/0% fixed floating rate portfolio. NBF applied the same mix to both US and Canadian debt under each portfolio given the scope of the assignment.”

CAC/MSOS/MH I-157

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 page 13, Figure 3

The report provides a chart of “Historical Interest Rates”.

CAC/MSOS wishes to better understand the choice of data underlying the analysis.

a) Please identify each of the Bloomberg data series used in Figure 3.

ANSWER:

The following response was provided by National Bank Financial:

“CDOR03 Index and C30215Y Index.”

CAC/MSOS/MH I-157

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 page 13, Figure 3

The report provides a chart of “Historical Interest Rates”.

CAC/MSOS wishes to better understand the choice of data underlying the analysis.

- b) Please identify the pricing methodology used in the 15 year series, perhaps Bloomberg Fair Value, and that used in the 3 month series.**

ANSWER:

The following response was provided by National Bank Financial:

“Rates were as provided by Bloomberg.”

CAC/MSOS/MH I-157

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 page 13, Figure 3

The report provides a chart of “Historical Interest Rates”.

CAC/MSOS wishes to better understand the choice of data underlying the analysis.

- c) Please identify the currency or currencies of the obligations which are used to derive the indicated interest rates in the 15 year series and the 3 month series.**

ANSWER:

The following response was provided by National Bank Financial:

“Canadian Dollars.”

CAC/MSOS/MH I-157

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 page 13, Figure 3

The report provides a chart of “Historical Interest Rates”.

CAC/MSOS wishes to better understand the choice of data underlying the analysis.

- d) Please identify whether the data analyzed in each series used was “business day data”, daily data, weekly data, or data from some other time period.**

ANSWER:

The following response was provided by National Bank Financial:

“Business day data was used for illustrative purposes only to convey a graphic representation. The asset/liability model has consistently utilized monthly averages to derive its conclusions.”

CAC/MSOS/MH I-157

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 page 13, Figure 3

The report provides a chart of “Historical Interest Rates”.

CAC/MSOS wishes to better understand the choice of data underlying the analysis.

e) Please provide the starting date and initial value for each data series.

ANSWER:

The following response was provided by National Bank Financial:

“CDOR03 Index: Jan 12, 1999, 5.03%

C30215Y Index: Jan 12, 1999, 5.55%”

CAC/MSOS/MH I-157

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 page 13, Figure 3

The report provides a chart of “Historical Interest Rates”.

CAC/MSOS wishes to better understand the choice of data underlying the analysis.

f) Please provide the ending date and final value for each data series.

ANSWER:

The following response was provided by National Bank Financial:

“CDOR03 Index: May 14, 2009, 0.43%

C30215Y Index: May 14, 2009, 5.16%”

CAC/MSOS/MH I-157

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 page 13, Figure 3

The report provides a chart of “Historical Interest Rates”.

CAC/MSOS wishes to better understand the choice of data underlying the analysis.

- g) If the ending date of the analysis is other than a date in July 2009, please advise the reason for ending the analysis at a time which ignored some of the then most currently available data.**

ANSWER:

The following response was provided by National Bank Financial:

“May 16, 2009 is the date that NBF completed its analysis of historical data and progressed to qualitative interpretation of that data.”

CAC/MSOS/MH I-157

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 page 13, Figure 3

The report provides a chart of “Historical Interest Rates”.

CAC/MSOS wishes to better understand the choice of data underlying the analysis.

- h) Please quantify the extent to which Manitoba Hydro has issued BAs of any term to maturity in the past 3 years, providing, principal, initial interest rate, reset mechanism if any, spread, and issue date of the particular issues.**

ANSWER:

Manitoba Hydro does not issue Banker’s Acceptances.

CAC/MSOS/MH I-157

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 page 13, Figure 3

The report provides a chart of “Historical Interest Rates”.

CAC/MSOS wishes to better understand the choice of data underlying the analysis.

- i) Please quantify the extent to which Manitoba Hydro has issued securities of any term to maturity, in the past 3 years, in respect of which the interest rate at time of issue is set or to be periodically reset based on a 1 or 3 month BA rate providing, principal, initial interest rate, reset mechanism if any, and issue date of the particular issues.**

ANSWER:

Please see the following table:

Debt Issue	Issue Date (dd/mm/year)	Maturity Date (dd/mm/year)	Principal (\$ Million)	Initial Interest Rate	Reset
C097	02/06/2008	02/06/2011	200	3.13571%	3m BA + 0bps
C099-1	17/09/2008	01/12/2010	50	3.31000%	3m BA + 1bps
C099-2	22/09/2008	01/12/2010	25	3.31000%	3m BA + 1bps
C099-3	29/09/2008	01/12/2010	40	3.31000%	3m BA + 1bps
C100-1	03/11/2008	01/11/2009	185	2.63571%	3m BA - 5bps
		01/11/2010	185	0.53286%	3m BA +10bps
		01/11/2011	185	not set until Nov 1, 2010	3m BA +15bps
C102	15/01/2009	15/07/2010	100	1.41571%	3m BA +40bps
C107	02/06/2009	04/09/2012	100	0.83286%	3m BA +40bps
C108	01/09/2009	01/09/2010	100	0.43571%	3m BA + 0bps
C112	01/03/2010	15/03/2013	200	0.58357%	3m BA +14bps

These debt issues represent Provincial advances that were issued as floating rate debt with interest rates that are periodically reset based on the 3 month Bloomberg Banker's Acceptance rate. With the exception of floating rate debt issue C107, these debt issues are being used as underlying debt for forward start interest rate swaps and therefore will be presented as fixed rate debt in any long term debt schedules. The initial rates outlined in the chart represent the 3 month Bloomberg BA rate plus or minus the spread on the date of settlement.

Series C100-1 is a step up puttable floating rate note, where the holder has the option of putting (selling) the note back to the Province of Manitoba on November 1, 2009 and November 1, 2010. If the put option is not exercised, the rate will step-up to a higher level.

CAC/MSOS/MH I-157

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 page 13, Figure 3

The report provides a chart of “Historical Interest Rates”.

CAC/MSOS wishes to better understand the choice of data underlying the analysis.

- j) Please advise whether Bloomberg publishes a Manitoba specific data series reflecting the 3 month term to maturity market yields from time to time, perhaps once described as C3023M, and please advise whether such a series provides data for the time period of analysis used in the report.**

ANSWER:

The following response was provided by National Bank Financial:

“NBF did not use C3023M for the analysis. See answer to CAC/MSOS/MH I-158 a).”

CAC/MSOS/MH I-157

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 page 13, Figure 3

The report provides a chart of “Historical Interest Rates”.

CAC/MSOS wishes to better understand the choice of data underlying the analysis.

- k) If the 3 month series used in the NBF report was other than the Bloomberg Manitoba specific series C3023M, please provide an explanation of why this series was thought to be less representative of Manitoba Hydro borrowing costs.**

ANSWER:

The following response was provided by National Bank Financial:

“See answer to CAC/MSOS/MH I-157 j).”

CAC/MSOS/MH I-157

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 page 13, Figure 3

The report provides a chart of “Historical Interest Rates”.

CAC/MSOS wishes to better understand the choice of data underlying the analysis.

- l) If the 3 month series used in the NBF report was other than the Bloomberg Manitoba specific series C3023M, please provide its mean yield, standard deviation, and the Correlation of that series to the 15 year Manitoba series used in the NBF analysis for each of the time periods used in Tables 3, 4 and 11.**

ANSWER:

The following response was provided by National Bank Financial:

“See answer to CAC/MSOS/MH I-157 j).”

CAC/MSOS/MH I-157

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 page 13, Figure 3

The report provides a chart of “Historical Interest Rates”.

CAC/MSOS wishes to better understand the choice of data underlying the analysis.

- m) Please explain in detail, why a 3 month BA series was used as the comparison data, in the analysis of Manitoba Hydro’s specific fixed or floating debt alternatives, if a three month Manitoba specific data source was available.**

ANSWER:

The following response was provided by National Bank Financial:

“See answer to CAC/MSOS/MH I-157 j).”

CAC/MSOS/MH I-158

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, page 13, Figure 3, and page 10 Table 3.

The report provides a chart of “Historical Interest Rates”, one series of which is a 3 month BA rate series, and provides certain statistical calculations related to that series.

CAC/MSOS also notes that in a recent Centra proceeding, in response to IR CAC/MSOS/Centra 1-9(c) Centra replied, “Manitoba Hydro issues short-term notes as required to fund day to day cash management requirements. Manitoba Hydro short-term note pricing is not based upon the one month banker’s acceptance rate, but has historically been approximated by the average one month Bloomberg banker’s acceptance rate.” [Emphasis added]

CAC/MSOS also notes that, in a recent Centra proceeding, in response to IR CAC/MSOS/Centra 1-8(b). Centra indicated that it or the Applicant has access to, “the average one month banker’s acceptance rate sourced from Bloomberg using code CDOR01”

CAC/MSOS has access to The Bank of Canada daily data series V39068 and V39071 which provides BA rates for 1 and 3 month terms, for the period January 3, 2000 to January 13, 2010, and notes that from time to time these series exhibit (a) a normal yield curve [the longer term having the higher interest rate], (b) a relatively flat yield curve, and (c) an inverted yield curve [the longer term having the lower interest rate]. For example, from approximately December 1, 2000 to January 23, 2002, the 3 month rate was less than the 1 month rate, suggesting an inverted yield curve. By way of example, on March 21, 2001, the 1 month rate was inverted [greater than the 3 month rate] by 36 basis points. The 1 and 3 month BA yield curves were also inverted in other years, including 2003, 2004 and 2009. During the 10 year period, as these rates oscillated, the 1 month rate as a percentage of the 3 month rate varied from a low of 82%

[April 22, 2009] to a high of 114% [January 9 through 12, 2009] of the then 3 month rate.

Since the report relies on 3 month BA data series which appears to be an inferior proxy to the actual floating rate borrowing costs of Manitoba Hydro and the 3 month and 1 month rates appear to oscillate throughout the period of analysis, CAC/MSOS wishes to better understand choice of data underlying the analysis.

- a) Please explain the use of the 3 month BA rate data, when the one month BA rate apparently better approximates the historic Manitoba Hydro Canadian dollar borrowing cost.**

ANSWER:

Manitoba Hydro's long term floating rate debt portfolio at March 31, 2009 was \$1,595 million. By comparison, Manitoba Hydro makes limited use of the Commercial Paper Program for short term borrowings. For example, during 2008/09 and 2009/10 the temporary borrowings outstanding at month end have ranged from \$0 to \$170 million (with an average balance of less than \$100 million). Please see the response to CAC/MSOS/MH I-135(b).

As indicated in the schedule attached to CAC/MSOS/MH I-142(a), the majority of Manitoba Hydro's interest reset rates for its long term floating rate debt issues utilize the 3 Month BA rate. Note that there are no instances where a 1 month BA rate is utilized for interest reset rate purposes nor were there any short term borrowings at that time.

Therefore, the report's use of the 3 month BA rate is appropriate and there is no meaningful basis for substituting a 1 month BA rate for analytical purposes.

CAC/MSOS/MH I-158

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, page 13, Figure 3, and page 10 Table 3.

The report provides a chart of “Historical Interest Rates”, one series of which is a 3 month BA rate series, and provides certain statistical calculations related to that series.

CAC/MSOS also notes that in a recent Centra proceeding, in response to IR CAC/MSOS/Centra 1-9(c) Centra replied, “Manitoba Hydro issues short-term notes as required to fund day to day cash management requirements. Manitoba Hydro short-term note pricing is not based upon the one month banker’s acceptance rate, but has historically been approximated by the average one month Bloomberg banker’s acceptance rate.” [Emphasis added]

CAC/MSOS also notes that, in a recent Centra proceeding, in response to IR CAC/MSOS/Centra 1-8(b). Centra indicated that it or the Applicant has access to, “the average one month banker’s acceptance rate sourced from Bloomberg using code CDOR01”

CAC/MSOS has access to The Bank of Canada daily data series V39068 and V39071 which provides BA rates for 1 and 3 month terms, for the period January 3, 2000 to January 13, 2010, and notes that from time to time these series exhibit (a) a normal yield curve [the longer term having the higher interest rate], (b) a relatively flat yield curve, and (c) an inverted yield curve [the longer term having the lower interest rate]. For example, from approximately December 1, 2000 to January 23, 2002, the 3 month rate was less than the 1 month rate, suggesting an inverted yield curve. By way of example, on March 21, 2001, the 1 month rate was inverted [greater than the 3 month rate] by 36 basis points. The 1 and 3 month BA yield curves were also inverted in other years, including 2003, 2004 and 2009. During the 10 year period, as these rates oscillated, the 1 month rate as a percentage of the 3 month rate varied from a low of 82%

[April 22, 2009] to a high of 114% [January 9 through 12, 2009] of the then 3 month rate.

Since the report relies on 3 month BA data series which appears to be an inferior proxy to the actual floating rate borrowing costs of Manitoba Hydro and the 3 month and 1 month rates appear to oscillate throughout the period of analysis, CAC/MSOS wishes to better understand choice of data underlying the analysis.

- b) For the time period indicated in Table 3, please calculate the correlation of each of the 1 month BA rates drawn from Bloomberg data series code CDOR01, the Bank of Canada daily data series V39068, and V39071, to the 15 year series used in the analysis.

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-158(a).

CAC/MSOS/MH I-158

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, page 13, Figure 3, and page 10 Table 3.

The report provides a chart of “Historical Interest Rates”, one series of which is a 3 month BA rate series, and provides certain statistical calculations related to that series.

CAC/MSOS also notes that in a recent Centra proceeding, in response to IR CAC/MSOS/Centra 1-9(c) Centra replied, “Manitoba Hydro issues short-term notes as required to fund day to day cash management requirements. Manitoba Hydro short-term note pricing is not based upon the one month banker’s acceptance rate, but has historically been approximated by the average one month Bloomberg banker’s acceptance rate.” [Emphasis added]

CAC/MSOS also notes that, in a recent Centra proceeding, in response to IR CAC/MSOS/Centra 1-8(b). Centra indicated that it or the Applicant has access to, “the average one month banker’s acceptance rate sourced from Bloomberg using code CDOR01”

CAC/MSOS has access to The Bank of Canada daily data series V39068 and V39071 which provides BA rates for 1 and 3 month terms, for the period January 3, 2000 to January 13, 2010, and notes that from time to time these series exhibit (a) a normal yield curve [the longer term having the higher interest rate], (b) a relatively flat yield curve, and (c) an inverted yield curve [the longer term having the lower interest rate]. For example, from approximately December 1, 2000 to January 23, 2002, the 3 month rate was less than the 1 month rate, suggesting an inverted yield curve. By way of example, on March 21, 2001, the 1 month rate was inverted [greater than the 3 month rate] by 36 basis points. The 1 and 3 month BA yield curves were also inverted in other years, including 2003, 2004 and 2009. During the 10 year period, as these rates oscillated, the 1 month rate as a percentage of the 3 month rate varied from a low of 82%

[April 22, 2009] to a high of 114% [January 9 through 12, 2009] of the then 3 month rate.

Since the report relies on 3 month BA data series which appears to be an inferior proxy to the actual floating rate borrowing costs of Manitoba Hydro and the 3 month and 1 month rates appear to oscillate throughout the period of analysis, CAC/MSOS wishes to better understand choice of data underlying the analysis.

- c) To provide confirmation of the statement that Manitoba Hydro short term note interest rate approximates the 1 month BA rate, please provide a table with at least monthly data points [but also daily data points if they are available], setting out the Manitoba Hydro short-term note interest rate compared to the one month banker's acceptance rate, for the period of analysis used in the NBF report and, if other than the period of analysis used in the NBF report, the period to which the authors of Centra IR response quoted above were referring, and for each period, provide the Correlation statistic to the 15 year province of Manitoba data series used in the analysis.

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-158(a).

CAC/MSOS/MH I-158

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, page 13, Figure 3, and page 10 Table 3.

The report provides a chart of “Historical Interest Rates”, one series of which is a 3 month BA rate series, and provides certain statistical calculations related to that series.

CAC/MSOS also notes that in a recent Centra proceeding, in response to IR CAC/MSOS/Centra 1-9(c) Centra replied, “Manitoba Hydro issues short-term notes as required to fund day to day cash management requirements. Manitoba Hydro short-term note pricing is not based upon the one month banker’s acceptance rate, but has historically been approximated by the average one month Bloomberg banker’s acceptance rate.” [Emphasis added]

CAC/MSOS also notes that, in a recent Centra proceeding, in response to IR CAC/MSOS/Centra 1-8(b). Centra indicated that it or the Applicant has access to, “the average one month banker’s acceptance rate sourced from Bloomberg using code CDOR01”

CAC/MSOS has access to The Bank of Canada daily data series V39068 and V39071 which provides BA rates for 1 and 3 month terms, for the period January 3, 2000 to January 13, 2010, and notes that from time to time these series exhibit (a) a normal yield curve [the longer term having the higher interest rate], (b) a relatively flat yield curve, and (c) an inverted yield curve [the longer term having the lower interest rate]. For example, from approximately December 1, 2000 to January 23, 2002, the 3 month rate was less than the 1 month rate, suggesting an inverted yield curve. By way of example, on March 21, 2001, the 1 month rate was inverted [greater than the 3 month rate] by 36 basis points. The 1 and 3 month BA yield curves were also inverted in other years, including 2003, 2004 and 2009. During the 10 year period, as these rates oscillated, the 1 month rate as a percentage of the 3 month rate varied from a low of 82%

[April 22, 2009] to a high of 114% [January 9 through 12, 2009] of the then 3 month rate.

Since the report relies on 3 month BA data series which appears to be an inferior proxy to the actual floating rate borrowing costs of Manitoba Hydro and the 3 month and 1 month rates appear to oscillate throughout the period of analysis, CAC/MSOS wishes to better understand choice of data underlying the analysis.

- d) Please indicate the effect of using the 1 month BA rates on the Fixed Equivalent and the Minimum Variance in Figure 1.

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-158(a).

CAC/MSOS/MH I-159

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 page 10, Section 2.1.3, and Table 3 and page 31 Table 10, Figure 6 on page 25

The report notes “15 year Province of Manitoba debt yields were analyzed” and in Table 3, refers to a period “1999-2009”, which depending on the starting and ending dates of the series could be about 9.5 or 10.5 years.

CAC/MSOS wishes to better understand the choice of data underlying the analysis.

- a) Please explain why it is appropriate to use a 15 year debt maturity data series in the analysis of a 10 year period.

ANSWER:

The following response was provided by National Bank Financial:

“The quote should be understood as “10 years of data (1999-2009) on 15 year Province of Manitoba debt yields were analyzed”. There is no theoretical support for relationships such as “10 years of data on 10 year yields were analyzed,” or “15 years of data on 15 year yields were analyzed.””

CAC/MSOS/MH I-159

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 page 10, Section 2.1.3, and Table 3 and page 31 Table 10, Figure 6 on page 25

The report notes “15 year Province of Manitoba debt yields were analyzed” and in Table 3, refers to a period “1999-2009”, which depending on the starting and ending dates of the series could be about 9.5 or 10.5 years.

CAC/MSOS wishes to better understand the choice of data underlying the analysis.

- b) Please explain why the use of 20 year GOC is the most comparable debt index for the comparison to “Peer” floating rate obligations.

ANSWER:

The following response was provided by National Bank Financial:

“In NBF’s opinion a 20 year GOC was representative of long-term debt rates for Manitoba Hydro’s peers. In addition, a different maturity term would not have an impact on the analysis or conclusion.”

CAC/MSOS/MH I-159

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 page 10, Section 2.1.3, and Table 3 and page 31 Table 10, Figure 6 on page 25

The report notes “15 year Province of Manitoba debt yields were analyzed” and in Table 3, refers to a period “1999-2009”, which depending on the starting and ending dates of the series could be about 9.5 or 10.5 years.

CAC/MSOS wishes to better understand the choice of data underlying the analysis.

- c) Is the GOC yield series in Figure 6 the same series and data frequency as the data series in Figure 12 on page 37?

ANSWER:

The following response was provided by National Bank Financial:

“Figure 6 is based on daily interest rate data, while Figure 12 is weekly. These were used for illustrative purposes only to convey a graphic representation. The asset/liability model has consistently utilized monthly averages to derive its conclusions.”

CAC/MSOS/MH I-160

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3, Section 5.1.2, and Table 10 page 31

The report notes “current and historical maturities will form the basis for the technical analysis”.

The report also notes “NBF assumes a fixed term to maturity of 15 years for fixed debt instruments”.

CAC/MSOS wishes to better understand the choice of data underlying the analysis.

- a) Please confirm the assumption that the choice of a fixed term of maturity assumes**
- i. no new issues during the period of analysis,**
 - ii. no maturities and therefore no improvement of the average interest cost of fixed debt as older more expensive issues would mature, and**
 - iii. a constant interest rate for the fixed debt maturity.**

ANSWER:

The following response was provided by National Bank Financial:

“Confirmed.”

CAC/MSOS/MH I-160

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3, Section 5.1.2, and Table 10 page 31

The report notes “current and historical maturities will form the basis for the technical analysis”.

The report also notes “NBF assumes a fixed term to maturity of 15 years for fixed debt instruments”.

CAC/MSOS wishes to better understand the choice of data underlying the analysis.

- b) Please explain how the analysis would have differed if a fixed term of 8.8 years had been used.**

ANSWER:

The following response was provided by National Bank Financial:

“The model and analysis relies on being able to use historical data for a generic GOC maturity. The distinction would have had no observable impact on our results or conclusions.”

CAC/MSOS/MH I-160

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3, Section 5.1.2, and Table 10 page 31

The report notes “current and historical maturities will form the basis for the technical analysis”.

The report also notes “NBF assumes a fixed term to maturity of 15 years for fixed debt instruments”.

CAC/MSOS wishes to better understand the choice of data underlying the analysis.

- c) Please explain how the analysis would have differed if a fixed term of 23.2 years had been used.**

ANSWER:

The following response was provided by National Bank Financial:

“The model and analysis relies on being able to use historical data for a generic GOC maturity. The distinction would have had no observable impact on our results or conclusions.”

CAC/MSOS/MH I-160

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3, Section 5.1.2, and Table 10 page 31

The report notes “current and historical maturities will form the basis for the technical analysis”.

The report also notes “NBF assumes a fixed term to maturity of 15 years for fixed debt instruments”.

CAC/MSOS wishes to better understand the choice of data underlying the analysis.

d) In what manner have the terms been averaged in Table 10?

ANSWER:

The following response was provided by National Bank Financial:

“Weighted average by amount outstanding.”

CAC/MSOS/MH I-160

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3, Section 5.1.2, and Table 10 page 31

The report notes “current and historical maturities will form the basis for the technical analysis”.

The report also notes “NBF assumes a fixed term to maturity of 15 years for fixed debt instruments”.

CAC/MSOS wishes to better understand the choice of data underlying the analysis.

- e) **Does “Total Canada” include short term debt and the current portion of long term debt in the calculation?**

ANSWER:

The following response was provided by National Bank Financial:

“Yes.”

CAC/MSOS/MH I-161

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 Section 5.2, page 31 and 32.

The report notes “Changes in Canadian CPI and US CPI levels were measured using a lognormal distribution. The mean reflects annualized increases, whereas the standard deviation represents the proportion of the mean that is subject to volatility on an annualized basis.” The mean for Canadian CPI is 1.68% and the Standard Deviation is 1.45%.

CAC/MSOS wishes to better understand the choice of methodology underlying the analysis.

- a) Is the content of the narrative intended to convey the meaning that the “portion of the mean that is subject to volatility” on an annual basis is, 1.68% times 1.45%, equalling 0.0002436? If not, please explain.

ANSWER:

The following response was provided by National Bank Financial:

“No. The mean for Canadian CPI is 1.68% and the standard deviation is 1.45%. Standard deviation is a measure of dispersion.”

CAC/MSOS/MH I-162

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3, Section 5.2, page 31 and 32.

The report notes “it is important to note that the added volatility introduced by fluctuations in hydrology does highlight the need for the stabilization of income, to the extent that it can be managed through financial instruments.”

CAC/MSOS wishes to better understand this point, which may appear to suggest that the hydrology risks, which have been otherwise excluded from this analysis, are sufficiently severe that they mandate a 100% fixed debt structure.

- a) Please confirm that interest rate risk can be minimized through adoption of an essentially fixed debt portfolio, or if unable to confirm, please correct the statement.

ANSWER:

The following response was provided by National Bank Financial:

“Questions CAC/MSOS/MH I-162 a), b), c) and d) are in conflict with each other. Interest rate volatility can be minimized through a 100% fixed portfolio. However, there exists an optimal mix of fixed and floating rate debt that minimizes net income volatility while maximizing returns.”

CAC/MSOS/MH I-162

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3, Section 5.2, page 31 and 32.

The report notes “it is important to note that the added volatility introduced by fluctuations in hydrology does highlight the need for the stabilization of income, to the extent that it can be managed through financial instruments.”

CAC/MSOS wishes to better understand this point, which may appear to suggest that the hydrology risks, which have been otherwise excluded from this analysis, are sufficiently severe that they mandate a 100% fixed debt structure.

- b) **Please confirm that the reduction of interest rate risk stabilizes income, or if unable to confirm, please correct the statement.**

ANSWER:

The following response was provided by National Bank Financial:

“Please see answer to CAC/MSOS/MH I-162 a).”

CAC/MSOS/MH I-162

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3, Section 5.2, page 31 and 32.

The report notes “it is important to note that the added volatility introduced by fluctuations in hydrology does highlight the need for the stabilization of income, to the extent that it can be managed through financial instruments.”

CAC/MSOS wishes to better understand this point, which may appear to suggest that the hydrology risks, which have been otherwise excluded from this analysis, are sufficiently severe that they mandate a 100% fixed debt structure.

- c) If unable to confirm the statement in (a) above, please confirm that with the recognition of hydrology risk, the only reasonable debt portfolio is the minimum variance point debt portfolio, or if unable to confirm, please correct the statement.

ANSWER:

The following response was provided by National Bank Financial:

“Please see answer to CAC/MSOS/MH I-162 a).”

CAC/MSOS/MH I-162

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3, Section 5.2, page 31 and 32.

The report notes “it is important to note that the added volatility introduced by fluctuations in hydrology does highlight the need for the stabilization of income, to the extent that it can be managed through financial instruments.”

CAC/MSOS wishes to better understand this point, which may appear to suggest that the hydrology risks, which have been otherwise excluded from this analysis, are sufficiently severe that they mandate a 100% fixed debt structure.

- d) Is it the meaning of the narrative quoted above that when the hydrology risks are considered, the need for stabilization of income voids the analysis presented in this report? If not, please explain.

ANSWER:

The following response was provided by National Bank Financial:

“Please see answer to CAC/MSOS/MH I-162 a).”

CAC/MSOS/MH I-163

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3, Section 7.1, page 36.

The report notes “NBF believes that Manitoba Hydro’s current guidance range is close to optimal.”

The current Manitoba Hydro range, is 15% to 25%, a range of 10%.

The optimal range is 14% to 27%, a range of 13%.

CAC/MSOS wishes to better understand why having undertaken this analysis, NBF would not recommend a change in the sub-optimal range, to the optimal range.

- a) Having paid all these fees and invested the time to investigate this issue, is there any reason why NBF believes that Manitoba Hydro should not expand the range?**

ANSWER:

The following response was provided by National Bank Financial:

“Based on NBF’s independent assessment of Manitoba Hydro’s fixed vs. floating rate debt policy, NBF reasserts that Manitoba Hydro’s current guidance range of 15% to 25% floating rate debt represents a range that is sufficiently close to optimal under the asset/liability management framework.”

CAC/MSOS/MH I-164

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3, Section 8.1, Impact on Manitoba Hydro, page 39.

The report provides a table showing impact of changes on the floating rate debt mix.

Data from 2008 Table 14		(millions)		
2008 Total Debt		\$7,599	Net	Interest
	Floating		Income	Saving
Fixed Equivalent	27%	\$2,052	\$ 363	
Minimum Variance	14%	\$1,064	\$ 329	
Difference		\$ 988	\$ 34	3.44%

The Table above is prepared to permit a discussion of the impact of changes, and assumes for the purpose of these questions that the \$7,559 million total debt number is an average debt number, that the net income is unaffected by tax, and that the Fixed Equivalent and Minimum Variance calculations are not rounded.

CAC/MSOS wishes to better understand this analysis,

- a) Would we be correct in thinking that the difference between the modeled Fixed Equivalent and Minimum Variance floating rate debt amounts is \$988 million?

ANSWER:

The following response was provided by National Bank Financial:

“The following information was utilized to respond to the question:

Table 14: Impact of changes in Floating Rate Debt Mix¹

<i>all figures in (\$mm)</i>	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total Debt	\$6,609	\$6,489	\$7,841	\$7,396	\$7,484	\$7,263	\$7,169	\$7,375	\$7,599
Historical Debt Mix									
Floating Rate	18%	15%	18%	18%	22%	19%	17%	19%	20%
Net Income									
Minimum Variance	\$144	\$268	\$205	\$62	(\$461)	\$123	\$412	\$117	\$333
Actual	\$152	\$270	\$214	\$71	(\$436)	\$136	\$415	\$122	\$346
Fixed Equivalent	\$158	\$277	\$246	\$98	(\$418)	\$159	\$424	\$128	\$358
Interest Coverage									
Minimum Variance	1.33	1.62	1.40	1.12	0.12	1.23	1.76	1.22	1.67
Actual	1.35	1.62	1.42	1.14	0.17	1.25	1.77	1.23	1.69
Fixed Equivalent	1.36	1.64	1.48	1.19	0.20	1.29	1.79	1.24	1.72

The difference in floating rate debt between Fixed Equivalent and Minimum Variance portfolios would have been approximately \$988 million.”

¹ Historical Manitoba Hydro data revised as per company information. This adjustment is for consistency purposes only and does not affect NBF’s findings in the report.

CAC/MSOS/MH I-164

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3, Section 8.1, Impact on Manitoba Hydro, page 39.

The report provides a table showing impact of changes on the floating rate debt mix.

Data from 2008 Table 14		(millions)		
2008 Total Debt		\$7,599	Net	Interest
	Floating		Income	Saving
Fixed Equivalent	27%	\$2,052	\$ 363	
Minimum Variance	14%	\$1,064	\$ 329	
Difference		\$ 988	\$ 34	3.44%

The Table above is prepared to permit a discussion of the impact of changes, and assumes for the purpose of these questions that the \$7,559 million total debt number is an average debt number, that the net income is unaffected by tax, and that the Fixed Equivalent and Minimum Variance calculations are not rounded.

CAC/MSOS wishes to better understand this analysis,

- b) Would it be correct to conclude that the difference between the modeled Fixed Equivalent net income and Minimum Variance net income would generally be interest savings of \$34 million?

ANSWER:

The following response was provided by National Bank Financial:

“The modeled net income difference in 2008 between a floating rate proportion of 14% versus 27% would have been \$25 million based solely on a change in the gross interest expense.”

CAC/MSOS/MH I-164

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3, Section 8.1, Impact on Manitoba Hydro, page 39.

The report provides a table showing impact of changes on the floating rate debt mix.

Data from 2008 Table 14		(millions)		
2008 Total Debt		\$7,599	Net	Interest
	Floating		Income	Saving
Fixed Equivalent	27%	\$2,052	\$ 363	
Minimum Variance	14%	\$1,064	\$ 329	
Difference		\$ 988	\$ 34	3.44%

The Table above is prepared to permit a discussion of the impact of changes, and assumes for the purpose of these questions that the \$7,559 million total debt number is an average debt number, that the net income is unaffected by tax, and that the Fixed Equivalent and Minimum Variance calculations are not rounded.

CAC/MSOS wishes to better understand this analysis,

- c) Would it follow (from (b) above) that a \$34 million interest saving on \$988 million principal amount of debt would imply a 3.44% saving on the average floating rate relative to the assumed fixed rate?

ANSWER:

The following response was provided by National Bank Financial:

“Savings are 2.53% given a \$25 million change in gross interest expense.”

CAC/MSOS/MH I-164

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3, Section 8.1, Impact on Manitoba Hydro, page 39.

The report provides a table showing impact of changes on the floating rate debt mix.

Data from 2008 Table 14		(millions)		
2008 Total Debt		\$7,599	Net	Interest
	Floating		Income	Saving
Fixed Equivalent	27%	\$2,052	\$ 363	
Minimum Variance	14%	\$1,064	\$ 329	
Difference		\$ 988	\$ 34	3.44%

The Table above is prepared to permit a discussion of the impact of changes, and assumes for the purpose of these questions that the \$7,559 million total debt number is an average debt number, that the net income is unaffected by tax, and that the Fixed Equivalent and Minimum Variance calculations are not rounded.

CAC/MSOS wishes to better understand this analysis,

- d) Would it be correct to conclude that the model show that moving to the modeled Fixed Equivalent level would have increased net income by \$120 million?

ANSWER:

The following response was provided by National Bank Financial:

“Moving from actual to fixed equivalent would have decreased gross interest expense by \$12 million.”

CAC/MSOS/MH I-164

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3, Section 8.1, Impact on Manitoba Hydro, page 39.

The report provides a table showing impact of changes on the floating rate debt mix.

Data from 2008 Table 14		(millions)		
2008 Total Debt		\$7,599	Net	Interest
	Floating		Income	Saving
Fixed Equivalent	27%	\$2,052	\$ 363	
Minimum Variance	14%	\$1,064	\$ 329	
Difference		\$ 988	\$ 34	3.44%

The Table above is prepared to permit a discussion of the impact of changes, and assumes for the purpose of these questions that the \$7,559 million total debt number is an average debt number, that the net income is unaffected by tax, and that the Fixed Equivalent and Minimum Variance calculations are not rounded.

CAC/MSOS wishes to better understand this analysis,

e) What is the assumed fixed interest rate in the analysis?

ANSWER:

The following response was provided by National Bank Financial:

“6.65% for CAD denominated debt, and 7.36% for USD denominated debt.”

CAC/MSOS/MH I-164

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3, Section 8.1, Impact on Manitoba Hydro, page 39.

The report provides a table showing impact of changes on the floating rate debt mix.

Data from 2008 Table 14		(millions)		
2008 Total Debt		\$7,599	Net	Interest
	Floating		Income	Saving
Fixed Equivalent	27%	\$2,052	\$ 363	
Minimum Variance	14%	\$1,064	\$ 329	
Difference		\$ 988	\$ 34	3.44%

The Table above is prepared to permit a discussion of the impact of changes, and assumes for the purpose of these questions that the \$7,559 million total debt number is an average debt number, that the net income is unaffected by tax, and that the Fixed Equivalent and Minimum Variance calculations are not rounded.

CAC/MSOS wishes to better understand this analysis,

- f) If any of the propositions advanced in questions (a) through (d) are incorrect, please provide the appropriate correction.

ANSWER:

The following response was provided by National Bank Financial:

“Please see responses to CAC/MSOS/MH I-164 b), c), d) and e).”

CAC/MSOS/MH I-165

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, including sections 1.4.1, and 2,

The NBF report indicates it included a “comprehensive review of the available academic literature”, and includes footnotes referencing approximately 15 publications apparently relating to the financial analysis undertaken.

The NBF report observes on page 16, “In most academic research papers, corporate debt is only represented by fixed coupon bonds and does not take into consideration interest rate movements and inflation risks. Hence, limited analytical results relevant to the scope of this assessment are available.”

The NBF report also observes on page 16, “These academic papers have not provided any quantitative estimate of the optimal breakdown between various types of debt instruments.”

CAC/MSOS wishes to better understand academic underpinnings of the analysis conducted.

- a) Please identify which of the academic papers referenced in the NBF report assume (i) “corporate debt is only represented by fixed coupon bonds”, (ii) which assume fixed and floating rate debt, and (iii) which make no assumption as to how interest on debt is determined.

ANSWER:

The following response was provided by National Bank Financial:

“(i)

- o *Leland, H., 1994. Corporate Debt Value, Bond Covenants, and Optimal Capital Structure, Journal of Finance, American Finance Association, 49 (4), 1213-1252.*

- Leland, H., Toft, K., 1996, *Optimal Capital Structure, Endogenous Bankruptcy, and the Term Structure of Credit Spreads*, *Journal of Finance*, 51 (3), 987-1019.
- Modigliani, F., Miller, M., 1958, *The Cost of Capital, Corporation Finance and the Theory of Investment*, *American Economic Review*, 48 (3), 261–297.

(ii)

- Chava, S., Purnanandam, A., 2007, *Determinants of the Floating-to-Fixed Rate Debt Structure of Firms*, *Journal of Finance*, 50 (3), 789-819.
- Faulkender, M., 2005, *Hedging or Market Timing*, *Journal of Finance*, 60 (2), 931-962.
- Hackbarth, D., Hennessy, C., Leland, H., 2007, *Can the Trade-off Theory Explain Debt Structure?*, *Review of Financial Studies*, 20 (5), 1389-1428.

(iii)

- Fisher, L., 1975, *Using Modern Portfolio Theory to Maintain an Efficiently Diversified Portfolio*, *Financial Analysts Journal*, 31 (3), 73-85.
- Froot, K., Scharfstein, D., Stein, J., 1993, *Risk Management: Coordinating Corporate Investment and Financing Policies*, *Journal of Finance*, 48 (5), 1629-1658.
- Lubatkin, M., Chatterjee, S., 1994, *Extending Modern Portfolio Theory into the Domain of Corporate Diversification: Does It Apply?*, *Academy of Management Journal*, 37 (1), 109-136.
- Markowitz, H., 1952, *Portfolio Selection*, *The Journal of Finance*, 7 (1), 77-91.
- Martellini, L., Milhau, V., 2008, *Capital Structure Choices and the Optimal Design of Corporate Market Debt Programs*, *Second Singapore International Conference on Finance 2008*.
- Rom, B., Ferguson, K., *Post-Modern Portfolio Theory Comes of Age*, 1993, *Journal of Investing*, 1, 349-364.
- Smith, C., Stulz, R., 1985, *The Determinants of Firms' Hedging Policies*, *Journal of Financial and Quantitative Analysis*, 20 (4), 391-405.
- Statman, M., 1987, *How Many Stocks Make a Diversified Portfolio*, *Journal of Financial and Quantitative Analysis*, 22, 353-363.

NBF has not cited academic research papers that had no relevance to the theoretical overview of optimal capital structure as they relate to fixed vs. floating rate debt.”

CAC/MSOS/MH I-165

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, including sections 1.4.1, and 2,

The NBF report indicates it included a “comprehensive review of the available academic literature”, and includes footnotes referencing approximately 15 publications apparently relating to the financial analysis undertaken.

The NBF report observes on page 16, “In most academic research papers, corporate debt is only represented by fixed coupon bonds and does not take into consideration interest rate movements and inflation risks. Hence, limited analytical results relevant to the scope of this assessment are available.”

The NBF report also observes on page 16, “These academic papers have not provided any quantitative estimate of the optimal breakdown between various types of debt instruments.”

CAC/MSOS wishes to better understand academic underpinnings of the analysis conducted.

- b) Please advise how a model that assumes “corporate debt is only represented by fixed coupon bonds” assists in the “definition of an optimal floating rate debt range”.

ANSWER:

The following response was provided by National Bank Financial:

“NBF utilized its proprietary asset/liability model throughout the analysis. The model was not based on specific academic papers. The generic merits of the asset/liability model in the business context were derived from papers cited in footnotes 14 through 20 on page 16 of our report.”

CAC/MSOS/MH I-165

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, including sections 1.4.1, and 2,

The NBF report indicates it included a “comprehensive review of the available academic literature”, and includes footnotes referencing approximately 15 publications apparently relating to the financial analysis undertaken.

The NBF report observes on page 16, “In most academic research papers, corporate debt is only represented by fixed coupon bonds and does not take into consideration interest rate movements and inflation risks. Hence, limited analytical results relevant to the scope of this assessment are available.”

The NBF report also observes on page 16, “These academic papers have not provided any quantitative estimate of the optimal breakdown between various types of debt instruments.”

CAC/MSOS wishes to better understand academic underpinnings of the analysis conducted.

- c) Please identify which of the approximately 15 academic papers are included in “These academic papers” which have not provided any quantitative estimate of the optimal breakdown between various types of debt instruments.

ANSWER:

The following response was provided by National Bank Financial:

“

- *Chava, S., Purnanandam, A., 2007, Determinants of the Floating-to-Fixed Rate Debt Structure of Firms, Journal of Finance, 50 (3), 789-819.*
- *Faulkender, M., 2005, Hedging or Market Timing, Journal of Finance, 60 (2), 931-962.*

- Fisher, L., 1975, *Using Modern Portfolio Theory to Maintain an Efficiently Diversified Portfolio*, *Financial Analysts Journal*, 31 (3), 73-85.
- Froot, K., Scharfstein, D., Stein, J., 1993, *Risk Management: Coordinating Corporate Investment and Financing Policies*, *Journal of Finance*, 48 (5), 1629-1658.
- Hackbarth, D., Hennessy, C., Leland, H., 2007, *Can the Trade-off Theory Explain Debt Structure?*, *Review of Financial Studies*, 20 (5), 1389-1428.
- Leland, H., 1994. *Corporate Debt Value, Bond Covenants, and Optimal Capital Structure*, *Journal of Finance*, American Finance Association, 49 (4), 1213-1252.
- Leland, H., Toft, K., 1996, *Optimal Capital Structure, Endogenous Bankruptcy, and the Term Structure of Credit Spreads*, *Journal of Finance*, 51 (3), 987-1019.
- Lubatkin, M., Chatterjee, S., 1994, *Extending Modern Portfolio Theory into the Domain of Corporate Diversification: Does It Apply?*, *Academy of Management Journal*, 37 (1), 109-136.
- Markowitz, H., 1952, *Portfolio Selection*, *The Journal of Finance*, 7 (1), 77-91.
- Martellini, L., Milhau, V., 2008, *Capital Structure Choices and the Optimal Design of Corporate Market Debt Programs*, *Second Singapore International Conference on Finance 2008*.
- Modigliani, F., Miller, M., 1958, *The Cost of Capital, Corporation Finance and the Theory of Investment*, *American Economic Review*, 48 (3), 261–297.
- Rom, B., Ferguson, K., *Post-Modern Portfolio Theory Comes of Age*, 1993, *Journal of Investing*, 1, 349-364.
- Smith, C., Stulz, R., 1985, *The Determinants of Firms' Hedging Policies*, *Journal of Financial and Quantitative Analysis*, 20 (4), 391-405.
- Statman, M., 1987, *How Many Stocks Make a Diversified Portfolio*, *Journal of Financial and Quantitative Analysis*, 22, 353-363.”

CAC/MSOS/MH I-165

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, including sections 1.4.1, and 2,

The NBF report indicates it included a “comprehensive review of the available academic literature”, and includes footnotes referencing approximately 15 publications apparently relating to the financial analysis undertaken.

The NBF report observes on page 16, “In most academic research papers, corporate debt is only represented by fixed coupon bonds and does not take into consideration interest rate movements and inflation risks. Hence, limited analytical results relevant to the scope of this assessment are available.”

The NBF report also observes on page 16, “These academic papers have not provided any quantitative estimate of the optimal breakdown between various types of debt instruments.”

CAC/MSOS wishes to better understand academic underpinnings of the analysis conducted.

- d) Please identify the papers from which the model used by National Bank Financial was drawn.

ANSWER:

The following response was provided by National Bank Financial:

“Please see response to CAC/MSOS/MH I-165 b).”

CAC/MSOS/MH I-166

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3, Section 2.2.3, page 15-16.

The report refers to a paper by Martellini and Milhau. The abstract of that paper suggests that the authors determined “that substantial increases in firm value can be generated by optimal debt structure”.

The analysis by NBF focuses on optimization of net income.

CAC/MSOS wishes to better understand the NBF analysis, which does not focus on the same parameter but upon one that might be one of the indicators of firm value.

- a) Please compare and contrast the NBF financial model to the Martellini and Milhau model.

ANSWER:

The following response was provided by National Bank Financial:

“In NBF’s professional judgment, our proprietary asset/liability model is the most appropriate for this assignment.”

CAC/MSOS/MH I-167

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 page 13, Figure 3

The report provides a chart of “Historical Interest Rates”. Below the figure, the report observes that “In the 1999-2003 timeframe, minimum variance is achieved at a 100% fixed portfolio, whereas for 2004-2009, a 16% floating mix yields the lowest volatility”.

CAC/MSOS wishes to better understand the implications of these observations.

- a) Please identify the start and ending dates for the “1999-2003 timeframe” and the initial and final values of each data series in that timeframe used in Figure 3.

ANSWER:

The following response was provided by National Bank Financial:

*“3 Month BAs: Beginning: January 1999, 5.02%; End: December 2003, 2.73%
15 Yr. Manitoba: Beginning: January 1999, 5.52%; End: December 2003, 5.32%”*

CAC/MSOS/MH I-167

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 page 13, Figure 3

The report provides a chart of “Historical Interest Rates”. Below the figure, the report observes that “In the 1999-2003 timeframe, minimum variance is achieved at a 100% fixed portfolio, whereas for 2004-2009, a 16% floating mix yields the lowest volatility”.

CAC/MSOS wishes to better understand the implications of these observations.

- b) Please identify the start and ending dates for the “2004-2009 timeframe” and the initial and final values of each data series in that timeframe used in Figure 3.

ANSWER:

The following response was provided by National Bank Financial:

*“3 Month BAs: Beginning: January 2004, 2.51%; End: December 2009, 0.44%
15 Yr. Manitoba: Beginning: January 2004, 5.20%; End: December 2009, 5.16%”*

CAC/MSOS/MH I-167

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 page 13, Figure 3

The report provides a chart of “Historical Interest Rates”. Below the figure, the report observes that “In the 1999-2003 timeframe, minimum variance is achieved at a 100% fixed portfolio, whereas for 2004-2009, a 16% floating mix yields the lowest volatility”.

CAC/MSOS wishes to better understand the implications of these observations.

- c) For each of the “1999-2003 timeframe” and the “2004-2009 timeframe”, please provide the Mean Yield, and the Standard Deviation of any Manitoba specific Bloomberg data series reflecting the 3 month term to maturity market yields from time to time, perhaps once described as C3023M, and its correlation to the 15 year Manitoba Series for those timeframes.

ANSWER:

The following response was provided by National Bank Financial:

“As per our responses to questions CAC/MSOS/MH I-157 j), k), l) and m), NBF did not use C3023M for the analysis, as 3 month Bloomberg BA rates are representative of Manitoba Hydro’s floating rate interest rate resets.”

CAC/MSOS/MH I-167

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 page 13, Figure 3

The report provides a chart of “Historical Interest Rates”. Below the figure, the report observes that “In the 1999-2003 timeframe, minimum variance is achieved at a 100% fixed portfolio, whereas for 2004-2009, a 16% floating mix yields the lowest volatility”.

CAC/MSOS wishes to better understand the implications of these observations.

- d) It appears, visually from the Figure 3, that the initial rate for a 15 year Manitoba issue was in the range of 5.6%, and that except for a short period in the “1999-2003 timeframe”, the floating rate was lower, and in later years materially lower than the initial rate, as such it would appear that consumers would have enjoyed substantial cost savings on any portion of debt which was not fixed but left floating from the initial date of the Figure. As such, please explain the consumer benefit of achieving “minimum variance” through “a 100% fixed portfolio”.

ANSWER:

The following response was provided by National Bank Financial:

“A 100% fixed portfolio can only minimize interest rate volatility. The model shows that lower net income volatility can be achieved while increasing net income by moving from the 100% fixed portfolio to the minimum variance portfolio. Lower net income volatility provides certainty of net income, which may allow for more stable rates for the consumer.”

CAC/MSOS/MH I-168

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 Page 13 Figure 3, and pages 37 & 38, Figures 11, 12 and 13

The report comments that “One of the outcomes of the current recession has been a substantial drop in interest rates across the yield curve”.

The report comments, on page 38, that “Traditional market timing theory would normally prescribe a higher proportion of floating rate debt during periods of steep yield curves”.

Figures 11, 12 and 13 provide evidence that the prevailing interest rate environment and yield curve slopes need to be taken into consideration in order to determine the optimal fixed vs. floating rate debt portfolio.

CAC/MSOS wishes to better understand the implications of these observations.

- a) Please refer to Figure 3, which provides a comparison of approximately 10 years of 3 month BA rates and 15 year maturity Manitoba specific rates, and confirm that the 3 month BA rates have fallen over 450 basis point or approximately 90% of their starting value, or provide the more accurate calculation of the change.

ANSWER:

The following response was provided by National Bank Financial:

“Confirmed.”

CAC/MSOS/MH I-168

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 Page 13 Figure 3, and pages 37 & 38, Figures 11, 12 and 13

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Figures 11, 12 and 13 provide evidence that the prevailing interest rate environment and yield curve slopes need to be taken into consideration in order to determine the optimal fixed vs. floating rate debt portfolio.

CAC/MSOS wishes to better understand the implications of these observations.

- b) Please refer to Figure 3, and confirm that during the period that the 3 month BA rates have fallen over 450 basis point or approximately 90% of their starting value, the 15 year Manitoba rates have varied between approximately 6.8% and 4.5% for a net reduction of approximately 20% from the starting value, or provide the more accurate calculation of the change.

ANSWER:

The following response was provided by National Bank Financial:

“Confirmed.”

CAC/MSOS/MH I-168

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 Page 13 Figure 3, and pages 37 & 38, Figures 11, 12 and 13

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Figures 11, 12 and 13 provide evidence that the prevailing interest rate environment and yield curve slopes need to be taken into consideration in order to determine the optimal fixed vs. floating rate debt portfolio.

CAC/MSOS wishes to better understand the implications of these observations.

- c) Please confirm that the most substantial drop in interest rates has occurred at the short end of the yield curve, particularly in the 1 to six month range.

ANSWER:

The following response was provided by National Bank Financial:

“Confirmed.”

CAC/MSOS/MH I-168

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 Page 13 Figure 3, and pages 37 & 38, Figures 11, 12 and 13

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Figures 11, 12 and 13 provide evidence that the prevailing interest rate environment and yield curve slopes need to be taken into consideration in order to determine the optimal fixed vs. floating rate debt portfolio.

CAC/MSOS wishes to better understand the implications of these observations.

- d) Based on the view that Traditional market timing theory would normally prescribe a higher proportion of floating rate debt during periods of steep yield curves”, would Manitoba Hydro have saved a considerable amount of interest had it moved to maximum floating rate limit, BA based debt position beginning in January 2008 and continuing until the current date, as opposed to locking in fixed rates over that period?**

ANSWER:

The following response was provided by National Bank Financial:

“The question assumes the ability to perfectly predict the future. This quote was taken out of its context. It is important to note that the following sentence on page 38 states that “these historically low interest rate levels provide an opportunity to lower interest rate risk at relatively inexpensive levels by increasing the proportion of fixed rate debt”.”

CAC/MSOS/MH I-168

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 Page 13 Figure 3, and pages 37 & 38, Figures 11, 12 and 13

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Figures 11, 12 and 13 provide evidence that the prevailing interest rate environment and yield curve slopes need to be taken into consideration in order to determine the optimal fixed vs. floating rate debt portfolio.

CAC/MSOS wishes to better understand the implications of these observations.

- e) CAC/MSOS notes that Figure 11 and Figure 12 provide differing time periods of data. Please explain how it enhances the point being made in this section by suppressing or limiting the data in Figure 11 to a different and shorter period than that provided in Figure 12.

ANSWER:

The following response was provided by National Bank Financial:

“We simply do not have more data available for Figure 12. The data used did not enhance our point being made.”

CAC/MSOS/MH I-168

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 Page 13 Figure 3, and pages 37 & 38, Figures 11, 12 and 13

The report comments that “One of the outcomes of the current recession has been a substantial drop in interest rates across the yield curve”.

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Figures 11, 12 and 13 provide evidence that the prevailing interest rate environment and yield curve slopes need to be taken into consideration in order to determine the optimal fixed vs. floating rate debt portfolio.

CAC/MSOS wishes to better understand the implications of these observations.

- f) Figure 12 is titled “20 Year Government of Canada Interest Rates” but it is unclear to CAC/MSOS, whether the title is indicating that this Figure is a curve for the 20 year maturity, or, a curve of approximately 20 years of data for an unidentified term bond. Please provide the Bloomberg series number.

ANSWER:

The following response was provided by National Bank Financial:

“GCAN20YR Index.”

CAC/MSOS/MH I-168

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 Page 13 Figure 3, and pages 37 & 38, Figures 11, 12 and 13

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Figures 11, 12 and 13 provide evidence that the prevailing interest rate environment and yield curve slopes need to be taken into consideration in order to determine the optimal fixed vs. floating rate debt portfolio.

CAC/MSOS wishes to better understand the implications of these observations.

- g) Please identify the starting date and value, the data frequency (daily, weekly, monthly, etc.), and the ending date and value for this curve.**

ANSWER:

The following response was provided by National Bank Financial:

“Beginning: January 12, 1999, 5.379%

End: May 14, 2009, 3.91%

Frequency: Daily”

CAC/MSOS/MH I-168

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 Page 13 Figure 3, and pages 37 & 38, Figures 11, 12 and 13

The report comments that “One of the outcomes of the current recession has been a substantial drop in interest rates across the yield curve”.

The report comments, on page 38, that “Traditional market timing theory would normally prescribe a higher proportion of floating rate debt during periods of steep yield curves”.

Figures 11, 12 and 13 provide evidence that the prevailing interest rate environment and yield curve slopes need to be taken into consideration in order to determine the optimal fixed vs. floating rate debt portfolio.

CAC/MSOS wishes to better understand the implications of these observations.

- h) With the rapidly dropping short term rates reflected in Figure 3 during 2008, would “Traditional market timing theory ... normally prescribe a higher proportion of floating rate debt during periods of steep yield curves”, and if not why not?**

ANSWER:

The following response was provided by National Bank Financial:

“This quote was taken out of its context. It is important to note that the following sentence on page 38 states that “these historically low interest rate levels provide an opportunity to lower interest rate risk at relatively inexpensive levels by increasing the proportion of fixed rate debt”.”

CAC/MSOS/MH I-168

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 Page 13 Figure 3, and pages 37 & 38, Figures 11, 12 and 13

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Figures 11, 12 and 13 provide evidence that the prevailing interest rate environment and yield curve slopes need to be taken into consideration in order to determine the optimal fixed vs. floating rate debt portfolio.

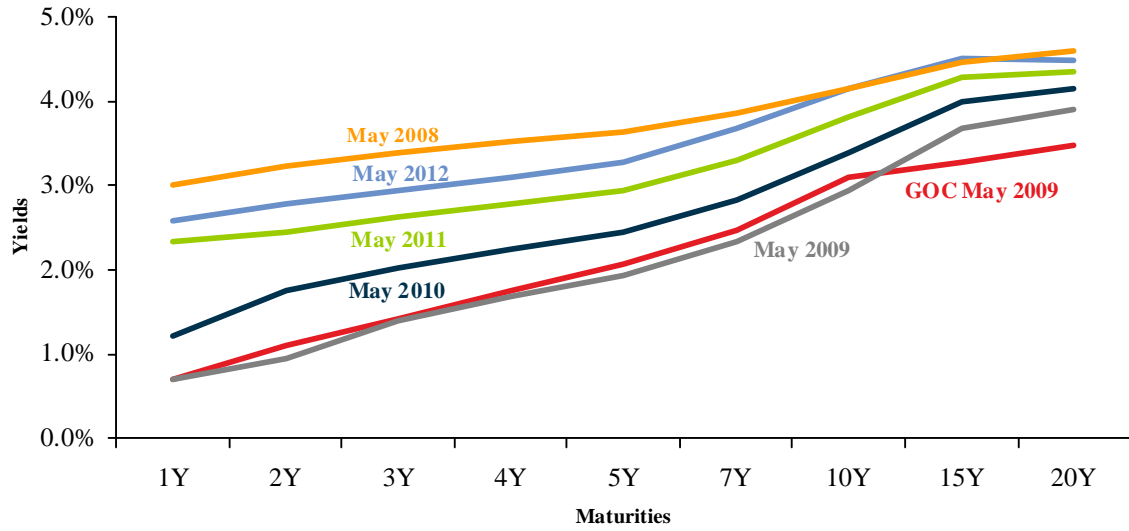
CAC/MSOS wishes to better understand the implications of these observations.

i) Please add the May 2008 curve to Figure 13.

ANSWER:

The following response was provided by National Bank Financial (please see the chart included below):

Figure 13: Canadian Swap Curve and Forward Curves¹



¹ Interest rate data as per Bloomberg.

CAC/MSOS/MH I-168

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 Page 13 Figure 3, and pages 37 & 38, Figures 11, 12 and 13

The report comments that “One of the outcomes of the current recession has been a substantial drop in interest rates across the yield curve”.

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Figures 11, 12 and 13 provide evidence that the prevailing interest rate environment and yield curve slopes need to be taken into consideration in order to determine the optimal fixed vs. floating rate debt portfolio.

CAC/MSOS wishes to better understand the implications of these observations.

- j) The report indicates that “Figures 11, 12 and 13 provide evidence that the prevailing interest rate environment and yield curve slopes need to be taken into consideration in order to determine the optimal fixed vs. floating rate debt portfolio”. Does Figure 3 also “need to be taken into consideration in order to determine the optimal fixed vs. floating rate debt portfolio”?

ANSWER:

The following response was provided by National Bank Financial:

“Figure 3 highlights the fact that short term interest rates are more volatile than long term interest rates, reinforcing NBF’s recommendation that Manitoba Hydro complement this asset/liability management framework with a market timing component that allows the company to adjust its floating rate debt proportion within the identified optimal range in order to take advantage of the prevailing interest rate environment.”

CAC/MSOS/MH I-168

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Independent Assessment of Corporate Policy Fixed vs. Floating, the National Bank Financial Report, Appendix 13.3 Page 13 Figure 3, and pages 37 & 38, Figures 11, 12 and 13

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The report comments, on page 38, that “Traditional market timing theory would normally prescribe a higher proportion of floating rate debt during periods of steep yield curves”.

Figures 11, 12 and 13 provide evidence that the prevailing interest rate environment and yield curve slopes need to be taken into consideration in order to determine the optimal fixed vs. floating rate debt portfolio.

CAC/MSOS wishes to better understand the implications of these observations.

- k) The report indicates that certain figures “provide evidence that the prevailing interest rate environment and yield curve slopes need to be taken into consideration in order to determine the optimal fixed vs. floating rate debt portfolio”, but does not describe whether this consideration should be qualitative or quantitative. Is this a purely qualitative recommendation or is there some quantitative aspect that should be employed that is not included in the statistical analysis in the report?

ANSWER:

The following response was provided by National Bank Financial:

“This is a qualitative recommendation.”

CAC/MSOS/MH I-169

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Tab 2 “Summary and Reasons For Application”, page 2 of 4, lines 18-22 and Appendix 3.1 pages 2, 6 and 7 of 13, Appendix 5.2 at page 22.

The Applicant indicates “lower market export prices more than offset the favourable volume variances in net extraprovincial revenues.”

The Applicant notes “expansion of hydropower exports and energy conservation helps to moderate rates for our Manitoba customers” and “Building Wuskwatim in advance of the electricity need within the province provides energy to export for additional revenues.”

The Applicant has also targeted “Firm energy available for export” of 2,900 Gwh/yr by 2011/12, 5,800 Gwh/yr by 2019/20 and 10,700 Gwh/yr by 2023/24.

The graph “Variability in Net Export Revenues” in provides a comparison in years of average revenues, and years of low and high flows.

CAC/MSOS wishes to better understand the focus on maximization of export power net revenues as opposed to profits.

- a) Please explain what the concept of “firm energy available for export” means, and discuss that measure in the relation provincial demand in the enumerated years, and to each of hydro and thermal capacity, and drought years.**

ANSWER:

Firm energy is the energy that the system can reliably use to meet commitments during the most adverse inflow conditions on record. Firm energy is used to serve Manitoba domestic loads, and any firm energy that is forecast to be in excess of that required to meet domestic load is available for export. There is a market for firm energy many years into the future, as it allows purchasing utilities to postpone construction of new resources which may have long lead times before they can be in service.

Please refer to the response to CAC/MSOS/MH I-35(a) which is the reference for the 2009 power resource plan. The dependable energy supply/demand balance that is summarized in Table 1a in the power resource plan document provides information on the quantity of “firm energy available for export” for each of the targeted years. The “firm energy available for export” is obtained by summing the quantity of “Exports” and the quantity of “Surplus” in each year. The “Export” component represents existing committed firm sales and potential sales associated with term sheets.

The Manitoba firm load is provided on Table 1a together with supply-side resources such as thermal generation, import energy, wind energy and DSM savings. It is noted that the table is based on dependable hydro energy which corresponds to the lowest flow on record. During most flow conditions, there will be sufficient energy from the hydro resources to fulfill the firm commitments and the requirement for thermal and import energy will be reduced from that shown in the table.

CAC/MSOS/MH I-169

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Tab 2 “Summary and Reasons For Application”, page 2 of 4, lines 18-22 and Appendix 3.1 pages 2, 6 and 7 of 13, Appendix 5.2 at page 22.

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The graph “Variability in Net Export Revenues” in provides a comparison in years of average revenues, and years of low and high flows.

CAC/MSOS wishes to better understand the focus on maximization of export power net revenues as opposed to profits.

- b) In as much as this chart appears to indicate that in years of high flows the gain from an average year is visibly and materially less than the negative revenues shown in low flow years, is the focus on export revenues not increasing the consequence of the risks of low flows?**

ANSWER:

The average revenue that is utilized in the IFF is derived from the consequences of all 94 historic water low conditions and the low and high in the chart are two of the possibilities. Even though the reduced revenue in the low flow condition is more extreme than the increased revenue in the high flow condition, this does not mean that there is increased consequence associated with low flows. The reason for this is that the sum of the reduced

revenues for all flow conditions below average is equal to the increased revenues for all flows above average. Therefore, it is not appropriate to conclude that export sales increase the consequence of drought by observing only the lowest and highest flow conditions rather than all flow conditions. In order to undertake an appropriate analysis, the revenues for the entire range of flow conditions must be analyzed since it is necessary to consider the frequency as well as the magnitude of revenues that result from all flow conditions.

CAC/MSOS/MH I-170

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Exhibit 3.1 page 7 of 13

The Applicant indicates it has as its first strategy to “Aggressively pursue a balanced portfolio of export sales”

CAC/MSOS wishes to better understand what is entailed in this strategy

a) Please explain what the concept of “a balanced portfolio of export sales” means.

ANSWER:

A balanced portfolio is a part of an export sales strategy based on diversification. By diversifying export sales, certain types of risks can be reduced. For example, transacting in multiple export markets reduces the related risks associated with transacting only in a single market.

Other ways to diversify export sales include;

- i. Different contract sales durations and different start and end dates of contracts.
- ii. Different power products (firm, non-firm/surplus)
- iii. Different pricing structures and escalators.

CAC/MSOS/MH I-170

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Exhibit 3.1 page 7 of 13

The Applicant indicates it has as its first strategy to “Aggressively pursue a balanced portfolio of export sales”

CAC/MSOS wishes to better understand what is entailed in this strategy

- b) Please discuss the concept of “a balanced portfolio of export sales” in respect of the current portfolio of export sales agreements, having regard to the minimum, maximum and average term of the sales agreements, fixed and variable volume commitments, and fixed or variable pricing.**

ANSWER:

Manitoba Hydro’s current export sales portfolio consists of the following for fiscal year 2008/2009:

	Price			Volume			Term		
	Fixed	Market	TL	Fixed	Market	TL	Min.	Avg.	Max.
Dependable	77%	23%	100%	30%	9%	39%	5 years	n/a	28 years
Opportunity									
-Bilateral	74%	26%	100%	12%	5%	17%	1 hour	1 mo	10 years
-Market		100%	100%	-	44%	44%	1 hour	1 day	36 hours

CAC/MSOS/MH I-170

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Exhibit 3.1 page 7 of 13

The Applicant indicates it has as its first strategy to “Aggressively pursue a balanced portfolio of export sales”

CAC/MSOS wishes to better understand what is entailed in this strategy

- c) CAC/MSOS notes that in certain years, including 2003/04, Opportunity volumes were a tiny proportion of the total export sales, and wonders if the Applicant’s portfolio was balanced during that period.**

ANSWER:

Opportunity sales volumes will fluctuate depending upon water supplies. In 2003/04, Manitoba Hydro experienced the third worst drought on record. As a result, it was not possible to have a balanced portfolio of export sales in that year.

CAC/MSOS/MH I-170

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Exhibit 3.1 page 7 of 13

The Applicant indicates it has as its first strategy to “Aggressively pursue a balanced portfolio of export sales”

CAC/MSOS wishes to better understand what is entailed in this strategy

- d) CAC/MSOS notes that in certain years, including 2005/06 Opportunity volumes were a large proportion of the total export sales, and wonders if the Applicant’s portfolio was balanced during that period.**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-170(c).

CAC/MSOS/MH I-171

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Tab 3, “Corporate Overview”, page 11 of 12, lines 13-16 and 23 and 24

The Applicant discusses its Capital Expenditures “The Capital Expenditure Forecast (“CEF”) is updated annually to provide a current projection of capital expenditures for new and replacement facilities to meet the electricity requirements in the Province of Manitoba, as well as to meet firm sale commitments outside the province.” Emphasis added

CAC/MSOS notes that in some years including 2005/06 and 2006/07 Opportunity sales greatly exceeded Dependable sales. CAC/MSOS wishes to what extent forecast capital expenditures are being undertaken to create facility capacity in excess of local and Dependable demand, during the “decade of investment”.

- a) Please enumerate each transmission project to be undertaken during the decade of investment and its capacity, providing the annual capacity dedicated to local demand, dependable export sales, and opportunity sales, if any.**

ANSWER:

Tab 6 of the Manitoba Hydro submission summarizes the Capital Expenditure Forecast (CEF09-1), a copy of which is included as Appendix 6.1. The CEF provides the description of each transmission project to be undertaken. The transmission projects are required for reliability enhancement, local demand and dependable export sales. No transmission projects are proposed for opportunity sales.

CAC/MSOS/MH I-171

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Tab 3, “Corporate Overview”, page 11 of 12, lines 13-16 and 23 and 24

The Applicant discusses its Capital Expenditures “The Capital Expenditure Forecast (“CEF”) is updated annually to provide a current projection of capital expenditures for new and replacement facilities to meet the electricity requirements in the Province of Manitoba, as well as to meet firm sale commitments outside the province.” Emphasis added

CAC/MSOS notes that in some years including 2005/06 and 2006/07 Opportunity sales greatly exceeded Dependable sales. CAC/MSOS wishes to what extent forecast capital expenditures are being undertaken to create facility capacity in excess of local and Dependable demand, during the “decade of investment”.

- b) CAC/MSOS notes that in the prior GRA Manitoba Hydro indicated in Coalition/MH I-33 that Dependable volumes had been in the order of 5,500,000 MWh in 1999/00, but had fallen to approximately 2,700,000 MWh by 2007/08 while the opportunity sales had been in the range of 5,600,000 MWh. With the Dependable sales then in the range of 33% of export sales, how is it that the capital expenditure forecast appears to sanction capital expenditures beyond “firm sale commitments”?**

ANSWER:

Historic opportunity sales are a function of water availability and market price. The ratio of dependable energy sales to total sales of 33% quoted above is not relevant to the 10 year capital expenditure forecast.

The transmission investments are needed to meet various drivers of need including: safety, load growth, reliability, service, efficiency, capacity and aging infrastructure. There is no investment driven by opportunity sales in the current 10-year forecast.

There are some investments in the capital expenditure forecast that are associated with firm sale commitments. As mentioned in Appendix 5.2-IFF09-1, the financial forecast assumes that long term dependable sales are finalized with Minnesota Power and Wisconsin Public Service. The transmission investments do not provide capacity beyond firm sale commitments.

CAC/MSOS/MH I-171

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Tab 3, “Corporate Overview”, page 11 of 12, lines 13-16 and 23 and 24

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CAC/MSOS notes that in some years including 2005/06 and 2006/07 Opportunity sales greatly exceeded Dependable sales. CAC/MSOS wishes to what extent forecast capital expenditures are being undertaken to create facility capacity in excess of local and Dependable demand, during the “decade of investment”.

- c) Please discuss the justification for each of those transmission projects within “seven categories: capacity, load, safety, reliability, service, efficiency and other.”**

ANSWER:

Tab 6 of the Manitoba Hydro submission summarizes the Capital Expenditure Forecast (CEF09-1), a copy of which is included as Appendix 6.1. The CEF provides the description of each transmission project to be undertaken, and the justification for the projects.

CAC/MSOS/MH I-172

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Tab 3, “Corporate Overview”, page 2 of 12, lines 33-35

The Applicant enumerates “ten organizational goals which” include: “4. Improve corporate financial strength” and “5. Maximize export power net revenues”. CAC/MSOS wishes to better understand the focus on maximization of export power net revenues as opposed to profits.

- a) In this context please explain exactly what the net export power revenues are net of, but if convenient and correct, adopt the response found in Coalition/MH I-95(i) from the prior GRA.**

ANSWER:

Net Export Revenues are comprised of extraprovincial revenue from power sales less all fuel expenses, power purchases and water rental expenses allocated to extraprovincial sales.

CAC/MSOS/MH I-172

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Tab 3, “Corporate Overview”, page 2 of 12, lines 33-35

The Applicant enumerates “ten organizational goals which” include: “4. Improve corporate financial strength” and “5. Maximize export power net revenues”. CAC/MSOS wishes to better understand the focus on maximization of export power net revenues as opposed to profits.

b) Please identify all costs which would have to be included to change the “export power net revenues” to export power net profits.

ANSWER:

Manitoba Hydro uses the term “Net Export Revenues” because “net profits” cannot be determined without analyzing the effect on overall system costs in the absence of exports. For firm sales, Manitoba Hydro analyzes these costs very carefully on a prospective basis, before entering into any firm sale arrangement, but does not attempt to analyze these effects retrospectively.

For opportunity sales, the best approximation of net revenues is provided in the response to CAC/MSOS/MH I-172(a), which indicates that variable costs are deducted from gross revenue to yield net revenue. For firm sales, an approximation is provided in Manitoba Hydro’s approach to allocating costs to exports in its Prospective Cost of Service Study. In PCOSS10, this is described on pages 8 and 9. In addition to variable cost, the following are assigned or allocated to export sales: US transmission cost; a portion of the cost of Power Trading, MAPP and MISO memberships; and a pro rata share of Generation and Transmission cost.

CAC/MSOS/MH I-173

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Tab 3, “Corporate Overview”, page 2 of 12, line 29, and Exhibit 3.1 page 4 of 13

The Applicant enumerates “ten organizational goals which” include: “2. Provide customers with exceptional value”.

CAC/MSOS wishes to better understand the focus of the equation through which the applicant measures the “exceptional value” which it strives to provide its customers.

a) Please list all factors and their weighting, which are included in the measurements of “value”.

ANSWER:

Manitoba Hydro includes several factors in considering the value it provides to customers including rates, reliability of service, customer choice, environmental protection, economic drivers, and corporate citizenship within the communities of Manitoba. Manitoba Hydro does not assign weights to components of customer value.

CAC/MSOS/MH I-173

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Tab 3, “Corporate Overview”, page 2 of 12, line 29, and Exhibit 3.1 page 4 of 13

The Applicant enumerates “ten organizational goals which” include: “2. Provide customers with exceptional value”.

CAC/MSOS wishes to better understand the focus of the equation through which the applicant measures the “exceptional value” which it strives to provide its customers.

b) Other than low rates, what are the most important value components?

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-173(a).

CAC/MSOS/MH I-173

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Tab 3, “Corporate Overview”, page 2 of 12, line 29, and Exhibit 3.1 page 4 of 13

The Applicant enumerates “ten organizational goals which” include: “2. Provide customers with exceptional value”.

CAC/MSOS wishes to better understand the focus of the equation through which the applicant measures the “exceptional value” which it strives to provide its customers.

- c) Please quantify the electrical rate target “Lowest in North America” in dollar terms, identifying the distributor, year and term of service, and compare that rate to the Applicant’s current retail electricity rate.**

ANSWER:

Please see Tab 10, page 10 of GRA filing.

CAC/MSOS/MH I-173

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Tab 3, “Corporate Overview”, page 2 of 12, line 29, and Exhibit 3.1 page 4 of 13

The Applicant enumerates “ten organizational goals which” include: “2. Provide customers with exceptional value”.

CAC/MSOS wishes to better understand the focus of the equation through which the applicant measures the “exceptional value” which it strives to provide its customers.

- d) Please explain how the target of “natural gas market share” of 60% of commodity sales, translates in providing each of gas customers and electric customers with “exceptional value”.**

ANSWER:

This measure of market share is viewed as an indicator of the degree to which Manitoba Hydro is successful in meeting the needs of gas customers in the marketplace.

CAC/MSOS/MH I-174

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Exhibit 13.1, National Bank Financial Report, page 1, Section 1.2, Page 4, Section 1.4.3

Section 1.2 of the report indicates that “NBF’s objective was to provide the following: ... An in-depth analysis of the fixed vs. floating rate debt policies of Manitoba Hydro’s Peers”. Emphasis added.

Section 1.4.3 of the report indicates that “NBF examined the fixed vs. floating rate debt policies of Manitoba Hydro’s peer group ... The purpose of this analysis was not to provide an assessment of the peer group’s fixed vs. floating rate debt policies, but rather to attain insight into a relevant peer group’s choice of floating rate debt mix”. Emphasis added.

CAC/MSOS understands that Figure 6 graphs the “Peer Group Floating Rate Mix”, Figure 8 graphs a single day point in time “Peer Group Floating Rate Debt” percentage, Table 15 provides and undated percentage of “Floating Rate Debt” of six crown utilities, Table 16 provides and undated percentage of “Floating Rate Debt” of six crown utilities and Table 17 provides and annual percentages of “Floating Rate Debt” of eight other utilities.

- a) While the National Bank report provides the statistics mentioned above, CAC/MSOS does not see any mention of policy ranges similar to the 15% - 25% policy range articulated by Manitoba Hydro. Please provide any data collected by National Bank Financial that would indicate from time to time any floating rate debt policy levels for these various utilities.

ANSWER:

The following response was provided by National Bank Financial:

“NBF found actual floating proportion figures, not policy ranges.”

CAC/MSOS/MH I-174

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Exhibit 13.1, National Bank Financial Report, page 1, Section 1.2, Page 4, Section 1.4.3

Section 1.2 of the report indicates that “NBF’s objective was to provide the following: ... An in-depth analysis of the fixed vs. floating rate debt policies of Manitoba Hydro’s Peers”. Emphasis added.

Section 1.4.3 of the report indicates that “NBF examined the fixed vs. floating rate debt policies of Manitoba Hydro’s peer group ... The purpose of this analysis was not to provide an assessment of the peer group’s fixed vs. floating rate debt policies, but rather to attain insight into a relevant peer group’s choice of floating rate debt mix”. Emphasis added.

CAC/MSOS understands that Figure 6 graphs the “Peer Group Floating Rate Mix”, Figure 8 graphs a single day point in time “Peer Group Floating Rate Debt” percentage, Table 15 provides and undated percentage of “Floating Rate Debt” of six crown utilities, Table 16 provides and undated percentage of “Floating Rate Debt” of six crown utilities and Table 17 provides and annual percentages of “Floating Rate Debt” of eight other utilities.

- b) Please provide any analysis performed by National Bank Financial that would indicate that these various point in time floating rate debt positions of the various utilities represented their optimal levels of floating rate debt.

ANSWER:

The following response was provided by National Bank Financial:

“The analysis of the peer group’s debt policies was a corroborative tool used in NBF’s independent assessment and supported NBF’s overall conclusion. Moreover, NBF was not retained to provide any views on the optimality of Manitoba Hydro’s peer group’s debt policies, and therefore is not in a position to provide such an opinion.”

CAC/MSOS/MH I-175

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Exhibit 13.1, National Bank Financial Report, page A-3 and A-5, Tables 15 and 17 and section 4.2.2.3.

Section 1.2 of the report indicates that “NBF’s objective was to provide the following: ... An in-depth analysis of the fixed vs. floating rate debt policies of Manitoba Hydro’s Peers”. Emphasis added.

CAC/MSOS understands that, in its analysis of its debt position, Manitoba Hydro includes, in its policy limits of “15% to 25% of debt in floating rate instruments”, debt of short duration with a fixed interest rate. This matter was discussed in the previous GRA in Coalition/MH II-77 (d).

CAC/MSOS notes that SaskPower is indicated in the tables as having no Floating Rate Debt.

Section 4.2.2.3. indicates “NBF’s peer group analysis demonstrated that among the peers, only SaskPower fixed all of its debt and hence was not affected by fluctuations in short-term interest rates.” CAC/MSOS believes that this statement is in error and that by focusing only on the SaskPower year end results misconstrues the SaskPower use of shorter term instruments as it may, from time to time, throughout the year, and calls into question the “in-depth” nature of the “analysis”.

- a) Please add Coalition/MH II-77 (d) from the previous GRA to the record of this proceeding, and if required, please correct the response, identifying the further updates.

ANSWER:

Please see attached COALITION/MH II-77 from the previous GRA.

The following commentary is provided as clarification to the response provided in COALITION/MH II-77(d):

- Section 30 of *The Manitoba Hydro Act* authorizes the Corporation to borrow money from time to time "for temporary purposes." Order in Council 815/92 was issued under the authority of Section 30 of the Act. It authorizes up to \$500 million of borrowing for temporary purposes. The \$500 million short term borrowing program is a credit facility to safeguard Manitoba Hydro from liquidity risk and to provide sufficient liquidity for the Corporation's temporary cash requirements. Short term borrowings are not intended as a financing vehicle to reduce Manitoba Hydro's overall debt servicing costs.
- Manitoba Hydro's existing uncommitted bank credit facilities available through demand loans or overdrafts are charged interest at Prime Rate (Canada) or US Base Rate (US) calculated on a daily basis. As Manitoba Hydro can issue promissory notes payable within its Commercial Paper Program at rates less than the Prime or Base Rates, Manitoba Hydro typically issues promissory notes instead of relying on bank overdrafts to meet its temporary cash requirements.
- Manitoba Hydro uses its short term debt line to fund seasonal working capital requirements and to bridge the timing between long term debt issues. It is inappropriate to utilize the Corporation's overdraft credit facilities and Commercial Paper Program to permanently fund capital construction that should more appropriately be financed through debt.
- Manitoba Hydro's short term borrowings within its promissory note Commercial Paper Program are theoretically fixed rate financing as the borrowing terms are for a specified period of time over which a constant or fixed interest rate is applied. Unlike Manitoba Hydro's long term floating rate debt portfolio, there are no interest reset rates on notes payable. However, rolling short term debt can take on floating rate characteristics. For example, a 30 day note payable that is subsequently refinanced for another 30 day term takes on the characteristics of a two month debt issue that had its interest rate reset after the first 30 days. Therefore, from a practical perspective for the calculation of fixed versus floating percentages, as Manitoba Hydro's rolling short term borrowings have refinancing risk and the sum of the short term borrowings are only a small portion of the Corporation's total debt portfolio, Manitoba Hydro treats outstanding short term borrowings as a component of its floating rate debt portfolio.

COALITION/MH II-77

Subject: Debt and Debt Management

Reference: COALITION/MH I-84(e).

The answer by Manitoba Hydro is not responsive to the question posed by the Coalition.

In response to a question on its “optimal balance with respect to the long-term and short term components”, Manitoba Hydro replied that a short term debt maximum of \$500 million is “adequate”. Dictionaries available to the Coalition define optimal as “best”, or “most favourable”. Those dictionaries also define “adequate” in various ways including “barely sufficient or suitable” and “enough”. The Coalition, based on Bank of Canada data available to it, would observe that for much of the 2004-2007 period discussed in COALITION/MH I-85, shorter term interest rates were below longer term interest rates. The Coalition notes that references to “optimal” conditions have appeared in a number of Manitoba Hydro’s documents filed in this proceeding.

In PUB/MH 43(b), Manitoba Hydro provides a continuity schedule of short and long term debt. The Coalition notes that the 2006 balance for short term debt was nil, the 2007 balance is approximately 2% of the long term debt, and throughout the period indicated, the short term debt as a percentage of long-term debt is always lower than about 2.5%. This suggests the inference that in the opinion of Manitoba hydro the “optimal” balance of short and long term debt is a minuscule portion of the debt portfolio in short term debt.

- c) Please compare the forecast weighted average interest costs on outstanding short term debt with the cost of the forecast and actual long-term financings used to replace them, in the years 2007-2018 as presented in the schedule to PUB/MH 43(b).**

ANSWER:

The table below contains interest rate assumptions used in IFF07-1 with respect to short-term and long-term debt costs:

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13 to 2017/18
CDN ST-Debt	4.70%	4.70%	4.60%	4.60%	4.60%	4.60%
CDN LT-Debt	5.15%	5.60%	5.75%	5.95%	6.10%	6.45%

For all forecast years outlined in PUB/MH I-43(b), Manitoba Hydro forecasts interest costs on cash requirements utilizing the short term borrowing rate until the short term balance reaches \$200 million, when a long term debt issue is forecasted.

CAC/MSOS/MH I-175

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Exhibit 13.1, National Bank Financial Report, page A-3 and A-5, Tables 15 and 17 and section 4.2.2.3.

Section 1.2 of the report indicates that “NBF’s objective was to provide the following: ... An in-depth analysis of the fixed vs. floating rate debt policies of Manitoba Hydro’s Peers”. Emphasis added.

CAC/MSOS understands that, in its analysis of its debt position, Manitoba Hydro includes, in its policy limits of “15% to 25% of debt in floating rate instruments”, debt of short duration with a fixed interest rate. This matter was discussed in the previous GRA in Coalition/MH II-77 (d).

CAC/MSOS notes that SaskPower is indicated in the tables as having no Floating Rate Debt.

Section 4.2.2.3. indicates “NBF’s peer group analysis demonstrated that among the peers, only SaskPower fixed all of its debt and hence was not affected by fluctuations in short-term interest rates.” CAC/MSOS believes that this statement is in error and that by focusing only on the SaskPower year end results misconstrues the SaskPower use of shorter term instruments as it may, from time to time, throughout the year, and calls into question the “in-depth” nature of the “analysis”.

- b) Please confirm that “outstanding short-term debt is one component of Manitoba Hydro’s total floating rate debt portfolio. The other component of Manitoba Hydro’s floating rate debt portfolio is its long-term debt that has been issued as floating rate debt. When considering the appropriate balance between fixed and floating rate debt, it is necessary to consider both components of Manitoba Hydro’s floating rate debt portfolio” remains the position of the Applicant.**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-175(a).

CAC/MSOS/MH I-175

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Exhibit 13.1, National Bank Financial Report, page A-3 and A-5, Tables 15 and 17 and section 4.2.2.3.

Section 1.2 of the report indicates that “NBF’s objective was to provide the following: ... An in-depth analysis of the fixed vs. floating rate debt policies of Manitoba Hydro’s Peers”. Emphasis added.

CAC/MSOS understands that, in its analysis of its debt position, Manitoba Hydro includes, in its policy limits of “15% to 25% of debt in floating rate instruments”, debt of short duration with a fixed interest rate. This matter was discussed in the previous GRA in Coalition/MH II-77 (d).

CAC/MSOS notes that SaskPower is indicated in the tables as having no Floating Rate Debt.

Section 4.2.2.3. indicates “NBF’s peer group analysis demonstrated that among the peers, only SaskPower fixed all of its debt and hence was not affected by fluctuations in short-term interest rates.” CAC/MSOS believes that this statement is in error and that by focusing only on the SaskPower year end results misconstrues the SaskPower use of shorter term instruments as it may, from time to time, throughout the year, and calls into question the “in-depth” nature of the “analysis”.

- c) Please confirm that
- i. in the various analysis of Manitoba Hydro debt position, from time to time, include in the floating rate portion of the its debt portfolio fixed rate obligations of short maturities, or
 - ii. if unable to confirm, clarify the manner in which it describes the interest rates which are paid on instruments included in the 15% to 25% of debt described as being floating rate instruments.

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-175(a).

CAC/MSOS/MH I-175

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Exhibit 13.1, National Bank Financial Report, page A-3 and A-5, Tables 15 and 17 and section 4.2.2.3.

Section 1.2 of the report indicates that “NBF’s objective was to provide the following: ... An in-depth analysis of the fixed vs. floating rate debt policies of Manitoba Hydro’s Peers”. Emphasis added.

CAC/MSOS understands that, in its analysis of its debt position, Manitoba Hydro includes, in its policy limits of “15% to 25% of debt in floating rate instruments”, debt of short duration with a fixed interest rate. This matter was discussed in the previous GRA in Coalition/MH II-77 (d).

CAC/MSOS notes that SaskPower is indicated in the tables as having no Floating Rate Debt.

Section 4.2.2.3. indicates “NBF’s peer group analysis demonstrated that among the peers, only SaskPower fixed all of its debt and hence was not affected by fluctuations in short-term interest rates.” CAC/MSOS believes that this statement is in error and that by focusing only on the SaskPower year end results misconstrues the SaskPower use of shorter term instruments as it may, from time to time, throughout the year, and calls into question the “in-depth” nature of the “analysis”.

- d) Please confirm that data in these tables has been collected and prepared in a consistent manner which includes in floating rate debt short term instruments with fixed rates, or if unable to confirm provide a statement of the methodology employed.**

ANSWER:

The following response was provided by National Bank Financial:

“Short term debt was assumed to be variable because it is still subject to refinancing risk.”

CAC/MSOS/MH I-175

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Exhibit 13.1, National Bank Financial Report, page A-3 and A-5, Tables 15 and 17 and section 4.2.2.3.

Section 1.2 of the report indicates that “NBF’s objective was to provide the following: ... An in-depth analysis of the fixed vs. floating rate debt policies of Manitoba Hydro’s Peers”. Emphasis added.

CAC/MSOS understands that, in its analysis of its debt position, Manitoba Hydro includes, in its policy limits of “15% to 25% of debt in floating rate instruments”, debt of short duration with a fixed interest rate. This matter was discussed in the previous GRA in Coalition/MH II-77 (d).

CAC/MSOS notes that SaskPower is indicated in the tables as having no Floating Rate Debt.

Section 4.2.2.3. indicates “NBF’s peer group analysis demonstrated that among the peers, only SaskPower fixed all of its debt and hence was not affected by fluctuations in short-term interest rates.” CAC/MSOS believes that this statement is in error and that by focusing only on the SaskPower year end results misconstrues the SaskPower use of shorter term instruments as it may, from time to time, throughout the year, and calls into question the “in-depth” nature of the “analysis”.

- e) Please confirm that the third quarter 2009 report for SaskPower, available on its website www.saskpower.com, shows as at September 30, 2009 a \$180 million short term obligation made September 30, 2009 to mature October 5, 2009 at a rate of 0.25%.

ANSWER:

The following response was provided by National Bank Financial:

“The third quarter 2009 SaskPower report was issued subsequent to the submission date of the NBF report (July 16th, 2009). Therefore, the third quarter 2009 SaskPower report data could not have been captured in the NBF report.”

CAC/MSOS/MH I-175

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Exhibit 13.1, National Bank Financial Report, page A-3 and A-5, Tables 15 and 17 and section 4.2.2.3.

Section 1.2 of the report indicates that “NBF’s objective was to provide the following: ... An in-depth analysis of the fixed vs. floating rate debt policies of Manitoba Hydro’s Peers”. Emphasis added.

CAC/MSOS understands that, in its analysis of its debt position, Manitoba Hydro includes, in its policy limits of “15% to 25% of debt in floating rate instruments”, debt of short duration with a fixed interest rate. This matter was discussed in the previous GRA in Coalition/MH II-77 (d).

CAC/MSOS notes that SaskPower is indicated in the tables as having no Floating Rate Debt.

Section 4.2.2.3. indicates “NBF’s peer group analysis demonstrated that among the peers, only SaskPower fixed all of its debt and hence was not affected by fluctuations in short-term interest rates.” CAC/MSOS believes that this statement is in error and that by focusing only on the SaskPower year end results misconstrues the SaskPower use of shorter term instruments as it may, from time to time, throughout the year, and calls into question the “in-depth” nature of the “analysis”.

- f) Please confirm that the \$180 million short term obligation, bearing a rate of 0.25%, represented approximately 7% of the total of the short term and long term debt, as at September 30, 2009, $\{180/(180+2.568)=7\%$ }.

ANSWER:

The following response was provided by National Bank Financial:

“Please see response to CAC/MSOS/MH I-175 e).”

CAC/MSOS/MH I-175

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Exhibit 13.1, National Bank Financial Report, page A-3 and A-5, Tables 15 and 17 and section 4.2.2.3.

Section 1.2 of the report indicates that “NBF’s objective was to provide the following: ... An in-depth analysis of the fixed vs. floating rate debt policies of Manitoba Hydro’s Peers”. Emphasis added.

CAC/MSOS understands that, in its analysis of its debt position, Manitoba Hydro includes, in its policy limits of “15% to 25% of debt in floating rate instruments”, debt of short duration with a fixed interest rate. This matter was discussed in the previous GRA in Coalition/MH II-77 (d).

CAC/MSOS notes that SaskPower is indicated in the tables as having no Floating Rate Debt.

Section 4.2.2.3. indicates “NBF’s peer group analysis demonstrated that among the peers, only SaskPower fixed all of its debt and hence was not affected by fluctuations in short-term interest rates.” CAC/MSOS believes that this statement is in error and that by focusing only on the SaskPower year end results misconstrues the SaskPower use of shorter term instruments as it may, from time to time, throughout the year, and calls into question the “in-depth” nature of the “analysis”.

- g) Please confirm that the first quarter 2008 report for Saskpower, available on its website www.saskpower.com, shows as at March 31, 2008 a \$165 million short term obligation made March 31, 2008 to mature April 2, 2008 at a rate of 3%.

ANSWER:

The following response was provided by National Bank Financial:

“Confirmed. However, for consistency amongst the entire peer group, the floating proportion reported in the NBF report was based on SaskPower’s historical Annual Reports, where no floating debt was observed. Also the Q1 2008 report was unaudited.”

CAC/MSOS/MH I-175

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Exhibit 13.1, National Bank Financial Report, page A-3 and A-5, Tables 15 and 17 and section 4.2.2.3.

Section 1.2 of the report indicates that “NBF’s objective was to provide the following: ... An in-depth analysis of the fixed vs. floating rate debt policies of Manitoba Hydro’s Peers”. Emphasis added.

CAC/MSOS understands that, in its analysis of its debt position, Manitoba Hydro includes, in its policy limits of “15% to 25% of debt in floating rate instruments”, debt of short duration with a fixed interest rate. This matter was discussed in the previous GRA in Coalition/MH II-77 (d).

CAC/MSOS notes that SaskPower is indicated in the tables as having no Floating Rate Debt.

Section 4.2.2.3. indicates “NBF’s peer group analysis demonstrated that among the peers, only SaskPower fixed all of its debt and hence was not affected by fluctuations in short-term interest rates.” CAC/MSOS believes that this statement is in error and that by focusing only on the SaskPower year end results misconstrues the SaskPower use of shorter term instruments as it may, from time to time, throughout the year, and calls into question the “in-depth” nature of the “analysis”.

- h) In light of the intermittent use of short term instruments by SaskPower reflected in their quarterly reports, please confirm or amend the statement quoted above from Section 4.2.2.3.

ANSWER:

The following response was provided by National Bank Financial:

“Given the one-off (at time of the report), very brief, unaudited use of short term instruments by only one of Manitoba Hydro’s peers NBF confirms its original statement in Section 4.2.2.3.”

CAC/MSOS/MH I-176

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Exhibit 13.1, National Bank Financial Report, page A-3 and A-5, Tables 15 and 17

Section 1.2 of the report indicates that “NBF’s objective was to provide the following: ... An in-depth analysis of the fixed vs. floating rate debt policies of Manitoba Hydro’s Peers”. Emphasis added.

CAC/MSOS notes that SaskPower and Emera, among others have different year end dates.

CAC/MSOS has reviewed certain corporate disclosure and attempted to reproduce some of the percentage calculations from company data, and, in so doing has noted some discrepancies. For example, Emera, in its 2005 annual report notes, “Prior to hedging, floating rate debt is estimated to represent approximately 18% of total debt in 2005, For 2006, interest on approximately 42% of floating debt is capped at a rate of 4.10%.” For the year 2007 Emera estimated 14% of the debt was floating and 86% of floating debt was capped at 4.75%. For the year 2008 Emera estimated 14% of the debt was floating and 40% of floating debt was capped at 4.75%. Similar disclosure appears in other annual reports.

- a) For the data points noted as being 2008 in Table 17, please provide the date of the financial statements for each of “Peers” therein listed.

ANSWER:

The following response was provided by National Bank Financial:

“BC Hydro: March 31, 2008

SaskPower: December 31, 2008

Hydro Quebec: December 31, 2008

NB Power: March 31, 2008

Emera Inc.: December 31, 2008

Fortis Inc.: December 31, 2008

Canadian Utilities Limited: December 31, 2008”

CAC/MSOS/MH I-176

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Exhibit 13.1, National Bank Financial Report, page A-3 and A-5, Tables 15 and 17

Section 1.2 of the report indicates that “NBF’s objective was to provide the following: ... An in-depth analysis of the fixed vs. floating rate debt policies of Manitoba Hydro’s Peers”. Emphasis added.

CAC/MSOS notes that SaskPower and Emera, among others have different year end dates.

CAC/MSOS has reviewed certain corporate disclosure and attempted to reproduce some of the percentage calculations from company data, and, in so doing has noted some discrepancies. For example, Emera, in its 2005 annual report notes, “Prior to hedging, floating rate debt is estimated to represent approximately 18% of total debt in 2005, For 2006, interest on approximately 42% of floating debt is capped at a rate of 4.10%.” For the year 2007 Emera estimated 14% of the debt was floating and 86% of floating debt was capped at 4.75%. For the year 2008 Emera estimated 14% of the debt was floating and 40% of floating debt was capped at 4.75%. Similar disclosure appears in other annual reports.

- b) For the data points noted as being 2008 in Table 17 (except for SaskPower), please provide the inputs into the calculation of the relevant percentage, and in so doing, for each source number in the calculation, identify the “company reports” relied upon and the page from which that number was found.**

ANSWER:

The following response was provided by National Bank Financial:

“BC Hydro: Page 67, 2008 Annual Report

Hydro Quebec: Page 89, 2008 Annual Report

NB Power: Page 39, \$273/\$3,447, 2007/8 Annual Report

Emera Inc.: Page 5, Annual Financial Report 2008

Fortis Inc.: Page 81, \$656/\$5,534, 2008 Annual Report

Canadian Utilities Limited: Pages 28-29, \$83/\$2,862, Consolidated Financial Statements for the Year Ended December 31, 2008”

CAC/MSOS/MH I-176

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Exhibit 13.1, National Bank Financial Report, page A-3 and A-5, Tables 15 and 17

Section 1.2 of the report indicates that “NBF’s objective was to provide the following: ... An in-depth analysis of the fixed vs. floating rate debt policies of Manitoba Hydro’s Peers”. Emphasis added.

CAC/MSOS notes that SaskPower and Emera, among others have different year end dates.

CAC/MSOS has reviewed certain corporate disclosure and attempted to reproduce some of the percentage calculations from company data, and, in so doing has noted some discrepancies. For example, Emera, in its 2005 annual report notes, “Prior to hedging, floating rate debt is estimated to represent approximately 18% of total debt in 2005, For 2006, interest on approximately 42% of floating debt is capped at a rate of 4.10%.” For the year 2007 Emera estimated 14% of the debt was floating and 86% of floating debt was capped at 4.75%. For the year 2008 Emera estimated 14% of the debt was floating and 40% of floating debt was capped at 4.75%. Similar disclosure appears in other annual reports.

c) Does the NBF analysis assume that capped floating rate debt is effectively fixed?

ANSWER:

The following response was provided by National Bank Financial:

“No.”

CAC/MSOS/MH I-176

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Exhibit 13.1, National Bank Financial Report, page A-3 and A-5, Tables 15 and 17

Section 1.2 of the report indicates that “NBF’s objective was to provide the following: ... An in-depth analysis of the fixed vs. floating rate debt policies of Manitoba Hydro’s Peers”. Emphasis added.

CAC/MSOS notes that SaskPower and Emera, among others have different year end dates.

CAC/MSOS has reviewed certain corporate disclosure and attempted to reproduce some of the percentage calculations from company data, and, in so doing has noted some discrepancies. For example, Emera, in its 2005 annual report notes, “Prior to hedging, floating rate debt is estimated to represent approximately 18% of total debt in 2005, For 2006, interest on approximately 42% of floating debt is capped at a rate of 4.10%.” For the year 2007 Emera estimated 14% of the debt was floating and 86% of floating debt was capped at 4.75%. For the year 2008 Emera estimated 14% of the debt was floating and 40% of floating debt was capped at 4.75%. Similar disclosure appears in other annual reports.

- d) Does the NBF analysis rely on some disclosure that indicates that the cap was breached in each of the years 2005, 2006, 2007 and 2008?

ANSWER:

The following response was provided by National Bank Financial:

“No.”

CAC/MSOS/MH I-176

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Exhibit 13.1, National Bank Financial Report, page A-3 and A-5, Tables 15 and 17

Section 1.2 of the report indicates that “NBF’s objective was to provide the following: ... An in-depth analysis of the fixed vs. floating rate debt policies of Manitoba Hydro’s Peers”. Emphasis added.

CAC/MSOS notes that SaskPower and Emera, among others have different year end dates.

CAC/MSOS has reviewed certain corporate disclosure and attempted to reproduce some of the percentage calculations from company data, and, in so doing has noted some discrepancies. For example, Emera, in its 2005 annual report notes, “Prior to hedging, floating rate debt is estimated to represent approximately 18% of total debt in 2005, For 2006, interest on approximately 42% of floating debt is capped at a rate of 4.10%.” For the year 2007 Emera estimated 14% of the debt was floating and 86% of floating debt was capped at 4.75%. For the year 2008 Emera estimated 14% of the debt was floating and 40% of floating debt was capped at 4.75%. Similar disclosure appears in other annual reports.

- e) Please provide the calculation of the Emera ratios for each of the years 2005, 2006, 2007 and 2008, and in so doing, for each source number in the calculation, identify the Emera “company reports” relied upon and the page from which that number was extracted.

ANSWER:

The following response was provided by National Bank Financial (please see the chart included below):

	2005	2006	2007	2008
<i>Short Term Debt</i>	\$ 88	\$ 133	\$ 28	\$ 158
<i>Current Portion of LTD</i>	\$ 153	\$ 3	\$ 121	\$ 131
<i>Long Term Debt</i>	\$ 1,632	\$ 1,657	\$ 1,600	\$ 2,159
<i>Total Debt</i>	\$ 1,873	\$ 1,794	\$ 1,750	\$ 2,449
<i>Floating Rate Debt</i>	5%	7%	2%	6%
<i>Page</i>	51	51	55	55
<i>Annual Report</i>	2006	2006	2008	2008

CAC/MSOS/MH I-177

Subject: Debt and Debt Management Fixed vs. Floating

Reference: Manitoba Hydro 20010/11 – 20011/12 GRA, Exhibit 13.1, National Bank Financial Report, page 1, Section 1.2, Page 4, Section 1.4.3

Section 1.2 of the report indicates that “NBF’s objective was to provide the following: ... An in-depth analysis of the fixed vs. floating rate debt policies of Manitoba Hydro’s Peers”. Emphasis added.

Section 1.4.3 of the report indicates that “NBF examined the fixed vs. floating rate debt policies of Manitoba Hydro’s peer group ... The purpose of this analysis was not to provide an assessment of the peer group’s fixed vs. floating rate debt policies, but rather to attain insight into a relevant peer group’s choice of floating rate debt mix”. Emphasis added.

- a) Please provide a list of the Manitoba Hydro peers’ policies analyzed, as described in or required by Section 1.2, setting out the date of the document and the policy range.**

ANSWER:

The following response was provided by National Bank Financial:

“As per answer CAC/MSOS/MH I-174 a), NBF found actual floating proportion figures from each peers’ annual statements, not ranges.”

CAC/MSOS/MH I-178

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 4, “Financial Results & Forecasts”, Section 4.6, page 14 of 29, line 14 and following

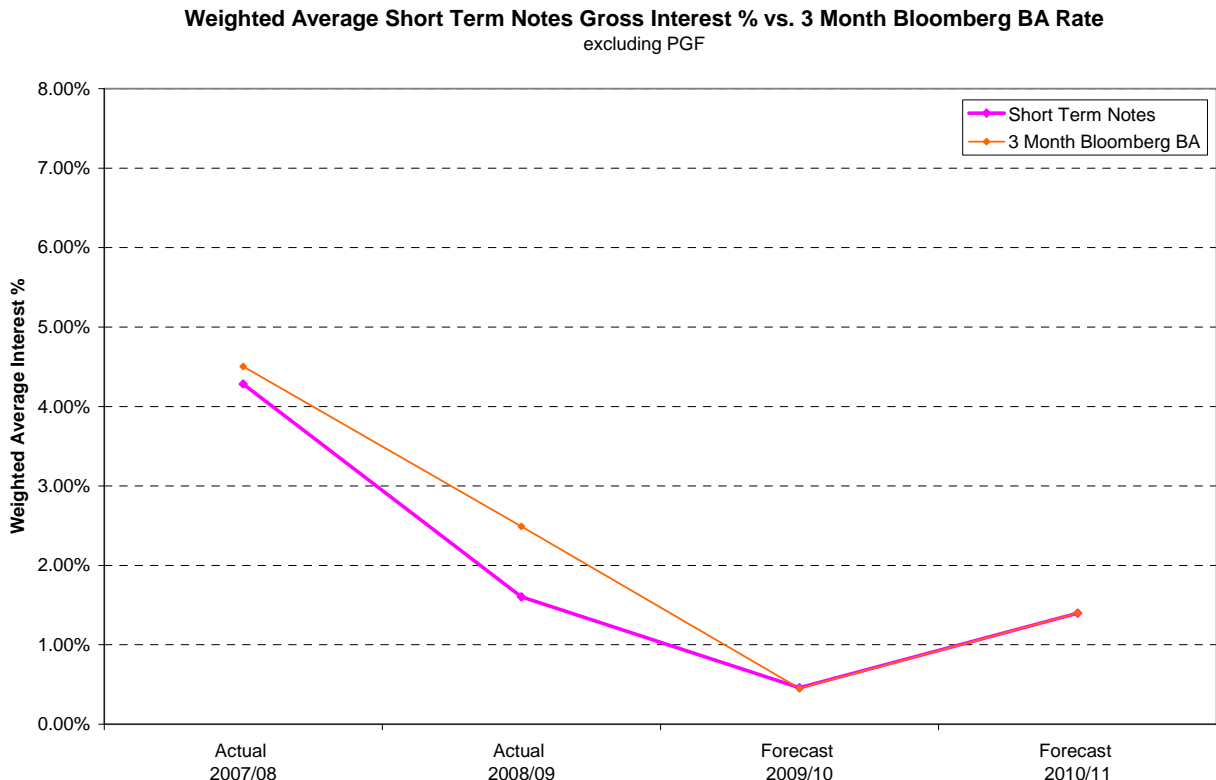
The Applicant provides a chart related to the weighted average short term and long term debt interest rates for each of 4 periods.

CAC/MSOS wishes to better understand the choice of data underlying the analysis.

- a) Please provide an additional graph reflecting only the interest rates for short term debt for the same 4 periods and add the line to reflect the Bloomberg 3 month BA rate for the historic data points and the forecast short term rate for the forecast data points.

ANSWER:

Please see the following graph:



Notes: 1) The 3 Month BA rate is per Bloomberg weekly series (CDOR03). The data points for the graph are calculated as annual averages of the weekly series.

2) The 3 Month BA rate actuals are utilized for the period from April 2007 to January 2010, and the 3 Month BA IFF-09 forecast rates are utilized for the period from February 2010 to March 2011.

CAC/MSOS/MH I-178

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 4, “Financial Results & Forecasts”, Section 4.6, page 14 of 29, line 14 and following

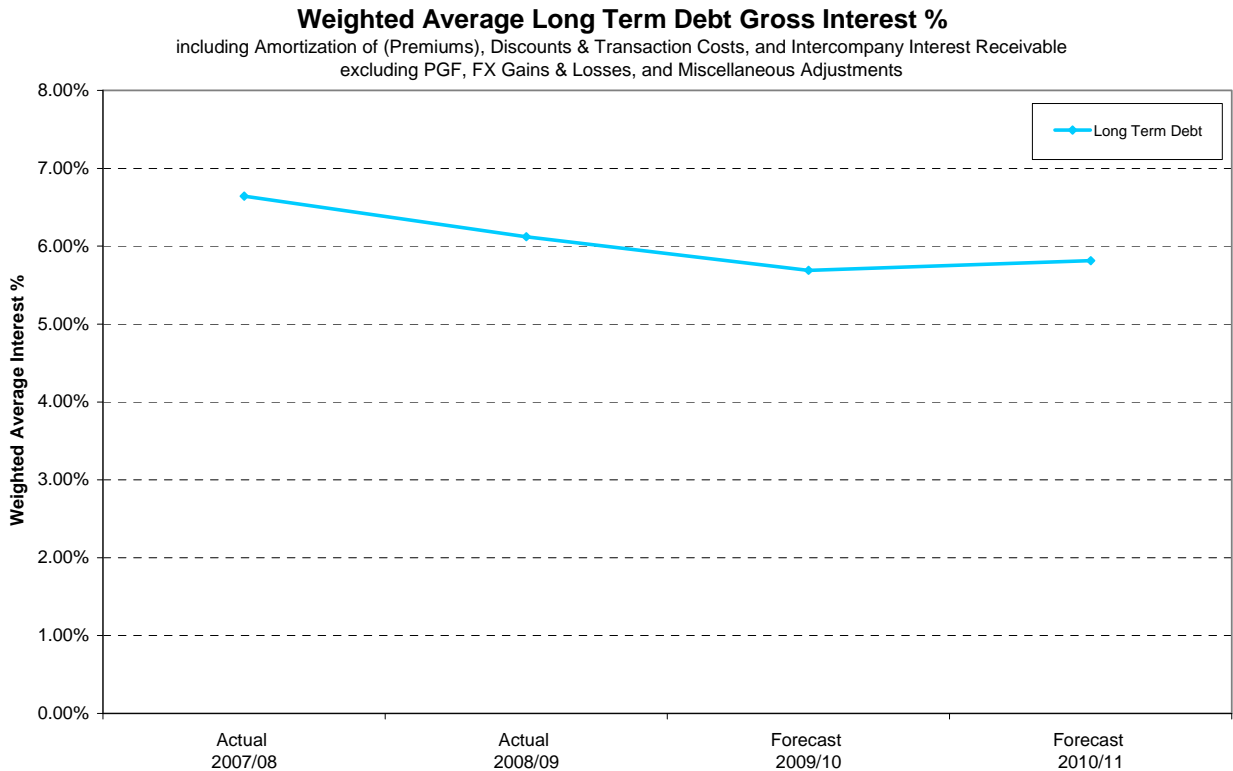
The Applicant provides a chart related to the weighted average short term and long term debt interest rates for each of 4 periods.

CAC/MSOS wishes to better understand the choice of data underlying the analysis.

- b) Please provide an additional graph reflecting only the interest rates for long term debt for the same 4 periods.

ANSWER:

Please see the following graph:



CAC/MSOS/MH I-179

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Section 12.3 & 12.4, page 5 of 8, line 32 and following

The Applicant reports “Fixed rate debt financing and interest rate derivatives are used to manage interest rates and the level of floating rate debt. Interest rate derivatives are executed by the Province of Manitoba on behalf of Manitoba Hydro and are structured such that Manitoba Hydro pays a fixed or floating semi-annual interest on a specified notional amount of debt”.

CAC/MSOS wishes to better understand the extent to which “interest rate derivatives have been employed in the 2008/09 and the 2009/10 financial years.

- a) Please provide a table setting out each of the interest rate derivative transactions which were entered into, maturing or terminated “on behalf of Manitoba Hydro” during each of the 2008/09 and the 2009/10 financial years, providing the date of the transaction, the “specified notional amount of debt”, whether the obligation was to pay fixed or floating, and if the transaction was to pay floating, the benchmark and spread.**

ANSWER:

Please see the attached schedule.

CAC/MSOS/MH I - 179 (a) & (b)

New Derivatives Transacted in 2008/09 & 2009/10

Debt Series	Trade Date	Effective Date	Notional Amount (\$)	Pay Fixed or Floating	Benchmark (%)	Spread (%)	Commissions (%)	Prior Quarter % Floating
FC-3	May 14, 2008	May 22, 2008	CAD 200,000,000	Pay Floating	3.251 CAD	0.630	0.025	20.48%
C100-2	October 27, 2008	November 3, 2008	CAD 100,000,000	Pay Fixed				21.38%
C100-1	October 31, 2008	November 3, 2008	CAD 85,000,000	Pay Fixed				21.38%
C101	November 14, 2008	November 21, 2008	CAD 200,000,000	Pay Floating	1.862 CAD	0.420	0.020	21.38%
C099-1	April 9, 2008	December 1, 2008	CAD 50,000,000	Pay Fixed				21.38%
C099-2	May 1, 2008	December 1, 2008	CAD 25,000,000	Pay Fixed				21.38%
C099-3A	May 1, 2008	December 1, 2008	CAD 25,000,000	Pay Fixed				21.38%
C099-3B	May 15, 2008	December 1, 2008	CAD 15,000,000	Pay Fixed				21.38%
C102	June 3 & 25, 2008	March 1, 2009	CAD 100,000,000	Pay Fixed				20.93%
FM	August 27, 2009	September 3, 2009	CAD 250,000,000	Pay Floating	2.536 CAD	0.520	0.087	19.69%
FO-1	January 13, 2010	January 21, 2010	USD 150,000,000	Pay Floating	1.538 USD	0.627	0.040	19.76%
FO-2 & FO-3	January 13, 2010	January 21, 2010	USD 250,000,000	Pay Floating	1.538 USD	0.627	0.040	19.76%
FP	February 11, 2010	February 19, 2010	CAD 175,000,000	Pay Floating	3.591 CAD	0.580	0.073	19.76%

Derivatives Maturing or Terminated in 2008/09 & 2009/10 (Net of Previous Derivatives)

Debt Series	Effective Date	Maturity Date	Notional Amount (\$)	Pay Fixed or Floating	Benchmark (%)	Spread (%)	Commissions (%)	Prior Quarter % Floating
EF	April 26, 2001	October 1, 2008	USD 46,494,000	Pay Fixed				21.38%
EM	February 22, 2000	February 22, 2010	USD 50,000,000	Pay Floating USD	6.566 USD	0.980	0.057	19.76%
EM-6	February 22, 2000	February 22, 2010	USD 100,000,000	Pay Floating USD	6.566 USD	0.980	0.057	19.76%
EM-1A	February 22, 2000	February 22, 2010	CAD 20,750,000	Pay Floating CAD	6.566 USD	0.980	0.057	19.76%
EM-1B	February 22, 2000	February 22, 2010	CAD 45,750,000	Pay Floating CAD	6.566 USD	0.980	0.057	19.76%
EM-3	June 19, 2000	February 22, 2010	CAD 50,000,000	Pay Fixed				19.76%
EM-4	July 4, 2000	February 22, 2010	CAD 25,000,000	Pay Fixed				19.76%
EM-5	April 24, 2001	February 22, 2010	USD 97,121,000	Pay Fixed				19.76%

Note: Existing derivatives amended advances C097, C108 and C112 during the 2008/09 and 2009/10 fiscal years, and therefore these advances are not included in the table.

CAC/MSOS/MH I-179

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Section 12.3 & 12.4, page 5 of 8, line 32 and following

The Applicant reports “Fixed rate debt financing and interest rate derivatives are used to manage interest rates and the level of floating rate debt. Interest rate derivatives are executed by the Province of Manitoba on behalf of Manitoba Hydro and are structured such that Manitoba Hydro pays a fixed or floating semi-annual interest on a specified notional amount of debt”.

CAC/MSOS wishes to better understand the extent to which “interest rate derivatives have been employed in the 2008/09 and the 2009/10 financial years.

- b) Please indicate for each of the transactions referred to in the table requested above the proportion of floating or short-term debt as a percentage of total debt as at the quarter end immediately prior to the transaction.**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-179(a). Note that the percentage of total debt as at the quarter end immediately prior to the transaction is associated with the final date listed for any identified debt series.

CAC/MSOS/MH I-180

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Section 12.4, page 8 of 8, line 15 and following

The Applicant presents a table indicating that a 1% change in interest rates will increase or decrease retained earnings by \$24 to 26 million.

In Manitoba Hydro 2010/11 2011/12 GRA, Tab 4, page 16 of 29, in schedule 4.6.0 indicates a “Gross Interest” cost of \$553,011,000.

CAC/MSOS recognizes that a significant portion of the “Gross Interest” expense will accrue on instruments which currently have fixed interest rates, and that many of these instruments have maturities past the end of 2011/12 financial year, but wishes to better understand the calculation of the \$24 & 26 million variance numbers for 2011/12.

- a) Please provide a table providing a reconciliation of the 2011/12 Gross Interest expense, through to the respective \$24 to \$26 million interest impact on retained earnings. In this table please segment the interest costs which are fixed and related to instruments maturing after the end of the 2011/12 financial year, and provide the outstanding year end principal amount. Please identify**
- i. any assumed impact of fixed or floating rate derivative transactions;**
 - ii. the principal amount of forecast refinancing of maturing fixed rate issues, which are intended to be refinanced into fixed rate instruments, and their interest costs;**
 - iii. the principal amount of forecast refinancing of maturing floating rate issues, which are intended to be refinanced into fixed rate instruments, and their interest costs;**
 - iv. the principal amount of forecast new fixed rate issues, and their interest costs; and,**
 - v. the principal amount of forecast new floating rate issues, and their interest costs.**

ANSWER:

The interest rate scenarios shown in the table in Tab 12 correspond to the interest rate scenarios in IFF09-1, Appendix 5.2, page 20. In these scenarios, interest rate changes are applied to all new long and short-term debt issues and new sinking fund investments. For the purposes of the forecast, all new long term debt is assumed to be Canadian dollar 30 year fixed rate financing so that finance expense is calculated over the term of the forecast at the Manitoba Hydro long-term Canadian debt interest rates. The timing of the issuance of long-term debt follows the forecasting convention of utilizing the first \$200 million of the corporation's \$500 million Commercial Paper Program to provide short-term capital bridge financing. At the point that forecast accumulated cash requirements reach \$200 million, short-term debt is converted to long-term debt through the issuance of new long-term financing.

The increase in retained earnings in the early years of the interest rate increase scenario is due to the application of rate changes to the significantly larger construction in progress balance (resulting in the corresponding increase in capitalized interest) compared to the balance of forecasted new long-term debt issued. Over time, the balance of new long-term debt exceeds the construction in progress balance as major projects are placed in-service resulting in the decrease in retained earnings that would be expected in an interest rate increase scenario. The converse would be true for the interest rate decrease scenario. The attached table provides a breakdown of the incremental impacts of interest rate changes on IFF09-1.

**Incremental Impact of 1% Increase in Interest Rates on IFF09-1 (Appendix 5.2, p. 20 and Tab 12, p.8, line 15)
(In Millions of Dollars)**

For the year ended March 31

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
New Long-Term Debt Issued:											
MH09	400	800	600	600	1,600	1,400	1,800	1,800	1,800	1,400	1,000
Interest +1%	400	800	600	600	1,600	1,400	2,000	1,800	2,000	1,600	1,000
New Long-Term Debt Interest Rate:											
MH09	4.60%	4.65%	5.20%	5.70%	6.10%	6.10%	6.10%	6.10%	6.10%	6.10%	6.10%
Interest +1%	4.60%	5.65%	6.20%	6.70%	7.10%	7.10%	7.10%	7.10%	7.10%	7.10%	7.10%
Short-Term Debt Balance:											
MH09	48	40	32	133	0	4	115	105	70	191	165
Interest +1%	48	41	42	152	43	104	73	148	15	73	200
Short-Term Debt Interest Rate:											
MH09	0.45%	1.40%	3.60%	4.30%	4.45%	4.45%	4.45%	4.45%	4.45%	4.45%	4.45%
Interest +1%	0.45%	2.40%	4.60%	5.30%	5.45%	5.45%	5.45%	5.45%	5.45%	5.45%	5.45%
Change in Net Finance Expense:											
Gross Interest on New Long-Term Debt	(0)	3	11	16	28	45	64	90	110	137	178
Gross Interest on Short-Term Debt	-	1	1	2	1	1	2	0	3	3	1
Provincial Guarantee Fee	-	(0)	0	0	0	0	1	2	2	3	5
Interest on Assets Under Construction	(1)	(20)	(20)	(17)	(21)	(31)	(45)	(60)	(66)	(63)	(59)
Interest Income	-	(2)	(1)	(1)	(1)	(0)	(3)	(5)	(8)	(9)	(9)
Total Change in Net Finance Expense	(1)	(17)	(8)	(0)	7	16	19	26	41	71	117
Cumulative Change in Net Finance Expense	(1)	(18)	(26)	(27)	(19)	(4)	15	42	82	154	270
Depreciation and Amortization	0	0	1	1	1	1	1	1	2	3	4
Capital and Other Taxes	(0)	0	0	0	0	0	1	1	1	2	2
Non-controlling Interest	(0)	(0)	1	2	2	2	2	2	1	1	1
Net Income	1	17	9	1	(7)	(15)	(19)	(27)	(43)	(74)	(121)
Retained Earnings	1	18	26	27	21	5	(14)	(41)	(83)	(157)	(279)

**Incremental Impact of 1% Decrease in Interest Rates on IFF09-1 (Appendix 5.2, p. 20 and Tab 12, p.8, line 15)
(In Millions of Dollars)**

For the year ended March 31

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
New Long-Term Debt Issued:											
MH09	400	800	600	600	1,600	1,400	1,800	1,800	1,800	1,400	1,000
Interest -1%	400	800	600	600	1,400	1,400	1,800	1,800	1,600	1,400	800
New Long-Term Debt Interest Rate:											
MH09	4.60%	4.65%	5.20%	5.70%	6.10%	6.10%	6.10%	6.10%	6.10%	6.10%	6.10%
Interest -1%	4.60%	3.65%	4.20%	4.70%	5.10%	5.10%	5.10%	5.10%	5.10%	5.10%	5.10%
Short-Term Debt Balance:											
MH09	48	40	32	133	0	4	115	105	70	191	165
Interest -1%	48	37	23	109	150	109	157	66	128	124	155
Short-Term Debt Interest Rate:											
MH09	0.45%	1.40%	3.60%	4.30%	4.45%	4.45%	4.45%	4.45%	4.45%	4.45%	4.45%
Interest -1%	0.45%	0.40%	2.60%	3.30%	3.45%	3.45%	3.45%	3.45%	3.45%	3.45%	3.45%
Change in Net Finance Expense:											
Gross Interest on New Long-Term Debt	(0)	(4)	(13)	(15)	(28)	(44)	(63)	(85)	(106)	(133)	(166)
Gross Interest on Short-Term Debt	-	(1)	0	(2)	(2)	(1)	(0)	(1)	(1)	0	0
Provincial Guarantee Fee	-	(0)	(0)	(0)	(0)	(1)	(1)	(2)	(2)	(3)	(5)
Interest on Assets Under Construction	(1)	20	20	17	21	31	45	59	66	63	56
Interest Income	-	2	1	1	1	0	2	5	7	8	8
Total Change in Net Finance Expense	(1)	16	7	0	(7)	(15)	(17)	(24)	(36)	(65)	(106)
Cumulative Change in Net Finance Expense	(1)	16	23	23	16	1	(16)	(40)	(76)	(141)	(248)
Depreciation and Amortization	0	0	0	(0)	(0)	(1)	(1)	(1)	(1)	(2)	(3)
Capital and Other Taxes	(0)	(0)	(0)	(0)	(0)	(0)	(1)	(1)	(1)	(2)	(2)
Non-controlling Interest	(0)	(0)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Net Income	1	(17)	(8)	(1)	6	15	18	24	38	68	111
Retained Earnings	1	(16)	(24)	(25)	(19)	(5)	13	37	75	143	254

CAC/MSOS/MH I-180

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Section 12.4, page 8 of 8, line 15 and following

The Applicant presents a table indicating that a 1% change in interest rates will increase or decrease retained earnings by \$24 to 26 million.

In Manitoba Hydro 2010/11 2011/12 GRA, Tab 4, page 16 of 29, in schedule 4.6.0 indicates a “Gross Interest” cost of \$553,011,000.

CAC/MSOS recognizes that a significant portion of the “Gross Interest” expense will accrue on instruments which currently have fixed interest rates, and that many of these instruments have maturities past the end of 2011/12 financial year, but wishes to better understand the calculation of the \$24 & 26 million variance numbers for 2011/12.

- b) Please provide the similar calculations for the 2011/12 forecast interest impact on retained earnings.**

ANSWER:

Please Manitoba Hydro’s response to CAC/MSOS/MH I-180(a).

CAC/MSOS/MH I-181

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Section 12.4, page 8 of 8, line 15 and following, and Appendix 12.2, Independent Review of Manitoba Hydro Export Power Sales and Associated Risks” September 11, 2009, page 118, Exhibit 9-7.

In Tab 12, “Corporate Risk Management”, Section 12.4, page 8 of 8, line 15, the Applicant presents a table indicating that a 1% increase in interest rates will increase retained earnings by \$26 million for 2011/12, decrease increase the retained earnings by \$14 Million for 2015/16, and decrease retained earnings by \$279 Million for 2019/20. The table also indicates that a 1% decrease in interest rates will decrease retained earnings by \$24 million for 2011/12, increase the retained earnings by \$13 Million for 2015/16, and increase retained earnings by \$254 Million for 2019/20.

In Appendix 12.2, Independent Review of Manitoba Hydro Export Power Sales and Associated Risks” September 11, 2009, page 118, Exhibit 9-7, the Applicant presents a table indicating that a 1% increase in interest rates will increase retained earnings by \$32 million for 2010/11, increase the retained earnings by \$27 Million for 2014/15, and decrease retained earnings by \$115 Million for 2018/19. The table also indicates that a 1% decrease in interest rates will decrease retained earnings by \$26 million for 2010/11, increase the retained earnings by \$13 Million for 2014/15, and increase retained earnings by \$214 Million for 2018/19.

CAC/MSOS observes that, all other things being equal, an increase in interest expense should result in a reduction of retained earnings, while a decrease in interest expense should result in an increase in retained earnings. As such, CAC/MSOS would like to better understand the counterintuitive results in Section 12.4 for 2011/12, and in Appendix 12.2 for 2010/11 and 2014/15.

- a) **Please provide a table providing a reconciliation of the 2011/12 Gross Interest expense, through to the respective \$24 to \$26 million interest impact on retained earnings from Section 12.4. In this table please segment the interest costs which are fixed and related to instruments maturing after the end of the 2011/12 financial year, and provide the outstanding year end principal amount. Please identify**
- i. **any assumed impact of fixed or floating rate derivative transactions;**
 - ii. **the principal amount of forecast refinancing of maturing fixed rate issues, which are intended to be refinanced into fixed rate instruments, and their interest costs;**
 - iii. **the principal amount of forecast refinancing of maturing floating rate issues, which are intended to be refinanced into fixed rate instruments, and their interest costs;**
 - iv. **the principal amount of forecast new fixed rate issues, and their interest costs; and,**
 - v. **the principal amount of forecast new floating rate issues, and their interest costs.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-180(a).

CAC/MSOS/MH I-181

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Section 12.4, page 8 of 8, line 15 and following, and Appendix 12.2, Independent Review of Manitoba Hydro Export Power Sales and Associated Risks” September 11, 2009, page 118, Exhibit 9-7.

In Tab 12, “Corporate Risk Management”, Section 12.4, page 8 of 8, line 15, the Applicant presents a table indicating that a 1% increase in interest rates will increase retained earnings by \$26 million for 2011/12, decrease increase the retained earnings by \$14 Million for 2015/16, and decrease retained earnings by \$279 Million for 2019/20. The table also indicates that a 1% decrease in interest rates will decrease retained earnings by \$24 million for 2011/12, increase the retained earnings by \$13 Million for 2015/16, and increase retained earnings by \$254 Million for 2019/20.

In Appendix 12.2, Independent Review of Manitoba Hydro Export Power Sales and Associated Risks” September 11, 2009, page 118, Exhibit 9-7, the Applicant presents a table indicating that a 1% increase in interest rates will increase retained earnings by \$32 million for 2010/11, increase the retained earnings by \$27 Million for 2014/15, and decrease retained earnings by \$115 Million for 2018/19. The table also indicates that a 1% decrease in interest rates will decrease retained earnings by \$26 million for 2010/11, increase the retained earnings by \$13 Million for 2014/15, and increase retained earnings by \$214 Million for 2018/19.

CAC/MSOS observes that, all other things being equal, an increase in interest expense should result in a reduction of retained earnings, while a decrease in interest expense should result in an increase in retained earnings. As such, CAC/MSOS would like to better understand the counterintuitive results in Section 12.4 for 2011/12, and in Appendix 12.2 for 2010/11 and 2014/15.

- b) Please provide the similar calculations for the 2010/11 forecast interest impact on retained earnings from Appendix 12.2.**

ANSWER:

Please see the attached schedules for the incremental impacts of interest rate scenarios from IFF08-1.

**Incremental Impact of 1% Increase in Interest Rates on IFF08-1
(In Millions of Dollars)**

For year ending March 31:

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
New Long-Term Debt Issued:											
MH08	-	800	800	400	200	1,200	1,400	2,000	1,600	1,800	1,800
Interest +1%	-	800	800	400	400	1,000	1,400	2,000	1,800	2,000	2,000
New Long-Term Debt Interest Rate:											
MH08	4.90%	5.30%	5.85%	5.95%	6.25%	6.45%	6.45%	6.45%	6.45%	6.45%	6.45%
Interest +1%	4.90%	6.30%	6.85%	6.95%	7.25%	7.45%	7.45%	7.45%	7.45%	7.45%	7.45%
Short-Term Debt Balance:											
MH08	95	132	24	28	181	115	64	12	138	156	163
Interest +1%	95	132	34	53	15	172	158	164	184	89	23
Short-Term Debt Interest Rate:											
MH08	3.50%	4.05%	4.60%	4.60%	4.60%	4.60%	4.60%	4.60%	4.60%	4.60%	4.60%
Interest +1%	3.50%	5.05%	5.60%	5.60%	5.60%	5.60%	5.60%	5.60%	5.60%	5.60%	5.60%
Change in Net Finance Expense:											
Gross Interest on New Long-Term Debt	(0)	3	12	19	24	31	44	66	88	115	141
Gross Interest on Short-Term Debt	(0)	1	1	1	0	1	2	(0)	1	(2)	0
Provincial Guarantee Fee	(0)	(0)	0	0	0	0	1	1	2	2	3
Interest on Assets Under Construction	(1)	(17)	(23)	(23)	(19)	(29)	(36)	(52)	(68)	(68)	(65)
Interest Income	(0)	(2)	(2)	(1)	(2)	(3)	(1)	(4)	(7)	(10)	(11)
Centra Gas	(1)	1	(1)	(0)	(0)	1	1	(1)	(0)	(0)	(0)
Total Change in Net Finance Expense	(2)	(15)	(14)	(4)	4	2	9	10	16	37	69
Cumulative Change in Net Finance Expense	(2)	(17)	(30)	(34)	(31)	(29)	(20)	(9)	6	44	112
Depreciation and Amortization	0	(2)	(1)	(1)	(0)	(1)	6	1	1	3	11
Capital and Other Taxes	0	(0)	0	1	0	0	0	1	1	1	2
Non-controlling Interest	-	-	-	1	3	3	3	3	3	3	2
Net Income	1	16	14	6	(1)	2	(12)	(9)	(15)	(39)	(79)
Retained Earnings	1	18	32	38	37	39	27	18	3	(36)	(115)

**Incremental Impact of 1% Decrease in Interest Rates on IFF08-1
(In Millions of Dollars)**

For year ending March 31:

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
New Long-Term Debt Issued:											
MH08	-	800	800	400	200	1,200	1,400	2,000	1,600	1,800	1,800
Interest -1%	-	800	800	400	200	1,200	1,200	2,000	1,600	1,600	1,800
New Long-Term Debt Interest Rate:											
MH08	4.90%	5.30%	5.85%	5.95%	6.25%	6.45%	6.45%	6.45%	6.45%	6.45%	6.45%
Interest -1%	4.90%	4.30%	4.85%	4.95%	5.25%	5.45%	5.45%	5.45%	5.45%	5.45%	5.45%
Short-Term Debt Balance:											
MH08	95	132	24	28	181	115	64	12	138	156	163
Interest -1%	95	131	16	5	142	40	140	20	57	163	29
Short-Term Debt Interest Rate:											
MH08	3.50%	4.05%	4.60%	4.60%	4.60%	4.60%	4.60%	4.60%	4.60%	4.60%	4.60%
Interest -1%	3.50%	3.05%	3.60%	3.60%	3.60%	3.60%	3.60%	3.60%	3.60%	3.60%	3.60%
Change in Net Finance Expense:											
Gross Interest on New Long-Term Debt	-	(3)	(12)	(18)	(20)	(31)	(45)	(65)	(87)	(106)	(135)
Gross Interest on Short-Term Debt	-	(1)	(1)	(1)	(2)	(1)	(1)	(1)	(2)	(3)	(2)
Provincial Guarantee Fee	-	-	(0)	(0)	(0)	(0)	(1)	(1)	(2)	(3)	(4)
Interest on Assets Under Construction	1	17	24	23	15	13	21	37	52	52	49
Interest Income	-	2	2	1	2	3	2	4	6	9	10
Centra Gas	(1)	1	(1)	0	0	1	1	(0)	0	0	0
Total Change in Net Finance Expense	1	16	12	4	(6)	(16)	(24)	(26)	(32)	(51)	(83)
Cumulative Change in Net Finance Expense	1	16	28	33	27	11	(13)	(39)	(71)	(122)	(205)
Depreciation and Amortization	0	(2)	(1)	(2)	(2)	(3)	2	(3)	(4)	(6)	(3)
Capital and Other Taxes	0	(0)	(0)	0	(0)	(1)	(1)	(1)	(1)	(1)	(1)
Non-controlling Interest	-	-	-	(1)	(3)	(3)	(3)	(3)	(2)	(2)	(2)
Net Income	(1)	(14)	(11)	(3)	5	16	20	27	34	56	85
Retained Earnings	(1)	(15)	(26)	(29)	(24)	(8)	13	39	73	129	214

CAC/MSOS/MH I-181

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Section 12.4, page 8 of 8, line 15 and following, and Appendix 12.2, Independent Review of Manitoba Hydro Export Power Sales and Associated Risks” September 11, 2009, page 118, Exhibit 9-7.

In Tab 12, “Corporate Risk Management”, Section 12.4, page 8 of 8, line 15, the Applicant presents a table indicating that a 1% increase in interest rates will increase retained earnings by \$26 million for 2011/12, decrease increase the retained earnings by \$14 Million for 2015/16, and decrease retained earnings by \$279 Million for 2019/20. The table also indicates that a 1% decrease in interest rates will decrease retained earnings by \$24 million for 2011/12, increase the retained earnings by \$13 Million for 2015/16, and increase retained earnings by \$254 Million for 2019/20.

In Appendix 12.2, Independent Review of Manitoba Hydro Export Power Sales and Associated Risks” September 11, 2009, page 118, Exhibit 9-7, the Applicant presents a table indicating that a 1% increase in interest rates will increase retained earnings by \$32 million for 2010/11, increase the retained earnings by \$27 Million for 2014/15, and decrease retained earnings by \$115 Million for 2018/19. The table also indicates that a 1% decrease in interest rates will decrease retained earnings by \$26 million for 2010/11, increase the retained earnings by \$13 Million for 2014/15, and increase retained earnings by \$214 Million for 2018/19.

CAC/MSOS observes that, all other things being equal, an increase in interest expense should result in a reduction of retained earnings, while a decrease in interest expense should result in an increase in retained earnings. As such, CAC/MSOS would like to better understand the counterintuitive results in Section 12.4 for 2011/12, and in Appendix 12.2 for 2010/11 and 2014/15.

- c) Please provide the similar calculations for the 2014/15 forecast interest impact on retained earnings from Appendix 12.2.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-181(b).

CAC/MSOS/MH I-182

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Appendix 12.1, Corporate Risk Management Report, October 2008, Table of Contents

The Applicant presents a Table of Contents indicating that the report contains 3 appendices, identified as A on page 11, B on page 62, and C on page 63.

CAC/MSOS observes that the on-line copy lacks appendices A on page 11, and C on page 63

a) Please provide the missing documents.

ANSWER:

A copy of the full report (with sensitive information redacted) was circulated to all Parties on March 8, 2010.

CAC/MSOS/MH I-182

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Appendix 12.1, Corporate Risk Management Report, October 2008, Table of Contents

The Applicant presents a Table of Contents indicating that the report contains 3 appendices, identified as A on page 11, B on page 62, and C on page 63.

CAC/MSOS observes that the on-line copy lacks appendices A on page 11, and C on page 63

- b) Please distinguish the separate risks, C1 Water Supply Drought, D 2 Insufficient Supply (drought peril), and D3 Prolonged Loss of System Supply.**

ANSWER:

Risks facing the Corporation have been identified and grouped into risk categories based on the source of the risk. C1 is an environmental risk relating to reduced water conditions (including the worst drought on historical record) and their impact on generation supply. D2 is an infrastructure risk related to infrastructure capacities. System planning is conducted based on the worst water conditions on record and this risk identifies that there is a possibility of a worst drought than the worst drought on record. D3 is an infrastructure risk relating to a catastrophic event such as a tornado, fire or sabotage that affects all facilities versus only generating facilities.

CAC/MSOS/MH I-182

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Appendix 12.1, Corporate Risk Management Report, October 2008, Table of Contents

The Applicant presents a Table of Contents indicating that the report contains 3 appendices, identified as A on page 11, B on page 62, and C on page 63.

CAC/MSOS observes that the on-line copy lacks appendices A on page 11, and C on page 63

- c) Please identify the event or events that would lead to a C 1 consequence, but not trigger a D 2 consequence.**

ANSWER:

A drought that is within the historical record.

CAC/MSOS/MH I-182

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Appendix 12.1, Corporate Risk Management Report, October 2008, Table of Contents

The Applicant presents a Table of Contents indicating that the report contains 3 appendices, identified as A on page 11, B on page 62, and C on page 63.

CAC/MSOS observes that the on-line copy lacks appendices A on page 11, and C on page 63

- d) Please distinguish between the extent of drought that would lead to a C 1, D 2 or D 3 consequence.**

ANSWER:

C1 would be a drought within historical record. D2 would be a drought that is greater than the historical record. D3 is related to a catastrophic event such as tornado, fire or sabotage and is not related to drought.

CAC/MSOS/MH I-183

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Appendix 12.1, Corporate Risk Management Report, October 2008, page 10

The Applicant presents a report dated October 2008, which under the heading “Future Work” reports “The risk management program will undergo an external review in the upcoming year to assess whether it is appropriate and in line with emerging best practices.”

a) Please provide a copy of the “external review”.

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-183(b).

CAC/MSOS/MH I-183

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Appendix 12.1, Corporate Risk Management Report, October 2008, page 10

The Applicant presents a report dated October 2008, which under the heading “Future Work” reports “The risk management program will undergo an external review in the upcoming year to assess whether it is appropriate and in line with emerging best practices.”

- b) If the “external review” has not been completed, please advise the reasons for the delay and its expected completion date.**

ANSWER:

This review did not commence as anticipated. Manitoba Hydro did engage two highly-respected consulting firms, ICF International and KPMG, to provide an independent assessment of Manitoba Hydro’s risk management practices. The ICF report was completed in September 2009 and is filed under Appendix 12.2 of the Application. The KPMG review was targeted to be filed by the end of March 2010; however KPMG has recently indicated that the report will not be completed in time to accommodate a March filing. Manitoba Hydro is targeting to file this report on April 15, 2010. As well, the Auditor General of Manitoba has also planned a review of Manitoba Hydro’s risk management practices. After all these reviews are completed an assessment will be made to determine whether any further reviews are required.

CAC/MSOS/MH I-184

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Appendix 12.1, Corporate Risk Management Report, October 2008, page 8

The Applicant indicates, in this report dated, October 2008, that the interest rate risk is “Up to \$170 million for a 1% change over a forecast period ending 2017-18”.

CAC/MSOS wishes to better understand the calculation of the \$24 & 26 million variance numbers for 2011/12 from Section 12.4, page 8 of 8, and the assumptions underlying the calculation of \$170 million.

- a) Does the \$170 million represent gross interest, or some other amount, and if another amount, please identify what is represented.

ANSWER:

Please see the attached schedules for the incremental impacts of interest rate scenarios from IFF07-1.

**Incremental Impact of 1% Increase in Interest Rates on IFF07-1
(In Millions of Dollars)**

For the year ended March 31

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
New Long-Term Debt Issued:											
MH07	-	800	800	600	400	400	1,400	800	1,200	1,000	1,200
Interest +1%	-	800	800	600	400	600	1,400	800	1,200	1,200	1,200
New Long-Term Debt Interest Rate:											
MH07	5.15%	5.60%	5.75%	5.95%	6.10%	6.45%	6.45%	6.45%	6.45%	6.45%	6.45%
Interest +1%	5.15%	6.60%	6.75%	6.95%	7.10%	7.45%	7.45%	7.45%	7.45%	7.45%	7.45%
Short-Term Debt Balance:											
MH07	93	31	9	17	53	195	159	112	16	124	95
Interest +1%	93	33	23	47	106	68	67	71	36	26	112
Short-Term Debt Interest Rate:											
MH07	4.70%	4.70%	4.60%	4.60%	4.60%	4.60%	4.60%	4.60%	4.60%	4.60%	4.60%
Interest +1%	4.70%	5.70%	5.60%	5.60%	5.60%	5.60%	5.60%	5.60%	5.60%	5.60%	5.60%
Change in Net Finance Expense:											
Gross Interest on New Long-Term Debt	-	4	11	21	25	29	43	62	74	89	111
Gross Interest on Short-Term Debt	-	0	1	(1)	3	4	2	(1)	1	3	(0)
Provincial Guarantee Fee	-	-	0	0	0	1	1	1	2	2	3
Interest on Assets Under Construction	-	(13)	(18)	(24)	(22)	(18)	(25)	(35)	(43)	(49)	(52)
Interest Income	-	(0)	(1)	(1)	(1)	(1)	(2)	(2)	(3)	(3)	(4)
Centra Gas	-	1	1	1	1	1	1	1	1	1	1
Total Change in Net Finance Expense	-	(8)	(6)	(3)	6	15	20	26	32	43	58
Cumulative Change in Net Finance Expense	-	(8)	(15)	(18)	(12)	4	24	50	82	125	183
Depreciation and Amortization	-	0	0	0	1	1	1	1	1	2	2
Capital and Other Taxes	-	0	0	0	0	0	0	1	1	1	1
Non-controlling Interest	-	-	-	-	2	4	4	5	5	5	5
Net Income	-	8	6	3	(5)	(13)	(17)	(23)	(29)	(40)	(57)
Retained Earnings	-	8	14	17	12	(1)	(18)	(41)	(70)	(111)	(167)

**Incremental Impact of 1% Decrease in Interest Rates on IFF07-1
(In Millions of Dollars)**

For the year ended March 31

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
New Long-Term Debt Issued:											
MH07	-	800	800	600	400	400	1,400	800	1,200	1,000	1,200
Interest -1%	-	800	600	600	400	600	1,400	600	1,000	1,200	1,000
New Long-Term Debt Interest Rate:											
MH07	5.15%	5.60%	5.75%	5.95%	6.10%	6.45%	6.45%	6.45%	6.45%	6.45%	6.45%
Interest -1%	5.15%	4.60%	4.75%	4.95%	5.10%	5.45%	5.45%	5.45%	5.45%	5.45%	5.45%
Short-Term Debt Balance:											
MH07	93	31	9	17	53	195	159	112	16	124	95
Interest -1%	93	28	195	180	186	107	43	152	198	26	90
Short-Term Debt Interest Rate:											
MH07	4.70%	4.70%	4.60%	4.60%	4.60%	4.60%	4.60%	4.60%	4.60%	4.60%	4.60%
Interest -1%	4.70%	3.70%	3.60%	3.60%	3.60%	3.60%	3.60%	3.60%	3.60%	3.60%	3.60%
Change in Net Finance Expense:											
Gross Interest on New Long-Term Debt	0	(3)	(11)	(19)	(26)	(33)	(42)	(53)	(66)	(83)	(101)
Gross Interest on Short-Term Debt	0	(1)	(1)	(1)	(1)	1	(0)	(2)	(1)	(0)	1
Provincial Guarantee Fee	(0)	0	(0)	(0)	(0)	(1)	(1)	(1)	(2)	(2)	(3)
Interest on Assets Under Construction	(0)	13	18	24	21	18	25	35	43	49	52
Interest Income	(0)	0	1	1	1	1	2	2	2	3	4
Centra Gas	-	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Total Change in Net Finance Expense	(0)	8	7	4	(5)	(15)	(17)	(20)	(24)	(34)	(47)
Cumulative Change in Net Finance Expense	(0)	8	15	19	14	(1)	(18)	(38)	(62)	(97)	(144)
Depreciation and Amortization	-	(0)	(0)	(0)	(1)	(1)	(1)	(1)	(1)	(2)	(2)
Capital and Other Taxes	-	(0)	(0)	(0)	(0)	(0)	(1)	(1)	(1)	(1)	(1)
Non-controlling Interest	-	-	-	-	(2)	(4)	(4)	(4)	(4)	(5)	(4)
Net Income	0	(8)	(6)	(4)	5	12	15	18	22	33	47
Retained Earnings	0	(8)	(15)	(19)	(14)	(2)	13	31	53	86	132

CAC/MSOS/MH I-184

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Appendix 12.1, Corporate Risk Management Report, October 2008, page 8

The Applicant indicates, in this report dated, October 2008, that the interest rate risk is “Up to \$170 million for a 1% change over a forecast period ending 2017-18”.

CAC/MSOS wishes to better understand the calculation of the \$24 & 26 million variance numbers for 2011/12 from Section 12.4, page 8 of 8, and the assumptions underlying the calculation of \$170 million.

- b) As the difference in variance numbers of \$24 & 26 million for 2011/12 from Section 12.4, appear to indicate a slight difference in the financial implications of increases as opposed to decreases in interest rates from those forecast, please indicate the variance for the forecast period assuming the variation is in the inverse direction to that used to develop the \$170 million forecast.**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-184(a).

CAC/MSOS/MH I-184

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Appendix 12.1, Corporate Risk Management Report, October 2008, page 8

The Applicant indicates, in this report dated, October 2008, that the interest rate risk is “Up to \$170 million for a 1% change over a forecast period ending 2017-18”.

CAC/MSOS wishes to better understand the calculation of the \$24 & 26 million variance numbers for 2011/12 from Section 12.4, page 8 of 8, and the assumptions underlying the calculation of \$170 million.

- c) Please provide the then annual calculated amounts of interest rate risk for 1% change for each financial year included in the period of the forecast of the aggregate \$170 million cumulative interest rate risk.**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-184(a).

CAC/MSOS/MH I-184

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Appendix 12.1, Corporate Risk Management Report, October 2008, page 8

The Applicant indicates, in this report dated, October 2008, that the interest rate risk is “Up to \$170 million for a 1% change over a forecast period ending 2017-18”.

CAC/MSOS wishes to better understand the calculation of the \$24 & 26 million variance numbers for 2011/12 from Section 12.4, page 8 of 8, and the assumptions underlying the calculation of \$170 million.

- d) Please provide the principal amount of fixed debt at each year end, the principal amount of floating or short-term debt at each year end, and the forecast proportion of floating or short term debt as a percentage of total debt in the forecast used to arrive at the \$170 million estimate.**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-184(a).

CAC/MSOS/MH I-184

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Appendix 12.1, Corporate Risk Management Report, October 2008, page 8

The Applicant indicates, in this report dated, October 2008, that the interest rate risk is “Up to \$170 million for a 1% change over a forecast period ending 2017-18”.

CAC/MSOS wishes to better understand the calculation of the \$24 & 26 million variance numbers for 2011/12 from Section 12.4, page 8 of 8, and the assumptions underlying the calculation of \$170 million.

- e) Please provide the principal amount of long term debt anticipated to mature, be called, put or repurchased for each financial year included in the period of the forecast of the aggregate \$170 million cumulative interest rate risk.**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-184(a).

CAC/MSOS/MH I-184

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Appendix 12.1, Corporate Risk Management Report, October 2008, page 8

The Applicant indicates, in this report dated, October 2008, that the interest rate risk is “Up to \$170 million for a 1% change over a forecast period ending 2017-18”.

CAC/MSOS wishes to better understand the calculation of the \$24 & 26 million variance numbers for 2011/12 from Section 12.4, page 8 of 8, and the assumptions underlying the calculation of \$170 million.

- f) In arriving at the forecast of the aggregate \$170 million cumulative interest rate risk during this period, did the authors assume that in each year the refinancing and new debt issues would take place at a rate that was**
- i. above the then forecast for interest rates,**
 - ii. below the then forecast for interest rates. or**
 - iii. provide for an oscillation so that in some years the rate is above and in others the rate is below those rate forecasts.**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-184(a).

CAC/MSOS/MH I-185

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Appendix 12.1, Corporate Risk Management Report, October 2008, page 8, Appendix 12.2, Independent Review of Manitoba Hydro Export Power Sales and Associated Risks” September 11, 2009, pages 66-67.

The Applicant indicates, in Appendix 12.1 dated, October 2008, that the interest rate risk is “Up to \$170 million for a 1% change over a forecast period ending 2017-18”.

The Applicant indicates, in Appendix 12.2 dated, September 2009, that the interest rate risk is “Manitoba Hydro’s current capital structure includes approximately \$7.2 billion of long-term debt. Furthermore, its long-term debt is expected to grow to over \$19.4 billion by 2028. This exposes the Corporation to interest rate fluctuation risk. Manitoba Hydro has estimated that an increase in interest by one percent would decrease its retained earnings by \$115 million through 2018/19.”

CAC/MSOS wishes to better understand the calculation of the \$24 & 26 million variance numbers for 2011/12 from Section 12.4, page 8 of 8, the assumptions underlying the calculation of \$170 million, and those related to the calculation of the \$115 million estimate.

- a) Does the \$115 million in Appendix 12.2 represent gross interest, or some other amount, and if another amount, please identify what is represented.**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-181(b).

CAC/MSOS/MH I-185

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Appendix 12.1, Corporate Risk Management Report, October 2008, page 8, Appendix 12.2, Independent Review of Manitoba Hydro Export Power Sales and Associated Risks” September 11, 2009, pages 66-67.

The Applicant indicates, in Appendix 12.1 dated, October 2008, that the interest rate risk is “Up to \$170 million for a 1% change over a forecast period ending 2017-18”.

The Applicant indicates, in Appendix 12.2 dated, September 2009, that the interest rate risk is “Manitoba Hydro’s current capital structure includes approximately \$7.2 billion of long-term debt. Furthermore, its long-term debt is expected to grow to over \$19.4 billion by 2028. This exposes the Corporation to interest rate fluctuation risk. Manitoba Hydro has estimated that an increase in interest by one percent would decrease its retained earnings by \$115 million through 2018/19.”

CAC/MSOS wishes to better understand the calculation of the \$24 & 26 million variance numbers for 2011/12 from Section 12.4, page 8 of 8, the assumptions underlying the calculation of \$170 million, and those related to the calculation of the \$115 million estimate.

- b) As the difference in variance numbers of \$24 & 26 million for 2011/12 from Section 12.4, appear to indicate a slight difference in the financial implications of increases as opposed to decreases in interest rates from those forecast, please indicate the variance for the forecast period assuming the variation is in the inverse direction to that used to develop the \$115 million forecast.**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-181(b).

CAC/MSOS/MH I-185

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Appendix 12.1, Corporate Risk Management Report, October 2008, page 8, Appendix 12.2, Independent Review of Manitoba Hydro Export Power Sales and Associated Risks” September 11, 2009, pages 66-67.

The Applicant indicates, in Appendix 12.1 dated, October 2008, that the interest rate risk is “Up to \$170 million for a 1% change over a forecast period ending 2017-18”.

The Applicant indicates, in Appendix 12.2 dated, September 2009, that the interest rate risk is “Manitoba Hydro’s current capital structure includes approximately \$7.2 billion of long-term debt. Furthermore, its long-term debt is expected to grow to over \$19.4 billion by 2028. This exposes the Corporation to interest rate fluctuation risk. Manitoba Hydro has estimated that an increase in interest by one percent would decrease its retained earnings by \$115 million through 2018/19.”

CAC/MSOS wishes to better understand the calculation of the \$24 & 26 million variance numbers for 2011/12 from Section 12.4, page 8 of 8, the assumptions underlying the calculation of \$170 million, and those related to the calculation of the \$115 million estimate.

- c) Please provide the then annual calculated amounts of interest rate risk for 1% change for each financial year included in the period of the forecast of the aggregate \$115 million cumulative interest rate risk.**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-181(b).

CAC/MSOS/MH I-185

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Appendix 12.1, Corporate Risk Management Report, October 2008, page 8, Appendix 12.2, Independent Review of Manitoba Hydro Export Power Sales and Associated Risks” September 11, 2009, pages 66-67.

The Applicant indicates, in Appendix 12.1 dated, October 2008, that the interest rate risk is “Up to \$170 million for a 1% change over a forecast period ending 2017-18”.

The Applicant indicates, in Appendix 12.2 dated, September 2009, that the interest rate risk is “Manitoba Hydro’s current capital structure includes approximately \$7.2 billion of long-term debt. Furthermore, its long-term debt is expected to grow to over \$19.4 billion by 2028. This exposes the Corporation to interest rate fluctuation risk. Manitoba Hydro has estimated that an increase in interest by one percent would decrease its retained earnings by \$115 million through 2018/19.”

CAC/MSOS wishes to better understand the calculation of the \$24 & 26 million variance numbers for 2011/12 from Section 12.4, page 8 of 8, the assumptions underlying the calculation of \$170 million, and those related to the calculation of the \$115 million estimate.

- d) Please provide the principal amount of fixed debt at each year end, the principal amount of floating or short-term debt at each year end, and the forecast proportion of floating or short term debt as a percentage of total debt in the forecast used to arrive at the \$115 million estimate.**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-181(b).

CAC/MSOS/MH I-185

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Appendix 12.1, Corporate Risk Management Report, October 2008, page 8, Appendix 12.2, Independent Review of Manitoba Hydro Export Power Sales and Associated Risks” September 11, 2009, pages 66-67.

The Applicant indicates, in Appendix 12.1 dated, October 2008, that the interest rate risk is “Up to \$170 million for a 1% change over a forecast period ending 2017-18”.

The Applicant indicates, in Appendix 12.2 dated, September 2009, that the interest rate risk is “Manitoba Hydro’s current capital structure includes approximately \$7.2 billion of long-term debt. Furthermore, its long-term debt is expected to grow to over \$19.4 billion by 2028. This exposes the Corporation to interest rate fluctuation risk. Manitoba Hydro has estimated that an increase in interest by one percent would decrease its retained earnings by \$115 million through 2018/19.”

CAC/MSOS wishes to better understand the calculation of the \$24 & 26 million variance numbers for 2011/12 from Section 12.4, page 8 of 8, the assumptions underlying the calculation of \$170 million, and those related to the calculation of the \$115 million estimate.

- e) Please provide the principal amount of long term debt anticipated to mature, be called, put or repurchased for each financial year included in the period of the forecast of the aggregate \$115 million cumulative interest rate risk.**

ANSWER:

Please see Manitoba Hydro’s response to CAC/MSOS/MH I-181(b).

CAC/MSOS/MH I-185

Subject: Debt and Debt Management – Finance Expense

Reference: Manitoba Hydro 2010/11 2011/12 GRA, Tab 12, “Corporate Risk Management”, Appendix 12.1, Corporate Risk Management Report, October 2008, page 8, Appendix 12.2, Independent Review of Manitoba Hydro Export Power Sales and Associated Risks” September 11, 2009, pages 66-67.

The Applicant indicates, in Appendix 12.1 dated, October 2008, that the interest rate risk is “Up to \$170 million for a 1% change over a forecast period ending 2017-18”.

The Applicant indicates, in Appendix 12.2 dated, September 2009, that the interest rate risk is “Manitoba Hydro’s current capital structure includes approximately \$7.2 billion of long-term debt. Furthermore, its long-term debt is expected to grow to over \$19.4 billion by 2028. This exposes the Corporation to interest rate fluctuation risk. Manitoba Hydro has estimated that an increase in interest by one percent would decrease its retained earnings by \$115 million through 2018/19.”

CAC/MSOS wishes to better understand the calculation of the \$24 & 26 million variance numbers for 2011/12 from Section 12.4, page 8 of 8, the assumptions underlying the calculation of \$170 million, and those related to the calculation of the \$115 million estimate.

- f) In arriving at the forecast of the aggregate \$115 million cumulative interest rate risk during this period, did the authors assume that in each year the refinancing and new debt issues would take place at a rate that was**
- i. above the then forecast for interest rates,**
 - ii. below the then forecast for interest rates or**
 - iii. provide for an oscillation so that in some years the rate is above and in others the rate is below those rate forecasts.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-181(b).

CAC/MSOS/MH I-186

Subject: Surplus Energy Program

Reference: Appendix 13.2, pages 1-6

- a) **Has Manitoba Hydro undertaken any analysis to confirm that this program is revenue neutral (per page 1) in that the sales under Surplus Energy would not have occurred in any event under standard rates? If so, please provide.**

ANSWER:

The revenue neutrality of the Surplus Energy Program (SEP) refers to the balance between SEP sales based on forecasted weekly SEP Energy Charge to the actual SEP Energy Charge. Manitoba Hydro has not undertaken any analysis that sales under Surplus Energy would not have occurred under the standard rates.

CAC/MSOS/MH I-186

Subject: Surplus Energy Program

Reference: Appendix 13.2, pages 1-6

- b) **Please explain how Manitoba Hydro determines the “distribution charge” component of the rate charged to SEP customers (pages 2-3) and provide a schedule setting out this determination for the November 1, 2007 to October 31, 2008 period.**

ANSWER:

The distribution charge is calculated based on results of the 1998/99 Cost of Service Study. These values do not change significantly from year to year and these rates are still in effect today.

It is calculated by taking the unit cost of kV.A from the COSS C/D/E table for each class multiplied by class load factor to determine an energy cost in kW.h. One third of this number is then the distribution charge.

For further detail, please see Manitoba Hydro’s responses to PUB/MH I-25(a) and its attachment from the SEP review hearing procedure in 2000.

PUB/MH-25: Reference: Application, P. 5

QUESTION:

- a) Please state the rationale and provide a detailed calculation for setting the transmission and distribution charges at 1/3 of cost.

ANSWER:

The one-third proportion is intended to recognize and balance the following:

- Most users will not incur distribution costs because their use represents load that would not have been attracted to the system at firm rates and because upgrades to the distribution, if required must be funded by customers;
- It is, however, appropriate that customers pay some of the costs of the distribution system if the value of the service can support some recovery of distribution costs;
- Recovery of all or substantially all of embedded distribution costs would raise the price of surplus energy to a level which would result in foregoing sales which recover their cost. As an example, full recovery of embedded distribution cost would add more than 1.2¢ per kW.h to the price of surplus energy delivered to GS Medium customers. This would substantially increase the number of weeks and time periods in which sales could not be made.

For the detailed calculation of the Distribution Charge, please see Attachment SEP-PUB/MH-25(a).

PUB/MH-25(a): (cont'd)

Attachment

DERIVATION OF SEP DISTRIBUTION CHARGES FROM 1998/99 COSS

Regional Transmission Cost	\$000
Total Transmission Costs in 1995/95 COSS	135,108
Regional Transmission Costs in 1994/95 COSS	26,800
Percentage Regional	19.84%
Total Transmission Cost in 1998/99 COSS	140,103
Estimated Regional Transmission in 1998/99	27,791

Allocation of Regional Transmission Cost by Class Using NCP

	NCP	Allocated % Cost	Billing (\$000)	kV.A	Allocated Cost \$/kV.A
General Service Medium	425.5	10.7%	2,961	5035800	0.5879
General Service Large <30 kV.	181.8	4.6%	1,265	2266400	0.5581
General Service Large 30-100 kV	104.4	2.6%	726	1284600	0.5655
General Service Large >100kV	620.9	15.5%	4,320	5930500	0.7285
All other classes	2661.4	66.6%			
Total	3994				

Subtransmission Cost as Allocated in 1998/99 COSS

General Service Medium	6,161	5035800	1.2234
General Service Large <30 kV.	2,757	2266400	1.2165
General Service Large 30-100 kV	1,583	1284600	1.2323
General Service Large >100kV	0	5930500	0.0000

Distribution Demand Related as Allocated in 1998/99 COSS

General Service Medium	15,552	5035800	3.0883
General Service Large <30 kV.	5,590	2266400	2.4665
General Service Large 30-100 kV	0	1284600	0.0000
General Service Large >100kV	0	5930500	0.0000

Total Distribution Cost in 1998/99 COSS	Cost \$/kV.A	Load Factor	Cost c/kW.h	Distribution Charge @ 1/3 of Cost
General Service Medium	4.90	36.3%	1.85	0.62
General Service Large <30 kV.	4.24	60.0%	0.97	0.32
General Service Large 30-100 kV	1.80	60.0%	0.41	0.14
General Service Large >100kV	0.73	60.0%	0.17	0.06

CAC/MSOS/MH I-186 (REVISED)

Subject: Surplus Energy Program

Reference: Appendix 13.2, pages 1-6

- c) **During the period that SEP supply was being sourced by imports, was supply to firm domestic customers also being sourced from imports?**

ANSWER:

When the marginal supply source for SEP is indicated from imports, it is safe to assume that a portion of the firm domestic customers' load is being served from imports as well as the total amount of SEP customer loads.

CAC/MSOS/MH I-186 (REVISED)

Subject: Surplus Energy Program

Reference: Appendix 13.2, pages 1-6

- d) **Please explain what is meant when Manitoba Hydro states that SEP energy supply is sourced by exports. What portion of the energy sourced by exports was from hydro vs. purchases/thermal?**

ANSWER:

When SEP energy supply is sourced by exports it means that the SEP energy supply is sourced from Manitoba Hydro generation that would otherwise be sold on the export market. In these cases the SEP prices are set to match the forecast equivalent export opportunity price in order to be revenue neutral.

The SEP energy sourced by exports was entirely supplied by hydro generation, otherwise it would have been indicated as sourced from thermal or purchases.

CAC/MSOS/MH I-186

Subject: Surplus Energy Program

Reference: Appendix 13.2, pages 1-6

- e) Please confirm that there were no new customers subscribing to the SEP during this period.

ANSWER:

Confirmed.

CAC/MSOS/MH I-187

Subject: Surplus Energy Program

Reference: Appendix 13.2, pages 7-15

- a) Please provide a table similar to that in the middle of page 8 but based on forecast value of spot market energy as used for setting SEP rates.

ANSWER:

The SEP sales column of the table referenced above and shown below is the forecast value based on actual SEP energy sales for the period November 1, 2007 to October 31, 2008. The SEP Energy Sales column is based on the actual SEP MW.h sales. The SEP Sales column is calculated by multiplying the weekly actual SEP MW.h sales by the weekly SEP forecast energy rates. The value of SEP Energy to Manitoba Hydro is calculated by multiplying the weekly actual SEP sales by the actual weekly SEP energy rate at common bus. Basic Charges and Distribution charges are not included in this table.

November 1, 2007 to October 31, 2008				
Period	SEP Energy Sales MW.h	SEP Sales	Value of SEP Energy to Manitoba Hydro	Manitoba Hydro Net Revenue
Peak	5,569	\$430,171	\$415,560	\$14,611
Shoulder	9,575	\$498,468	\$489,023	\$9,445
Off-Peak	7,203	\$220,833	\$233,549	(\$12,716)
Total	22,347	\$1,149,472	\$1,138,131	\$11,341

CAC/MSOS/MH I-187

Subject: Surplus Energy Program

Reference: Appendix 13.2, pages 7-15

- b) Please provide a table similar to that in the middle of page 8 but for the period November 1, 2008 to October 31, 2009.

ANSWER:

The marginal cost of energy to Manitoba Hydro for the period November 1, 2008 through to October 31, 2009 is shown in the table below. The SEP Energy Sales column is based on actual SEP MW.h sales. The column SEP Sales is calculated by multiplying the weekly actual MW.h sales by the weekly SEP forecast energy rates. The value of SEP Energy to Manitoba Hydro is calculated by multiplying the weekly actual SEP sales by the actual weekly SEP energy rate at common bus. Basic Charges and Distribution charges are not included in this table.

November 1, 2008 to October 31, 2009				
Period	SEP Energy Sales MW.h	SEP Sales*	Value of SEP Energy to Manitoba Hydro	Manitoba Hydro Net Revenue
Peak	5,567	\$325,616	\$285,044	\$40,572
Shoulder	10,053	\$406,416	\$366,738	\$39,678
Off Peak	7,773	\$200,043	\$190,728	\$9,315
Total	23,393	\$932,076	\$842,510	\$89,565

CAC/MSOS/MH I-187

Subject: Surplus Energy Program

Reference: Appendix 13.2, pages 7-15

- c) **What is Manitoba Hydro's estimate of the annual incremental (administrative) cost of managing the SEP?**

ANSWER:

Manitoba Hydro does not specifically track the annual incremental cost of managing SEP. Normal day-to-day costs of administering this program are not material.

CAC/MSOS/MH I-187 (REVISED)

Subject: Surplus Energy Program

Reference: Appendix 13.2, pages 7-15

- d) Does the “spill situation” described on page 11 only occur during the off-peak period? Did similar circumstances arise at all over November 1, 2008 to October 31, 2009?

ANSWER:

The spill situation is most frequent during the off peak periods but may also occur once in a while in early morning on peak hours as the load in Manitoba is increasing or in late evening on peak hours as the load is decreasing (both during mild weather conditions) or on weekend days during interconnection transmission outages. During these hours SEP customer incremental load uses hydraulic generation that would otherwise be spilled. There were similar circumstances during the 2008-2009 period referenced.

CAC/MSOS/MH I-188

Subject: Surplus Energy Program

Reference: Appendix 13.2, pages 38-39

- a) **Has Manitoba Hydro undertaken any assessment of the circumstances that led to negative revenues during some weeks? If so, please provide.**

ANSWER:

The negative revenues indicated are not losses but are the result of actual prices exceeding forecast prices. Spot market prices are extremely variable and are difficult to predict up to ten days in advance. As a result, in some weeks actual prices are lower and in some weeks they are higher. Manitoba Hydro attempts on an annual basis to keep the SEP revenue neutral relative to the export market.

CAC/MSOS/MH I-188

Subject: Surplus Energy Program

Reference: Appendix 13.2, pages 38-39

- b) **Was the occurrence of negative revenues in some weeks attributable to changes in system conditions from what was forecast (e.g., change from prices based on exports to prices based on imports) or changes in export prices under system conditions similar to forecast?**

ANSWER:

The majority of the negative revenue occurrences were attributable to lower actual export prices compared to those forecast.

CAC/MSOS/MH I-189

Subject: New Head Office

Reference: Appendix 13.5

a) **What is the floor space of the new Head Office and, as of December 31, 2009 how much was:**

- **Being used by Manitoba Hydro**
- **Leased to other Tenants**
- **Vacant.**

ANSWER:

Please see the following table for the requested information as of March 1, 2010.

Description	Square feet
Floor Space	697,609
Being used by Manitoba Hydro	646,362
Leased to other Tenants	20,672
Vacant (not fitted for use)	30,575

CAC/MSOS/MH I-189

Subject: New Head Office

Reference: Appendix 13.5

b) For that space noted in part (a) as vacant please indicate how much is: i) Being offered for Lease but currently vacant versus ii) Reserved for future use by Manitoba Hydro.

ANSWER:

- | | | |
|-----|--|--------------------|
| i) | Being offered for lease but currently vacant | 8,453 square feet |
| ii) | Reserved for future use by Manitoba Hydro | 22,122 square feet |

CAC/MSOS/MH I-189

Subject: New Head Office

Reference: Appendix 13.5

- c) **As of December 31, 2009 how many employees can the space currently being used by Manitoba Hydro accommodate?**

ANSWER:

2,082 employees.

CAC/MSOS/MH I-189

Subject: New Head Office

Reference: Appendix 13.5

- d) The report states that the estimated productivity savings could be in the range of 10% to 15%. Please clarify what the percentages are to be applied to in order to obtain dollar estimates of productivity savings.**

ANSWER:

Please see Manitoba Hydro's response to PUB/MH I-179(e).

CAC/MSOS/MH I-189

Subject: New Head Office

Reference: Appendix 13.5

- e) **How many employees occupied the 820 Taylor site prior to the move to the new Head Office?**

ANSWER:

There were 752 employees at 820 Taylor prior to the move to the new head office.

CAC/MSOS/MH I-189

Subject: New Head Office

Reference: Appendix 13.5

- f) **How many Manitoba Hydro employees occupy the new Head Office as of December 31, 2009? Note: In this estimate please include vacant positions for which space has been provided for.**

ANSWER:

Please refer to part c) of this response.

CAC/MSOS/MH I-189

Subject: New Head Office

Reference: Appendix 13.5

- g) Are the 150 employees referenced on the first page, employees that were in accommodation other than 820 Taylor prior to the move to the New Head Office?**

ANSWER:

The 150 employees referenced represents new staff requirements that were not contemplated when the building was first envisioned, but had been hired by the time of new building occupancy. As such, there were no previous accommodations for them at 820 Taylor or any other existing leased location.

CAC/MSOS/MH I-189

Subject: New Head Office

Reference: Appendix 13.5

- h) Please reconcile the reported project costs shown in this Appendix with those reported in Appendix 6.1, page 16.**

ANSWER:

An additional \$4.95 M was required primarily due to increased material costs and rising labour rates.

CAC/MSOS/MH I-189

Subject: New Head Office

Reference: Appendix 13.5

- i) **With respect to the Report on Project Costs, please explain why the Projected Total Cost at Completion for some line items is less than the Actual Costs to June 30, 2009.**

ANSWER:

The \$283 million projected total cost at completion was prepared prior to the June 30, 2009 actual spending. Although the details have changed, the total is still representative of the expected cost.

CAC/MSOS/MH I-190

Subject: General Service Rates

Reference: Appendix 13.6

- a) **Does Manitoba Hydro have a timetable as to when a determination will be made regarding the future application of time of use rates for General Service Large and/or seasonal rate differentiation for General Service Medium and General Service Small Demand customers? If yes, please describe.**

ANSWER:

Manitoba Hydro is presently reviewing TOU rates on the General Service Large customers and is currently in discussions with customers regarding an Energy Intensive Industrial rate (EIIR) which has a TOU component built into the design. An Application on the EIIR was filed with the Public Utilities Board on February 12, 2010.

No analysis has been undertaken with respect to TOU rates for General Service Medium and Small Demand customers. The majority of these customers do not have interval metering in place to record time period usage.

CAC/MSOS/MH I-191

Subject: Small and Medium Class Consolidation

Reference: Appendix 13.8

Appendix 10.2

Tab 10, pages 4-5

- a) **Please confirm whether the proposed class rate increases set out on page 2 of Appendix 13.8 are consistent with the rate changes discussed on pages 4-5 of Tab 10.**

ANSWER:

The rate changes discussed on pages 4-5 of Tab 10 are directionally consistent with the rate changes discussed in Appendix 13.8.

The rate changes on pages 4-5 of Tab 10 are based on the 2009 System Load Forecast and account for the revenue loss associated with the elimination of the 70% winter ratchet. The proposed rate increases set out on page 2 of Appendix 13.8 however, are based on the 2008 System Load Forecast and do not factor in the elimination of the winter ratchet.

CAC/MSOS/MH I-191

Subject: Small and Medium Class Consolidation

Reference: Appendix 13.8

Appendix 10.2

Tab 10, pages 4-5

- b) **Please explain why the class increases set out on page 2 of Appendix 13.8 don't match those set out in the proof of revenue table in Appendix 10.2, page 1.**

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-191(a).

CAC/MSOS/MH I-192

Subject: Use of Diesel in Off-Grid Communities

Reference: Appendix 13.9

a) What is the date of publication for the study included in Appendix 13.9?

ANSWER:

The full report compiled in Appendix 13.9 was available on June 5, 2009.

The Generation Resource Screening Studies contained in Appendix 2 of that report were completed for the off-grid communities as follows:

Brochet and Lac Brochet:

Original Issue: April 2007

Revised: January 2008

Finalized: November 2008

Tadoule Lake:

Original Issue: October 2007

Finalized: November 2008

Shamattawa:

Original Issue: October 2007

Finalized: November 2008

CAC/MSOS/MH I-192

Subject: Use of Diesel in Off-Grid Communities

Reference: Appendix 13.9

- b) **Would the connection of these off-grid communities to the transmission system require any reinforcement of existing transmission facilities and, if so, have these costs been factored into the analyses?**

ANSWER:

The connection of these off-grid communities to the transmission system would not require reinforcement of existing transmission facilities.

CAC/MSOS/MH I-192

Subject: Use of Diesel in Off-Grid Communities

Reference: Appendix 13.9

- c) **Do any of the transmission line options require the maintenance of diesel generation capability in order to maintain reliability in the event of a line or transformer failure?**

ANSWER:

For the purposes of the studies included in Appendix 13.9, the transmission line options assume no diesel generation capability is maintained once the transmission line is established.

CAC/MSOS/MH I-192

Subject: Use of Diesel in Off-Grid Communities

Reference: Appendix 13.9

d) What is the current status of proposal to the federal Green Infrastructure fund (page 14)?

ANSWER:

Please see Manitoba Hydro's response to CAC/MSOS/MH I-86(a).

CAC/MSOS/MH I-192

Subject: Use of Diesel in Off-Grid Communities

Reference: Appendix 13.9

- e) **What is Manitoba Hydro's forecast for diesel fuel oil prices? Please convert into a 20-year levelized cost in 2006\$ for comparison with the breakeven cost of the various options examined for each community.**

ANSWER:

Levelized cost calculations were not used for diesel prices in determining the breakeven fuel costs for power supply options for the off-grid communities. The breakeven fuel price represents the fuel price at which the cost of continued operation of the diesel generating stations is equivalent to the estimated cost of the option under evaluation, resulting in a net present value of zero. These values were provided for comparative purposes against Manitoba Hydro's 2006 20-year average delivered fuel price forecast for each community.

The most recent delivered fuel price forecast for each community results in the following 20-year average delivered fuel prices:

2009 Diesel Fuel Price Forecast - 20 year average, by community - cents/litre

Dollar Year	Brochet	Lac Brochet	Tadoule Lake	Shamattawa
2008	64.3	85.6	88.9	71.2
2006	61.7	82.0	85.2	68.2

CAC/MSOS/MH I-193

Subject: Temporary Billing Demand Concessions

Reference: Appendix 13.1

Tab 1, page 2

- a) **Please provide a copy of the Application and all subsequent supporting materials filed with the PUB underlying Order 126/09.**

ANSWER:

A copy of application and subsequent supporting materials as requested by the PUB in its first round of Information Requests are provided on Manitoba Hydro's Regulatory Affairs web site at http://www.hydro.mb.ca/regulatory_affairs/electric/temp_concessions/index.shtml.

Copies of the following correspondence are attached:

- Letter from PUB dated November 5, 2009;
- Letter from Manitoba Hydro dated November 13, 2009; and
- Letter from Manitoba Hydro dated March 11, 2010 and attached report.

Additional correspondence has been provided in Manitoba Hydro's response to PUB/MH I-170(a), (b) and (c).



Intergovernmental Affairs

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November 5, 2009

Ms. Patricia J. Ramage
Barrister and Solicitor
Manitoba Hydro
P. O. Box 815
3rd Floor, 820 Taylor Avenue
Winnipeg, MB R3C 2P4

Dear Ms. Ramage:

Re: Board Order 126/09

Board Order 126/09 provided for the following in the Operative Section:

- “2) *MH shall provide monthly reports on the impacts of this Order to the Board, containing the number of customers that are eligible for the within relief, the number of customers accepting the within relief, as well as the calculation of the energy reductions and demand billings deferred*”

The Board notes that this first monthly report was due on October 4, 2009, 31 days ago.

Please advise if the Board is to expect this report soon.

Yours truly,

Original signed by G. Gaudreau

Gerry Gaudreau, CMA
Secretary and Executive Director



PO Box 815 • Winnipeg Manitoba Canada • R3C 2P4
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Telephone / N° de téléphone : (204) 360-3946 • Fax / N° de télécopieur : (204) 360-6147
pjramage@hydro.mb.ca

November 13, 2009

DELIVERED

Mr. G. Gaudreau
THE PUBLIC UTILITIES BOARD
400 - 330 Portage Avenue
WINNIPEG, Manitoba R3C 0C4

Dear Mr. Gaudreau:

RE: BOARD ORDER 126/09

I acknowledge receipt of your letter dated November 5, 2009.

There appears to be a misunderstanding as to when the report regarding demand concessions was first due. Board Order 126/09 did not reference a specific date for filing the first monthly report. Manitoba Hydro interpreted the Directive as requiring monthly reporting following program implementation.

Letters to customers went out in September 2009 following which Key Account, Major Account and Retail Operations staff followed up with each eligible customer. I am advised that to date, nine customers have requested the concessions and that the first bills calculating the concessions will not issue until the end of November, 2009.

It is Manitoba Hydro's intention to provide a report to the PUB as soon as possible after the first billing cycle is complete.

Yours truly,

MANITOBA HYDRO LAW DEPARTMENT

Per:

A handwritten signature in black ink, appearing to read 'PJR', written over a horizontal line.

PATRICIA J. RAMAGE
Barrister & Solicitor

PJR/

PO Box 815 • Winnipeg Manitoba Canada • R3C 2P4
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March 11, 2010

DELIVERED

Mr. G. Gaudreau
THE PUBLIC UTILITIES BOARD
400 - 330 Portage Avenue
WINNIPEG, Manitoba
R3C 0C4

Dear Mr. Gaudreau:

Enclosed please find nine copies of the following reports:

1. Partial Bill Payment Deferral Program (Billing Demand Concession);
2. Surplus Energy Program (November 1, 2008 to October 31, 2009)

Yours truly,

MANITOBA HYDRO LAW DEPARTMENT

Per:



PATRICIA J. RAMAGE
Barrister & Solicitor

PJR/
encls.

REPORT TO
THE PUBLIC UTILITIES BOARD

PARTIAL BILL PAYMENT
DEFERRAL PROGRAM
(BILLING DEMAND CONCESSION)

February 2010



PARTIAL BILL PAYMENT DEFERRAL PROGRAM (BILLING DEMAND CONCESSION)

Background:

On August 7, 2009, Manitoba Hydro applied to the Public Utilities Board for Interim *Ex Parte* approval of a temporary change to allow billing concessions for General Service Medium (GSM) and Large (GSL) customers who were experiencing reduced electrical consumption as direct result of the global economic downturn. The temporary billing concession was intended to absorb much of the impact of Manitoba Hydro's rate structure on per unit energy costs as a result of the reduced production schedules being implemented by these customers.

PUB Order 126/09 issued on September 4, 2009 approved Manitoba Hydro "*to offer and implement a partial bill payment deferral program*" and "*provide monthly reports on the impacts of this Order to the Board, containing the number of customers that are eligible for the within relief, the number of customers accepting the within relief, as well as the calculation of the energy reductions and demand billings deferred*". Due to the time-frame required to notify and consult customers, implementation of the deferrals was not applied until the November billing period. This report therefore includes deferrals provided to customers on their November, December and January billing statements related to the months of June through November 2009.

The amounts presented in this report will vary from those provided by Manitoba Hydro in its preliminary status report to the Public Utilities Board dated November 18, 2009 and responses to questions filed on December 18, 2009. This is primarily due to the conclusion of a review of one customer's eligibility within the framework and intent of the application as noted in response to PUB Question 2 b) filed on December 18, 2009.

Criteria for Determining Demand Concessions:

Manitoba Hydro's analysis of all General Service Large and Medium customers indicated that some customers with curtailed operations were paying higher unit costs for energy than they paid prior to the onset of the global downturn. With approval from the Public Utilities Board to implement a "partial bill payment deferral program", Manitoba Hydro issued letters to 29 GSL and 47 GSM customers beginning September 23, 2009 (template included as

Attachment 2). The letters advised customers that, based on their historical usage and reduced consumption levels in the January to June 2009 period, they may be eligible for receiving a deferral on the demand portion of their energy bill if they met the pre-defined criteria set out in the Board Order. Given that some customers have more than one account or more than one meter associated with an account, the actual number of accounts advised was 33 GSL and 48 GSM services (meters).

As noted in the customer letter, Energy Advisors contacted each customer to further review their account and discuss their eligibility requirements. The onus was on the customer to prove to Manitoba Hydro that their cost per kW.h had increased demonstrably due to economic circumstances and not due to other factors such as holiday or maintenance shut downs.

Subsequent to the delivery of the letters, analysis was conducted on a monthly basis to determine whether additional customers became eligible for deferrals under the requirements of the program. This analysis determined that 13 accounts identified in the original analysis were no longer eligible for deferrals due to improvements in their load factor. An additional three accounts were determined to be ineligible as a result of a change in rate class, leaving a total of 60 customers with 65 accounts from the original analysis. Further analysis also determined that 16 additional accounts had become eligible in the June 09 - Nov 09 period, which had not been identified in the original analysis covering the Jan 09 - Jun 09 period, increasing the total number of eligible accounts to 81.

Manitoba Hydro reviewed each customer's application to evaluate evidence that the customer's operation has been negatively affected by the current economic downturn, and calculated the energy bill deferral amount. The amounts were then forwarded to the Vice-President, Customer Service and Marketing for final approval. Once approved, the Customer Accounting Department applied the deferred amounts to each customer's account.

Uptake of Program:

Many customers were hesitant to participate in the demand concession program since it was approved as a "partial bill payment deferral" rather than a concession. Customers believed that, due to the uncertainty associated with the possible re-payment of the concession, deferral amounts remained on their ledgers as a liability, meaning they could not pass on these savings to their customers. In total 24 General Service customers, with a total of 26 accounts, applied for the partial bill payment deferral program. Of these, 13 were classed as

Medium; 5 were Large 750 V - 30 kV; 2 was Large 30 - 100 kV; and the remaining 4 customers were Large >100 kV.

Deferrals (Concessions) Processed: June 2009 to November 2009

Determination of the monthly demand concession deferrals was based on the following approved methodology:

- (a) Calculate the customer's normal load factor based on actual usage during the 24-month period ended August 2008 (or other period due to exceptional circumstances).
- (b) Calculate unit cost per kW.h during the 24-month period based on normal load factor ('Baseline Normal Unit Cost') at current rates.
- (c) Determine the unit cost per kW.h in each billing period of the concession period based on standard bill calculation.
- (d) If the unit cost per kW.h determined in (c) is at least 10% higher than Baseline Normal Unit Cost, a demand concession is calculated to reduce unit cost to baseline normal unit cost plus 10%.

The monthly concessions shown in Attachment 1 were applied to approved customers' November, December and January bills using this methodology, which for the six month period ending November 2009 totaled \$1,291,190. This amount differs from the \$1,971,528 reported to the PUB on December 18, 2009 in response to Question b) due to the acceptance of additional customers into the program, a final review of one customer's application, which determined that it did not fall within the spirit and intent of Manitoba Hydro's application, and a smaller variance in the amount of \$568 resulted from adjustments made for seasonal behavior and maintenance shutdowns.

The table provided in Attachment 1 shows the number of customers who were eligible in each rate class, by month, based on the methodology provided above, as well as the actual number and amount of deferrals processed for the 6-month period.

Conclusion:

As indicated on December 18, 2009, Manitoba Hydro chose not to extend the Partial Bill Payment Deferral program beyond November 30, 2009.

Manitoba Hydro has applied for confirmation of Board Order 126/09 and deferrals to be made permanent concessions in its General Rate Application filed with the Public Utilities Board on December 1, 2009.

ATTACHMENT 1:

**APPROVED BILLING DEMAND CONCESSION DEFERRALS BY RATE CLASS
(June 2009 to November Periods)**

Rate Class	JUNE 2009				JULY 2009				AUGUST 2009			
	Customers		Deferral Amts		Customers		Deferral Amts		Customers		Deferral Amts	
	Eligible	Approved	\$	kV.A	Eligible	Approved	\$	kV.A	Eligible	Approved	\$	kV.A
Medium	38	8	4,885	586	45	11	6,386	766	48	13	9,306	1,116
L <30	10	4	23,213	3,689	12	4	28,688	4,428	12	5	37,811	5,891
L 30-100	0	0	-	-	2	2	28,822	4,756	2	2	31,154	5,141
L >100	5	5	190,750	35,324	5	5	466,168	86,327	5	5	141,946	26,286
Total	53	17	218,848	39,599	64	22	530,064	96,277	67	25	220,217	38,434
Rate Class	SEPTEMBER 2009				OCTOBER 2009				NOVEMBER 2009			
	Customers		Deferral Amts		Customers		Deferral Amts		Customers		Deferral Amts	
	Eligible	Approved	\$	kV.A	Eligible	Approved	\$	kV.A	Eligible	Approved	\$	kV.A
Medium	48	10	5,739	688	44	12	8,387	1,006	45	9	6,361	763
L <30	10	4	28,052	3,962	10	5	30,078	4,248	10	5	23,475	3,316
L 30-100	2	2	6,185	1,021	2	2	12,889	2,127	2	2	17,744	2,928
L >100	2	2	17,793	3,295	3	3	81,192	15,035	3	3	84,166	15,586
Total	63	18	57,769	8,966	61	22	132,546	22,416	61	19	131,746	22,593
Rate Class	TOTAL (June - November)											
	Deferral Amounts											
	\$		kV.A									
Medium	41,064		4,925									
L <30	171,317		25,534									
L 30-100	96,794		15,973									
L >100	982,015		181,853									
Total	1,291,190		228,285									

ATTACHMENT 2:

2009 09 XX

Mr. X
Company Name
Street
City/Town, MB
Postal Code

Dear Mr. X:

RE: DISTRESSED COMPANY DEMAND BILLING CONCESSION

While many of Manitoba Hydro's business customers continue to grow and prosper in these tough economic times, others struggle to maintain their operations within Manitoba. We at Manitoba Hydro recognize that this downturn has caused some industries to take capacity out of global production, due to a lack of sales, as they attempt to stabilize prices for their products. Companies within various industrial sectors are closing higher cost facilities or adopting a batch plant approach to production in an effort to match production to consumer demand. As a result, the standard (and normally appropriate) demand billing practice may now be adding significantly to unit electricity costs, particularly for customers where electricity represents a significant portion of their total operating costs.

Manitoba Hydro recently made an application to The Public Utilities Board (PUB) for interim ex parte approval of temporary billing demand concessions. On September 4, 2009, Manitoba Hydro received approval to offer and implement a partial bill payment deferral program, rather than the billing demand concessions requested in Manitoba Hydro's application. Based on our initial analysis of changes to your operating profile, this program may have application to your company.

Where a customer's load factor has decreased (and per unit energy cost increased) as a result of the economic downturn, Manitoba Hydro will, effective the June 2009 billing cycle, consider, partial electricity bill deferral. The amount of this bill deferral may be fully or partially forgiven subject to final approval of the program by the PUB. Manitoba Hydro will continue to maintain the position that this deferral should be fully forgiven and treated as a billing demand concession to the customers. This partial electricity bill deferral program will be in effect during the six month billing period commencing June 2009 through November 2009, at which point it will be reviewed by Manitoba Hydro to determine if continuation is warranted.

Your Manitoba Hydro Account Advisor has reviewed your company's recent electricity consumption and noticed that your operating hours and electricity load factor appear to have been reduced, and that this action has significantly increased your average electricity cost. If

this change in operating profile is clearly demonstrated and verified to be due to the current downturn in the economy, Manitoba Hydro may be able to help mitigate some of these incremental unit cost increases.

Manitoba Hydro is committed to working with our business customers, and continuing to assist them to prosper and grow within Manitoba. Your Account Advisor, (name and phone number), will contact you shortly to provide you with additional information about how changes to our demand billing concession policy could impact your electricity costs and how our Power Smart programs can assist you in further reducing your total energy costs.

I look forward to working cooperatively with you as you manage your company through these difficult economic times.

Yours truly,

RBB/dmh

c: Account Advisor

CAC/MSOS/MH I-193

Subject: Temporary Billing Demand Concessions

Reference: Appendix 13.1

Tab 1, page 2

- b) **Was the Temporary Billing Demand Concession offered after November 2009? If yes, please update Appendix 13.1 with the most recently available data. Also, if yes please provide the supporting data filed with the PUB in accordance with Order No. 126/09, page 27.**

ANSWER:

Manitoba Hydro did not extend the Temporary Billing Demand Concession beyond the November 2009 billing period.

CAC/MSOS/MH I-193

Subject: Temporary Billing Demand Concessions

Reference: Appendix 13.1

Tab 1, page 2

c) Please provide a schedule that for each account (name withheld) lists:

- **The average range of monthly load factors and the overall average load factor for the period September 2006 to August 2008.**
- **The applicable 2009 rate schedule**
- **The average per unit cost of energy based on the overall average load factor (September 2006 – August 2008) and 2009 rates**
- **The months the accounts received the billing demand concession**
- **The range of load factors and the overall average load factor for the eligible months to-date**
- **The average unit energy cost that would have been paid based on standard rates over these months**
- **The average unit cost of energy actually paid over these months.**

ANSWER:

The information requested is of a commercially-sensitive nature and specific to customers for whom energy expense represents a significant portion of overall operating costs. The small number of customers located in Manitoba within specific industry sectors tends to make this type of information transparent to knowledgeable individuals. Given this sensitivity and respecting the privacy of commercially-sensitive information as it relates to customer-specific operations, Manitoba Hydro needs to provide answers on an aggregated basis by rate class.

Manitoba Hydro has applied for the deferrals granted to eligible customers under PUB Board Order 126/09 to be converted into concessions. At present amounts deferred under the program are subject to repayment in accordance with the terms specified under the order.

Range of Load Factors and Average Load Factor for Accounts Participating in the Distressed Industry Billing Demand Deferral Program during the Billing Periods of Sep 2006 - Aug 2008

Rate Class	Program Participants	Range of Load Factors		
		Min	Avg	Max
GSL > 100 kV	4	0.224	0.722	0.938
GSL 30 kV to 100 kV	2	0.481	0.787	0.892
GSL 750 V to 30 kV	5	0.120	0.417	0.714
GSM	13	0.105	0.365	0.702

Applicable 2009 Rate Schedules

The applicable 2009 rate schedules for General Service Large (GSL) and General Service Medium Customers can be found on Manitoba Hydro's corporate web site at http://www.hydro.mb.ca/regulatory_affairs/energy_rates/electricity/historical.shtml

Average Unit Energy Cost for Accounts Participating in the Distressed Industry Billing Demand Deferral Program Based on 2009 Rates and Overall Average Load Factor during the Billing Periods of Sep 2006 - Aug 2008

Rate Class	Unit Energy Cost (average)
GSL > 100 kV	\$0.0354
GSL 30 kV to 100 kV	\$0.0363
GSL 750 V to 30 kV	\$0.0505
GSM	\$0.0607

Months that Accounts Received Billing Demand Deferrals by Rate Class

(See attached table outlining program participation)

Range of Load Factors and Average Load Factor for Accounts Participating in the Distressed Industry Billing Demand Deferral Program during the Billing Periods of Jun 2009 - Nov 2009

Rate Class	Program Participants	Range of Load Factors		
		Min	Avg	Max
GSL > 100 kV	4	0.263	0.314	0.651
GSL 30 kV to 100 kV	2	0.157	0.461	0.875
GSL 750 V to 30 kV	5	0.099	0.259	0.450
GSM	13	0.100	0.274	0.581

Average Unit Energy Costs Based on Standard 2009 Rates and Average Load Factor

Rate Class	Unit Energy Cost (average)
GSL > 100 kV	\$0.0489
GSL 30 kV to 100 kV	\$0.0437
GSL 750 V to 30 kV	\$0.0646
GSM	\$0.0720

Average Unit Energy Costs Paid After Distressed Industry Billing Demand Deferrals

Rate Class	Unit Energy Cost (average)
GSL > 100 kV	\$0.0436
GSL 30 kV to 100 kV	\$0.0390
GSL 750 V to 30 kV	\$0.0567
GSM	\$0.0656

Note: It is important to recognize that lower unit energy costs are the direct result of deferrals applied to customer accounts. Customer savings, resulting from lower unit costs, are dependent on the deferral being converted into a concession per Manitoba Hydro's application to the PUB.

**APPROVED BILLING DEMAND DEFERRALS BY RATE CLASS
(June 2009 to November 2009 Billing Periods)**

Rate Class	JUNE 2009				JULY 2009				AUGUST 2009			
	Accounts		Deferral Amts		Accounts		Deferral Amts		Accounts		Deferral Amts	
	Eligible	Approved	\$	kV.A	Eligible	Approved	\$	kV.A	Eligible	Approved	\$	kV.A
Medium	38	8	4,885	586	45	11	6,386	766	48	13	9,306	1,116
L <30	10	4	23,213	3,689	12	4	28,688	4,428	12	5	37,811	5,891
L 30-100	0	0	-	-	2	2	28,822	4,756	2	2	31,154	5,141
L >100	5	5	190,750	35,324	5	5	466,168	86,327	5	5	141,946	26,286
Total	53	17	218,848	39,599	64	22	530,064	96,277	67	25	220,217	38,434
Rate Class	SEPTEMBER 2009				OCTOBER 2009				NOVEMBER 2009			
	Accounts		Deferral Amts		Accounts		Deferral Amts		Accounts		Deferral Amts	
	Eligible	Approved	\$	kV.A	Eligible	Approved	\$	kV.A	Eligible	Approved	\$	kV.A
Medium	48	10	5,739	688	44	12	8,387	1,006	45	9	6,361	763
L <30	10	4	28,052	3,962	10	5	30,078	4,248	10	5	23,475	3,316
L 30-100	2	2	6,185	1,021	2	2	12,889	2,127	2	2	17,744	2,928
L >100	2	2	17,793	3,295	3	3	81,192	15,035	3	3	84,166	15,586
Total	63	18	57,769	8,966	61	22	132,546	22,416	61	19	131,746	22,593
Rate Class	TOTAL (June - November)		Deferral Amounts									
			\$	kV.A								
	Medium	41,064	4,925									
L <30	171,317	25,534										
L 30-100	96,794	15,973										
L >100	982,015	181,853										
Total	1,291,190	228,285										

CAC/MSOS/MH I-193

Subject: Temporary Billing Demand Concessions

Reference: Appendix 13.1

Tab 1, page 2

- d) With respect to Appendix 13.1, for each month please indicate the average unit energy cost for the customers in each class. Please also indicate the actual cost of energy under the SEP for each month.

ANSWER:

Average Unit Energy Cost (prior to deferrals) for Accounts Participating in the Distressed Industry Billing Demand Deferral Program by Month for the Billing Periods of Jun 2009 - Nov 2009

Billing Period	Average Unit Energy Cost (\$/kWh)			
	GSL > 100 kV	GSL 30 - 100 kV	GSL 750 V - 30 kV	GSM
Jun 09	\$ 0.0433	\$ 0.0367	\$ 0.0620	\$ 0.0694
Jul 09	\$ 0.0711	\$ 0.0536	\$ 0.0623	\$ 0.0717
Aug 09	\$ 0.0421	\$ 0.0548	\$ 0.0778	\$ 0.0765
Sep 09	\$ 0.0500	\$ 0.0414	\$ 0.0630	\$ 0.0701
Oct 09	\$ 0.0507	\$ 0.0435	\$ 0.0640	\$ 0.0737
Nov 09	\$ 0.0551	\$ 0.0456	\$ 0.0623	\$ 0.0718

Average Actual Unit Energy Costs under the Surplus Energy Program for Corresponding Months of the Distressed Industry Billing Demand Deferral Program

Billing Period	GSL > 100 kV (SEP)		
	On-Peak	Shoulder	Off-Peak
Jun 09	\$ 0.0290	\$ 0.0215	\$ 0.0086
Jul 09	\$ 0.0334	\$ 0.0238	\$ 0.0092
Aug 09	\$ 0.0325	\$ 0.0202	\$ 0.0076
Sep 09	\$ 0.0264	\$ 0.0186	\$ 0.0062
Oct 09	\$ 0.0259	\$ 0.0191	\$ 0.0084
Nov 09	\$ 0.0353	\$ 0.0260	\$ 0.0157

Billing Period	GSL 30 - 100 kV (SEP)		
	On-Peak	Shoulder	Off-Peak
Jun 09	\$ 0.0294	\$ 0.0218	\$ 0.0087
Jul 09	\$ 0.0339	\$ 0.0242	\$ 0.0094
Aug 09	\$ 0.0330	\$ 0.0205	\$ 0.0077
Sep 09	\$ 0.0268	\$ 0.0189	\$ 0.0062
Oct 09	\$ 0.0262	\$ 0.0193	\$ 0.0086
Nov 09	\$ 0.0358	\$ 0.0264	\$ 0.0160

Billing Period	GSL 750 V - 30 kV (SEP)		
	On-Peak	Shoulder	Off-Peak
Jun 09	\$ 0.0301	\$ 0.0223	\$ 0.0089
Jul 09	\$ 0.0347	\$ 0.0248	\$ 0.0096
Aug 09	\$ 0.0338	\$ 0.0210	\$ 0.0079
Sep 09	\$ 0.0274	\$ 0.0194	\$ 0.0064
Oct 09	\$ 0.0269	\$ 0.0198	\$ 0.0088
Nov 09	\$ 0.0367	\$ 0.0270	\$ 0.0164

Billing Period	GSM (SEP)		
	On-Peak	Shoulder	Off-Peak
Jun 09	\$ 0.0306	\$ 0.0226	\$ 0.0091
Jul 09	\$ 0.0352	\$ 0.0251	\$ 0.0097
Aug 09	\$ 0.0343	\$ 0.0213	\$ 0.0080
Sep 09	\$ 0.0278	\$ 0.0196	\$ 0.0065
Oct 09	\$ 0.0273	\$ 0.0201	\$ 0.0089
Nov 09	\$ 0.0372	\$ 0.0274	\$ 0.0166

Note: The Distressed Industry Billing Demand Deferral Program did not provide deferrals against energy charges. The intent of the program was to mitigate the impact of “fixed” demand charges during periods of production curtailment, thereby decreasing the average unit cost of energy.

SEP rates are specific to time of day and week, and do not include distribution costs. Available energy is of an interruptible nature and period specific rates are set weekly by Manitoba Hydro based on availability of energy, market conditions and associated costs of supply. These rates are approved by the PUB on a weekly basis.

For purposes of this analysis, PUB approved weekly SEP rates were averaged over monthly billing periods and presented based on the specific time of day during which they applied.

CAC/MSOS/MH I-193

Subject: Temporary Billing Demand Concessions

Reference: Appendix 13.1

Tab 1, page 2

e) **With respect to Appendix 13.1 please provide a total across all customer classes for each of the following:**

- **Total kWhs subject to Billing Demand Concession**
- **Total Revenues under the Billing Demand Concession**
- **Total Estimated Revenues assuming the equivalent energy was sold at SEP rates during the same month.**
- **Total Estimate Revenues assuming the equivalent energy was sold at SEP rates (recalibrated to actual costs) during the same month.**

ANSWER:

The Distressed Industry Billing Demand Deferral Program was not intended to provide relief for the energy charge Manitoba Hydro applies against energy consumed. The purpose of the program was to mitigate the impact of “fixed” demand charges on the customer’s average cost of energy as production was curtailed to balance inventories with demand for the customer’s products and/or services. Therefore, kWh’s were not subject to deferral under the program.

The total revenues subject to deferral under the Distressed Industry Billing Demand Deferral Program are shown by rate class and month in the accompanying table.

Energy charges were not subject to deferral under the Distressed Industry Billing Demand Deferral Program. As result, there is no value for equivalent energy sold at SEP rates (posted or actual).

**APPROVED BILLING DEMAND DEFERRALS BY RATE CLASS
(June 2009 to November 2009 Billing Periods)**

Rate Class	JUNE 2009				JULY 2009				AUGUST 2009			
	Accounts		Deferral Amts		Accounts		Deferral Amts		Accounts		Deferral Amts	
	Eligible	Approved	\$	kV.A	Eligible	Approved	\$	kV.A	Eligible	Approved	\$	kV.A
Medium	38	8	4,885	586	45	11	6,386	766	48	13	9,306	1,116
L <30	10	4	23,213	3,689	12	4	28,688	4,428	12	5	37,811	5,891
L 30-100	0	0	-	-	2	2	28,822	4,756	2	2	31,154	5,141
L >100	5	5	190,750	35,324	5	5	466,168	86,327	5	5	141,946	26,286
Total	53	17	218,848	39,599	64	22	530,064	96,277	67	25	220,217	38,434
Rate Class	SEPTEMBER 2009				OCTOBER 2009				NOVEMBER 2009			
	Accounts		Deferral Amts		Accounts		Deferral Amts		Accounts		Deferral Amts	
	Eligible	Approved	\$	kV.A	Eligible	Approved	\$	kV.A	Eligible	Approved	\$	kV.A
Medium	48	10	5,739	688	44	12	8,387	1,006	45	9	6,361	763
L <30	10	4	28,052	3,962	10	5	30,078	4,248	10	5	23,475	3,316
L 30-100	2	2	6,185	1,021	2	2	12,889	2,127	2	2	17,744	2,928
L >100	2	2	17,793	3,295	3	3	81,192	15,035	3	3	84,166	15,586
Total	63	18	57,769	8,966	61	22	132,546	22,416	61	19	131,746	22,593
Rate Class	TOTAL (June - November)		Deferral Amounts									
			\$	kV.A								
	Medium	41,064	4,925									
L <30	171,317	25,534										
L 30-100	96,794	15,973										
L >100	982,015	181,853										
Total	1,291,190	228,285										

CAC/MSOS/MH I-194

Subject: Temporary Billing Demand Concessions

Reference: PUB Order No. 126/09

- a) **Please indicate how many of the 10 accounts receiving the Temporary Billing Concession also received financial assistance from the province (per page 21) and what form that assistance took.**

ANSWER:

In total, 26 accounts received a Billing Demand Deferral under the Distressed Industry Billing Demand Deferral Program. Manitoba Hydro does not have knowledge of the number of these accounts that received provincial assistance or the amounts and form which such assistance may have taken.

CAC/MSOS/MH I-194

Subject: Temporary Billing Demand Concessions

Reference: PUB Order No. 126/09

- b) Please outline any similar programs offered by other Canadian electric utilities (per page 22).**

ANSWER:

Manitoba Hydro is only aware of one other utility that has offered some form of rate relief to customers during the economic recession. The Quebec government authorized industrial customers whose power demand exceeded 50 MW to benefit, once, from an exceptional reduction in contract power during the period April 1, 2009 to March 31, 2010. Hydro Quebec also offers a Load Retention Rate (in place since 1993) to large customers (5000 kW or more) that are experiencing financial difficulties and who can demonstrate that they are obtaining nonrefundable reductions from their other suppliers.

CAC/MSOS/MH I-194

Subject: Temporary Billing Demand Concessions

Reference: PUB Order No. 126/09

- c) **Is Manitoba Hydro planning on extending the program beyond March 31, 2010 (per page 27)?**

ANSWER:

Manitoba Hydro concluded the Distressed Industry Billing Demand Deferral Program after the November 2009 billing period. There are presently no considerations being given to extending the program beyond that date.

CAC/MSOS/MH I-194

Subject: Temporary Billing Demand Concessions

Reference: PUB Order No. 126/09

- d) To Manitoba Hydro's knowledge has any GSL or GSM customer appealed any Manitoba Hydro decision regarding the program (per page 27).

ANSWER:

As of the date of this response, Manitoba Hydro does not have any knowledge of GSL or GSM customers appealing any Manitoba Hydro decision regarding the program.

CAC/MSOS/MH I-195

Subject: Manitoba Hydro Affordable Energy Program

Reference: Manitoba Hydro Affordable Energy Program Report, November 2009

a) Please provide a schedule that indicates the number of each of following that were waived/reduced in 2009 for residential customers (per page 9):

- Security deposits waived
- Reconnection fees waived
- Reconnection fees reduced
- Late Payment charges waived.

ANSWER:

The following table presents the total number of waived late payment fees and reconnection fees waived by month for residential accounts. Manitoba Hydro does not reduce reconnection fees. If extenuating circumstances are being considered for a customer's account, the fee will be waived, not reduced.

Manitoba Hydro does not track waived security deposits.

2009	Waived Late Payment Charges	Waived Reconnection Fees
Jan	1,037	4
Feb	1,327	5
Mar	984	0
Apr	917	4
May	1,514	5
Jun	960	7
Jul	1,008	16
Aug	858	7
Sep	1,021	7
Oct	913	3
Nov	909	5
Dec	1,091	4
Total	12,539	67

CAC/MSOS/MH I-195

Subject: Manitoba Hydro Affordable Energy Program

Reference: Manitoba Hydro Affordable Energy Program Report, November 2009

b) For the October 1, 2008 to May 14, 2009 heating season, please indicate the following:

- **How many residential accounts were potentially subject to disconnection but not disconnected as it was the heating season?**
- **How many accounts were subject to the installation of a load limiter?**

ANSWER:

Manitoba Hydro does not fully disconnect electric services for combined electric/gas accounts during the above mentioned period as outlined Board Order 14/08. For the period identified above, 1 123 load limiters were installed.

Manitoba Hydro does not normally disconnect all-electric residential accounts during the heating season as per Manitoba Hydro's voluntary weather moratorium.

Accounts which are identified as apartments with "lights & plugs only" and for which a mutually acceptable payment arrangement can not reached are subject to disconnection year round.

Manitoba Hydro does not archive account status information and therefore cannot provide the number of accounts which were technically eligible for disconnection in the past, i.e. met all disconnection criteria as outlined in the response to CAC/MSOS/MH I-100(d). Manitoba Hydro can state that as of May 4, 2009, approximately 29,000 residential accounts were in arrears more than 60 days and with arrears greater than \$100. However, if the customer had entered into payment arrangements for their account at this time or if no customer contact had been made by Manitoba Hydro within the preceding 60 days, the customer would not be subject to disconnection.

CAC/MSOS/MH I-195

Subject: Manitoba Hydro Affordable Energy Program

Reference: Manitoba Hydro Affordable Energy Program Report, November 2009

- c) **Would an account with a load limiter be able to use electricity for space heating?
If not, please outline Manitoba Hydro's policy with respect to the installation of
load limiters on accounts with electric space heating.**

ANSWER:

Load limiters are not installed at premises where electricity is the primary heat source. PUB Order 14/08 allows Manitoba Hydro to load limit the electric service for combined gas/electric services which are in arrears and for which a mutually acceptable payment arrangement can not be reached. With the load limiter installed, the customer maintains the benefit of heat while the outstanding account is being resolved.

CAC/MSOS/MH I-195

Subject: Manitoba Hydro Affordable Energy Program

Reference: Manitoba Hydro Affordable Energy Program Report, November 2009

- d) Would an account with a load limiter be able to use electricity for water heating?
If not, please outline Manitoba Hydro's policy with respect to the installation of load limiters on accounts with electric water heating but not electric space heating.**

ANSWER:

A customer whose service has been load limited would not be able to use electricity for water heating. Load limiters are installed on combined gas/electric services which are in arrears and where a mutually acceptable payment arrangement can not be reached so that the customer maintains the benefit of heat while the outstanding account is being resolved.

CAC/MSOS/MH I-195

Subject: Manitoba Hydro Affordable Energy Program

Reference: Manitoba Hydro Affordable Energy Program Report, November 2009

- e) **Pages 5 and 6 (and also pages 26-37) of the report outline a number of program “enhancements”. It is not clear if these are possible or planned enhancements. Please provide a schedule that sets out the current status of each enhancement listed.**

ANSWER:

The following are the enhancements and the associated status of each enhancement as identified in Manitoba Hydro Affordable Energy Program Report, November 2009:

1. *Refine eligibility criteria to ensure crisis intervention funding is provided for those customers that genuinely need the assistance.*

Action:

Manitoba Hydro is currently in discussion with various stakeholders to help determine potential members of a working group which may include government officials and other stakeholders with expertise in social programming. The goal of this group will be to identify customers who are vulnerable and genuinely find it difficult to pay their utility bill. The most efficient way of defining the vulnerable customer would be to tie qualification to an existing form of government assistance, such as disability benefits. This will be achieved through expansion of the Manitoba Hydro’s existing stakeholder group to include other stakeholders that can further provide insight into social programming criteria. This group is being assembled with a goal to schedule a first meeting in the spring of 2010.

2. *Expand bill management:*

- a. *Implement a “select your own payment date” option that would allow customers to set a preferred payment date.*

Action:

In place

- b. *Waive reconnection fees, security deposits and interest fees for NHN participants who have previously been disconnected but are now receiving an NHN subsidy.*

Action:

Manitoba Hydro is currently waiving reconnection fees, security deposits and interest fees for the majority of NHN participants, however this waiver is offered on a case by case basis.

3. *Upgrade the NHN program offering:*

- a. *Increase the limit on NHN grant amounts from \$300 to \$450*

Action:

In place

- b. *Allow participants to participate more than once.*

Action:

In place

- c. *Implement a referral for NHN homeowner participants to LIEEP.*

Action:

In place

- d. *Implement a six month follow-up policy with customers.*

Action:

Manitoba Hydro is working with Salvation Army to enhance the process to contact past participants in order to monitor their current status as well as review the progress they have made on the action plan (accessing community support services, counseling, and job training) established during the application process.

4. *Elimination or reduction of the basic monthly charge*

Action: Manitoba Hydro's proposal to reduce the basic monthly charge for all customers will be reviewed at the public hearing for this General Rate Application.

5. *Consolidate and improve interaction between internal programs.*

Action: Manitoba Hydro has been consolidating and improving interaction between internal programs and will be formalizing this process during Spring/Summer 2010.

6. *Strengthen interaction between Manitoba Hydro and other stakeholders.*
Action: Manitoba Hydro has been working with our stakeholders. This process will be further enhanced in Spring/Summer 2010.

7. *Implement an education component for the AEP to educate customers, service providers and program partners.*
Action: Manitoba Hydro has been engaging and educating customers and partners and will be formalizing this process during the Spring/Summer 2010.

8. *Build market awareness of the AEP through a solid marketing strategy.*
Action: Manitoba Hydro has developed a comprehensive marketing plan. Please see response to PUB/MH I-222(a).

CAC/MSOS/MH I-196

Subject: Manitoba Hydro Affordable Energy Program

Reference: Manitoba Hydro Affordable Energy Program Report, November 2009

- a) **What is the basis for Manitoba Hydro's funding to the NHN program? For example, is a set amount granted each year and, if so how is that amount determined? Alternatively, is funding provided for a percentage of the total grants offered?**

ANSWER:

The Salvation Army prepares a budget for the program, based upon the previous year's activity and a forecast for the upcoming year for both operational (grants) and administrative costs. Manitoba Hydro has committed to match all private donations. In the event requests for grants exceed the donations received, Manitoba Hydro has extended its support for the program.

CAC/MSOS/MH I-196

Subject: Manitoba Hydro Affordable Energy Program

Reference: Manitoba Hydro Affordable Energy Program Report, November 2009

- b) **Does the NHN program, as described, apply just to electricity bills? Is there a comparable program offer by Manitoba Hydro for its natural gas accounts?**

ANSWER:

The NHN program provides emergency funding to assist with energy bills, and is not limited to electricity.

CAC/MSOS/MH I-196

Subject: Manitoba Hydro Affordable Energy Program

Reference: Manitoba Hydro Affordable Energy Program Report, November 2009

- c) **Please provide a copy of the Salvation Army's most recent annual report on the NHN program (per page 13).**

ANSWER:

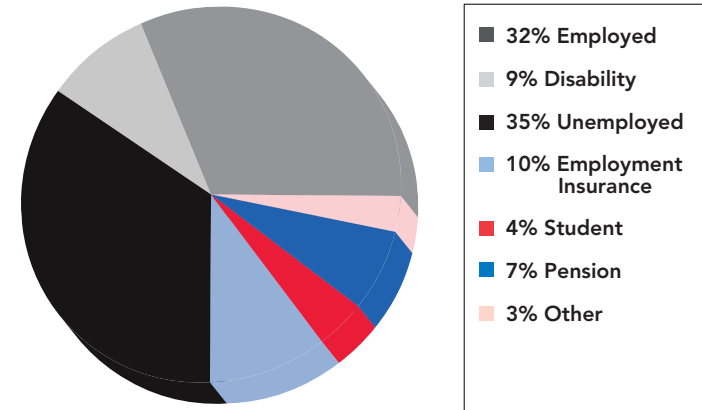
Refer to attached Neighbours Helping Neighbours 2008/09 Annual Report.

Neighbours *helping* Neighbours

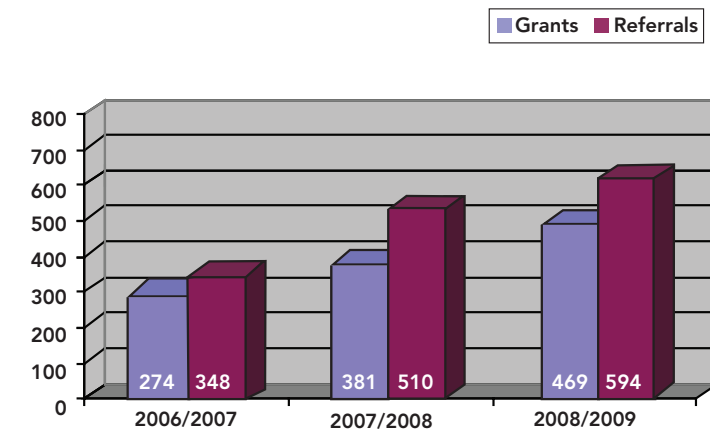
Statement of activities year ended March 31, 2009

Income	
Prior Year Surplus/(Defecit) brought forward	\$ 7,921
Customer and Manitoba Hydro donations	\$ 130,135
Administration Grants	\$ 81,250
Other	\$ 1,763
Total Income	\$ 221,069
Expenses	
Support services	\$ 54,949
General operations	\$ 7,553
Equipment, furniture, and property	\$ 10,012
Assistance grants	\$ 120,835
Total expenses	\$ 193,349
Surplus (defecit) to be carried forward	\$ 27,716

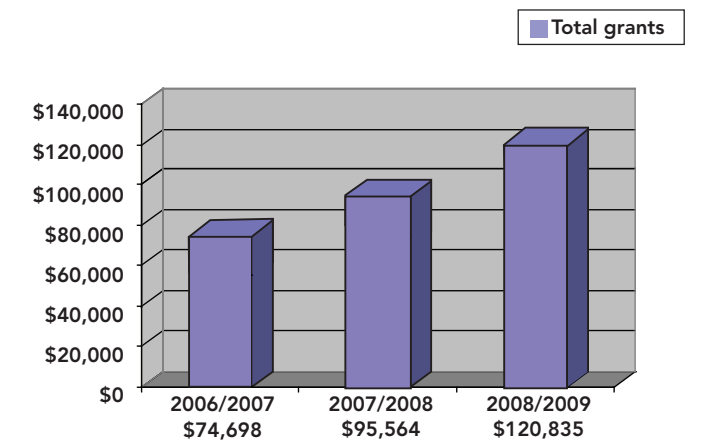
Employment status of individuals assisted 2008-2009 Winnipeg program only



Individuals helped



Total assistance grants



Vision

Strengthening our communities by empowering and guiding individuals towards independence.



Major Susan van Duinen
Divisional Commander
The Salvation Army,
Manitoba and North West
Ontario Division

Greetings. Another year has swiftly passed and Canadians are faced with uncertain economic situations. In its compassionate concern to exemplify the love of God in the midst of these challenges, the partnership between Manitoba Hydro and The Salvation Army reaches out together to offer hope.

The outcome of this partnership is more than statistics. It is the transformation of lives through the offer of support of community services, the opportunity to celebrate the courage of individuals and families by a fresh start and finding hope in the midst of heartache.

I am grateful to Manitoba Hydro for exhibiting confidence and trust in the mission of The Salvation Army through their continued generous support of the Neighbours Helping Neighbours program. This partnership makes it possible to reach out to hundreds who need help for today and hope for tomorrow.

Sincerely,
Major Susan van Duinen



Giving
Hope
Today



Bob Brennan
President and CEO
Manitoba Hydro

Once again I am very pleased to report that the Neighbours Helping Neighbours program has continued to meet its goal of providing support to those Manitobans in need.

Manitoba Hydro is honoured to be working with such a well-respected organization and we commend the Salvation Army's outstanding commitment to our community. Our partnership allows the program applicants' access to a host of agencies from which they can get various types of support to help them overcome a wide range of hurdles and provide for a brighter future.

I would like to take this opportunity to thank the Salvation Army for their efforts and look forward to continued success in the years ahead.

I also extend our thanks to all our contributors for their generous donations. Your support truly does make a difference to those in need.

Sincerely,
Bob Brennan



Annual Report 2008-2009

Neighbours Helping Neighbours
c/o The Salvation Army
Winnipeg, Manitoba
(204) 949-2106
www.neighbourshelpingneighbours.com



To date, Neighbours Helping Neighbours has assisted more than **1500 families**

and individuals in need of support.

Who Neighbours helps

In every community, there are individuals, families and seniors trying to make ends meet who experience problems beyond their control. When personal hardship happens, it can cause a financial emergency. Neighbours Helping Neighbours assists people who need support.

Individuals with lower incomes typically spend a higher proportion of their income on their natural gas and electricity bills. These families also often rent homes that have little insulation, old appliances, and inefficient heating systems; factors that can cause a greater impact on their energy bills.

Through Neighbours Helping Neighbours, these families are provided with referrals to help them manage through a crisis. One-time emergency funding to assist with energy bills may also be provided.

"I am very thankful to have the arrears paid on my Hydro bill. That really means a lot right now. I never used to think that was a lot of money. Times sure have changed. Well hopefully I won't be down for too long...Thank you once again!"

"Hi. I just want to let you know that what your organization has done to help me is very much appreciated. Thanks again for everything you have done to help with my Hydro bill."

"Thank you so much for all your help on top of the bill. God bless you."

"I just want to thank you for helping me with my gas bill. It was not easy for me to ask for help and you made me feel very comfortable and I appreciate it."

Program management

The Salvation Army manages the program and meets with individuals and families who are seeking assistance and is responsible for determining whether approval will be granted.

Community Council

Neighbours Helping Neighbours was developed by a Community Council that oversees the program. The group is made up of individuals representing a number of community minded organizations.

Linda Brazier
Lamoureux Director
Community Investment

Linda Lalande
United Way

Bill Loveless
Community Ministries Worker
SA Weetamah

Nic Munday
Scotia Bank

Lois Morrison
Divisional Manager
Business Support Services
Manitoba Hydro

Cindy Roy
Customer Care Manager
Business Support Services
Manitoba Hydro

Robert Russell
Corps Officers
SA Weetamah

Dirk Van Duinen
Salvation Army
DHQ

Mark Young
Community Ministries Coordinator
SA Weetamah

Highlights (April 2004 to March 2009)

More than 1500 families have been helped by the program.
Most referrals come from Manitoba Hydro staff assisting customers with collection issues

More than 2100 referrals to additional community programs.
Through Neighbours Helping Neighbours, the Salvation Army can access a significant number of community members that they may not normally reach. Connecting these individuals to community support services helps address underlying factors that affect their household.

More than 1500 grants have been provided.
The program relieves an individual's financial stress and enables a family to redirect money toward other basic needs, such as food and shelter, in an emergency situation.

Access to community and government programs

Referral agencies

- Community financial counseling services
- Community resources (rent assistance, housing renovations, clothing, furniture)
- Disability issues
- Employment programs
- Food banks
- Health care facilities
- Immigrant Tool Box
- Individual counseling (addictions, abuse, grief, support groups)
- Manitoba Child Benefit
- Manitoba Shelter Benefit for Renters
- Manitoba Hydro Power Smart
- Residential Rehabilitation Assistance Program for Homeowners (RRAP)
- Repair Conversions
- Social assistance
- STAT 55 Plus (school tax assistance for tenants 55 years and over)
- 55 Plus (income supplement for Manitobans)
- Various job sites, websites, etc.

You can make a difference in your community

With your support, Neighbours Helping Neighbours:

- Assists individuals, families and seniors in crisis
- Strengthens families and our community
- Helps people learn new life skills to make positive changes

The Board and Staff of Neighbours Helping Neighbours look forward to their continued role helping people manage emergency situations. Without your generous donations, this program would not be possible.

On behalf of all the people you helped regain their self-reliance last year, *thank you*

Programs

- Age & Opportunity
- Canada Pension Plan Disability
- Child Related Income Support Program
- Community Financial Counseling Services
- Dental assistance
- Employment and Income Assistance
- Hands of Hope
- Independent Living Resource Centre
- Clinic
- North End Women's Counseling Services
- PATH Resource Centre
- Pharmacy and prescription drugs
- Salvation Army Weetamah Community Church
- Seed Winnipeg Inc
- The Salvation Army Work Readiness Program
- Vision Care
- Winnipeg Harvest
- WISE-Seniors Helping Seniors

you can make a
difference.



CAC/MSOS/MH I-196

Subject: Manitoba Hydro Affordable Energy Program

Reference: Manitoba Hydro Affordable Energy Program Report, November 2009

- d) Reference is made on pages 17-18 to the 2003 Residential End Use Survey. If possible, please provide a breakdown from that survey of the customers with income less than LICO x 125% by monthly consumption level.

ANSWER:

The 2003 survey was not analyzed by monthly consumption. The following table provides a breakdown of LICO-125 customers by annual kW.h consumption based on the 2003 survey.

Heat Source:	Electric	Gas	Total
0 - 4,999 kW.h	719	18,582	19,301
5,000 - 9,999 kW.h	4,002	23,309	27,311
10,000 - 14,999 kW.h	3,053	13,588	16,641
15,000 - 19,999 kW.h	3,387	5,062	8,449
20,000 - 24,999 kW.h	6,298	831	7,129
25,000 - 29,999 kW.h	4,749	763	5,512
30,000 - 34,999 kW.h	2,746	556	3,302
35,000 - 39,999 kW.h	2,173	258	2,431
40,000 kW.h plus	2,984	137	3,121
Total	30,111	63,086	93,197

CAC/MSOS/MH I-197

Subject: Manitoba Hydro Affordable Energy Program

Reference: Manitoba Hydro Affordable Energy Program Report, November 2009

Preamble: Reference is made to administration cost for 1.75 full time staff to field calls and pre-qualify customer for interviews

a) Who actually carries out the “interviews” and is any funding provided for this part of the process?

ANSWER:

Salvation Army staff conduct all interviews for the Neighbours Helping Neighbours Program. Staff supporting the program are funded through the administrative funding as identified in Manitoba Hydro’s response to CAC/MSOS/MH I-196(a).

CAC/MSOS/MH I-197

Subject: Manitoba Hydro Affordable Energy Program

Reference: Manitoba Hydro Affordable Energy Program Report, November 2009

Preamble: Reference is made to administration cost for 1.75 full time staff to field calls and pre-qualify customer for interviews

- b) Do customers seeking assistance need to attend such interviews in person and, if so, what accommodation is made for customers who do not have reasonable access (due to proximity, disability, etc.) to the offices where such interviews will occur.**

ANSWER:

Initial client contact with the Salvation Army is traditionally by phone and includes general intake questions to assess program eligibility, followed by an in-person interview. If the client is unable to attend any of the six Salvation Army offices located throughout the Province, arrangements can be made to have the necessary information faxed or mailed in for review and the interview may be conducted by phone.

CAC/MSOS/MH I-197

Subject: Manitoba Hydro Affordable Energy Program

Reference: Manitoba Hydro Affordable Energy Program Report, November 2009

Preamble: Reference is made to administration cost for 1.75 full time staff to field calls and pre-qualify customer for interviews

c) Must customers meet an income test in order to qualify and, if so, what is it (e.g. <125% of LICO)?

ANSWER:

Program eligibility is based upon household income being <120% of LICO.

CAC/MSOS/MH I-197

Subject: Manitoba Hydro Affordable Energy Program

Reference: Manitoba Hydro Affordable Energy Program Report, November 2009

Preamble: Reference is made to administration cost for 1.75 full time staff to field calls and pre-qualify customer for interviews

d) Who is responsible for determining if a customer is eligible for financial assistance?

ANSWER:

Salvation Army staff provide referrals and determine client eligibility for financial assistance.

CAC/MSOS/MH I-197

Subject: Manitoba Hydro Affordable Energy Program

Reference: Manitoba Hydro Affordable Energy Program Report, November 2009

Preamble: Reference is made to administration cost for 1.75 full time staff to field calls and pre-qualify customer for interviews

e) What appeal process, if any, is there?

ANSWER:

There is currently no formal appeal process; however, any client can request that their situation be re-examined by a supervisor within the Salvation Army. Regardless of whether or not a client meets the eligibility requirements for the financial grant, the Salvation Army will work with the client, and offer counselling and referrals to programs available through the Salvation Army and other community organizations to help the client manage through their individual crisis.

CAC/MSOS/MH I-198

Subject: 20-Year Financial Outlook

Reference: 20 Year Financial Outlook, January 2010

- a) **Based on no new major generation after Conawapa as assumed in the Outlook, please provide a schedule that indicates for each year through to 2028/29:**
- **Surplus MWs of Firm Dependable Capacity (over Domestic Demand)**
 - **Hydraulic Generation available for export assuming a) dependable flow levels and b) medial flow levels**
 - **Assumed dependable and median energy purchases from wind power in each year**

ANSWER:

The table on the next page contains a summary of the requested information. The “Total Dependable Export” includes energy sourced from imports, thermal generation and wind energy purchases but excludes coal-fired thermal energy from Brandon Unit 5. The “hydraulic generation available for export” that is requested is dependent on the assumption used to determine the order in which the various resources are stacked and the order in which loads are assumed to be served. For purposes of illustration, it is assumed that hydraulic energy is first in the supply stack followed by the non-hydro resources. Furthermore, it is assumed that Manitoba domestic load is served before export commitments. As a consequence on these assumptions, it is observed from the summary in the table that there is no surplus hydraulic generation until 2023 in the recommended development plan which includes Keeyask in 2018/19 and Conawapa in 2022/23 and the WPS and MP Sales. It is noted that a different set of stacking assumptions could produce significantly different results.

It should be noted that the wind energy in this table includes a 10% adder in order to be consistent with the supply/demand tables utilized in the power resource plan which have losses inherently considered in the domestic load forecast. The actual purchases of wind energy are 10% lower than shown in the table.

Fiscal Year	Capacity Surplus Net of MB Load (MW)	Energy Available for Export (GWh/yr)			Wind Purchases (GWh/yr)	
		Total Dependable Export	Hydro Energy		Dependable	Median
			Dependable Flow	Median Flow		
2009/10	1203	3538	0	5175	320	376
2010/11	1181	3692	0	4811	818	962
2011/12	1340	4260	0	5481	1254	1475
2012/13	1334	4593	0	5943	1254	1475
2013/14	1219	4143	0	5594	1254	1475
2014/15	1110	3515	0	4996	1254	1475
2015/16	887	2702	0	4448	1254	1475
2016/17	872	2395	0	4149	1254	1475
2017/18	920	2454	0	4477	1254	1475
2018/19	967	4002	0	6269	1254	1475
2019/20	1149	5688	0	8426	1254	1475
2020/21	1267	5944	0	7984	1254	1475
2021/22	1204	5694	0	7592	1254	1475
2022/23	1659	8212	0	9605	1254	1475
2023/24	2045	10302	1026	13343	1254	1475
2024/25	2235	9951	675	13132	1254	1475
2025/26	1767	8599	24	13051	1254	1475
2026/27	1479	8046	0	12516	1254	1475
2027/28	1589	7615	0	12085	1254	1475
2028/29	1513	7221	0	11701	1254	1475

CAC/MSOS/MH I-198

Subject: 20-Year Financial Outlook

Reference: 20 Year Financial Outlook, January 2010

- b) Please re-do pages 8-9 assuming a 2.9% rate increase annually for 2013 through to 2020.

ANSWER:

Please refer to the attached schedules.

CONSOLIDATED PROJECTED OPERATING STATEMENT
2.90% Rate Increases from 2013-2020
(In Millions of Dollars)

For the year ended March 31

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
REVENUES											
General Consumers	1,652	1,670	1,739	1,800	1,854	1,928	1,994	2,056	2,122	2,188	2,254
Extraprovincial	414	383	554	583	615	590	701	729	742	894	1,093
	2,066	2,054	2,293	2,383	2,468	2,518	2,694	2,785	2,864	3,082	3,347
Cost of Gas Sold	351	332	340	346	342	349	350	351	352	353	352
	1,715	1,722	1,953	2,037	2,126	2,169	2,344	2,434	2,512	2,730	2,995
Other	28	29	31	32	32	33	34	34	35	36	36
	1,742	1,751	1,984	2,069	2,158	2,202	2,378	2,468	2,547	2,765	3,032
EXPENSES											
Operating and Administrative	446	456	482	492	501	512	522	532	555	568	589
Finance Expense	454	451	509	569	571	591	578	598	644	736	947
Depreciation and Amortization	394	415	438	469	481	502	513	519	540	573	607
Water Rentals and Assessments	120	110	111	113	114	114	115	115	115	115	124
Fuel and Power Purchased	103	131	248	249	259	268	296	341	362	440	418
Capital and Other Taxes	97	99	100	104	109	116	125	133	140	146	150
	1,613	1,663	1,888	1,995	2,035	2,103	2,149	2,239	2,356	2,579	2,836
Non-controlling Interest	-	-	1	1	(2)	(5)	(9)	(11)	(12)	(15)	(14)
Net Income	129	88	98	75	121	94	220	218	178	172	182
Additional General Consumers Revenue											
General electricity rate increases		2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
General gas rate increases		0.00%	1.50%	0.00%	1.00%	0.00%	1.00%	0.00%	1.00%	1.00%	0.00%
Financial Ratios											
Equity	26%	25%	24%	24%	22%	21%	20%	19%	19%	18%	19%
Interest Coverage	1.24	1.15	1.15	1.11	1.17	1.12	1.25	1.22	1.16	1.15	1.14
Capital Coverage	1.39	1.09	1.14	1.27	1.22	1.46	1.77	1.71	1.76	1.93	2.27

CONSOLIDATED PROJECTED OPERATING STATEMENT
2.90% Rate Increases from 2013-2020
(In Millions of Dollars)

For the year ended March 31

	2021	2022	2023	2024	2025	2026	2027	2028	2029
REVENUES									
General Consumers	2,307	2,367	2,424	2,488	2,556	2,623	2,699	2,771	2,848
Extraprovincial	1,201	1,223	1,379	1,758	1,940	1,908	1,903	1,928	1,950
	3,509	3,590	3,803	4,246	4,496	4,531	4,602	4,699	4,798
Cost of Gas Sold	351	350	350	349	348	347	346	346	345
	3,158	3,240	3,453	3,897	4,148	4,184	4,255	4,354	4,453
Other	37	38	39	39	40	41	42	42	43
	3,195	3,278	3,492	3,936	4,188	4,225	4,297	4,396	4,496
EXPENSES									
Operating and Administrative	602	615	634	647	660	673	686	699	713
Finance Expense	1,036	938	985	1,176	1,279	1,247	1,222	1,174	1,126
Depreciation and Amortization	634	639	667	729	773	789	807	810	821
Water Rentals and Assessments	129	130	136	150	154	155	155	156	157
Fuel and Power Purchased	435	459	473	459	492	420	395	424	445
Capital and Other Taxes	143	147	153	154	155	156	157	158	159
	2,979	2,928	3,048	3,315	3,513	3,440	3,423	3,422	3,421
Non-controlling Interest	(25)	(27)	(28)	(29)	(30)	(34)	(38)	(41)	(43)
Net Income	191	323	416	593	644	751	837	933	1,031
Additional General Consumers Revenue									
General electricity rate increases	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
General gas rate increases	0.00%	1.00%	0.00%	1.00%	1.00%	0.00%	1.00%	0.00%	1.00%
Financial Ratios									
Equity	19%	20%	21%	23%	26%	29%	33%	37%	41%
Interest Coverage	1.14	1.25	1.32	1.45	1.49	1.59	1.68	1.78	1.90
Capital Coverage	1.97	1.94	1.99	2.28	2.20	2.47	2.57	2.76	2.78

CAC/MSOS/MH I-198

Subject: 20-Year Financial Outlook

Reference: 20 Year Financial Outlook, January 2010

c) Please provide the 20 year results of an alternative scenario where:

- The in-service dates for Keeyask and Conawapa are move further into the future to align with need dates based on the load forecast and current long-term firm export contracts**
- The capital spending on these projects is shifted accordingly**
- Export volumes and revenues are shifted accordingly.**

ANSWER:

Manitoba Hydro has not prepared a scenario which includes both Keeyask and Conawapa for Manitoba load and current long-term firm export contracts. In the alternative development plan to meet Manitoba demand and existing firm export contracts, Keeyask is not required. In this scenario, Conawapa is required in 2021 (one year earlier than IFF09) and a combined cycle gas turbine is required in 2033. Please see the Alternative Development Sequence (page 15) in the 20 Year Financial Outlook and Appendix 15 for the corresponding financial projections.

CAC/MSOS/MH I-199

Subject: Export Power Sales and Risks

Reference: Appendix 12.2

- a) **ICF does not believe (page 18) that Manitoba Hydro should engage in shorter term merchant non-arbitrage transactions. It also states that MH management is not interested in pursuing non-arbitrage merchant transactions. Please explain the difference between these transactions and the simultaneous buy-sell arrangements that MH does engage in.**

ANSWER:

Please see Manitoba Hydro's responses to PUB/MH I-149(a) and (b).

CAC/MSOS/MH I-200

Subject: Curtailable Power

Reference: Appendix 10.8

- a) **Has Manitoba Hydro undertaken any analysis (per pages 4 and 13-14) since 2000 to update the estimated marginal value of capacity (apart from annual inflation adjustments)?**

ANSWER:

No.

CAC/MSOS/MH I-200

Subject: Curtailable Power

Reference: Appendix 10.8

- b) What is the value for capacity currently used by Manitoba Hydro in the evaluation of DSM programs?**

ANSWER:

The value of capacity currently used by Manitoba Hydro in the evaluation of DSM programs is \$5.87/kW-month. This applies to programs at the General Service Large level.

CAC/MSOS/MH I-200

Subject: Curtailable Power

Reference: Appendix 10.8

- c) **The discussion of costs and benefits on pages 17-18 only quantifies the benefits of Option R. Can the historic benefits from Options A and C be quantified? If not, please explain why. If yes, please do so and explain the basis for the analysis.**

ANSWER:

As noted on page 17 and 18 of Appendix 10.8 of the Application, the benefits shown in the table include the combined benefits of Curtailable Program Options A, C and R.

The Option R benefit analysis was based on accounting for the revenue from increased availability of hydraulic generation for economic operation, which would otherwise have been needed for Ready Reserves (also termed Supplemental Operating Reserves). Option R curtailable load was used to provide this reserve.

The Option A and C benefit analysis was based on a review of incremental summer season capacity and energy sale revenues where Manitoba Hydro was able to sell additional capacity and associated energy in the forward market as opposed to the spot market. This incremental capacity resource is a result of the capacity made available from load reductions under Options A and C.

CAC/MSOS/MH I-200

Subject: Curtailable Power

Reference: Appendix 10.8

- d) Please explain more fully how the benefits from Option R curtailable load were determined (page 18).**

ANSWER:

As reported on page 7 of Appendix 10.8 of the Application, Option R curtailable load allows Manitoba Hydro to obtain increased value in the short-term opportunity energy market. For the years where benefits have been calculated these were determined on a daily basis and summarized into an annual value.

The benefits calculated were dependant upon actual spot market prices and water conditions.

Benefits arise as follows:

- Under high water supply conditions the generating capacity freed up for commercial use allows for increased hydraulic generation for export as generating units that would otherwise be held in reserve can be run to capture additional on peak sales. Without Option R capacity in place, on peak energy would be spilled. With Option R load, the additional energy generated can be sold at on peak prices. Incremental water rental charges were subtracted from the additional sale revenues.
- Under average water supply conditions the generating capacity freed up for commercial use allows for additional hydraulic generation during on-peak hours. The energy used to supply these additional on-peak sales is made available by either purchasing additional off-peak energy or reducing off-peak exports. In this case Manitoba Hydro captures the benefit of the price differential between on and off-peak periods.
- Under low water supply conditions Option R capacity does not provide any significant benefits because Manitoba Hydro has sufficient shut down generating units (due to a lack of water) to meet its operating reserves requirements without relying on Option R load.

CAC/MSOS/MH I-201

Subject: Low-Income Assistance and DSM March 4, 2010

Reference: Ontario Energy Board Review, cited at page 4 of “Manitoba Hydro Affordable Energy Program” (November 10, 2009) filed February 3, 2010.

Ontario Energy Board Report “Report of the Board: Low Income Energy Assistance Program” (March 10, 2009), cited at page 20-22 of “Manitoba Hydro Affordable Energy Program” (November 10, 2009) filed February 3, 2010

Please file the following documents on the record in this proceeding:

- a) **IndEco Strategic Consulting Inc., “Report on the proposed framework for low-income emergency financial assistance”, Final report of the emergency Financial Assistance Working Group to the Ontario Energy Board (September 30, 2009); and**

ANSWER:

Manitoba Hydro has not relied and does not intend to rely on these documents in support of its Application and, therefore, declines to place them on the record of this proceeding.

CAC/MSOS/MH I-201

Subject: Low-Income Assistance and DSM March 4, 2010

Reference: Ontario Energy Board Review, cited at page 4 of “Manitoba Hydro Affordable Energy Program” (November 10, 2009) filed February 3, 2010.

Ontario Energy Board Report “Report of the Board: Low Income Energy Assistance Program” (March 10, 2009), cited at page 20-22 of “Manitoba Hydro Affordable Energy Program” (November 10, 2009) filed February 3, 2010

Please file the following documents on the record in this proceeding:

- b) IndEco Strategic Consulting Inc., “Report on the proposed short-term (2010) framework for natural gas low-income DSM”, Final report of the Conservation Working Group to the Ontario Energy Board (August 13, 2009).**

ANSWER:

Manitoba Hydro has not relied and does not intend to rely on these documents in support of its Application and, therefore, declines to place them on the record of this proceeding.