

Manitoba Hydro 2011-2012 General Rate Application

**Consumer Association of Canada  
(Manitoba Branch)  
and  
Manitoba Society of Seniors**

**BOOK OF EXHIBITS**

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***TAB 1***

**MANITOBA HYDRO**

**MARGINAL COSTS vs. AVERAGE REVENUE**  
(2010/11)

	Marginal Cost (cents/kWh)			Total	Average Revenue (cents/kWh)	Ratio of Revenue to Marginal Costs
	Generation	Transmission	Distribution			
Residential	6.01	0.83	0.51	7.35	7.03	95.6%
GSS	6.01	0.83	0.51	7.35	6.66	90.6%
GSM	6.01	0.83	0.51	7.35	5.10	69.4%
GSL 0-30 kV	6.01	0.83	0.51	7.35	4.53	61.6%
GSL 30-100 kV	6.01	0.83	n/a	6.84	3.89	56.8%
GSL >100 kV	6.01	0.83	n/a	6.84	3.53	51.6%

Sources: CAC/MSOS/MH I-66 c)  
CAC/MSOS/MH II-75 a)  
Appendix 58, page 79

- Notes:
- 1) Average Revenues are based on Manitoba Hydro's proposed April 1, 2010 Interim Rates
  - 2) Marginal costs are in 2010 dollars and for the year 2010/11.
  - 3) In the case of the GSM and GSL classes the marginal costs have not been adjusted to account for the fact that classes serviced at higher voltages will have lower/no distribution losses.
  - 4) Distribution marginal costs are not attributed to classes served at greater than 30 kV – consistent with Appendix 58, page 79 where it is noted that classes receiving service at greater than 30 kV are excluded from the allocation of distribution plant costs.
  - 5) The individual marginal cost components in CAC/MSOS/MH II-75 a) do not sum to the reported total. For purposes of the Table, the individual components are used along with their arithmetic total.

***TAB 2***

**Inflation vs. MH Residential Rate Increases  
Per PUB/MH I-2 b) - with Inflation Update**

<u>Year</u>	<u>Man Infl</u>	<u>Inflation Index</u>	<u>Res. Rate Incr.</u>	<u>Rate Incr Index</u>	<u>Compound Resid Rate Incr Over Inflation</u>
2003/04		100.00		100.00	
2004/05	2.70%	102.70	5.00%	105.00	
2005/06	2.40%	105.16	2.25%	107.36	
2006/07	2.00%	107.27	2.25%	109.78	
2007/08	1.90%	109.31	0.00%	109.78	
2008/09	2.20%	111.71	5.00%	115.27	
2009/10	0.70%	112.49	2.90%	118.61	
2010/11	1.60%	114.29	2.90%	122.05	
Compound Incr. 2003/04 - 2010/11 (Seven Years)		14.29%		22.05%	54.27%
Compound Incr. 2004/05 - 2010/11 (Six Years)		11.29%		16.24%	43.85%
Compound Incr 2003/04 - 2009/10 (Six years)		12.49%		18.61%	48.96%

**Source:** Rate Increases - PUB/MH I-2 b)  
2010/11 - 2.9% Residential Rate Increase per Order 18/10  
Inflation - Appendix 51, page 5. All values are actual except 2010/11 which is a forecast

**Notes:** Inflation and Rate Index values are calculated by applying the noted increase for the year to the previous year's value. 2003/4 set at 100.0.  
Compound Increases calculated by dividing the index value for the end year by the index value for the start year.  
Compound Rate Increase over Inflation calculated by dividing the overall percentage increase in Rates by the overall percentage increase in Inflation.

***TAB 3***

### Historic Change in Residential Bills

Residential Monthly Use (kWh)	<u>Monthly Bill as of</u>		<u>% Change</u>
	<u>Mar-31 2004</u>	<u>Mar-31 2011</u>	
500	33.135	37.75	13.93%
1000	58.935	\$69.84	18.50%
1500	84.735	\$102.69	21.19%
2000	110.535	\$135.54	22.62%
2500	136.335	\$168.39	23.51%
Cumulative Average Rate Increase			22.05%
Cumulative Increase in Inflation			14.29%

**Sources:** 2003/04 Rates - 2004 GRA, CAC/MSOS/MH I-42 a)  
2010/11 Rates - Board Order 33/10  
Average Rate Increase - 2010 GRA, PUB/MH I- 2b)  
Inflation - Appendix 51, page 5. All values are actual  
except 2010/11 which is a forecast



***TAB 4***

**Manitoba Inflation versus Forecast Manitoba Hydro Rate Increases**

<u>Year</u>	<u>Manitoba Inflation</u>		<u>Rates - IFF09</u>	
	<u>Annual Rate</u>	<u>Compound Value</u>	<u>Annual Increase</u>	<u>Compound Effect</u>
2009/10	-	100.00	-	100.00
2010/11	1.60%	101.60	2.80%	102.80
2011/12	1.90%	103.53	2.90%	105.78
2012/13	2.20%	105.81	3.50%	109.48
2013/14	2.10%	108.03	3.50%	113.32
2014/15	2.10%	110.30	3.50%	117.28
2015/16	2.10%	112.61	3.50%	121.39
2016/17	2.10%	114.98	3.50%	125.63
2017/18	2.10%	117.39	3.50%	130.03
2018/19	2.10%	119.86	3.50%	134.58
2019/20	2.10%	122.38	3.50%	139.29

Sources: Inflation - Appendix 51, page 3. All years are forecast values.

Rate Increases - Appendix 5.2, page 34

Note: 2010/11 Increase reflects approved interim increase

Notes: For both Manitoba Inflation and Rates the Compound Value/Effect was calculated by applying the Annual Rate/Increase to the previous year's value. 2009/10 was set equal to 100.0

***TAB 5***

### MH Financial Forecast - Incremental Revenues Sought

	<u>IFF09-1 (\$M)</u>	<u>IFF10-1 (\$M)</u>
<u>Year</u>	<u>Total Incr. Revenue</u>	<u>Total Incr. Revenue</u>
2009/10	-	
2010/11	\$33	\$33
2011/12	\$69	\$76
2012/13	\$113	\$121
2013/14	\$161	\$170
2014/15	\$212	\$221
2015/16	\$266	\$274
2016/17	\$322	\$331
2017/18	\$381	\$390
2018/19	\$442	\$452
2019/20	\$508	\$519

Sources: IFF09-1

- Incremental Revenue - Appendix 5.2, page 34

IFF10-1

- 2010/11 - based on March 29, 2010 Proof of Revenue

- Total Increase for other years based on sum of a) Incremental Revenue from Appedix 76 (page 33) plus b) \$33 M (for 2010/11) escalated by the increase in revenues at current rates from same between 2010/11 and the forecast year.

***TAB 6***

**MH Financial Forecast - Incremental Revenues Sought**

<b>IFF09-1 (\$M)</b>					
<u>Year</u>	<u>Man. Inflation</u>	<u>Revenue at 2009/10 Rates</u>	<u>Incr. Revenue</u>	<u>Incr. Rev. at Man Inflation</u>	<u>Incr. Rev. in Excess of Inflation</u>
2009/10	-	\$1,160	-	-	
2010/11	1.60%	\$1,159	\$33	\$19	\$14
2011/12	1.90%	\$1,177	\$69	\$42	\$27
2012/13	2.20%	\$1,191	\$113	\$69	\$44
2013/14	2.10%	\$1,204	\$161	\$97	\$64
2014/15	2.10%	\$1,229	\$212	\$127	\$85
2015/16	2.10%	\$1,244	\$266	\$157	\$109
2016/17	2.10%	\$1,260	\$322	\$189	\$133
2017/18	2.10%	\$1,272	\$381	\$221	\$160
2018/19	2.10%	\$1,283	\$442	\$255	\$187
2019/20	2.10%	\$1,297	\$508	\$290	\$218

Sources: IFF09-1

- Revenue at 2009/10 Rates and Incremental Revenue

- Appendix 5.2, page 34

Inflation from Appendix 51, page 3

Notes; Incremental Revenue at Manitoba Inflation calculated assuming rates increased at inflation following 2009/10 as opposed to at the rates increases set out in IFF09-1  
Incremental Revenue in Excess of Inflation calculated as the difference between the previous two columns.

***TAB 7***

**TABLE 1**

**OM&A - PER 2008 GRA**

	<u>2006/07</u>	<u>2007/08</u>	<u>2008/09</u>	<u>2009/10</u>	<u>2010/11</u>	<u>2011/12</u>
<b>OM&amp;A Expense (Millions)</b>	\$323	\$340	\$349	\$357	\$365	\$372
<b>Increase</b>		5.26%	2.65%	2.29%	2.24%	1.92%
<b>Cumul Increase</b>		5.26%	8.05%	10.53%	13.00%	15.17%
<b>Number of Cust.</b>	516,861	520,259	524,220	528,117	531,958	535,740
<b>OM&amp;A/Customer</b>	\$626	\$653	\$665	\$677	\$686	\$694
<b>Increase</b>		4.31%	1.84%	1.80%	1.33%	1.17%
<b>Cumul Increase</b>		4.31%	6.23%	8.15%	9.58%	10.86%

**Sources:** 2008 GRA, CAC/MSOS/MH I-35 c)

**Notes:**

- Based on IFF07-1 and excludes OM&A for subsidiaries
- 2006/07 is Actual while subsequent years are Forecast
- Cumulative Increases are compounded and calculated by applying the current year's increase to the previous year's value



***TAB 8***

**TABLE 2**

**OM&A - PER 2010 GRA**

	<u>2006/07</u>	<u>2007/08</u>	<u>2008/09</u>	<u>2009/10</u>	<u>2010/11</u>	<u>2011/12</u>
<b>OM&amp;A Expense (Millions)</b>	\$323	\$323	\$360	\$372	\$380	\$403
<b>Increase</b>		-0.24%	11.45%	3.29%	2.20%	6.24%
<b>Cumul Increase</b>		-0.24%	11.19%	14.85%	17.38%	24.70%
<b>Number of Cust.</b>	516861	521599	527472	531804	536267	540756
<b>OM&amp;A/Customer</b>	\$626	\$619	\$682	\$699	\$708	\$746
<b>Increase</b>		-1.12%	10.18%	2.49%	1.29%	5.37%
<b>Cumul Increase</b>		-1.12%	8.95%	11.66%	13.10%	19.17%

**Sources:** 2010 GRA, Appendix 4.4, page 2 and CAC/MSOS/MH I-16 d) & 38 c)

**Notes:**

- OM&A Expenses exclude subsidiaries
- 2006/07-2008/9 are Actuals while subsequent years are Forecast per IFF09-1
- Cumulative Increases are compounded and calculated by applying the current year's increase to the previous year's value

***TAB 9***

**TABLE 3**

**OM&A - PER 2010 GRA**  
*(Revised for Accounting Changes)*

	<u>2006/07</u>	<u>2007/08</u>	<u>2008/09</u>	<u>2009/10</u>	<u>2010/11</u>	<u>2011/12</u>
<b>OM&amp;A Expense (Millions)</b>	\$323	\$323	\$360	\$372	\$380	\$403
<b>Accounting Adj. Revised OM&amp;A</b>	\$323	\$323	\$8	\$8	\$9	\$29
	\$323	\$323	\$352	\$364	\$371	\$374
<b>Increase</b>		-0.24%	8.98%	3.37%	1.98%	0.99%
<b>Cumul Increase</b>		-0.24%	8.71%	12.38%	14.60%	15.74%
<b>Number of Cust.</b>	516,861	521,599	527,472	531,804	536,267	540,756
<b>OM&amp;A/Customer</b>	\$626	\$619	\$667	\$684	\$691	\$692
<b>Increase</b>		-1.14%	7.76%	2.53%	1.13%	0.15%
<b>Cumul Increase</b>		-1.14%	6.50%	9.19%	10.42%	10.59%
<b>Cumul Inflation</b>						8.89%

**Sources:** 2010 GRA, CAC/MSOS/MH I-16 d) & 38 c) and PUB/MH II-3 b)  
 Historical Inflation from Appendix 5.1, page 5. Forecast is from IFF09-1, page 5

**Notes:**

- Based on IFF09-1
- OM&A Expenses exclude subsidiaries
- 2006/07-2008/09 are Actuals while subsequent years are Forecast values
- Accounting Adjustments include CICA changes and Accounting Transfers per Appendix 4.4, page 3. Note - Impacts are assumed to cumulative.
- Cumulative Increases are compounded and calculated by applying the current year's increase to the previous year's value

***TAB 10***

**TABLE 4****OM&A - PER 2010 GRA (IFF10-1)**

	<u>2006/07</u>	<u>2007/08</u>	<u>2008/09</u>	<u>2009/10</u>	<u>2010/11</u>	<u>2011/12</u>
<b>OM&amp;A Expense (Millions)</b>	\$323	\$323	\$364	\$378	\$398	\$402
<b>Increase</b>		-0.24%	12.89%	3.64%	5.34%	1.05%
<b>Cumul Increase</b>		-0.24%	12.62%	16.72%	22.95%	24.24%
<b>Number of Cust.</b>	516,861	521,599	527,472	532,359	538,002	543,574
<b>OM&amp;A/Customer</b>	\$626	\$619	\$691	\$709	\$739	\$739
<b>Increase</b>		-1.14%	11.63%	2.69%	4.23%	0.01%
<b>Cumul Increase</b>		-1.14%	10.32%	13.29%	18.08%	18.10%

**Sources:** 2010 GRA, PUB/MH/PRE-ASK-10 and 14

**Notes:**

- Based on IFF10-1
- OM&A Expenses exclude subsidiaries
- 2006/07-2009/10 are Actuals while subsequent years are Forecast per IFF10-1
- Cumulative Increases are compounded and calculated by applying the current year's increase to the previous year's value
- 2008/09 OM&A has been restated from \$360 M to \$364 M per notes to PUB/MH/PRE-ASK-10 a).

***TAB 11***

**TABLE 5**

**OM&A - PER 2010 GRA (IFF10-1)**  
*(Revised for CICA Accounting Changes)*

	<u>2006/07</u>	<u>2007/08</u>	<u>2008/09</u>	<u>2009/10</u>	<u>2010/11</u>	<u>2011/12</u>
<b>OM&amp;A Expense (Millions)</b>	\$323	\$323	\$364	\$378	\$398	\$402
<b>Accounting Adj.</b>			\$13	\$11	\$29	\$30
<b>Revised OM&amp;A</b>	\$323	\$323	\$351	\$367	\$369	\$372
<b>Increase</b>		-0.24%	8.86%	4.35%	0.58%	0.86%
<b>Cumul Increase</b>		-0.24%	8.60%	13.32%	13.98%	14.96%
<b>Number of Cust.</b>	516,861	521,599	527,472	532,359	538,002	543,574
<b>OM&amp;A/Customer</b>	\$626	\$619	\$666	\$689	\$685	\$684
<b>Increase</b>		-1.14%	7.65%	3.39%	-0.47%	-0.17%
<b>Cumul Increase</b>		-1.14%	6.39%	9.99%	9.47%	9.28%
<b>Cumul Inflation</b>						8.57%

**Sources:** 2010 GRA, PUB/MH/PRE-ASK-10 and 14  
 Inflation values based on Appendix 51, page 5

**Notes:**

- Based on IFF10-1
- OM&A Expenses exclude subsidiaries
- 2006/07-2009/10 are Actuals while subsequent years are Forecast per IFF10-1
- Accounting Adjustments include CICA changes and Reclassifications per Rebuttal Evidence, page 14.
- Cumulative Increases are compounded and calculated by applying the current year's increase to the previous year's value
- 2008/09 OM&A has been restated from \$360 M to \$364 M per notes to PUB/MH/PRE-ASK-10 a)



***TAB 12***

**TABLE 6**

**CSP - OM&A/Customer**

	<b><u>CSP Target</u></b>	<b><u>Actual Result</u></b>	<b><u>Actual Result (excl Acct Chgs)</u></b>
2006/07	\$612	\$626	\$626
2007/08	\$640	\$619	\$619
2008/09	\$665	\$682	\$666
2009/10	\$673	709	\$689
2010/11	\$708	n/a	n/a

**Sources:** CSP Targets

- 2006/07 - 2008 GRA, CAC/MSOS/MH I-5 b) and II-24 a)
- 2007/08 - CAC/MSOS/MH I-9 a)
- 2008/09 - CAC/MSOS/MH I-16 c)
- 2009/10 - CAC/MSOS/MH I-16 a)
- 2010/11 - Appendix 61

Actual Results -

- 2006/07 to 2008/09 - CAC/MSOS/MH I-9 g)
- 2009/10 - PUB/MH/PRE-ASK-14
- Excluding Accounting Changes - Rebuttal Evidence, page 15

***TAB 13***

Year	Manitoba Inflation		Average Export Revenues				2010-2012 GRA			
	Annual	Cumul.	Wuskwatim NFAAT		Wuskwatim NFAAT		Actual	Actual <sup>(A)</sup> &	Forecast	
			Avg Export Revenue (2002\$)	High	Avg. Export Revenue (Nominal)	Low	High	Export Revenue	Avg Export Revenue	Export Revenue
2001/02										
2002/03	2.30%	2.30%	\$50.50	\$51.50	\$54.82	\$59.51	\$53.25	51.94 <sup>(A)</sup>		
2003/04	0.90%	3.22%	\$50.70	\$53.20	\$56.14	\$62.16	\$51.61	50.85 <sup>(A)</sup>		
2004/05	2.70%	6.01%	\$50.00	\$54.80	\$56.41	\$63.65	\$46.78	48.87 <sup>(A)</sup>		
2005/06	2.40%	8.55%	\$50.10	\$56.70	\$57.77	\$66.61	\$49.78	51.63 <sup>(A)</sup>		
2006/07	2.00%	10.72%	\$49.90	\$59.50	\$57.94	\$67.28	\$32.00	43.58 <sup>(F)</sup>		\$36.24
2007/08	1.90%	12.83%	\$50.70	\$63.90	\$59.81	\$70.56		51.81 <sup>(F)</sup>		\$41.02
2008/09	0.70%	16.12%	\$51.00	\$66.90	\$61.31	\$73.70		70.53 <sup>(F)</sup>		\$65.90
2009/10	1.60%	17.97%	\$51.20	\$68.50	\$62.90	\$77.28				\$66.89
2010/11	2.20%	22.86%	\$51.10	\$68.80	\$64.10	\$80.41				\$71.71
2011/12	2.10%	25.44%	\$51.10	\$69.30	\$65.45	\$83.82				\$73.93
2012/13	2.10%	28.07%	\$52.00	\$78.70	\$68.00	\$88.92				\$90.87
2013/14	2.10%	30.76%	\$51.60	\$79.20	\$68.89	\$91.98				\$92.31
2014/15	2.10%	33.51%	\$52.60	\$81.20	\$71.70	\$97.74				\$94.95
2015/16	2.10%	36.31%	\$52.10	\$80.80	\$72.51	\$100.92				\$105.30
2016/17	2.10%	39.18%	\$51.90	\$80.80	\$73.75	\$104.80				\$105.56
2017/18										
2018/19										
2019/20										

Sources: Inflation - Appendix #51

Wuskwatim NFAAT Export Prices (\$2002) - Wuskwatim NFAAT Submission, Attachment 6, Tables A.15 & A.16

Note: These "export prices" represent the average price to be obtained from export revenue

Actual Export Revenue (A) - CAC/MSOS/MH I-13 d) - sum Dependable, Opportunity and System Merchant

Actual & Forecast Export Prices (B) - PUB I - 31

Forecast Export Prices (C) - PUB/MH I-45 b)

Notes: Cumulative Manitoba Inflation - Based on the compounded effect of the reported annual inflation values

Wuskwatim NFAAT Export Prices (Nominal) - Based on the Prices in 2002\$ multiplied by the Cumulative Inflation