

<b>M A N I T O B A</b>	<b>Order No. 43/13</b>
<b>THE PUBLIC UTILITIES BOARD ACT</b>	<b>April 26, 2013</b>

Before: Régis Gosselin, B.A., M.B.A., C.G.A., Chair  
Raymond Lafond, B.A., C.M.A., F.C.A., Member  
Larry Soldier, Member

**FINAL ORDER WITH RESPECT TO  
MANITOBA HYDRO'S 2012/13 AND 2013/14  
GENERAL RATE APPLICATION**

## TABLE OF CONTENTS

<b>1.0.0 EXECUTIVE SUMMARY.....</b>	<b>2</b>	<b>14.0.0 SPECIAL RATES .....</b>	<b>46</b>
<b>2.0.0 IT IS ORDERED: .....</b>	<b>4</b>	14.1.0 Curtailable Rate Program .....	46
<b>3.0.0 IT IS RECOMMENDED: .....</b>	<b>7</b>	14.2.0 Surplus Energy Program.....	46
<b>4.0.0 THE RATE APPLICATION .....</b>	<b>8</b>	14.3.0 Time-of-Use Rates.....	47
4.1.0 Issues.....	8	14.4.0 Diesel Communities.....	47
4.2.0 Board Findings .....	9	<b>15.0.0 PRESENTER SUBMISSIONS 49</b>	
<b>5.0.0 OPERATION, MAINTENANCE &amp; ADMINISTRATION EXPENSES.....</b>	<b>12</b>	15.1.0 Industry Presentations .....	49
5.1.0 Issues.....	12	15.2.0 Individual Presenters .....	50
5.2.0 Board Findings .....	14	<b>APPENDIX A – APPROVALS SOUGHT BY MANITOBA HYDRO.....</b>	<b>54</b>
<b>6.0.0 DEPRECIATION AND AMORTIZATION .....</b>	<b>16</b>	<b>APPENDIX B – APPEARANCES .....</b>	<b>56</b>
6.1.0 Issues.....	16	<b>APPENDIX C – WITNESSES FOR MANITOBA HYDRO.....</b>	<b>57</b>
6.2.0 Board Findings .....	18	<b>APPENDIX D – INTERVENERS OF RECORD .....</b>	<b>58</b>
<b>7.0.0 FINANCE EXPENSE.....</b>	<b>20</b>	<b>APPENDIX E – INTERVENER WITNESSES .....</b>	<b>59</b>
7.1.0 Issues.....	20	<b>APPENDIX F – PRESENTERS.....</b>	<b>60</b>
7.2.0 Board Findings .....	20	<b>APPENDIX G - UNITS OF MEASUREMENT .....</b>	<b>61</b>
<b>8.0.0 FINANCIAL TARGETS .....</b>	<b>21</b>		
8.1.0 Issues.....	21		
8.2.0 Board Findings .....	23		
<b>9.0.0 WUSKWATIM GENERATING STATION PROJECT .....</b>	<b>25</b>		
9.1.0 Issues.....	25		
9.2.0 Board Findings .....	27		
<b>10.0.0 CAPITAL EXPENDITURES ....</b>	<b>29</b>		
10.1.0 Issues.....	29		
10.2.0 Board Findings .....	33		
<b>11.0.0 LOAD FORECAST .....</b>	<b>35</b>		
11.1.0 Issues.....	35		
11.2.0 Board Findings .....	36		
<b>12.0.0 EXPORT MARKETS .....</b>	<b>38</b>		
12.1.0 Issues.....	38		
12.2.0 Board Findings .....	39		
<b>13.0.0 DEMAND-SIDE MANAGEMENT .....</b>	<b>41</b>		
13.1.0 Issues.....	41		
13.2.0 Board Findings .....	44		

## 1.0.0 EXECUTIVE SUMMARY

In this Order, the Public Utilities Board of Manitoba (“Board”) approves a 3.5% increase in Manitoba Hydro consumers’ billed rates effective May 1, 2013. However, of this increase, the revenues from a 1.5% rate increase are to mitigate rate increases when Bipole III comes into service.

Since a portion of the granted increase is dedicated to major capital, the Board expects Manitoba Hydro to realize internal cost savings to meet its net income projections. The key will be controlling Operation, Maintenance & Administration costs.

The major reasons for this rate increase are to address:

- Reduced revenues from export sales;
- Higher operating costs related to the Wuskwatim Generating Station;
- Higher Operation, Maintenance & Administration costs;
- Funding of capital expenditures undertaken to support the reliability of electrical service; and
- Manitoba Hydro’s financial and credit rating integrity over the longer term.

Overall net export revenues projected, by Manitoba Hydro, over a 20-year forecast have declined by over \$6 billion in the current forecast compared to the prior forecast presented at the last General Rate Application. Lower revenues mean increased borrowing to pay for capital expenditures.

The Wuskwatim Generation Station and transmission project came on-line in 2012/13 with a capital cost of \$1.8 billion, which was almost double the initial cost estimate. The Board calculates that the project’s incremental in-service cost is approximately \$160 million/yr (excluding any internally generated funds). This amounts to an in-service unit cost of approximately 10.5¢/kWh, which is three times higher than the current average export revenue rate of 3.3¢/kWh. Wuskwatim energy sales may not be profitable for a sustained period.

The Board is concerned with the projected future deterioration of Manitoba Hydro's financial targets, in particular the debt-to-equity ratio that will fall from a current level of 75:25 to 90:10 by 2021, even with projected annual rate increases of approximately 4%, which is twice the projected level of inflation. This deterioration will put Manitoba Hydro in a weaker financial position given its planned capital spending over the next two decades.

Manitoba Hydro has identified over \$33 billion in capital spending over the next twenty years. The planned major capital investments in the Keeyask Generating Station and Conawapa Generating Station will be the subject of a future Needs For and Alternatives To (NFAT) proceeding before the Board. However, part of the spending is also required to maintain aging infrastructure for reliability purposes.

Electricity rates are forecast, by Manitoba Hydro, to more than double from current levels over the next 20 years at approximately twice the forecast level of inflation. The Board therefore believes that Manitoba Hydro should increase its energy conservation and load management (Demand-Side Management) targets from its 2011 Power Smart Plan to assist consumers to reduce their energy consumption and the impact of projected rate increases. The rate increase granted by this Order contains specific funds designated to be used to implement energy-savings programs.

In this Order, the Board also finalizes several other interim orders with respect to Manitoba Hydro rendered by the Board since the last General Rate Application.

The specific details of Manitoba Hydro's Application are set out in Appendix A to this Order.

The Board was ably assisted in its extensive review by Interveners and their witnesses. The transcripts of evidence and Exhibits from the 21 days of oral hearings that have been considered by the Board in reaching its decisions in this Order can be found on the Board's website at [www.pub.gov.on.ca](http://www.pub.gov.on.ca). Likewise, Manitoba Hydro's complete Application, including Appendices, is posted on Manitoba Hydro's website at [www.hydro.mb.ca](http://www.hydro.mb.ca).

**2.0.0 IT IS ORDERED:**

1. That the 1% rate deferral and associated revenues, which formed part of interim rates granted in Order 30/11 and 40/11 to be included in Manitoba Hydro's revenue and base rates effective April, 2012 **BE AND IS HEREBY APPROVED AS FINAL.**
2. That the interim rate increases of 2% granted April 1, 2012 and 2.4% granted September 1, 2012 **BE AND ARE HEREBY APPROVED AS FINAL.**
3. That a 3.5 % overall increase in billed rates for the basic monthly charge, the demand charge, and the energy charge for all rate categories to take effect May 1, 2013, with revenues from a 1.5% portion of the rate increase accruing in a deferral account to be utilized to mitigate the required rate increases when Bipole III is placed in-service, **BE AND IS HEREBY APPROVED.**
4. That Manitoba Hydro recalculate and refile, for Board approval, a schedule of rates reflecting a 3.5% increase to the basic monthly charge, demand charge and energy charge across all consumer classes, effective May 1, 2013, together with all supporting schedules including proof of revenue and customer impacts.
5. That Manitoba Hydro file with the Board, as part of any future interim application for rate increases, the following information on a monthly basis for the previous three months, and on an on-going basis until a rate Order in respect of the Application is issued:
  - (a) Hydraulic generation monthly data (GWh) for the Winnipeg River System, Grand Rapids, Upper Nelson River Generating Station(s), Lower Nelson River Generating Station(s), and Wuskwatim Generating Station;
  - (b) Monthly adjusted system energy-in-storage curves and Lake Winnipeg water levels;
  - (c) Average monthly flow data for the Winnipeg River, Saskatchewan River, and Upper Nelson River (Kelsey Generating Station) and Lower Nelson River (Kettle Generating Station);
  - (d) Monthly extra-provincial energy exchange data (volumes and prices) for National Energy Board-filed sales and purchases (by permit / license number), Midwest Independent System Operator day-ahead and real-time sales and purchases, and Canadian sales and purchases; and
  - (e) Monthly updates to Manitoba Hydro's financial results relative to its forecast.

6. That Manitoba Hydro file with the Board an International Financial Reporting Standards status update report prior to the next General Rate Application that will provide the Board options available for rate-setting purposes.
7. That Manitoba Hydro complete and file with the Board an Asset Condition Assessment Study no later than the filing of the next updated depreciation study with the Board.
8. That Manitoba Hydro file updated depreciation rates and schedules based on an International Financial Reporting Standards-compliant Average Service Life methodology with the next General Rate Application.
9. That Manitoba Hydro file with the Board, with the next General Rate Application, a chart showing a comparison of the impact on its Integrated Financial Forecast (i.e. 'Budget') of asset depreciation pursuant to the Average Service Life methodology (without net salvage) and the Equal Life Group methodology (without net salvage), applying both methodologies to all planned major capital additions.
10. That Manitoba Hydro file, with its next General Rate Application, a detailed quantitative and probabilistic risk assessment and review of all of its operating and financial risks in order to allow the Board to assess the adequacy of the reserves. Commercially sensitive information in the report is to be redacted from the public version and filed in confidence with the Board.
11. That Manitoba Hydro file with the Board any negotiated agreements or changes with respect to the Wuskwatim Power Limited Partnership when finalized, and detail the impacts on Manitoba Hydro's operating results and rates.
12. That Manitoba Hydro's revenue requirements are determined based on the level of Demand-Side Management spending as set out in Manitoba Hydro's 2011 Power Smart report, i.e., \$34 million for 2012/13 and \$35 million for 2013/14, for a total of \$69 million. To the extent Manitoba Hydro's spending on Demand-Side Management in the test years, including the Affordable Energy Fund and the Lower Income Energy Efficiency Program, falls below \$69 million, Manitoba Hydro shall establish a deferral account for the discrepancy, the disposition of which the Board will consider at the next General Rate Application.
13. That Manitoba Hydro's proposed changes to the Curtailable Rate Program **BE AND ARE HEREBY APPROVED ON AN INTERIM BASIS**, to be reviewed by the Board at a General Rate Application to follow the Needs For And Alternatives To (NFAT) hearing with respect to Manitoba Hydro's Preferred Development Plan.

14. That all Curtailable Rate Program Orders from Order 52/12 up to and including all Curtailable Rate Program Orders issued prior to the date of this Order **BE AND ARE HEREBY APPROVED AS FINAL.**
15. That Manitoba Hydro's Option 1 Surplus Energy Program rate offering **BE AND IS HEREBY APPROVED ON AN INTERIM BASIS**, to be reviewed by the Board at a Cost of Service/Time of Use hearing.
16. That Options 2 and 3 of the Surplus Energy Program **BE AND ARE HEREBY APPROVED** as permanent rate offerings.
17. That Manitoba Hydro is permitted to file any future Surplus Energy Program applications based on the review and approval of a Division Manager in lieu of the current requirement for a Professional Engineer's Seal.
18. That all weekly Surplus Energy Program interim ex-parte rate Orders – from Order 6/12 up to and including all Surplus Energy Program Orders issued prior to the date of this Order – **BE AND ARE HEREBY APPROVED AS FINAL.**

Board decisions may be appealed in accordance with the provisions of Section 58 of *The Public Utilities Board Act*, or reviewed in accordance with section 36 of the Board's Rules of Practice and Procedure (Rules). The Board's Rules may be viewed on the Board's website at [www.pub.gov.mb.ca](http://www.pub.gov.mb.ca).

**3.0.0**        **IT IS RECOMMENDED:**

1.     That Manitoba Hydro control Operation, Maintenance & Administration costs to keep increases below inflation.
2.     That Manitoba Hydro prepare a business case with a thorough analysis of the economic rationale for the rebuilding of Pointe du Bois (estimated to cost \$2.4 billion), and that the Board be mandated, by the Province of Manitoba, to conduct a Needs For And Alternatives To (NFAT) review before proceeding further.
3.     That Manitoba Hydro target higher levels of domestic customer energy savings and therefore spend, in its energy efficiency plan, at minimum, the budgeted amounts set out in the 2011 Power Smart Plan.
4.     That Manitoba Hydro undertake an independent assessment of its Power Smart Plan with the goal of evaluating and improving the plan.
5.     That Manitoba Hydro continue and increase its efforts with respect to the Lower Income Energy Efficiency Program, as low income individuals will find it more difficult to meet ever increasing energy rates contemplated in Manitoba Hydro's rate increase forecast.



## **4.0.0 THE RATE APPLICATION**

### 4.1.0 Issues

#### **4.1.1 Previous Rate Increases**

In its final Order arising from Manitoba Hydro's last General Rate Application (Order 5/12), the Board awarded a 1.9% rate increase effective April 1, 2010 and a 2.0% rate increase effective April 1, 2011. Since the April 1, 2010 final rate increase was lower than the interim rates approved and collected by Manitoba Hydro, the Board directed the Corporation to create a deferral account. Manitoba Hydro sought to Review and Vary Order 5/12, indicating a deteriorating financial condition as a result of a mild winter, below-normal precipitation and lower export revenues due to the U.S. economic downturn. In Order 19/12, the Board denied the Review and Vary request but indicated that the matter would be dealt with as part of the current General Rate Application.

Total revenues accumulated in the deferral account total \$36 million as of March 31, 2013, with another \$14 million to accumulate by March 31, 2014.

On March 30, 2012, Manitoba Hydro filed an interim application seeking reinstatement of the 1% rollback accumulating in the deferral account balance, maintaining the base rates approved in Orders 30/10 and 40/11, and seeking an additional 3.5% rate increase effective April 1, 2012, all based on lower than forecast export revenues and a winter that was warmer than normal. In Order 32/12, the Board awarded a 2.0% inflation-based rate increase effective April 1, 2012 and denied a reinstatement of the 1.0% rollback.

Effective September 1, 2012, Manitoba Hydro requested a mid-year 2.5% rate increase based on lower-than projected domestic and export revenues and a projection that 2012/13 total hydraulic generation would be approximately 1,000 GWh below the post-Wuskwatim average, resulting in a net export revenue reduction of \$30-40 million. In Order 117/12, the request for an interim 2.5% rate increase was granted, based on the lower projected revenues.

During the General Rate Application proceeding, it was determined that Manitoba Hydro's hydraulic generation and export projections presented as part of the Application for an interim September 1, 2012 rate increase (which were based exclusively on 1<sup>st</sup>-quarter (Q1) data) were much better than expected. The utility's Q1 projection was for 7,200 GWh of generation and 2,100 GWh of export in 2012/13. By the 2<sup>nd</sup> quarter (Q2) the projections had increased to 9,029 GWh of generation and 3,500 GWh of export. In July and August 2012, monthly exports were about 1,300 GWh. Energy-in-storage peaked substantially above historical averages in July 2012, suggesting above-average flow conditions. However, the Board was not advised that Manitoba Hydro's situation had improved until December 13, 2012.

#### **4.1.2 April 1, 2013 Rate Increase**

Manitoba Hydro's application for a 3.5% April 1, 2013 overall revenue increase is based on its expressed need to lessen the projected deterioration of its financial ratios in future years and maintain the financial and credit rating integrity of Manitoba Hydro. Manitoba Hydro also indicated that rate increases were needed to compensate for reduced non-firm export prices and address increased costs to maintain its aging infrastructure. Manitoba Hydro's financial forecast indicates annual increases of 3.95% will be required over the next twenty years, while annual inflation is forecast at 2% per annum.

The Consumers' Association of Canada (Manitoba) Inc. while recommending that the Board accept Manitoba Hydro's request for the 1.0% deferral account rollback for 2012/13 and finalize the April 1, 2012 2.0% and September 1, 2012 2.5% interim rate increases, requested that the Board require Manitoba Hydro to refund the amounts accrued in the 2010/11 and 2011/12 deferral accounts. The Consumers' Association of Canada (Manitoba) Inc. further opposed the request for an April 1, 2013 3.5% rate increase, stating that the economic slowdown, coupled with private and public-sector restraint, has brought some hardship to Manitobans, and a 4.5% rate increase (2.0% April 1, 2012 + 2.5% September 1, 2012) in 2012 compounded by a further 3.5% rate increase in 2013 would put substantial pressure on individuals with limited discretionary incomes, particularly those who rely on electric heat.

The Green Action Centre supported Manitoba Hydro's application for rate increases, stating that there was a need to invest in existing infrastructure for reliability purposes, and that Manitoba Hydro had demonstrated that it was negatively affected by a decline in export revenue.

The Manitoba Industrial Power Users Group recommended against Manitoba Hydro retaining any of the deferral account balance accrued prior to March 31, 2012, but recommended that the 2.0% increase in effect as of April 1, 2012 and the 2.5% interim rate increase in effect as of September 1, 2012 be made final. The Manitoba Industrial Power Users Group further requested that the Board implement rate adjustments of up to 0.2% to the appropriate customer classes to ensure that the rate increase is appropriately applied on an "across-the-board" basis when energy, demand and customer charges are taken into account, which issue will be addressed at a Cost of Service hearing. The Manitoba Industrial Power Users Group asked the Board to reject the request for a 3.5% rate increase as of April 1, 2013, stating that this was not needed to fund revenue requirements or set appropriate reserves.

#### **4.2.0 Board Findings**

The Board is called upon to balance the interests of consumers with those of the utility. While two of the interveners recommended that the rate increases sought by Manitoba Hydro be denied or rebated, the Board is concerned about the deteriorating financial

condition of Manitoba Hydro in the face of pending significant major capital expenditures.

Interveners recommended various accounting changes to lessen rate increases over the test years. The Board rejects this approach as it would have the effect of reducing Manitoba Hydro's revenues, weakening its financial situation, and increasing borrowing costs. It is important that Manitoba Hydro remain a financially strong and viable organization. The Board supports the staged approach to accounting changes planned by Manitoba Hydro.

The Board will allow Manitoba Hydro to include the 1% rollback in its revenues as final and confirm as final the 2% interim rate increase in effect as of April 1, 2012 approved in Order 32/12. The Board will also confirm as final the 2.5% interim rate increase in effect as of September 1, 2012 approved in Order 117/12. These decisions reflect an overall concern about the projected decline in Manitoba Hydro's financial targets in the upcoming years due to various factors, including the in-service costs of the Wuskwatim Generating Station, major capital expenditures, as well as continued low export revenues as a result of low export prices.

The Board will further permit a 3.5% increase to the basic monthly charge, demand charge and energy charge across all customer classes effective May 1, 2013 with a 2% portion of the increase included in general revenues and the balance to accrue to a deferral account. This reflects the Board's view that Manitoba Hydro must achieve a proper balance between cost containment and rate increases to meet its financial position. Manitoba Hydro is to establish a deferral account in which the revenues from the 1.5% increase accrues until further Order of the Board ( 2% to general revenues + 1.5% to deferral account = 3.5%) . The capital deferral account is to assist in funding the planned Bipole III transmission line. The cost of this project will be capitalized during the construction phase, but significant annual depreciation, operation, maintenance & administration, and interest costs will have to be recovered from domestic ratepayers once the project is placed in-service. The deferral account allows Manitoba Hydro to collect funds as the Bipole III project is being built, which will help to mitigate rate increases required once the infrastructure is placed in-service.

To address a problem the Board experienced with out-dated information in respect of Manitoba Hydro's request for a September 1, 2012 interim rate increase, the Board will direct Manitoba Hydro to file the following documentation as part of any future interim application for rate increases, for the three months immediately preceding the filing of such applications, and on an on-going basis until such time as a rate Order in respect of the Application is issued:

- (a) Hydraulic generation monthly data (GWh) for the Winnipeg River System, Grand Rapids, Upper Nelson River Generating Station(s), Lower Nelson River Generating Station(s), and Wuskwatim Generating Station;

- (b) Monthly adjusted system energy-in-storage curves and Lake Winnipeg water levels;
- (c) Average monthly flow data for the Winnipeg River, Saskatchewan River, and Upper Nelson River (Kelsey Generating Station) and Lower Nelson River (Kettle Generating Station);
- (d) Monthly extra-provincial energy exchange data (volumes and prices) for; NEB-filed sales and purchases (by permit / license number), Midwest Independent System Operator (Midwest Independent System Operator) day-ahead and real-time sales and purchases, and Canadian sales and purchases; and
- (e) Monthly updates to Manitoba Hydro's financial results relative to its forecast.

## **5.0.0 OPERATION, MAINTENANCE & ADMINISTRATION EXPENSES**

### 5.1.0 Issues

#### **5.1.1 Overall Growth**

From 2009/10 to 2013/14, Manitoba Hydro's total annual electric Operation, Maintenance & Administration cost has grown from \$662 million to \$802.4 million. When capitalized costs are factored out, Operation, Maintenance & Administration relating to electric operations has increased from \$377.6 million in 2009/10 to a forecast \$470.6 million in 2013/14. The increase is due to a growth in staffing levels and accounting policy changes.

#### **5.1.2 Staffing Levels**

Over 75% of Manitoba Hydro's Operation, Maintenance & Administration costs relate to labour costs, including employee benefits. Wages and salaries increased by an average of 4.5% per year, primarily as a result of contract settlements with bargaining units and an increase in total Equivalent Full-Time employees. The increase in Equivalent Full-Time employees has been attributed to growth in Manitoba Hydro's capital program, including new generation and transmission projects such as Bipole III, Keeyask Generating Station, Conawapa Generating Station, and Pointe du Bois Generating Station. To a lesser degree, Manitoba Hydro attributes the employee growth to operational support for various initiatives, including the commissioning of Wuskwatim Generating Station and the meter compliance program.

Both the Consumers' Association of Canada (Manitoba) Inc. and the Manitoba Industrial Power Users Group were critical of the growth in Operation, Maintenance & Administration costs. The Consumers' Association of Canada (Manitoba) Inc. took the position that Manitoba Hydro should be directed to develop a plan to have Operation, Maintenance & Administration expenses increase at less than inflation when accounting changes are removed from the equation. The Manitoba Industrial Power Users Group suggested that the level of staffing increases cannot be maintained, and that the utility's staffing should be thoroughly examined on employee-level basis. The Manitoba Industrial Power Users Group also took issue with the vacancy rate used in forecasting and suggested it be adjusted to be more consistent with recent experience of 8% rather than forecast 6.2%. Making this adjustment to the forecast would reduce the revenue requirement by \$10 million. The Manitoba Industrial Power Users Group recommended that the Board ask the Minister to undertake an independent external review and evaluation of Manitoba Hydro's Operation, Maintenance & Administration spending, similar to the review undertaken for BC Hydro in British Columbia.

### **5.1.3 Capitalization of Operation, Maintenance & Administration**

Manitoba Hydro capitalized \$321.8 million (44%) of Operation, Maintenance & Administration cost in 2011/12 and forecasts to capitalize \$324.4 million (42%) in 2012/13 and \$331.8 million (41%) in 2013/14. The vast majority of cost capitalized is labour and benefits. Capitalized Equivalent Full-Time employees have grown from 2,369 Equivalent Full-Time employees in 2007/08 to a forecast of 2,825 Equivalent Full-Time employees for the two test years.

### **5.1.4 Accounting Changes**

Since 2007/08, Manitoba Hydro has made changes to its capitalization practice to move away from “full cost” accounting and provide consistency with other Canadian utilities. Manitoba Hydro capitalizes overhead costs directly attributable to capital initiatives and has identified certain previously capitalized costs that would exist regardless of whether or not Manitoba Hydro incurred capital spending. Since 2009/10, Manitoba Hydro has removed approximately \$29 million from capitalized overhead, with a further \$27 million forecast for 2012/13, for a total of \$56.5 million in 2012/13 and \$57.6 million in 2013/14. The change in capitalization practice is consistent with Canadian Generally Accepted Accounting Principles and is directionally consistent with International Financial Reporting Standards.

Manitoba Hydro has also identified an additional \$36 million in overhead costs that it plans on expensing when Manitoba Hydro adopts International Financial Reporting Standards in 2015/16. In total, over \$93 million in overhead costs will be expensed when International Financial Reporting Standards are implemented. The new standards do not allow the capitalization of advertising and promotional activities, administrative and other general overhead expenditures, property and business taxes and interest on common assets.

International Financial Reporting Standards do not currently recognize “rate-regulated accounting”. To comply with International Financial Reporting Standards, Manitoba Hydro may be required to write off the accumulated balance of its rate-regulated assets against retained earnings and expense, as incurred, expenditures previously deferred due to rate regulation. A major annual rate-regulated expense for Manitoba Hydro is Demand-Side Management. Under its existing rate-regulated accounting practices, Manitoba Hydro capitalizes Demand-Side Management expenses and depreciates them over a period of ten years. Manitoba Hydro’s rate-regulated assets were \$310 million as of March 31, 2012, of which \$233 million relate to electric operations and \$77 million to gas operations.

The Accounting Standards Board has granted deferrals for Canadian utilities with rate-regulated assets and liabilities, which will delay Manitoba Hydro’s implementation of International Financial Reporting Standards until 2015/16. The International Accounting

Standards Board has indicated that it will be issuing an interim standard that may grandfather rate-regulated accounting practices. That interim standard is expected to be issued in 2013.

The Consumers' Association of Canada (Manitoba) Inc. did not support the \$27 million in accounting changes in the test years related to information technology infrastructure and building depreciation in the revenue requirement. Furthermore, both the Consumers' Association of Canada (Manitoba) Inc. and the Manitoba Industrial Power Users Group recommended that Manitoba Hydro's approach to capitalization should be based on full-cost accounting. The Manitoba Industrial Power Users Group stated that accounting changes should not be the driver for rate increases as the economic reality of operations has not changed, and recommended that the Board should direct Manitoba Hydro to conduct a third-party review of its accounting policies.

### **5.1.5 Cost Containment Measures**

Manitoba Hydro expects an annual productivity factor of 0.5-1.0% in setting Operation, Maintenance & Administration targets and states that it continues to implement several cost containment measures, including an external hiring freeze, overtime restrictions, restrictions on out-of-town travel, restrictions in community sponsorships and donations, and a leveraging of technology. However, Manitoba Hydro was unable to quantify the savings attributable to these measures, stating that they were internalized in the budgeting process.

### **5.2.0 Board Findings**

Manitoba Hydro's Operation, Maintenance & Administration expenses have grown significantly, increasing by almost 25% over four years. While part of this increase is attributable to a change in accounting policies, the single biggest factor is an increase in staffing levels. Since 2003/04, staffing levels have grown by over 1,000 Equivalent Full-Time positions. Since the economic downturn in 2007/08, levels have increased by 771, with total payroll increasing by \$197 million or 41% since that time.

Manitoba Hydro's cost containment measures appear to be modest at best, and despite a hiring freeze, the utility's current projections still reflect a growth in staffing of 243 Equivalent Full-Time positions from 2011/12 levels. The Board expects Manitoba Hydro to control Operation, Maintenance & Administration costs, the key to which will be capping or reducing staffing levels. The award of only a 2.0% portion of the 3.5% increase to accrue to general revenues reflects the utility's need to find internal savings, and to demonstrate those savings at the next General Rate Application.

The Board understands that Manitoba Hydro has been making changes to its accounting policies since 2007/08 to be more consistent with other electric utilities as well as to be consistent with International Financial Reporting Standards. The Board in

past orders had expressed concern with the level of capitalization and Manitoba Hydro has begun to address these concerns. In the Board's view, Manitoba Hydro's proposed accounting changes are appropriate for the test years. The Board will direct Manitoba Hydro to file an International Financial Reporting Standards status update at the next General Rate Application. Until such time, the Board expects Manitoba Hydro not to make any further accounting changes for rate-setting purposes.



## **6.0.0 DEPRECIATION AND AMORTIZATION**

### 6.1.0 Issues

#### **6.1.1 *Asset Lives and New Asset Classes***

Depreciation expense is recognized on a straight-line basis over the estimated remaining service lives of assets, which lives are determined pursuant to periodic depreciation studies. Manitoba Hydro filed a March 31, 2010 depreciation study prepared by Gannett Fleming. In this most recent study, Gannett Fleming recommended several extensions of assumed service lives and the creation of several new asset classes, most notably through the creation of a new “Dams, Dykes & Weirs” category with a 125-year service life, whereas previously all dams were depreciated over 100 years. The composite average service life of a generating station was thereby increased from 100 years to 104 years. Gannett Fleming also recommended an increase in the terminal life of most generating stations from 100 years to 140 years.

Overall, the new depreciation rates resulting from updated account groupings and changed service lives resulted in a reduction of depreciation expense by \$40 million in 2012/13 and \$44 million in 2013/14. This also means there currently is an accumulated depreciation surplus of \$555 million, which will be refunded over the remaining service life of each asset account, consistent with Generally Accepted Accounting Principles.

The Consumers’ Association of Canada (Manitoba) Inc. supported the changes to service lives and recommended that the estimates be revisited once an Asset Condition Assessment report has been obtained. However, the Consumers’ Association of Canada (Manitoba) Inc. suggested that the accumulated depreciation surplus should be returned over a 20-year period rather than over the remaining service lives of the assets.

#### **6.1.2 *Equal Life Group vs. Average Service Life***

Gannett Fleming testified on behalf of Manitoba Hydro and recommended a switch from Manitoba Hydro’s current methodology of Average Service Life to Equal Life Group, a procedure whereby the investment of a group of assets is subdivided to specifically recognize the life expectancy of each subgroup. In Mr. Kennedy’s view, Equal Life Group is superior as it reduces the need to recognize losses on interim retirements of assets within a category, thus providing for lower depreciation volatility.

Both Equal Life Group and Average Service Life are International Financial Reporting Standards-permissible methodologies and Manitoba Hydro indicated that the adoption of Equal Life Group was a policy decision. However, it would not be implemented until the utility adopts International Financial Reporting Standards. In 2015/16, the switch to Equal Life Group is expected to increase depreciation expense by \$38 million.

Notably, Gannett Fleming used Average Service Life to determine depreciation rates for Wuskwatim Generating Station due to uncertainty about when the facility will come into service. By using Average Service Life compared to Equal Life Group for Wuskwatim, the calculated depreciation rate was approximately \$3.0 million lower than it otherwise would have been. Similarly, Manitoba Hydro based the projected depreciation expenses for Keeyask Generating Station, Conawapa Generating Station, and Bipole III on Average Service Life proxy rates (without net salvage) until Gannett Fleming provides proposed Equal Life Group rates.

Neither the Consumers' Association of Canada (Manitoba) Inc. nor the Manitoba Industrial Power Users Group supported the switch to Equal Life Group, stating that many other utilities follow the Average Service Life approach. The Consumers' Association of Canada (Manitoba) Inc. raised issues of data reliability at a time of a rapidly increasing capital base. The Manitoba Industrial Power Users Group's witness testified that Equal Life Group leads to higher depreciation expenses in the early years of an individual asset's life. In a growing utility where newer and costlier assets are routinely added to plant in service, it can result in higher initial costs to ratepayers.

In the Manitoba Industrial Power Users Group's view, high depreciation in the early years does not match the economic benefit profile of utility assets, which provide the most benefit in later years. It further testified that Equal Life Group is very sensitive to the shape of the "Iowa Curve" chosen to calculate depreciation rates, and that Manitoba Hydro's asset retirement data is insufficient to support Equal Life Group, as data exists for only a small number of large assets.

### **6.1.3            *Removal of Net Salvage***

Manitoba Hydro's current depreciation rates include a provision for net salvage, representing the cost of decommissioning and disposal of an asset when taken out of service. The rationale for including net salvage in depreciation rates is to ensure that ratepayers benefitting from the use of the asset over time are shouldering the burden of paying for the eventual decommissioning costs.

Mr. Kennedy advised that International Financial Reporting Standards would no longer permit the inclusion of net salvage in depreciation rates. Manitoba Hydro plans to remove net salvage from depreciation rates at the same time as it switches to the Equal Life Group methodology in 2015/16. Manitoba Hydro indicated the impact of removing net salvage would lower depreciation expense by approximately \$56 million in 2013/14, \$63 million in 2014/15, and \$66 million in 2015/16.

Both the Consumers' Association of Canada (Manitoba) Inc. and the Manitoba Industrial Power Users Group recommended that net salvage be removed from depreciation immediately rather than waiting for a possible implementation of Equal Life Group.

## 6.2.0 Board Findings

The Board accepts the depreciation rates applied April 1, 2011, which rates reflect the changes in service lives and the true-up of the accumulated depreciation surplus for the two test years. The Board also accepts Manitoba Hydro's position that net salvage should be removed from depreciation rates when International Financial Reporting Standards are implemented rather than during the test years.

The Board understands that Manitoba Hydro is enhancing its asset condition assessment tools and will direct Manitoba Hydro to complete an Asset Condition Assessment Study no later than the filing of an updated depreciation study with the Board.

With respect to the possible switch from an Average Service Life methodology to Equal Life Group, the Board notes that both are acceptable methodologies under International Financial Reporting Standards and that any proposed changes would take place in 2015/16, which is beyond the test years. The Board understands that the decision to move towards Equal Life Group is a policy decision very much interrelated with other International Financial Reporting Standards accounting policy considerations. Given continued uncertainty regarding the application of International Financial Reporting Standards on rate-regulated entities, the Board will expect Manitoba Hydro to file additional information, including an update on any accounting policy changes, that will impact depreciation rates at the next General Rate Application.

The Board also is concerned that not enough information has been provided to date to assess the true impact on ratepayers of a switch to Equal Life Group. As such, the Board will require Manitoba Hydro to file additional information, including a determination of depreciation rates and schedules based on the Average Service Life methodology, to provide a meaningful comparison between the two approaches. The Board further expects Manitoba Hydro to file, as part of its next General Rate Application, additional information to specify what, if any, increased componentization is required, and at what cost. The work undertaken by Manitoba Hydro and Gannett Fleming Inc. with respect to component groupings to date can serve as a foundation towards determining what additional component groupings and costs, if any, are required for an International Financial Reporting Standards-compliant Average Service Life methodology.

The Board will require Manitoba Hydro to provide a comparison, for the next General Rate Application, of the impact on the Integrated Financial Forecast of an Average Service Life methodology (without net salvage) and an Equal Life Group methodology (without net salvage), where each of the accounting methodologies are applied to planned major capital additions in the Integrated Financial Forecast. Given the forecast to increase net plant by over \$21 billion over a 20 year period, it will be important to understand the implications on ratepayers of using each approach at the next General Rate Application.

The Board further expects Manitoba Hydro to file, as part of its next General Rate Application, additional information to support Manitoba Hydro's view that an Average Service Life methodology compliant with International Financial Reporting Standards requires increased componentization. As part of this information, the Board expects to see evidence as to what level of componentization would be required, and how such level of componentization would increase Manitoba Hydro's costs, if at all.

## **7.0.0 FINANCE EXPENSE**

### **7.1.0 Issues**

Finance expense to be recovered in electricity rates is forecast to be \$452 million in 2012/13 and \$444 million in 2013/14. Finance expense is forecast to be over \$1.6 billion in 2028, an increase of almost \$1.2 billion from 2013/14 levels.

Manitoba Hydro capitalizes (and does not recover in current consumer's rates) all interest on capital projects until the project is placed in service. Manitoba Hydro is forecasting to capitalize interest costs of \$141.5 million (or 23%) in 2012/13 and \$161.4 million (or 27%) in 2013/14. Overall, Manitoba Hydro is forecasting to capitalize over \$5.3 billion in interest costs relating to capital projects by 2032.

Long-term interest rates in Integrated Financial Forecast IFF12 are projected to be 3.15% in 2013 and 3.3% in 2014 (excluding the 1% Provincial Debt Guarantee Fee). Manitoba Hydro is forecasting long-term interest rates to increase from 3.85% in 2015 to 4.55% by 2016, to peak at 5.3% in 2022 and remain at that level for the remainder of the forecast through 2032.

### **7.2.0 Board Findings**

Manitoba Hydro's annual finance expense is set to grow substantially over the next two decades as Manitoba Hydro completes major capital projects. The Board notes that Manitoba Hydro's long-term debt is expected to grow from \$9.4 billion in 2013 to \$29 billion by 2027, which will lead to a finance expense exceeding \$1.6 billion in 2028; three times the current level.

The Board sees a genuine risk that the capital cost for the major capital projects will escalate further and that interest rates will be higher than forecast. Manitoba Hydro's current risk analysis reflects that a 1.0% increase in the interest rate yield curve over the entire forecast will increase total interest costs by \$700 million. It is expected that this risk will be reviewed by the Board at an upcoming Needs For And Alternatives To hearing with respect to Manitoba Hydro's Preferred Development Plan.

## **8.0.0 FINANCIAL TARGETS**

### **8.1.0 Issues**

Manitoba Hydro has three self-imposed financial targets:

1. A minimum debt-to-equity ratio of 75:25;
2. A gross interest coverage ratio of greater than 1.20; and
3. A capital coverage ratio of greater than 1.20, to facilitate funding all new base capital construction requirements, excluding major new generation and transmission facilities, from internal sources.

Manitoba Hydro acknowledges that the targets will not be attained during years of major investments in the generation and transmission system.

#### **8.1.1 *Debt-to-Equity Ratio***

The debt-to-equity ratio measures the relationship of long-term and short-term debt to equity. This ratio is used to assess the overall financial risk to Manitoba Hydro.

Manitoba Hydro's capital structure is forecast to weaken to a debt-to-equity ratio of 90:10 in 2021 due to planned capital spending on major projects. Manitoba Hydro filed Integrated Financial Forecast IFF12, which indicates planned capital spending of \$33.4 billion, of which \$22.9 billion relate to major projects over the next 20 years. According to Manitoba Hydro's forecast, the debt-to-equity ratio target of 75:25 will not be reached until 2031/32.

At the last General Rate Application, Manitoba Hydro had forecast long-term debt to grow from \$7.8 billion in 2010 to \$23 billion in 2029. Based on Integrated Financial Forecast IFF12, long-term debt is now forecast to be over \$29 billion by 2029, an increase of \$6.0 billion (26%) from the level forecast at the previous General Rate Application. Higher debt servicing costs, coupled with lower forecast export revenues, have resulted in reductions in forecast and actual net income of \$5.9 billion since Integrated Financial Forecast IFF09.

The Consumers' Association of Canada (Manitoba) Inc. expressed concern with the increase in capital costs and noted the promise made by Manitoba Hydro two years ago that a decade of investment was to be followed by a decade of returns. This appears to have been replaced by rate increases up to twice the level of inflation until 2030. In light of the significant planned capital expenditures, the Consumers' Association of Canada (Manitoba) Inc. further questioned the continued reliance on the debt-to-equity ratio to determine Manitoba Hydro's ability to withstand adverse events.

The Manitoba Industrial Power Users Group proposed adjusting the current method of calculating the debt-to-equity ratio to exclude Accumulated Other Comprehensive Income as well as the dedicated debt for the capital spending on the Keeyask Generating Station and Conawapa Generating Station, as the projects are currently not “used and useful” and not serving customers.

### **8.1.2            *Interest Coverage Ratio***

The Interest Coverage Ratio is calculated to measure the degree to which Manitoba Hydro can meet its interest payment obligations with the net income generated. An interest coverage ratio below 1.0 indicates that Manitoba Hydro must borrow to meet its interest obligations. Absent the requested rate increases for the two test years, Manitoba Hydro forecasts an interest coverage ratio of 0.95% in 2012/13 and 0.9% in 2013/14. In Integrated Financial Forecast IFF12-1, the 1.20 target is not achieved throughout the forecast period, with the ratio falling below 1.0 from fiscal 2019 to 2021.

### **8.1.3            *Capital Coverage Ratio***

The Capital Coverage Ratio measures Manitoba Hydro’s ability to fund base capital expenditures out of current cash flow from operations. A capital coverage ratio less than 1.0 indicates that Manitoba Hydro must borrow to fund its annual sustaining (base) capital requirements. Absent the requested rate increases, Manitoba Hydro forecasts a capital coverage ratio of 0.90 in 2012/13 and 0.67 in 2013/14. Manitoba Hydro’s target capital coverage ratio is set at >1.20. When the ratio exceeds 1.0, Manitoba Hydro internally generates funds from its operations that are used to fund major capital projects. This reduces the amount that must be borrowed to fund major capital projects.

### **8.1.4            *Drought Reserves***

Manitoba Hydro’s existing Retained Earnings reserve to address a major drought is \$2.4 billion. Historically, Manitoba Hydro has experienced drought situations in approximately 25 of the last 100 years. Manitoba Hydro's opening presentation at the General Rate Application suggested that a five-year drought would have a cost impact of at \$1.6 billion. This suggests that Manitoba Hydro may have an adequate level of reserves.

Manitoba Hydro Exhibit #38 and Manitoba Hydro Exhibit #40 (Exhibits are available on the Board’s website) have provided analyses of the impact of droughts, relative to Integrated Financial Forecast IFF11-2, as follows:

### Impact of a 5-Year Drought (\$millions)

	<b>5-Year Starting 2014/15</b>	<b>7-Year Starting 2014/15</b>	<b>5-Year Starting 2021/22</b>	<b>7-Year Starting 2021/22</b>
<b>Net Revenue Impact*</b>	<b>\$1,341</b>	<b>\$1,945</b>	<b>\$2,473</b>	<b>\$3,130</b>

\*Excludes finance costs

In Integrated Financial Forecast IFF12, Manitoba Hydro's retained earnings were forecast to be at about \$2.4 billion through 2022. Manitoba Hydro's drought history (1930's & 1940's) included a five-year drought followed two years later by a seven-year drought. A repeat of such a situation using the above net revenue impacts would nearly eliminate retained earnings in the absence of additional rate increases.

#### 8.2.0 Board Findings

Manitoba Hydro currently has achieved its debt-to-equity target of 75:25. However, the Board is concerned about the contemplated deterioration in the utility's financial targets, particularly the fact that by 2021, the debt-to-equity ratio is projected to be 90:10. Any further escalations in the capital cost for Manitoba Hydro's major new capital projects will cause the financial structure to deteriorate further.

The rate increases contemplated by Manitoba Hydro in the test years and beyond are significantly lower than what would be required to keep the Corporation at its current level of financial strength in the medium to long term. Progress in meeting these financial targets will require further rate increases, but more importantly, a concerted effort at cost containment within Manitoba Hydro.

The Board is concerned that, by moving towards a 90:10 debt-to-equity ratio by the end of the decade, there will be an insufficient retained earnings reserve to deal with droughts and other risks such as infrastructure failure or rising interest rates. The Board sees a need to further examine and quantify the other risks that Manitoba Hydro faces at the next General Rate Application and determine whether these should be subject to separate reserve provisions. The Board will require Manitoba Hydro to provide an analysis of risks on a quantitative and probabilistic basis at the next General Rate Application.

The Board notes that Manitoba Hydro shares the benefit of the flow-through credit rating of the Province, which affords it preferential interest rates on its debt and access to funds to meet its major capital spending program. However, as its debt grows, there is a potential for Manitoba Hydro's financial condition to affect the credit rating of the Province. It is important that Manitoba Hydro remains a financially strong and viable organization.



The Board does not believe that establishing a debt-to-equity ratio that ignores real debt, as was proposed by the Manitoba Industrial Power Users Group, is a reasonable proposition when credit rating agencies focus on actual debt levels.

## **9.0.0 WUSKWATIM GENERATING STATION PROJECT**

### 9.1.0 Issues

#### **9.1.1 Cost Escalation**

The Clean Environment Commission in 2003 conducted a hearing examining the Need For and Alternatives To the Wuskwatim project. The projected cost of the project at the Clean Environment Commission hearing was \$901 million for the generating station and transmission facilities.

Since then, the capital cost estimate increased on an annual basis, almost doubling to \$1,77 million.

#### **9.1.2 Tendering Problems with Northern Generation**

Manitoba Hydro experienced tendering difficulties with the primary contract(s) for building the generating station. This led to a retendering on a component basis. Productivity problems with respect to major civil, mechanical, and electrical components were also experienced.

#### **9.1.3 The Wuskwatim Power Limited Partnership Agreement**

The Wuskwatim Power Limited Partnership Agreement provided for a first-ever First Nations ownership stake in a Manitoba Hydro generating facility. Pursuant to the terms of the Agreement, the Nisichawayasihk Cree Nation was given the option of being a Limited Partner in the Wuskwatim Generating Station with an interest of up to 33%.

Revenues received by the Partnership from the sale of power to Manitoba Hydro were based on the actual output of Wuskwatim Generating Station and be priced in accordance with an agreed methodology which reflected Manitoba Hydro's actual selling prices for exports. The Partnership would pay Manitoba Hydro a percentage of gross revenues to contribute towards the marketing and transmission risks borne by Manitoba Hydro.

Wuskwatim's revenue related to energy generated during the on-peak (5x16) hours is determined based on the average price Manitoba Hydro realizes for long-term export sales and import transactions. Wuskwatim's revenue related to energy generated during the off-peak hours is determined from the average price Manitoba Hydro realizes for all on-peak and off-peak opportunity export and import transactions, excluding the on-peak long-term contract transactions. The total of gross revenue related to on-peak and off-peak energy is reduced by transmission and related market participation charges and Manitoba Hydro's 3% marketing risk fee. Domestic sales are not included in the determination of the revenue allocated to the Wuskwatim Power Limited Partnership.

Because of low export prices, Manitoba Hydro is now forecasting losses for the first ten years of operations of Wuskwatim. Those losses are projected to total \$341 million as Manitoba Hydro forecasts the project will not be profitable until 2023. The current agreement also requires the partners to invest more money to cover operating losses.

The total cost of Wuskwatim as identified by Manitoba Hydro (in Exhibit #108) was \$1.77 billion. Manitoba Hydro only applied \$1.25 billion of project costs to the Wuskwatim Power Limited Partnership, as it subtracted \$526 million of Manitoba Hydro's internally generated funds. On this basis, there is a net cost to the partnership of \$43 million in 2012/13 and \$75 million in 2013/14. This net cost results from the apportionment of both project costs and export revenues to the Partnership, with low export revenues contributing to a shortfall in both years.

If Manitoba Hydro's attribution of internally generated funds is removed from the calculation of partnership costs, the shortfalls would increase to \$68 million and \$114 million in 2012/13 and 2013/14, respectively. Because internally generated funds are the result of ratepayer contributions, they constitute a real cost to ratepayers that cannot be ignored when assessing the total impact of the project. In the absence of the Partnership covering the shortfalls, these costs flow through to domestic ratepayers.

During the hearing, Manitoba Hydro indicated its intention to re-negotiate the Agreement with the Wuskwatim Power Limited Partnership. Manitoba Hydro provided a calculation that attributed revenues based on the average of domestic and export revenues rather than just export revenue, upon which the Wuskwatim Power Limited Partnership Agreement is currently based. That potential change would still leave the Partnership with a shortfall in both test years, albeit a reduced amount. However, in the absence of a recovery in export prices, the net impact on ratepayers would actually increase, as a portion of domestic revenue would now be allocated to the Partnership.

Wuskwatim Generating Station in average flow years adds about 1,500 GWh/yr to the existing 29,500 GWh of energy, for a total Manitoba Hydro energy capability of 31,000 GWh. With average annual domestic load and firm export contract commitments less than 29,000 GWh until 2020, Wuskwatim energy is forecast to be sold at prices in the range of 3.0-3.5¢/kWh.

Wuskwatim Generation came on-line in 2012/13 with a Board-calculated (all-in) incremental in-service cost of \$160 million/yr (10.5¢/kWh). This is about three times the current average export revenue rate (for both firm and spot market sales) of about 3.2¢/kWh.

The Consumers' Association of Canada (Manitoba) Inc. did not object to the renegotiation of the Wuskwatim Power Limited Partnership agreement. However, it expressed great concerns about the Wuskwatim project's cost growth. It further questioned whether the full impact of the Wuskwatim losses should be borne by current

ratepayers, as the extent of the losses were not contemplated when the project was initiated.

#### 9.2.0 Board Findings

The Board has difficulty rationalizing the increase in the cost of the Wuskwatim project from the \$900 million estimate presented to the Clean Environment Commission in 2003, to the most recent estimate of a \$1.77 billion in-service cost. The increase in costs, in conjunction with a substantial decrease in export prices, means that the anticipated results have not been achieved and will not be achieved for many years.

The capital cost escalation of the Wuskwatim project is of serious concern to the Board. The reasons for the increased costs need to be more specifically broken down with respect to the various project components and construction activities. The utility's northern generation projects experienced competing demands for skilled labour from the Alberta market, resulting in the need to hire unskilled labour that had to be trained locally. This resulted in overall low productivity. These concerns should be more fully addressed and mitigated in future northern capital projects to the extent possible.

The Board understands that Manitoba Hydro is currently renegotiating its Wuskwatim Power Limited Partnership Agreement with its First Nations Partner as the economics of the project have changed substantially since the time the Agreement was first concluded. The revenues to be attributed to the Wuskwatim Power Limited Partnership were to be based on export revenues. The Wuskwatim Power Limited Partnership financial forecast now projects many years of losses. Absent adequate export revenues, the losses now have to be funded by domestic ratepayers. The Board expects to be notified when any changes to the current Agreement are finalized and apprised of the impact of such changes on Manitoba Hydro's operating results and domestic rates.

As for the cost consequences of Wuskwatim on Manitoba Hydro, the current rate increase requests are required to meet the operating losses from Wuskwatim. The Board finds that, as a rule-of-thumb, the average incremental annual operating cost of a capital project can be approximated at 9% of the capital cost minus the incremental export revenue gained. This makes for an additional revenue requirement of the Wuskwatim project viewed in isolation (without internally generated funds) equivalent to about \$100 million in 2012/13 and \$160 million in 2013/14. These costs are significantly greater than the \$74 million and \$117 million (respectively) set out in Information Request CAC/MH I-15(a) where Manitoba Hydro used financial costs that were net of internally generated funds:

	<b>Partial Year 2012/13</b>	<b>2013/14</b>
9% of \$1.77B Capital Cost	\$100M	\$160M
Average Output/year	900 GWh	1520 GWh
Unit Output Cost	10.0 ¢/kWh	10.5 ¢/kWh
Incremental Revenues	\$26M	\$43M
Average Net Export Revenue Rate*	2.8 ¢/kWh	2.8 ¢/kWh
<b>Net Cost Impact on Rate Payers**</b>	<b>\$74M</b>	<b>\$117M</b>

\*While MH calculates its total Export Sales (including long term firm export contract) average price of approximately 3.2 ¢/kWh [Exhibit MH-17], the output of Wuskwatim is not committed to a long term firm Export contract, so the average price of Wuskwatim output is only 2.8 ¢/kWh. [Exhibits MH-11 and MH-34]

\*\*This assumes no new firm export contracts for Wuskwatim output.

The Board also understands that Manitoba Hydro intends to allocate only \$1.25 billion of capital cost to the Wuskwatim Power Limited Partnership, employing \$526 million of Manitoba Hydro's internally generated funds (accumulated since 2003). This would result in net costs to the Wuskwatim Power Limited Partnership of \$43 million (2012/13) and \$75 million (2013/14), assuming Manitoba Hydro ratepayers have already invested approximately \$500 million that could have been utilized to reduce its overall level of borrowing.

## 10.0.0 CAPITAL EXPENDITURES

### 10.1.0 Issues

#### 10.1.1 *Base Capital Expenditures*

Manitoba Hydro divides its annual capital expenditures into two broad categories, namely (i) “base capital”, meaning investments in maintaining existing infrastructure that will not create new generation and are generally funded entirely from internal revenue sources, and (ii) “major new generation & transmission”, which is financed out of a mix of internally generated funds and new debt.

Actual base capital expenditures have grown from \$361 million in 2004/05 to \$458 million in 2011/12. Base capital expenditures are forecast to be \$433 million in 2012/13 and increase to \$503 million in 2013/14. Until 2011/12 internally-generated funds were more than sufficient to cover the base capital costs.

#### 10.1.2 *Major New Generation and Transmission Expenditures*

Manitoba Hydro’s most significant new generation and transmission investments consist of Wuskwatim Generating Station, which has since come into service, as well as Keyask Generating Station, Conawapa Generating Station, and the Bipole III Transmission Line. Major new generation & transmission projects are financed out of a mix of internally generated funds and new debt. Major new generation and transmission annual expenditures have grown from \$159 million (2004/05) to \$656 million (2011/12). Future forecast annual expenditures on major new generation and transmission will total (in \$ million):

<u>2012/13</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>
909	1,352	1,435	1,536	1,781	1,797	1,437	1,299

#### 10.1.3 *Capital Cost Escalations*

The following table illustrates the progression of major generation and transmission project costs since Capital Expenditure Forecast CEF06. When Manitoba Hydro defined the major new generation & transmission program (circa 2008) the projected project costs at the time were about 60% of what they are currently projected to be.

### Capital Cost of Major Projects (\$millions)

	CEF-6	CEF-07	CEF-08	CEF-09	CEF-10	CEF-11	CEF-12
Wuskwatim G.S	\$1,094	\$1,275	\$1,275	\$1,275	\$1,275	\$1,375	\$1,449
Wuskwatim Transmission	257	320	316	316	291	298	323
Wuskwatim Total Project	<b>1,351</b>	<b>1,595</b>	<b>1,591</b>	<b>1,591</b>	<b>1,566</b>	<b>1,673</b>	<b>1,772</b>
Pointe du Bois Improvements and Upgrade	834	818	818	-	-	-	-
Pointe du Bois Spillway	-	-	-	318	398	398	560
Pointe du Bois Transmission	-	83	86	86	86	86	86
Pointe du Bois Rebuild	-	-	-	-	1,538	1,538	1,538
Pointe du Bois Safety & Rehabilitation	-	-	-	-	50	50	183
Point du Bois Total Project		<b>901</b>	<b>904</b>	<b>404</b>	<b>2,072</b>	<b>2,072</b>	<b>2,367</b>
Herblet Lake Transmission	54	95	93	93	75	75	77
Bipole III	1,880	2,248	2,248	2,248	3,280	3,280	3,280
Riel C.S	103	105	268	268	268	268	268
Kelsey G.S	166	184	190	190	302	302	302
Kettle G.S	61	61	76	76	166	166	166
Slave Falls G.S	179	192	198	198	223	230	-
Conawapa	4,978	4,978	4,978	6,325	7,771	7,771	10,192
Keeyask G.S	-	-	3,700	4,592	5,637	5,637	6,220
500 KV Dorsey US Border	-	-	205	205	205	205	205
Northern Generating Station Improvements	-	-	-	-	536	649	649
Gillam Redevelopment and Expansion Program	-	-	-	-	-	-	367
Firm Import Upgrades	-	-	5	5	-	20	20
Additional North South Transmission	-	-	-	-	-	318	396
<b>Total</b>	<b>\$9,606</b>	<b>\$10,359</b>	<b>\$14,456</b>	<b>\$16,195</b>	<b>\$22,101</b>	<b>\$22,666</b>	<b>\$26,281</b>

Manitoba Hydro advised that it has now added a Management Reserve to its estimates for remote northern Manitoba projects (Keeyask and Conawapa) to cope with cost escalations. The Management Reserve has not specifically defined the components of remote major generation and transmission projects that need upward cost adjustments. Lower construction productivity has been cited, as well as a broader North American demand for heavy construction resources.

The Consumers' Association of Canada (Manitoba) Inc. argued that Manitoba Hydro's Capital Expenditure Forecast CEF09 grossly understated the expected capital costs of Conawapa, Keeyask and Bipole III. The Consumers' Association of Canada (Manitoba) Inc. also expressed great concern about the actual cost increases experienced on the Wuskwatim project. In light of the on-going escalations of Bipole III, Keeyask and Pointe du Bois, The Consumers' Association of Canada (Manitoba) Inc. questioned Manitoba Hydro's forecasting capability as well its ability to manage its capital program.

The Consumers' Association of Canada (Manitoba) Inc. and the Green Action Centre both spoke to the need for greater Demand-Side Management spending in light of the proposed capital spending and supported the evidence of Mr. Dunsky, which advocated greater Demand-Side Management investments to mitigate the need for additional power resources. Mr. Dunsky stated that Demand-Side Management is the lowest cost resource for balancing supply and demand. The cost of Demand-Side Management is 2¢/kWh to 4¢/kWh. He stated that much could be done by Manitoba Hydro to increase its savings by using Demand-Side Management measures. Mr. Dunsky further stated that Demand-Side Management can defer expensive capital investment in new dam construction.

#### **10.1.4 Incremental Cost and Revenue Assumptions**

Between Capital Expenditure Forecasts CEF08 and CEF12, Manitoba Hydro's cost and revenue forecasts with respect to major new generation and transmission have changed materially. With respect to Wuskwatim, the changes suggest that the incremental export electricity generated by Wuskwatim will be sold at less than 50% of the incremental cost of generation. Similarly, under current assumptions, the cost of Bipole III will no longer be covered by export electricity sales from Keeyask Generating Station and Conawapa Generating Station, as the capital cost of those projects has nearly doubled. The following table highlights the Board's understanding of the most recent cost and revenue impacts based on projections taken from Capital Expenditure Forecast CEF12 and Integrated Financial Forecast IFF12, which suggest that annual revenues generated by these projects will not be enough to cover their incremental costs at the start of their operation.



<b>Project</b>	<b>Wuskwatim G.S &amp; T</b>	<b>Keeyask G.S.</b>	<b>Conawapa G.S.</b>	<b>Bipole III</b>
In service Date	2012/13	2019/20	2025/26	2025/26
Capital Cost ( \$B)	\$1 .77	\$6.22	\$10.19	\$3.28
Annual In-Service Cost (\$M)	\$160	\$560	\$900	\$300
Average Year Output (GWh)	1,520	4,400	7,000	11,400 *
Unit Output Costs (¢/kWh)	10.5¢	12.7¢	12.9¢	*2.6¢
Export Revenue Rate (¢/kWh)	3.2¢	8.0¢	9.0¢	N/A
Net Export Loss (¢/kWh)	7.3¢	4.7¢	3.9¢	N/A

\*Incremental transmission capacity for output from Keeyask and Conawapa

The cost and revenue data will be further reviewed by the Board at the upcoming Needs For And Alternatives To (NFAT) hearing with respect to Manitoba Hydro's Preferred Development Plan.

### **10.1.5      *Pointe Du Bois Spillway***

When Manitoba Hydro purchased Winnipeg Hydro (circa 2003) there was an expectation that the Pointe du Bois station output could be significantly increased above 600 GWh. Replacement of the spillway was not contemplated. However, by Capital Expenditure Forecast CEF09 Manitoba Hydro had moved away from consideration of facility improvements and upgrades to the concept of total station replacement by 2016/17, including a replacement of the spillway.

In the 2010/11 Power Resource Plan, Manitoba Hydro indicated that the decision to rebuild the Pointe du Bois powerhouse has been deferred to 2030/31; decommissioning of the powerhouse at that time had not been ruled out.

In PUB/MH Pre-Ask 16, it is stated that Manitoba Hydro extensively studied decommissioning Pointe du Bois but assumed a new spillway would be required to maintain the upstream water regime and safely manage river flow. The cost was, at that time, estimated at \$400 million. In Capital Expenditure Forecast CEF12, Manitoba Hydro is budgeting over \$2.4 billion in capital spending on Pointe du Bois.

Manitoba Hydro is currently proceeding with the new spillway and substantial improvements to the main dam, stating that a 2007 guideline published by the Canadian Dam Association requires the spillway to be capable of handling a flow of 5,040 m<sup>3</sup>/s, while the existing capacity is only 2,840 m<sup>3</sup>/s. Manitoba Hydro's view is that this requires a replacement of the spillway. However, when the capacity of the powerhouse is added

to that of the spillway, Pointe du Bois can currently handle a maximum flow of 3,250 m<sup>3</sup>/s at full supply level (4,560 m<sup>3</sup>/s at overtopping). The Board received submissions from Mr. Per Stokke, P. Eng., a retired Manitoba Hydro engineer, suggesting that this capacity was sufficient to allow the deferral of the spillway replacement until such time as the powerhouse is rebuilt. Mr. Stokke further questioned whether modifications to the river regime were seriously explored. His presentation is summarized in Section 15 of this Order.

#### 10.2.0 Board Findings

The Board accepts that Bipole III is being constructed to improve domestic reliability and to permit exports into the United States. However, the Board is concerned that Bipole III may not achieve any incremental positive revenue from exports within the 20-year planning period. Accordingly, the Board will establish a deferral account to assist in funding Bipole III in-service costs. The deferral account will be established based on the revenues from a 1.5% portion of the 3.5% rate increase to be collected from customers commencing May 1, 2013.

In the Board's view, the introduction of a Management Reserve to define project cost escalation in future major capital projects, while justifiable, provides little or no assurance that the project costs will not increase further in light of the overlapping construction schedules of the many projects to be undertaken by Manitoba Hydro.

With respect to Manitoba Hydro's Power Resource Plan, the Board is of the view that the Plan does not clearly define Manitoba Hydro's firm contract obligations in terms of long-term/short-term/diversity sales and assured purchase opportunities. Manitoba Hydro's Recommended Plan and Alternatives identified in its recent Power Resource Plans is expected to be a subject of the Needs For And Alternatives To hearing process.

Regarding the planned Pointe du Bois spillway replacement, the Board understands that Manitoba Hydro's decision to replace the spillway to provide capacity of 5,000 m<sup>3</sup>/s for a maximum probable flood was made prior to Sept 24, 2010 on the basis that a new powerhouse would be in service in 2030/31 and the existing spillway and main dam could not be economically rehabilitated, and operational safety issues precluded the longer term usage of the existing spillway.

The Board understands the cost implications of Pointe du Bois to be as follows:

<b>2013/14 to 2015/16</b>	<b>Total Capital Cost (\$M)</b>	<b>In-Service Incremental Cost (\$M)</b>	<b>Incremental Output Costs (¢/kWh)</b>	
Spillway Rebuild	560	50	8.2	(600 GWh)
Transmission Upgrade	86	8	1.3	(600 GWh)
Powerhouse Temporary Rehabilitation	183	18	3.0	(600 GWh)
Subtotal	829	76	12.5	(600 GWh)
<b>2022/23 – 2031/32</b>				
Powerhouse Rebuild	1,538	138	18.4	(750 GWh)
Overall Total (if station output increased to 750 GWh)	2,367	214	28.5	(750 GWh)

In the Board's view, based on the above analysis, the Pointe du Bois project, if developed, does not on the face of it appear to provide cost-effective energy to Manitoba Hydro customers. The decision to proceed with a Pointe du Bois rebuild should be subject to a more thorough review of the economics of the project before it proceeds. The Board recommends that it be mandated by the government of Manitoba to conduct a Needs for and Alternatives To (NFAT) process in order to review the economic rationale for the project.

## 11.0.0 LOAD FORECAST

### 11.1.0 Issues

Manitoba Hydro's domestic load growth history and forecast shows that the utility's actual gross firm domestic energy load peaked in 2008/09. The weather-adjusted gross firm load in that year was also near a historical peak, subsequently exceeded in 2011/12. Over the past 22 years, Manitoba Hydro's actual load grew by about 1.3%/year, while the weather-adjusted load grew by 1.5%/year.

In Integrated Financial Forecast IFF12 Manitoba Hydro anticipates a rebound in domestic load at generation from the  $\pm 24,000$  GWh levels experienced in 2009/10, 2010/11 and 2011/12 to:

25,148 GWh (2012/13) including projected load losses of 3,400 GWh

25,597 GWh (2013/14) including projected load losses of 3,267 GWh

25,754 GWh (2014/15) including projected load losses of 3,197 GWh

26,006 GWh (2015/16) including projected load losses of 3,225 GWh

It appears that Manitoba Hydro's domestic load growth forecast is primarily predicated on a shift to electric heating as experienced prior to 2012. This assumption differs from Manitoba Hydro's Fuel Switching Report. It does not recognize the relatively lower natural gas cost since 2010 and the natural gas price outlook for the next decade.

Manitoba Hydro attributes almost all of the lower actual domestic loads to lower Top Consumer industrial energy consumption, partly as a result of the closure of a pulp and paper plant and the economic downturn. However, Manitoba Hydro continues to project a new industrial customer load of 100 GWh/yr being added in each and every year. Manitoba Hydro has also suggested that a new load, equivalent to Manitoba Hydro's largest customer, can be anticipated in the near future to offset the impact of pending northern Manitoba smelter closures.

Energy conservation (Demand-Side Management) apparently is not credited with any of the load reductions.

The Consumers' Association of Canada (Manitoba) Inc. has raised concerns about Manitoba Hydro's assumption that domestic load is non-responsive to on-going rate increases. This, in the Consumers' Association of Canada (Manitoba) Inc.'s experience, is inconsistent with most models, although perhaps it is reflective of limited price elasticity.

The Green Action Centre sees potential for Demand-Side Management-related load reductions in both the near-term and long-term. The Green Action Centre is concerned about the information contained in the Fuel Switching Report filed by Manitoba Hydro

that suggests fuel switching will account for 11% of the increase in net firm energy requirements from 2011/12 to 2030/31.

The Fuel Switching Report cited two reasons for fuel switching. The first is that some existing customers replace their natural gas space and water heating equipment with electric equipment. The second is that developers choose the installation of electric heating equipment in new homes in areas that are serviced by natural gas. Manitoba Hydro's study concludes that switching to electricity for space and water heating has consistently adverse impacts from the perspective of the customer, the utility, and the global environment.

The Green Action Centre believes that proper measures ought to be introduced to ensure that better choices are made by customers in order to reduce the unwarranted electricity load growth. As recommended by the Green Action Centre's witness, Demand-Side Management programs that provide better information, rely upon trustworthy vendors with appropriate incentives, pay an adequate share of capital cost, and offer low-cost, on-bill financing transferable to future residents would assist customers in making choices that are environmentally more preferable. The Green Action Centre's witness also suggested that builders of electrically heated homes should pay connection fees that reflect the true cost of installation to the home buyers and the Province.

The Manitoba Industrial Power Users Group questioned Manitoba Hydro's industrial load growth assumptions considering that no new large industry has come to Manitoba since the late 1990's. Large customers use significant amounts of electricity. For example, Manitoba Hydro's largest industrial customer uses the equivalent of the entire output of the Wuskwatim Generating Station. If less expensive electricity options are available in other jurisdictions, such industrial customers could consider locating current, new and additional facilities in those other jurisdictions. This situation will likely be exacerbated by Manitoba Hydro's forecast of rate increases over the next two decades.

#### 11.2.0 Board Findings

The Board is aware of several recent reports that predict lower electricity demand in the United States. Similarly, the Board is concerned that Manitoba Hydro's projected domestic load growth of 1,700 GWh over the next four years is overly optimistic. Manitoba Hydro's projections that 60% of new homeowners will opt for electric heat appears at odds with the utility's Fuel-Switching Report and the low natural gas prices available to homeowners. The utility's projected load growth of 1.5% per year also does not reflect the potential impacts of Demand-Side Management and rising electricity rates.

The Board is also concerned about Manitoba Hydro's weather adjustment calculation process, domestic loss assumptions and all-electric load growth assumptions. However,

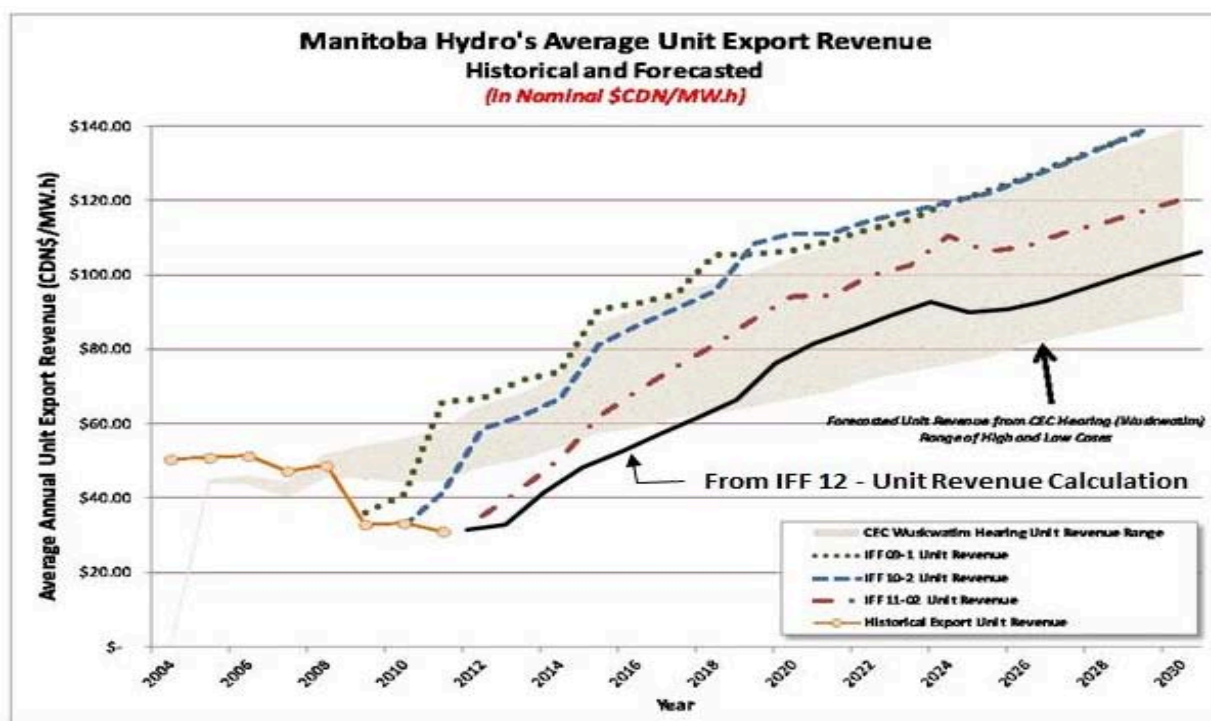
the Board expects that these issues will be more fully canvassed at a Needs For And Alternatives To hearing into Manitoba Hydro's Preferred Development Plan.

## 12.0.0 EXPORT MARKETS

### 12.1.0 Issues

Manitoba Hydro's primary export market is the market operated by the Midwest Independent System Operator, which, over the past several years, has seen reduced load-growth, an increase in subsidized wind power from U.S.-based wind farms, increased utilization of combined-cycle combustion turbine gas generation, imports into the Midwest Independent System Operator market from other U.S.-based utilities, and no increase in exports from Manitoba Hydro. Since 2008/09, spot market export prices have decreased from about 8.0¢/kWh to an average of 3.2¢/kWh.

The chart filed by Manitoba Hydro in response to Information Request PUB/MH II-14 illustrates Manitoba Hydro's actual average export price experience and Manitoba Hydro's average price forecasts in successive Integrated Financial Forecasts IFF09-1, IFF10-2, IFF11-02 and IFF12, as well as Manitoba Hydro's Clean Environment Commission Wuskwatim Hearing "high" and "low" forecast in 2003.



From the chart, it is apparent that from Integrated Financial Forecasts IFF09-1 to IFF12, the average export price forecast has dropped by about 3.5¢/kWh for the entire period until 2030/31. This represents revenue decreases of more than \$120 million/yr until 2019/20 compared to Integrated Financial Forecast IFF09-1. Beyond 2024/25, it

represents an export revenue loss of more than \$200 million/yr. After 2024/25 the reduced export revenue would be about \$300 million/yr.

As illustrated in Information Request PUB/MH I-18(a) and PUB/MH II-12(a) and (c), post-2008 to 2011, Manitoba Hydro sales into the Midwest Independent System Operator market have not increased, but have actually declined by about 600 GWh. Electricity suppliers from other regions have increased their supply into that market by about 14,000 GWh. Wind energy sales have increased by 25,000 GWh. Natural gas generation output has increased by about 10,000 GWh. Overall load growth of about 35,000 GWh was served despite lower coal and nuclear output.

Purported new or pending supply resources in the Midwest Independent System Operator market include 2,200 MW of new combined-cycle combustion turbine generation, 3,000 MW of additional wind generation (not including new Northern States Power ventures) and increasing imports as renewable energy surpluses resources grow.

The installed capacity of combined-cycle combustion turbine generation in the Midwest Independent System Operator region in 2008 was about 20,000 MW but was only being utilized 12% of the time. By 2011 this capacity had increased to about 21,000 MW but utilization had increased to 18%.

Manitoba Hydro's Northern States Power, Minnesota Power and Wisconsin Public Service existing and pending export contracts provide assured revenues for capacity and energy. Manitoba Hydro's firm contract fixed-price long-term export commitments are about 2,000 GWh per year (prior to 2015/16), about 1,200 GWh a year from 2015/16 to 2019/20, about 3,200 GWh a year from 2020/21 to 2024/25 and about 1,500 GWh a year until 2035. In average flow years, this means firm contract prices will apply to no more than approximately 50% of the energy sold to 2024/25 and less than 20% thereafter.

Both the Consumers' Association of Canada (Manitoba) Inc. and the Manitoba Industrial Power Users Group expressed concerns about the reliability of Manitoba Hydro's export forecasts, and noted that post-shale gas forecasts present a challenge. However, in the Manitoba Industrial Power Users Group's view, the decline in Midwest Independent System Operator energy prices is close to having reached its bottom, so the risk involved as a result of low export prices is less than previously anticipated.

#### 12.2.0 Board Findings

The Board questions Manitoba Hydro's projection that average export market prices are set to increase to 4.1¢/kW in 2014/15 and 4.8¢/kWh in 2015/16, and believes that prices around 3.2¢/kWh are more realistic. In light of low shale gas prices and increasing availability, the Board is not confident that Manitoba Hydro will return to pre-2009/10 export revenue levels within the next decade.



The Board accepts that once Manitoba Hydro's new export contracts come into effect, the average export price realized by Manitoba Hydro will increase. However, with firm prices applying to only 25-50% of average export sales, revenues will still be primarily driven by the opportunity market and likely lower than forecast in Integrated Financial Forecast IFF12. The Board further notes that the Integrated Financial Forecast IFF12 first predicts export prices to rise above 10¢/kWh after 2028; this suggests that a project, such as Wuskwatim, would not be profitable based on export sales, until after 2028, and possibly even later, if market prices do not rebound as predicted by the Forecast.

## **13.0.0 DEMAND-SIDE MANAGEMENT**

### 13.1.0 Issues

#### **13.1.1 *Manitoba Hydro's Power Smart Plan***

Manitoba Hydro's Power Smart Plan consists of Demand-Side Management energy conservation and load management activities designed to lower the demand for both electricity and natural gas in Manitoba. Manitoba Hydro's 2011 Power Smart plan reflects spending of \$34.4 million in 2012/13 and \$34.7 million in 2013/14. However, in the course of the General Rate Application, Manitoba Hydro filed an update which lowered estimated spending to \$28.5 million in 2012/13 and \$28.0 million in 2013/14. The reductions were part of Manitoba Hydro's capital prioritization plan, reflecting a decreased availability of economically beneficial Demand-Side Management opportunities in the Manitoba marketplace. Manitoba Hydro amortizes its Demand-Side Management spending over a 10-year period.

The current 15-year Power Smart Plan targets 597 MW and 1,944 GWh of energy savings, representing 3.8% of the estimated electric load forecast for 2025/26. Cumulative energy and demand reduction achieved (including savings to date) is forecast to achieve 3,283 GWh/year of energy savings and 906 MW of winter demand by 2025/26. The cumulative savings are forecasted to reduce carbon dioxide (CO<sub>2</sub>) equivalent emissions by 2.5 million tonnes.

Manitoba Hydro initially evaluates new Demand-Side Management programs based on a Marginal Resource Cost Screen, which compares the expected benefits to the incremental capital costs. If programs pass the initial screening, they are subjected to a more detailed analysis based on the Total Resource Cost and Rate Impact Measure tests.

Manitoba Hydro utilizes a marginal cost value of 8.5 ¢/kWh in its Demand-Side Management screening, which includes the expected value of electricity exports. However, consecutive Integrated Financial Forecasts since IFF09 have shown a material decline in the export revenues forecast. Manitoba Hydro has indicated that if incremental export revenues were to decline to a level where they no longer offered an offsetting value, the marginal benefits of Demand-Side Management would then shift from the export market value to a valuation of the benefit of deferring new generation facilities, recognizing that there is an economic benefit to achieving load savings in the Province.

Both the Consumers' Association of Canada (Manitoba) Inc. and the Green Action Centre expressed concern about Manitoba Hydro's reduction in Demand-Side Management programming, especially in light of increasing electricity prices. Philippe Dunsy, an expert retained jointly by the Consumers' Association of Canada (Manitoba)

Inc. and the Green Action Centre, indicated that Power Smart was costing the utility 1.8¢/kWh but could create 8.5¢/kWh in additional revenue, and that it could be in the public interest to have a slight increase in rates offset by a reduction in consumption, such that overall costs are lowered. Mr. Dunsky's benchmarking study indicated that comparable utilities are targeting 1.0-2.6% savings from Demand-Side Management, while Manitoba Hydro only targets 0.3%.

Considering Manitoba Hydro's significant proposed rate increases for the two test years, and with indicated rate increases of close to double the rate of inflation until 2030, the dramatic decline in Demand-Side Management savings is a matter of grave concern to the Consumers' Association of Canada (Manitoba) Inc. In their view, there are many opportunities for Manitoba Hydro to promote its existing products and Manitoba Hydro's failure to maintain and enhance its Demand-Side Management portfolio will result in considerable foregone opportunity in terms of cost reductions.

The Consumers' Association of Canada (Manitoba) Inc. argued that the \$23 million amount related to the deferral account for the 2010/11 and 2011/12 years belonged to ratepayers, but that if there was a mechanism within the Board's jurisdiction to target the funds for Demand-Side Management, the Consumers' Association of Canada (Manitoba) Inc. would be open to dialogue. It argued that there would be a benefit to an independent review of Manitoba Hydro's Demand-Side Management measures.

The Green Action Centre's witness suggested that the marginal cost used by Manitoba Hydro to evaluate Demand-Side Management programs was too low and should be based on the cost of bringing new hydro generation for domestic consumption into service. He further recommended that the specific marginal cost for each customer class should be used for the test.

The Green Action Centre recommended that the Board require Manitoba Hydro to increase its Demand-Side Management programming to target energy savings of 1.0% by 2015 and sustain that ratio thereafter. The Green Action Centre further recommended that the Board build into the rate application an amount to supplement Demand-Side Management spending of \$41 million per year, as suggested by Mr. Dunsky.

### **13.1.2 Lower Income Energy Efficiency Program**

The objective of Manitoba Hydro's Lower Income Energy Efficiency Program is to ensure that the financial benefits associated with implementing Power Smart measures can be realized by low-income consumers. Targeted measures addressed by the program include low-cost or no-cost energy efficiency initiatives such as compact fluorescent light bulbs, low-flow water faucets, and subsidized measures such as increased basement and attic insulation and the installation of high-efficiency gas furnaces. The program is delivered through community-based organizations and the participation of individual households.

2011 Power Smart Plan target participation in the Lower Income Energy Efficiency Program has been set at 557 homes per year, down from 883 homes per year in the 2009 Power Smart Plan. The revised target is based on actual participation experience gathered from working with community based organizations and social agencies. With respect to the First Nations Power Smart Program, which focuses on 24 different communities, Manitoba Hydro has completed 597 homes by the end of August 2012. Manitoba Hydro is forecasting to complete 751 additional households by 2016/17.

The Consumers' Association of Canada (Manitoba) Inc. recognized that the Lower Income Energy Efficiency Program is making good progress with respect to government-owned social housing and First Nations, but expressed concern about the program not being able to effectively reach tenants.

The Manitoba Industrial Power Users Group focused its submissions on the accounting implications of the Demand-Side Management program, disagreeing with Manitoba Hydro's proposition that, as of the date of International Financial Reporting Standards implementation, Demand-Side Management expenditures be written off in the year in which they are incurred rather than treated as retained earnings. In the Manitoba Industrial Power Users Group's view, this does not fairly represent the economic profile of Demand-Side Management spending, and the Board should ensure that rates continue to be based on the existing practices.

### **13.1.3      *The Affordable Energy Fund***

The Provincial Government passed *The Winter Heating Cost Control Act* in 2006. The Act established the Affordable Energy Fund, requiring Manitoba Hydro to contribute 5.5% of its fiscal 2006/07 gross export revenues to the Affordable Energy Fund. This resulted in a fund of \$37.4 million to be utilized for various energy efficiency initiatives, including assisting low-income electricity and natural gas customers. Manitoba Hydro has spent \$17 million of the fund by the end of 2011/12 and forecasts depleting the fund by 2020/21.

Manitoba Hydro has \$19 million reserved for low-income programs that would mostly benefit electricity and natural gas space-heated homes, and would provide for programs that would not otherwise be funded from Manitoba Hydro/Centra's rate-based Demand-Side Management programs.

Manitoba Hydro has forecast to spend approximately \$2.5 million on the Lower Income Energy Efficiency Program during the two test years, including \$1.8 million from the Affordable Energy Fund.

The Affordable Energy Fund is continued under *The Energy Savings Act*, passed in 2012, that leaves it up to the discretion of the board of Manitoba Hydro to allocate additional funds in the future. The new statute further requires Manitoba Hydro to

prepare an energy efficiency plan in consultation with the minister responsible for Manitoba Hydro by March 31, 2013.

### 13.2.0 Board Findings

The Board believes that it is fundamental that Manitoba Hydro enhances Demand-Side Management efforts from those reflected in the 2011 Power Smart Plan. Given an outlook where rates are forecast to more than double over the next twenty years, which is twice the expected level of inflation, the Board is of the view that Manitoba Hydro should be providing ratepayers with the tools to mitigate their exposure to rising electricity bills through Demand-Side Management.

The Board does not agree with Manitoba Hydro's decision to cut Demand-Side Management spending and targeted savings. For rate-setting purposes, Demand-Side Management spending and its related revenue requirement costs will be established at a minimum of \$34 million for 2012/13 and \$35 million in 2013/14, consistent with the 2011 Power Smart Plan. If monies are not spent on the Demand-Side Management programs to meet the minimum threshold, any underspend from the set levels will be accumulated in a deferral account.

DSM spending is beneficial to ratepayers and will be more prominent in the future as pressures from increasing rates continue in future years. The Board urges Manitoba Hydro to incorporate Demand-Side Management programs into its plan that target higher levels of energy efficiency, as was recommended by Mr. Dunsky and endorsed by the Consumers' Association of Canada (Manitoba) Inc. and the Green Action Centre. The Board further notes that Demand-Side Management may have a role in limiting future load growth and expects to evaluate Demand-Side Management options in the upcoming Needs For And Alternatives To hearing into Manitoba Hydro's Preferred Development Plan. The Board notes Mr. Dunsky's testimony that Keeyask could be delayed several years and Conawapa could be delayed indefinitely with an increased focus on Demand-Side Management.

In evaluating Demand-Side Management programs, the Rate Impact Measure test should not be a barrier to higher levels of Demand-Side Management savings and should be applied only at the portfolio level, not the individual program level. The Board recommends that Manitoba Hydro undertake an independent assessment of its Power Smart Plan with a goal of evaluating and improving the Plan. The Board further recommends that Manitoba Hydro should consider revising the marginal cost used to evaluate Demand-Side Management to include the cost of new generation. In light of low export rates, a marginal cost focus on generation deferral rather than export pricing may be preferable.

Manitoba Hydro has made modest progress in implementing the Lower Income Energy Efficiency Program, and the Board believes that the reduction in homes being targeted for the Lower Income Energy Efficiency Program is a reflection of the difficulty in reaching the target market. The Board urges Manitoba Hydro to continue or increase its

efforts in implementing the Lower Income Energy Efficiency Program, as increasing energy prices will place a significant burden on low-income individuals.

## **14.0.0 SPECIAL RATES**

### 14.1.0 Curtailable Rate Program

Manitoba Hydro's Curtailable Rate Program allows the Utility to curtail a portion of a large industrial customer's peak load in exchange for reduced rates on that same portion of the load when not curtailed. The objective of the program is to be able to reduce electrical load at peak times when the system is near maximum capacity.

Manitoba Hydro is proposing to reduce the maximum amount of Curtailable Rate Program capacity that Manitoba Hydro will contract for with General Service Large customers, but expects to achieve this with minimal impact to existing customers. Presently the Curtailable Rate Program cost is about \$6 million/yr or about 10% of Manitoba Hydro's annual demand billing to General Service Large >100 customers. The apparent value of short-term capacity in the Midwest Independent System Operator Capacity market has dropped substantially due to lower load growth in the area and also due to the greater availability of quick response natural gas generation. Additionally, when Manitoba Hydro brings Keeyask Generating Station on-line, there will be surplus capacity in Manitoba Hydro's system. That, coupled with lower Midwest Independent System Operator reserve requirements, removes much of the benefit to Manitoba Hydro of the Curtailable Rate Program.

The Consumers' Association of Canada (Manitoba) Inc. suggested that Demand-Side Management expansion in lieu of new generation could include more Curtailable Rate Program demand reduction initiatives. The Manitoba Industrial Power Users Group believes that the Curtailable Rate Program should continue at current or expanded levels of capacity available with the program. The Curtailable Rate Program is valuable to existing customers who are looking to expand operations. Manitoba Hydro should investigate additional rate options for industry such as Demand Response and Feed-in Self-Generation.

The Board accepts Manitoba Hydro's rationale for reducing the Curtailable Rate Program offering in response to the current capacity market decline. However, recognizing the potential Demand-Side Management resource expansion proposals that may be put forward during the pending Needs For And Alternatives To process, the Board will approve Manitoba Hydro's proposed Curtailable Rate Program cutback on an interim basis until a subsequent General Rate Application.

### 14.2.0 Surplus Energy Program

The Surplus Energy Program is a mechanism by which Manitoba Hydro prices electricity generated in excess of its immediate requirements and sells it based on pricing determined by a Board-approved methodology. Manitoba Hydro plans to make the Surplus Energy Program a permanent offering. This, along with some other

changes, is intended to broaden the appeal of Surplus Energy Program to the General Service Medium and General Service Large <100 customer sub-classes which currently have enrolled in the Option 2 Surplus Energy Program. Manitoba Hydro is also looking for a final approval of a revised Option 1 which currently has no customers. The change would also allow some General Service Medium and General Service Large customers to nominate different levels of Surplus Energy Program energy purchases in peak periods (5x8 weekdays – day time), off-peak periods (7x8 weekdays – night time), and shoulder periods (other weekday or weekend periods). These changes would allow customers to tailor their optional Option 1 purchases to minimize costs and/or maximize purchase effectiveness. Manitoba Hydro has not set any overall limits on the size of the Surplus Energy Program purchases, but only on individual customers' proportion of load.

Manitoba Hydro would also like to eliminate the need for a professional engineering seal on the weekly Surplus Energy Program pricing.

The Consumers' Association of Canada (Manitoba) Inc. and the Green Action Centre took no position with respect to the Surplus Energy Program. The Manitoba Industrial Power Users Group is supportive of the time-of-use amendment of Option 1 and making the Surplus Energy Program a permanent offer.

The Board agrees that making the Surplus Energy Program Options 2 and 3 permanent rate offerings has no obvious downside and will grant approval subject to the continuation of annual reports. It is the Board's view that allowing Option 1 to designate different reference levels based on time of use appears to have merit as an interim Surplus Energy Program amendment. However, permanent approval should await actual events with respect to load shifting.

The Board believes that the Surplus Energy Program involves the defining of surplus electricity and detailing of an acceptable pricing strategy for summer and winter sales and purchases. Surplus Energy Program price schedules are a weekly commitment by Manitoba Hydro to supply energy and not just a price schedule. As such, the Board would consider a division manager's signature as an adequate substitute for a professional engineer's seal.

#### 14.3.0 Time-of-Use Rates

Time-of-Use Rates for industry will be addressed at a Cost of Service/Time of Use Hearing before the Board.

#### 14.4.0 Diesel Communities

In Order 116/12 the Board approved a 6.5% interim rate increase on the full-cost portion of the rate applicable to General Service and government customers in the diesel zone. This increase is projected to provide \$200,000 in 2012/13 and \$300,000 in 2013/14. In



total, there are eight interim diesel orders identified in Manitoba Hydro's filing. Manitoba Hydro requested that if Manitoba Keewatinawi Okimakanak files the true copies of the settlement agreement prior to the issuance of the General Rate Application Order, the interim orders be approved as final. If the true copies are not filed, Manitoba Hydro requests the Board's final approval be granted conditional upon the filing of the true copies of the settlement agreement.

The Board is not prepared to finalize the interim orders until it has received true copies of the settlement agreement. Accordingly, the Board will address finalization when a true copy has been received.

## **15.0.0 PRESENTER SUBMISSIONS**

### 15.1.0 Industry Presentations

#### ***The Manitoba Industrial Power Users Group***

Mr. Bill Turner stated that the recent change in available lower-cost natural-gas-produced power in the U.S. is making it more difficult for some major Manitoba companies to be competitive in the export of finished goods. Given the relative importance of electricity to industry, both the actual price and the predictability of electrical costs are extremely important. The Manitoba Industrial Power Users Group asked the Board to help them retain their competitive position in Manitoba and in North America. In their view, dedication to providing reliable firm power at fair and reasonable rates, ensuring rates reflect cost of service, and developing innovative rate options that benefit both industry and Manitoba Hydro are important for the future growth of large industry in Manitoba.

Mr. Turner stated that the Manitoba Industrial Power Users Group questions if the timing is correct for Wuskwatim, Keeyask and Conawapa to go forward, and would like to understand the justifications for trying to complete as many of the expansions in a short order of time as proposed by Manitoba Hydro. Mr. Turner indicated that there are other opportunities to help alleviate some of the immediate concerns for increased power, such as the Curtailable Rate Program which was cut back by Manitoba Hydro. Mr. Turner also stated that if there were other options for curtailable rate programs that plants could be involved with, it would postpone some of that major development and spread it out until the U.S. economy changes, which would then promote higher export values. The Manitoba Industrial Power Users Group supports expansion and exports to other markets by Manitoba Hydro, but not at the sake of loss of domestic power loads.

#### ***Canexus***

Mr. Dale Bossons stated that Canexus has made a lot of business decisions based on Manitoba's competitive power pricing. Canexus expanded its plant numerous times and continues to reinvest in the Brandon facility. However, it will not proceed with the expansion it was planning for economic reasons. As electrical pricing in Manitoba is forecast to increase, it makes it harder to justify capital expenditures into the facility. Mr. Bossons further stated that the Louisiana plant Canexus relocated to Brandon several years ago would now be more competitive in Louisiana, considering the current economic environment.

In that regard, Mr. Wayne Yan spoke of special programs available in Louisiana, in particular, a special rate program for electrochemical producers through Entergy, in which the demand cost is not charged. Mr. Yan suggested such a program could be beneficial to attract investments and to retain companies in Manitoba.

Mr. Bossons indicated that the proposed increase of 3.5 percent for this year is equivalent to electricity costs of \$2 million for Canexus, and the planned increases over the next five years amount to \$24 million for the plant in Brandon. These extremely significant amounts have major decision-making impacts on Canexus' future growth. Mr. Bossons mentioned that through the Curtailable Rate Program, Canexus has the ability to supply Manitoba Hydro with up to 168 megawatts of power on short notice to assist it in its times of need. Canexus is very interested in seeing this program continue into the future.

### ***Gerdau Steel***

Mr. Dave Forsyth indicated that with the current Application, by April 1st, 2013, Manitoba Hydro's rates will have increased by almost 35% for industrial customers since 2004, with a rate increase of over 9% for the 15 month period started in January 2012. This recent rate uncertainty has resulted in budget variances for the Gerdau Manitoba plant, preventing the plant from making investment decisions with confidence.

Mr. Forsyth stated that Manitoba Hydro developed the Demand Billing Concession Program, which helped Gerdau following the 2008 economic downturn. However, the previous Board ordered repayment of the concession long after the period had passed, creating another episode of uncertainty for the plant. Mr. Forsyth indicated that participating in the Curtailable Rate Program is the only option available for Gerdau to lower the limit of Option A megawatts.

Mr. Forsyth stated that Gerdau recommends this Board to advise Manitoba Hydro to explore other opportunities in demand response, such as economic demand response or price response and expanding interruptible contracts. In Gerdau's view, regulation should achieve firm, low cost, stable power rates that are necessary to maintain investment and jobs in the province. Rate stability is a key input when making long-term investment decisions. Mr. Forsyth requested that the Public Utilities Board reconsider the contemplated increases in this Application, and since the industrial class has been paying above the measured cost of service for a very long time, Gerdau requests that the rates reflect the cost of service for their customer class.

## 15.2.0 Individual Presenters

### ***Doug Biggs***

Mr. Biggs stated that Manitoba Hydro should cut back on its expenses rather than require the customers paying more at the whim of Manitoba Hydro's revenue shortfalls.

***Carol Boitson***

Carol Boitson presented her objection to the 4% rate increase being sought every year by Manitoba Hydro. In her opinion, Manitoba Hydro's executives should have lower salaries instead.

***Allan Ciekiewicz***

Mr. Ciekiewicz provided the Board with a written presentation together with his oral presentation. The presentation by Mr. Ciekiewicz covered a variety of topics from Manitoba Hydro's forecasts and projections, including an emphasis on rate increases.

Mr. Ciekiewicz also provided the Board with a series of recommendations that can be found starting at page 550 of the Transcript.

***John Corden***

Mr. Corden requested the Board to deny the increase being sought by Manitoba Hydro. Mr. Corden also questions Manitoba Hydro's plan to develop the infrastructure for exports while export revenues are currently decreasing due to the US using other forms of energy. Mr. Corden requested the Board to put a stop to Manitoba Hydro's mismanagement.

***Brandy Fleury & Jennifer Pacaud***

Ms. Fleury & Ms. Pacaud expressed concerns over Manitoba Hydro's requested rate increase. Since Manitoba Hydro sells Manitoba's power at a low premium price to the US, the maintenance of the power lines should be paid out of the revenue generated to supply those states with their power. Mrs. Fleury & Mrs. Pacaud believe the citizens of Manitoba should not have to pay to supply those in the US.

***Sandra Giese***

Ms. Giese provided the Board with her concerns and disapproval for the proposed rate increases for 2013. In Ms. Giese's view, Manitoba Hydro customers should not go through rate increases of 3-4% for each of the next 18 years to bail out Manitoba Hydro from losses due to poor management and planning. Ms. Giese questions Manitoba Hydro's expectations for exports from their future dam projects considering US energy attitude currently is to be self-reliant.

Ms. Giese stated that alternatives and new energy technologies should be investigated and encouraged. Ms. Giese also spoke of Manitoba taxpayers experiencing a wave of increases at every level, creating vulnerability for some segments of the population.

***Justin Jaron Lewis***

Mr. Lewis objected to the proposed rate increases being sought by Manitoba Hydro. As a Crown Corporation, Manitoba Hydro has a responsibility to serve the public interest, which does not require maximizing its profits or proceeding with new large-scale dam projects when the market for exported hydroelectricity is in steep decline. Mr. Lewis further stated that in light of U.S. plans for energy self-sufficiency, it is likely that Manitoba energy will not continue to be in demand in the United States, and that Manitoba Hydro will need to reframe its business model.

***Gary Luby***

Mr. Luby stated his outrage at Manitoba Hydro's proposed rate increases for the next 18 years. In Mr. Luby's opinion, the costs of building dams, and the proposed hydro line down the east side of Lake Winnipeg, should be incurred by the customers in the United States and the other Provinces, as they will be the ones supplied by those major projects. Mr. Luby further stated that it is unacceptable for Manitoba Hydro to sell inexpensive hydroelectricity to American customers. Mr. Luby indicated that Manitoba Hydro appears to be mismanaged, and that it should be run as a business or be privatized.

***Douglas Macduff***

Mr. Macduff provided comments on why the Public Utilities Board should refuse Manitoba Hydro's request for a 3.5% increase on April 1, 2013 and rates be rolled back instead. Mr. Macduff questions the necessity of building another series of dams, considering Manitoba Hydro is having problems selling the extra hydroelectricity. Mr. Manitoba Hydro should also not be supporting and/or sponsoring various organizations, and should end the Power Smart Program.

***Allison Reid***

Mrs. Reid presented her concerns over the new rate increase proposed by Manitoba Hydro. Mrs. Reid questioned why she was on the hook for an 8% increase for a single year. She is concerned the cost of living is going up but not the wages. In Mrs. Reid's opinion, Manitoba Hydro should cut back its expenses, or decrease its executive salaries and she urges the Board to not allow this increase.

***Per Stokke***

Mr. Stokke, a former Manitoba Hydro engineer previously involved in the planning of Pointe du Bois, provided the Board with a written presentation together with his oral presentation. Mr. Stokke questions Manitoba Hydro's decision to replace the spillway at

Pointe du Bois, and whether Manitoba Hydro had credible and defensible evidence that the spillway does not meet the Canadian Dam Safety Guidelines with respect to required capacity and that it therefore must be replaced. Mr. Stokke stated that Manitoba Hydro does not appear to have an open and transparent document with a detailed account of the decision-making process, as required by the Guidelines.

Mr. Stokke indicated that in 2002, a world-renowned engineering consultant and contractor suggested a repair of the existing spillway was possible at a cost of about 4 to \$6 million, a pittance compared to the \$400 million cost of the replacement spillway.

Mr. Stokke indicated that to determine if an existing dam is safe enough, Manitoba Hydro has neglected to use the necessary Guideline's risk-based approach and only used the standards approach. It is Mr. Stokke's opinion that Manitoba Hydro owes it to the ratepayers and owners to provide higher-level studies.

THE PUBLIC UTILITIES BOARD

"RÉGIS GOSSELIN, B.A., M.B.A., C.G.A."  
Chair

"HOLLIS SINGH"  
Secretary

Certified a true copy of Order No. 43/13  
issued by The Public Utilities Board

\_\_\_\_\_  
Secretary

## APPENDIX A – APPROVALS SOUGHT BY MANITOBA HYDRO

Manitoba Hydro requested the following:

- (a) Approval, on an interim basis, of rate schedules incorporating an across the board 2.5% rate increase on currently billed rates, effective September 1, 2012, sufficient to generate additional revenues of \$20 million in 2012/13;
- (b) Approval of a further 3.5% increase in overall revenue effective April 1, 2013, sufficient to generate additional revenues of \$48 million in 2013/14;
- (c) Approval to maintain in base rates the rates approved by the Public Utilities Board in Orders 30/10 and 40/11, and include in current year revenues the revenues previously billed and collected, which have been accumulated in the deferral account pertaining to rates implemented April 1, 2010;
- (d) Final approval of Orders 32/12 and 34/12 approving interim rates effective April 1, 2012, and final approval of any other interim rate Orders issued subsequent to the filing of the Application and prior to conclusion of this proceeding;
- (e) Approval, on an interim basis, of rate schedules incorporating a 6.5% rate increase effective September 1, 2012 (consistent with previous and proposed rate increases for grid customers), for the full-cost portion of the rate applicable to general service and government customers in four remote communities served by diesel generation, sufficient to generate additional revenue of \$0.2 million in 2012/13;
- (f) Confirmation that the Board accepts the rate approval process given proposed modifications to the Terms and Conditions of the Surplus Energy Program, as will be discussed in Tab 12 of this Application;
- (g) Confirmation that the Board accepts the rate approval process given proposed modifications to the Curtailable Rate Program ("Curtailable Rate Program");
- (h) Final approval of all Surplus Energy Program interim *ex parte* rate orders as will be set forth in Tab 11 of this Application, as well as any additional Surplus Energy Program *ex parte* rate orders issued subsequent to the filing of this Application and prior to the Board's order in this matter;
- (i) Final approval of Curtailable Rate Program *ex parte* Order 52/12 as well as any additional *ex parte* orders issued in respect of the Curtailable Rate Program issued subsequent to the filing of this Application and prior to the Public Utilities Board's order in this matter; and

- (j) Final approval of diesel zone interim Orders (17/04, 46/04, 159/04, 176/06, 1/10, 134/10, 1/11 and 148/11), subject to confirmation that MKO has provided the parties to the agreement with the required affidavits from representatives of signatories to the agreement, as well as any additional diesel zone interim orders issued subsequent to the filing of this Application and prior to the Public Utilities Board's order in this matter.



## APPENDIX B – APPEARANCES

R. Peters	Counsel for The Manitoba Public Utilities Board
A. Southall	(Board)
P. Ramage	Counsel for the Manitoba Hydro Electric Board
O. Fernandes	(Manitoba Hydro)
B. Williams	Counsel for Consumers' Association of Canada (Manitoba) Inc.
A. Hacault	Counsel for the Manitoba Industrial Power Users Group
W. Gange	Counsel for the Green Action Center
P. Miller	
D. Pambrun	Counsel for the City of Winnipeg
M. Anderson	Manitoba Keewatinowi Okimakanak

## APPENDIX C – WITNESSES FOR MANITOBA HYDRO

S. Thomson	President and CEO
V. A. Warden	Senior Vice-President, Finance & Administration and Chief Financial Officer
R. Wiens	Division Manager, Rates & Regulatory Affairs
D. Cormie	Division Manager, Power Sales and Operations Division
D. Rainkie	Corporate Controller, Corporate Controller Division
M. Schulz	Corporate Treasurer
T. Miles	Manager of Resource Planning and Market Analysis
L. Morrison	Division Manager of Consumer Marketing and Sales
J. Hall	Division Manager of Distribution, Engineering, and Construction
W. Wittmeier	Division Manager, Apparatus Maintenance
M. Morin	Manager, Distribution Asset Maintenance
L. Kennedy	Vice President, Gannett Fleming Canada ULC.

## APPENDIX D – INTERVENERS OF RECORD

### **Interveners of Record**

Consumers' Association of Canada (Manitoba) Inc.

Green Action Centre

Manitoba Industrial Power Users Group

City of Winnipeg

Manitoba Keewatinowi Okimakanak

## APPENDIX E – INTERVENER WITNESSES

**The Consumers' Association of  
Canada (Manitoba) Inc. & The Green  
Action Centre**

P. Dunsky President, Dunsky Energy Consulting

**The Green Action Centre**

P. Chernick President, Resource Insight Inc.

**The Manitoba Industrial Power Users Group**

P. Bowman Consultant, InterGroup Consultants Ltd.

## APPENDIX F – PRESENTERS

D. Biggs (written only)	Private Citizen
C. Boitson (written only)	Private Citizen
D. Bossons	Canexus, Brandon Plant Manager
A. Ciekiewicz	Private Citizen
J. Corden (written only)	Private Citizen
B. Fleury (written only)	Private Citizen
D. Forsyth	Gerdau Steel, Regional Energy Manager
S. Giese (written only)	Private Citizen
J. J. Lewis (written only)	Private Citizen
G. Luby (written only)	Private Citizen
D. MacDuff (written only)	Private Citizen
J. Pacaud (written only)	Private Citizen
A. Reid (written only)	Private Citizen
P. Stokke	Retired Manitoba Hydro engineer
G. Tobin	Gerdau Steel, Vice President, Plant Manager
B. Turner	The Manitoba Industrial Power Users Group, Interim Chair, retired Brandon Plant Manager, Canexus
W. Yan	Canexus, Manager Operational Services, Calgary

## APPENDIX G - UNITS OF MEASUREMENT

**Demand/Power** represents the size of electricity load over a specific period of time.

expressed in:

- Watts (W)
- Kilo-watts (kW) - 1,000 watts
- Mega-watts (MW) - one million watts
- Giga-watts (GW) - one billion watts

**Energy** represents the amount of electricity provided to customers to do work or create heat, light, or sound. It is typically expressed as:

- Kilo-watt hours (kWh) - 1,000 watt hours
- Mega-watt hours (MWh) - 1,000 kilo-watt hours
- Giga-watt hours (GWh) - one million kilo-watt hours

**Voltage** represents the electric potential between two points expressed in:

- Volts
- Kilo-volts (kV) – 1,000 volts

**Water Flow** represents the rate at which water enters or leaves a system, expressed in:

- Cubic Meters per Second (m<sup>3</sup>/s)