

1 Application for a further 7.9 percent increase to all
2 components of rates to every customer class to be
3 effective April 1st, 2018.

4 This oral public hearing will be
5 conducted in accordance with the provisions of the
6 Crown Corporations Governance and Accountability Act,
7 the Public Utilities Board Act, and the Board's rules
8 of practice and procedure. It is pursuant to the
9 legislation that the Board's mandate is to set just
10 and reasonable rates that are in the public interest.

11 The Board has, quote,
12 "two concerns when dealing with a
13 rate application: The interests of
14 the Utility's ratepayers and the
15 financial health of the Utility,
16 together and in the broadest
17 interpretation, these interest
18 represent the general public
19 interest," closed quote,
20 as set out by the Manitoba Court of
21 Appeal.

22 In setting just and reasonable rates,
23 this hearing panel only considers the totality of the
24 evidence that is adduced on the record of this
25 proceeding, which includes the written and oral

Affordability

- Manitoba Hydro knows this rate increase will have a serious impact on its ratepayers who experience energy poverty, including many of our Indigenous customers
- This is an issue that requires many parties working together to find meaningful solutions
- Today's reality is that we have a choice between rate increases today or even larger rate increases in the future – that is why we need to get this right.

1 it will simply not work. The old plans have clearly
2 already failed. We cannot put this off any longer.
3 Action to address today's immediate situation is
4 required if we are to protect all stakeholders' long
5 term best interests.

6 Slide 5. We certainly recognize that
7 the rate increases we've asked for and the future rate
8 increases that are forecasted as part of our new
9 financial plan will not be popular, nor without
10 consequence. We are sensitive to concerns that
11 justifiably exist about the negative impacts on our
12 low-income indigenous electric heat and heavy
13 industrial customers. We are not asking for any more
14 than we think is necessary.

15 As you will understand, under our
16 legislative mandate none of us have corporate or
17 printed personal financial motivation or incentive for
18 seeking higher rates. We're solely motivated to act
19 in the interests of the Corporation and its
20 stakeholders. We have a duty to maintain Manitoba
21 Hydro's financial security and to do what is in all of
22 our int -- customers' best interests over the long
23 run. Our job is to run sound, financially sustainable
24 utility.

25 Questions of income and energy poverty

1 and economic competitiveness are certainly important
2 and ones we have considered to the degree we can. But
3 these are really issues of broad public policy and
4 cannot easily be resolved through a rate-setting
5 process. The responsibilities and tools for such
6 matters do not rest with Manitoba Hydro or this Public
7 Utilities Board.

8 Manitoba Hydro has always worked and
9 will continue to work with all stakeholders on these
10 kinds of issues, and will seek to play a positive role
11 in solutions that improve the economic conditions for
12 all Manitobans. But income adequacy and economic
13 development issues are mostly beyond Manitoba Hydro's
14 mandate or control. We cannot and should need not use
15 this rate-setting hearing to do the work of developing
16 and implementing public social policies. We are not
17 well-equipped to handle these issues and the potential
18 consequence of trying to do so is compromising both
19 the financial integrity of the utility and ultimately
20 making decisions that result in the transfer of costs
21 from some groups of customers to other customers.

22 I believe these issues are best left to
23 government, who are responsible for establishing the
24 appropriate policy framework and directives for both
25 Manitoba Hydro and this board to follow.

participants) by October 31, 2015. The Terms of Reference should explain and include items in scope as well as items specifically out of scope. If Terms of Reference cannot be agreed upon between Manitoba Hydro and participating stakeholders, the Board is prepared to receive submissions from the parties and adjudicate the appropriate scoping. The goal of the process should be to develop a program for implementation within one year from the approval of the Terms of Reference.

The Board is prepared to entertain submissions for participant funding to be charged to Manitoba Hydro in appropriate cases and in accordance with the Board's Rules of Practice and Procedure.

Upon completion of the collaborative process the Board will evaluate the options presented and decide on their implementation.

The Board has been asked to consider establishing a bill assistance program before, notably in Order 116/08, in which the Board required Manitoba Hydro to propose such a program for approval. In Order 116/08, the Board concluded that it has jurisdiction to order the implementation of a bill affordability program. This remains the Board's view.

However, the Board notes that at this time, it is not ordering such a program to be established and the collaborative process should not be limited to the consideration of special lower income rates. From a policy perspective, there may well be better solutions that have not been proposed to date. Furthermore, the optimal solution may well involve a portfolio of measures rather than a single measure. However, the idea of lower income rates should not be discarded upfront due to jurisdictional concerns.

The Board interprets section 39(1) of *The Manitoba Hydro Act* to require the aggregate price of power realized by Manitoba Hydro to be such as to achieve full cost recovery, subject to the requirement that such rates must be just and reasonable. This is illustrated by several examples:

- The power from historical generating stations is currently being sold for significantly more than the actual cost to generate, while power from new

generating stations is sold for significantly less than the cost to generate. Rates are set based on Manitoba Hydro's aggregate revenue requirement, not the cost attributable to individual stations.

- While Manitoba Hydro exports some power (primarily firm power) at prices higher than the average cost to generate, it also sells opportunity power for less than the average cost to generate, attributing no fixed costs to such power.
- Certain classes of customers, such as existing Curtailable Rate Program customers, achieve benefits not available to other customer classes or customers in the same class.

The Board does not read the legislative requirement for "postage stamp" rates to prohibit the creation of a lower income customer class, provided that no geographic limitations are imposed on such a class. Similarly, while subsection 43(3) prevents the commingling of government funds with Manitoba Hydro funds, it does not prohibit the creation of a rate class that pays less than the average cost to serve such customers.

The Board notes that while Manitoba Hydro is regulated on a cost of service basis, section 26(4) of *The Crown Corporations Public Review and Accountability Act* specifically authorizes the Board to consider "any compelling policy considerations that the Board considers relevant to the matter." In that respect, the Board's jurisdiction is similarly broad as that of the Ontario Energy Board pursuant to *The Ontario Energy Board Act, 1998*. Subsection 26(3) of *The Crown Corporations Public Review and Accountability Act* further stipulates that *The Public Utilities Board Act* applies with any necessary changes to the Board's rate-setting mandate. As such, rates are not only required to meet the requirements of subsection 39(1) of *The Manitoba Hydro Act* but must also be "just and reasonable." In the Board's view, affordability is a factor to consider when setting just and reasonable rates.

As such, it is the Board's intention to evaluate any future proposals for bill assistance programs from a comprehensive policy perspective rather than through the lens of

jurisdictional constraints, provided that such proposals fall within the legislative framework set by *The Manitoba Hydro Act*, *The Crown Corporations Public Review and Accountability Act*, and *The Public Utilities Board Act*.

Domestic revenue adjustment

Executive summary

Interim findings – Aug 9

Generating additional revenue through requesting and receiving rate increases is one of the key tools at MH's disposal to strengthen its financial position

- The ability to receive necessary rate increases from the regulator is a key component of self-sustainment in rating agencies' evaluations of Manitoba's provincial rating

Expected revenue at current rate levels is insufficient to cover costs in coming years

- Increases in finance and depreciation expense related to large CapEx projects entering into service are likely to widen this gap

Manitoba Hydro's rates are the lowest in Canada across all rate classes, leaving headroom to raise rates

- MH residential customers pay a smaller share (1.4%) of disposable income than the Canadian average (1.8%)
- Small and medium general service customers also enjoy low rates and are largely captive customers within Manitoba

Based on internal and external benchmarks, we expect a feasible cumulative rate increase of up to ~35% over 5 years

However, rate increases are likely to impact some segments disproportionately, and impacts could be politically sensitive

- Low income and remote First Nations customers more sensitive to rate increases
- Several large industrial customers in low margin industries have been impacted by recent commodity declines

Differentiated rate increases are one tool that can be used to mitigate the impact of rate increases for certain groups

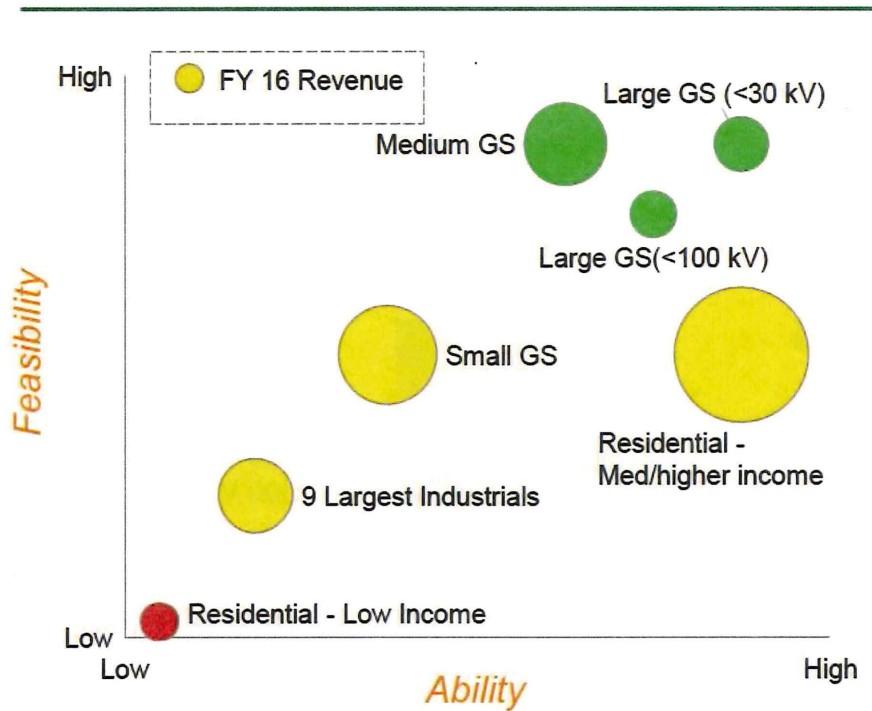
- Other provinces have implemented low income programs and economic development rates that offer different rates to consumers below poverty line and large employers in Province

MH's current policy on rate differentiation focuses entirely on costs to serve and not cross-subsidies between rate classes. Implementing differentiation on basis other than cost would require policy direction from Province for PUB and MH

- If differentiation pursued, key question of how to implement: within MH (e.g. via low income programs) or external to MH (via other Provincial programs)

MH to consider customer financial constraints and feasibility of implementing differentiated rates across segments

Assessment of relative ability to raise rates



Residential, small and medium sized businesses can sustain increases

Segment	Ability	Feasibility	Grade
Residential Low Income	<ul style="list-style-type: none"> Limited incomes Bills a high % of household spending 	<ul style="list-style-type: none"> Difficult to raise rates on vulnerable population Uniform rates law poses challenge 	Red
Residential Med./high income	<ul style="list-style-type: none"> Electric bills low as % of total spending Total utility bills very low 	<ul style="list-style-type: none"> Headroom under affordability law Weaker intervener for non-low income pop. 	Yellow
Small GS	<ul style="list-style-type: none"> Elec low % of costs Captive consumers 	<ul style="list-style-type: none"> Weak interveners Poor optics of increase for SMEs 	Yellow
Medium GS	<ul style="list-style-type: none"> Elec low % of costs Captive consumers – many gov't customers 	<ul style="list-style-type: none"> Weak interveners 	Green
Large GS (<30 kV)	<ul style="list-style-type: none"> Captive consumers Diverse industry mix 	<ul style="list-style-type: none"> Pay lowest cost coverage ratio among segments 	Green
Large GS (<100 kV)	<ul style="list-style-type: none"> Captive consumers Diverse industry mix 	<ul style="list-style-type: none"> Stronger intervener presence 	Green
Large Industrial	<ul style="list-style-type: none"> Elec. high % of costs Hit by commodity swings 	<ul style="list-style-type: none"> Higher risk of shutdown/job loss 	Yellow

- | | |
|--|--|
| <p>Factors impacting ability</p> <ul style="list-style-type: none"> Electric bill as % of disposable income Electricity share of company op. costs Macroeconomic environment Industry-specific trends Ability to relocate operations | <p>Factors impacting feasibility</p> <ul style="list-style-type: none"> Utility legislation (e.g. uniform rates) Political considerations Economic development objectives PUB precedent Intervener pressures |
|--|--|

jurisdictions and affordable energy. Either can exist without the other. Historically, Manitoba Hydro and the Province have blurred the distinction by using the latter expression to describe the former condition, but more recently “affordable energy” has become the name for auxiliary services to lower-income customers. GRA applications still present customer cost impacts in monetary terms as a \$x.xx/month or \$y.yy/year bill increase for a fictitious average or typical household without consideration of a ratepayer’s ability to pay bills as reflected qualitatively in the Bill Affordability Working Group’s definition of energy poverty and quantitatively in terms of the size of the ratio of household energy bills to household income. One hoped-for outcome of the bill affordability project is that future GRAs will provide data on customer bill affordability and the affordability impacts of rate increases.

Unaffordable energy has obvious negative implications for individual and family well-being in terms of comfort, health, disruptions of education, work and continuing dwelling occupancy. These in turn affect Manitoba’s health, education, employment and economic outcomes and social welfare burden.²

A fundamental policy question is whether energy affordability should have any bearing on rate-setting and if so how? A traditional response is that home energy fuels are commodities to be supplied to each and every customer at a common price without regard to ability to pay, like gasoline at the pump. Another response is to accept the common price rate perspective and use the negative impacts of increases on high-energy-burden households, in a regulated context, as grounds for containing or lowering the price for customers at all income levels even though the impacts may be negligible for high-income, low-burden households. Such an approach creates a trade-off between affordable energy burdens for low-income households and raising sufficient revenues for the financial well-being of Manitoba Hydro, which has implications for longer-term risks, costs and rate shocks. The trade-off approach runs the risk of either facilitating unaffordable energy burdens by rejecting rate discount solutions or risking the financial health of Manitoba Hydro by low-balling Hydro’s revenue requirement or both. A third response, which we considered in the Bill Affordability Working Group, is to design alternative rates or rate discounts to make bills more affordable for income-eligible customers.

Green Action Centre has long argued that this third response and other bill mitigation strategies for low-income, high-energy-burden customers are consistent with and even implied by Manitoba Hydro’s legislated mandate as regulated by the Public Utilities Board.

The Manitoba Hydro Act prescribes a mandate for Hydro, “*to provide for the continuance of a supply of power adequate for the needs of the province, and to engage in and to promote economy and efficiency in the development, generation, transmission, distribution, supply and end-use of power....*” Green Action Centre argues that affordability solutions are critical to providing power efficiently and economically to Manitobans. The argument has several links.

1. **Least-cost planning requires an aggressive DSM program.** The PUB’s NFAT report observed that Manitoba Hydro’s 15 year DSM plan would achieve over 80% of the capacity and 85% of the dependable energy that Conawapa would add, but at 8% of the cost. Hence the PUB recommended

² See Roger Colton’s April 24, 2015 Direct Testimony Part 3 at http://pub.gov.mb.ca/exhibits/mh_gra_2015/gac-3-1.pdf and Appendix C at http://pub.gov.mb.ca/exhibits/mh_gra_2015/gac-3-2.pdf.

that electricity DSM be targeted at 1.5% of domestic load (a target also adopted by both the previous provincial government's *Climate Change and Green Economy Action Plan* and the current government's Bill 19, *The Efficiency Manitoba Act*).

2. **More aggressive levels of DSM require enhancements beyond the usual programing discounts and rebates, including conservation rates.** Manitoba Hydro identified Codes & Standards, Fuel Choice, Conservation Rates, and Load Displacement (e.g. through solar on your roof) as enhancements needed to achieve higher levels of DSM.
3. **Conservation rates can have a disproportionate impact on high-consuming, lower-income customers.** Conservation rates are designed to make high usage more expensive and low-usage less expensive. They thus would have a favourable impact on low-income customers with lower-than-average usage but, unless designed to mitigate the impacts, would add to the burden of high-consuming low-income customers, in particular those with electric resistance heating systems.
4. **Hence the PUB, guided by a public interest interpretation of "just and reasonable rates," has repeatedly asked MH (a) to implement conservation rates and (b) to implement bill mitigation for low-income customers, especially those with electric heat.** MH did introduce a minimal-inversion conservation rate in 2010, but without special measures to mitigate bills for electric heat customers. For that reason, in 2011 the PUB turned the inclined conservation rate back into a flat rate.
5. **In addition, steadily rising rates required by Manitoba Hydro's capital investment program will compound low-income energy burdens.** Order 73/15 notes: "In light of above-inflation rate increases projected by Manitoba Hydro for the next 17 years, the affordability of electricity bills to lower-income ratepayers will become an ever greater concern" (25). Further the PUB finds that subsection 43(3) of The Manitoba Hydro Act "does not prohibit the creation of a rate class that pays less than the average cost to serve such customers," that "affordability is a factor to consider when setting just and reasonable rates," and that "it is the Board's intention to evaluate any future proposals for bill assistance programs from a comprehensive policy perspective rather than through the lens of jurisdictional constraints..." (29-30).
6. **Hence we conclude:**
 - Without a satisfactory bill affordability program, the PUB has been unwilling to approve conservation rates that contribute to the highest levels of energy savings.
 - Without the highest levels of savings, Manitoba's load growth will necessitate the construction of additional expensive generation (Conawapa?) sooner rather than later.
 - If expensive new generation is required, all rates will rise even more than is currently forecast to pay for it and the impacts on lower-income customers (and all others) will increase even further.
 - The current and future environment of rising rates intensifies the need for an affordability program able to achieve just and reasonable rates.

Thus the PUB has indicated in general terms the test for an acceptable suite of affordability strategies – do they together solve the affordability problem for an expected growing number of lower-income ratepayers in a just and reasonable way? Let's call this the "economic and efficient supply and end-use of power" business case or, for short, ***the Manitoba Hydro core mandate business case*** for making energy bills affordable.

MANITOBA
THE PUBLIC UTILITIES BOARD ACT
THE MANITOBA HYDRO ACT
THE CROWN CORPORATIONS PUBLIC
REVIEW AND ACCOUNTABILITY ACT

Board Order 7/03

February 3, 2003

Before: G.D. Forrest, Chair
R. A. Mayer, Q.C., Vice Chair
Dr. K. AveryKinew, Member

A FILING BY MANITOBA HYDRO TO PROVIDE AN INFORMATION
UPDATE REGARDING FINANCIAL RESULTS, FORECASTS,
METHODOLOGIES, PROCESSES, AND OTHER MATTERS
RELATING TO SALES RATES CHARGED BY MANITOBA HYDRO

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- (b) Net export revenues are allocated on the basis of generation and transmission costs only in accordance with Order 51/96.
- (c) Transmission costs, including Dorsey, are classified as 100% demand.
- (d) Transmission and ancillary services costs are allocated on the basis of the 2 CP.
- (e) Generation demand costs are allocated on the basis of the 2 CP.
- (:t) Energy related costs of generation are allocated on the basis of class annual energy (Non-Coincident Peak).
- (g) HVDC costs (other than Dorsey) are functionalized as generation.
- (h) Only transmission facilities recognized for inclusion in Hydro's Transmission Tariff are included in the transmission function.
- (i) The creation of a Firm Export Class. This class should include long-term firm export sales and one-year firm export sales, with costs allocated on a fully embedded basis using a 2 CP allocation as employed for general service customers; and
- G) The creation of an Opportunity Export Class. This class should allocate costs using a similar basis to the domestic interruptible GSL customer class.

21.12 Rate Design

21.12.1 General

Although Hydro did not apply for any changes in rate design, the Board and the Intervenors considered the issues of rate design to be of considerable importance in this status update filing. As part of the Board's review as to whether the rates charged remain just and reasonable, the Board not only examined the overall revenue requirement, but also the cost of service methodology, and the rate structure itself.

The Board is disappointed with the inaction of Hydro to comply with the spirit of Order 51/96 with regard to undertaking a study and reporting to the Board by no later than the next GRA to develop a comprehensive rate design policy. More than six years have elapsed since that directive was issued, and Hydro stated at this hearing that it has no intention of preparing such a

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study in the near future. Such inaction is a disservice to the many Hydro customers, particularly those who might benefit from such a comprehensive rate design policy.

Having reviewed rate design issues as part of this status update, the Board believes that certain rates require adjustment.

21.12.2 Rates

After examining the overall revenue requirement of Hydro, the Board finds that there is no need for an overall rate adjustment for all customer classes. However, the Board is of the view that rates for certain customer classes should be adjusted.

Much time was spent at the hearing reviewing the Cost of Service Study. A revenue to cost ratio of 1.0 indicates that costs allocated to a customer class equal the revenues earned from that customer class. While unity may be the desired goal, Order 51/96 sets a zone of reasonableness target at 0.95 to 1.05 for revenue to cost coverage ratios. The Board is of the view that this zone of reasonableness of 0.95 to 1.05 continues to be an appropriate target for rate setting purposes.

As demonstrated in the table in Section 17.8.5, certain customer classes and subclasses have consistently remained outside of this zone of reasonableness for long periods of time, in some cases more than 10 years. Therefore, the Board is convinced that directional rate adjustments are appropriate now to address these inequities. Accordingly, the Board will order a 1% decrease in rates for GSS customers and a 2% decrease in rates for GSL customers in subclasses greater than 30 kV. Such rate decreases are to be effective April 1, 2003. The Board will direct Hydro to file new rate schedules for Board approval reflecting these rate adjustments.

The Board will also eliminate the winter ratchet over the next two years, which will reduce revenues to Hydro by approximately \$3 to 4 million. The Board understands that this change will likely bring the GSM class and GSL subclass less than 30 kV closer to unity. Therefore, no further rate adjustment will be ordered for the GSM or GSL less than 30 kV subclass at this time.

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The Board is confident that these rate adjustments will not impact the overall financial strength of Hydro, or its ability to achieve its financial targets.

21.12.3 Inverted Rates and Rate Structure

The declining block structure is largely the result of the historical circumstances of electrification throughout the Province and the construction of major generating plants on the Northern rivers. While the Board is not prepared at this time to support an inverted rate structure, the Board accepts that certain concepts of an inverted rate structure for residential customers may have merit for consideration in the future. The Board compliments both Mr. Lazar and Hydro for preparing thoughtful evidence on this matter and raising interesting new approaches. The Board believes that more study is required before an inverted rate structure can be considered for any customer class. The Board will direct Hydro to prepare a study on the merits of an inverted rate structure across all rate classes including transition and implementation issues. As part of this study, Hydro should evaluate the impact of an inverted rate structure on electric heat customers and residential customers with higher than average loads. This study should be filed with the Board by no later than December 31, 2003.

While the issue of inverted rates was largely confined to residential rates, the Board investigated demand and energy charges levied on larger General Service customers as part of the overall rate design. In the Board's opinion, some of Hydro's demand charges are in the mid to high range as compared to other jurisdictions in Canada, while the energy charges are amongst the lowest in Canada.

The Board is of the belief a lower demand charge and higher energy charge may serve as an impetus to further conservation of electricity since the users may become more aware of their consumption and hence, may attempt to minimize usage. Accordingly, the Board will direct Hydro to prepare a study on the impact of decreasing the demand charge and increasing the tail

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block of the energy charge and include recommendations and a timetable for possible implementation. The study should be filed with the Board by no later than December 31, 2003.

21.12.4 Winter Ratchet and Limited Use Billing Demand

In the 1996 GRA, Hydro sought to eliminate the winter ratchet with the implementation of seasonal rates. However, with little actual evidence and no customer consultation, the Board did not support the implementation of seasonal rates, and directed further study by Hydro. Since then, the LUBD program was introduced to alleviate some irritants posed by the winter ratchet. The Board is of the view that winter ratchet continues to pose problems for customers unable to benefit from the LUBD program.

The traditional rationale for the winter ratchet is that additional winter capacity to meet peak demand requires significant and costly capital expansions. The winter ratchet is designed to recover capacity costs incurred to meet this peak demand. The current system load runs nearly at capacity throughout the year as any additional capacity beyond domestic use is sold on the export market. Therefore, the Board finds that the use of the winter ratchet is not valid in the current circumstances. Accordingly, the Board will order Hydro to phase out the winter ratchet in two steps. On April 1, 2003, the winter ratchet is to be decreased to 70% of the maximum previous winter demand measured in December 2002, and January and February 2003. On April 1, 2004, the winter ratchet is to be eliminated. The Board will order Hydro to file the resulting rate schedules, for Board approval, prior to the above dates.

The Board will order the LUBD be eliminated on April 1, 2004. All LUBD customers will then revert to the billing rate of their appropriate class. Until April 1, 2004 the LUBD rate option will be considered a temporary rate offering. The Board also expects Hydro to inform all LUBD customers of this decision and its implication. The Board will grant final approval of Order 118/02 which extended the LUBD rate option on an interim ex parte basis.

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21.12.5 Time of Use Rates

In Order 51/96 the Board directed Hydro to prepare a comprehensive rate policy including time of use rates which remains outstanding. The Board heard testimony that Hydro continues to install specialized metering equipment for certain general service customers with time of use capability. Accordingly, the Board considers it important to proceed with the development of time of use rates and directs Hydro to prepare a study, including a timetable and a plan for implementation, for a time of use rate program. Such study should also consider time of use rates for general service classes based on a seasonal, weekly, daily and hourly basis, including an evaluation of each alternative. The study should be filed with the Board by no later than December 31, 2003.

21.12.6 Diesel Rates

Any determination of whether rates are just and reasonable must include an examination of rates charged to those customers serviced by Hydro's diesel generation. The Board cannot make a determination on which customer should be included in a specific rate class of government versus non-government or whether a customer has sufficient resources to pay the bill, or funding formulas are appropriate.

During the hearing, Hydro stated it would be filing a separate application for diesel rates in December 2002. Such an application has now been filed and the Board will consider diesel rate issues at a future public hearing to review this filing.

21.12.7 Curtailable Rates

Hydro applied for a new CRP which included only minor variations from the existing curtailable service program. The rationale for curtailments has changed and, as stated by Hydro witnesses, the number of curtailments will likely decrease sharply. However, the Board is reasonably satisfied with the rationale used in the calculation of the Reference Discount.

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Hydro has applied for the CRP to be a temporary program with an expiry date of November 30, 2003, given the unknown impact of MISO's requirement and the value of reserves. In the interest of rate stability, the Board will approve the CRP on a permanent basis.

21.12.8 Surplus Energy Program and Interim Ex Parte Orders

The Board will approve, on a final basis, all interim ex parte Orders relating to the DFH, ISE, SEP and CSP programs as attached in Appendix E.

21.12.9 Demand Side Management - Energy Conservation

The Board acknowledges that Hydro's initiatives on DSM since 1989 have achieved approximately 50% of targets set for 2012 of 356 MW and 1,272 GW.h. However, it is the Board's view the new DSM programs may not be effective for achieving DSM targets for 2012.

In this period of potential generation expansion the Board is concerned that Hydro may reduce efforts for DSM. It would appear that other utilities are more proactive in pursuing energy conservation measures. A program target for energy use reduction of 3% does not seem to be sufficiently aggressive.

The Board is of the view that, at present, Hydro provides few incentives for either residential or general service customer energy conservation. Financial incentives such as a movement toward lower demand and higher energy charges could encourage more efficient energy usage. Greater energy conservation within Manitoba opens the door for increased power exports with good financial returns. The Board views this as a positive process, particularly if the exported energy displaces coal or other greenhouse gas producing generation within other jurisdictions.

Therefore, the Board directs Hydro to re-examine the current level of DSM programs and pricing strategies to encourage conservation and develop a program with more aggressive targets to be filed with the Board by December 31, 2003.

MANITOBA

THE PUBLIC UTILITIES BOARD ACT

THE MANITOBA HYDRO ACT

**THE CROWN CORPORATIONS PUBLIC
REVIEW AND ACCOUNTABILITY ACT**

Board Order 90/08

June 30, 2008

Before: Graham Lane CA, Chair
Robert Mayer Q.C., Vice-Chair
Susan Proven, P.H.Ec., Member

**ELECTRICITY RATES FOR MANITOBA HYDRO
TO TAKE EFFECT JULY 1, 2008**

June 30, 2008
Order No. 90/08
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It Is Therefore Ordered That:

1. An across-the-board rate increase of 5% for all Manitoba Hydro domestic customers, except for Area and Roadway Lighting customers effective July 1, 2008 BE AND IS HEREBY APPROVED. Rates for Area and Roadway Lighting customers will not change.
2. An increase in the Basic Monthly Charge for all customers of 5%, as of both July 1, 2008 and April 1, 2009 BE AND IS HEREBY APPROVED;
3. Order 20/07 which established an interim rate increase of 2.25% on March 1, 2007 BE AND IS HEREBY APPROVED;
4. The modest introduction of inverted rates for the "residential" class (SGS) BE AND IS HEREBY APPROVED;
5. Extension of the Surplus Energy Program (SEP) to October 31, 2008 BE AND IS HEREBY APPROVED;
6. Modifications to the Curtailable Rate Program BE AND IS HEREBY APPROVED;
7. Changes to the Limited Use of Billing Demand Rate, as per Order 27/05, BE AND IS HEREBY APPROVED;
8. Interim Orders per Schedule "A" concerning the Surplus Energy Program BE AND ARE HEREBY APPROVED; and
9. Interim Orders per Schedule "B" related to the Curtailable Rate Program BE AND ARE HEREBY APPROVED.

MANITOBA
THE PUBLIC UTILITIES BOARD ACT
THE MANITOBA HYDRO ACT
THE CROWN CORPORATIONS PUBLIC
REVIEW AND ACCOUNTABILITY ACT

Edited for format and typographical errors only
August 25, 2008
Further amended September 4, 2008

Board Order 116/08

July 29, 2008

Before: Graham Lane CA, Chair
 Robert Mayer Q.C., Vice-Chair
 Susan Proven, P.H.Ec., Member

AN ORDER SETTING OUT FURTHER DIRECTIONS, RATIONALE AND
BACKGROUND FOR OR RELATED TO THE DECISIONS IN BOARD
ORDER 90/08 WITH RESPECT TO AN APPLICATION BY MANITOBA
HYDRO FOR INCREASED RATES AND FOR RELATED MATTERS

July 29, 2008
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14.0 Rate Design

14.0 Rate Design

14.1 Inverted Rates

In Order 117/06, the Board reiterated its directive to MH to move towards the elimination of declining block rates. MH has, with some notable exceptions, moved toward this objective.

MH introduced, on a very limited scale, an inverted rate structure for the residential class, where the tale block rate is to be greater than the first block by a modest 1% differential. MH has suggested a continued future GRA movement in the direction of marginal cost, through future gradual increases in the tale block closer to the marginal cost of energy (now 7.01¢/kW.h.).

MH proposed that the first block of energy consumption be set at 900 kW.h per month, regardless of the season or the energy source for residential space heating. MH did not propose any changes to the basic monthly charge block rate.

MH acknowledged that the future evolution of the inverted residential rate should take into consideration the needs and constraints of customers who currently use electricity as a primary heating fuel, while continuing to encourage natural gas as the appropriate fuel choice in areas of the province served by natural gas. MH indicated that to address heating loads, there are essentially three approaches that could be taken to provide for meeting these needs within a lower cost first block.

The more complex mechanism would be to design a separate residential rate for electric heating loads. MH stated that this is the method preferred by Mr. Chernick, the witness for RCM/TREE, and would provide existing electricity heating customers an allowance of an additional 6,400 GW.h/ year in the initial price block during the heating season. This would result in an increase in the

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14.0 Rate Design

percentage of heating energy served at the initial rate block of roughly 54% that non-electric heating customers receive.

MH cautioned that such a specific rate targeted at electric heat customers may create an incentive for customers to report electric heat capability though staying with natural gas, and may create increased administrative burden and cost to manage/police.

MH offered two alternatives that may be simpler to administer, and which may not specifically target all electric heat customers or exclude customers using other sources of heating. MH noted the simplest method would be to differentiate the size of the first block by season, with a larger first block in winter, as is done in Ontario. The other is to provide a larger first block in winter only in areas not served by natural gas (although this may be complicated by the uniform rates legislation). MH concluded that further review of the alternatives were required.

Given the significance of residential electric heat in Manitoba (natural gas distribution is limited), as well as higher degree-days compared to Ontario, the Board would consider it appropriate to set a winter "first block size" higher than that now set in Ontario.

14.2 General Service Small and Medium Classes (GSS and GSM)

MH is moving to consolidate the GSS and GSM rate structures, supported by previous Board direction. Both classes are served from MH-owned transformation and utilize similar voltages.

The following rate table illustrates the proposed changes as initially proposed by MH (1) and the revised rates (2) as per Order 90/08 as follows:

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14.0 Rate Design

Mr. Chernick noted that in jurisdictions where TOU rates have been implemented a parallel billing system was utilized, where a customer would, along with the existing bill, receive a bill as if they were on time of use rates. This allowed the customer to gauge the impact the TOU system had on their consumption and billing, and allow them time to make changes in energy use behaviour.

14.13 Board Findings

Inverted Rates

The Board encourages MH to develop plans to employ an inverted rate structure for all customer classes, initially to be designed on a revenue neutral (to MH) basis and to send a "price signal" for every kilowatt hour of energy used, to promote conservation.

MH suggested that too large an inversion would be prejudicial to all-electric customers. However, the nominal inversion of the Residential Rate approved by Order 90/08 can be expected to cost an all-electric customer approximately \$45/year.

In comparison, a natural gas space-heated home, with a conventional furnace, can expect to pay hundreds of dollars more for space heating this upcoming winter as compared to a similarly adequately-insulated, electrically-heated home.

The Board agrees with the principle of inverted rates but notes, based on demand studies presented, that residential customers, in particular, do not significantly change their consumption patterns upon a price increase.

The Board shares the concerns expressed by all parties on the impact that sharply inverted rates would have on both low-income customers and all all-electric heat-load customers, who are unlikely to diminish consumption with

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14.0 Rate Design

increases in electricity prices. So, if the inversion were to be sharper, to promote conservation, this could be expected to result in a relatively high proportion of consumption being exposed to the higher second-block rate.

The Board notes that (with respect to the identified problem which electric heat customers could incur with sharply-inverted rates) there are methods to address what could be considered the inequity that could result from such sharply-inverted rates. The Board is aware of the complexities that MH will face in addressing this concern, but it warrants a fulsome analysis.

In particular, the Board is interested in MH providing additional information on seasonal variations in the size of the first electric block for electric heat-load customers. The Board agrees with MH that the size of the first rate block for Manitoba, as compared to the one utilized in Ontario, will likely have to be higher to take into consideration the greater heating load factor due to Manitoba's colder winters. The Board will direct MH to file a plan by January 15, 2009 outlining the pros and cons of the various potential inverted rate strategies under consideration, and the MH-proposed course of action to address this issue.

The Board is quite concerned with the impact that sharply-inverted rates will have on low-income customers. The Board shares the concerns raised by the Coalition that barriers exist that preclude low-income customers from taking actions to reduce electricity consumption. Given that the proposal currently under consideration only reflects a nominal differential between the first and second block, the implementation of inverted rates should not be delayed, and the Board will address the problems of higher energy costs for low-income households in a broader way.

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14.0 Rate Design

Nonetheless, the Board will expect MH to put forward more comprehensive plans to shield low-income customers from the impacts that will result from higher electricity rates in a sharply-inverted rate scheme.

With respect to the level of the basic monthly charge, the Board will direct MH to increase the Basic Monthly Charge by 5% on July 1, 2008 and a further 5% on April 1, 2009, by way of Order 90/08. The increases will result in BMCs that will still be well below a representation of MH's actual customer-based costs.

MH is to continue with the process of the GSS and GSM customer class consolidation, and provide the Board with a proposal by June 30, 2009 for a stepped-up program and a timeframe for completion.

Time of Use (TOU) Rates should be fast-tracked for customer classes where the required meter technology is currently installed. TOU rates assist in defining marginal cost, and therefore, should be included in any new proposed energy-intensive industry rate for consideration by the Board.

The Board will direct MH to provide a planned implementation strategy outline by September 30, 2008 for TOU rates, as appropriate to the classes with required metering technology already in place. Alternate rate strategies should be included for consideration at the upcoming Energy Intensive Industry rate hearing.

Energy and demand balancing is a policy issue that speaks to the fairness of rates to individual customers within a class. The argument for reducing demand charges, and increasing energy charges, is that it does send an improved price signal and thus promotes conservation. As the change occurs, Demand and Energy Cost recoveries will be brought more into line with cost causation principles. The Board will therefore direct MH to plan to re-balance demand and

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14.0 Rate Design

energy charges on a revenue-neutral basis, and submit a 5-year transition plan for the Board's approval at the earlier of December 31, 2009 or the next GRA.

Diesel Zone: MH has indicated it will apply to the Board for finalization of the 4 interim Orders related to Diesel Rates. In such an application, the Board will also direct that MH provide reports on:

- a) the fairness of the rate approach with respect to non-senior government accounts (the Board is concerned that the rates restrict the economic development prospects for the communities and drive up service and commodity costs);
- b) the efficacy of the current rate schedule for non-government accounts (data on aged accounts receivable, delinquency and bad debts together with the collection policies in place for the four communities will be required);
- c) the effects of the current approach to rates and consumption restrictions on the four communities, a detailed review of consumption levels and collection practice from the former Diesel communities that have been connected to the Grid which will serve as a comparison; and
- d) MH to report to the Board by September 1, 2008, as to the balances and status of the diesel zone accounts; to ascertain whether existing interim rates are fully recovering operational costs.

Area and Roadway Lighting (ARL)

The Board agreed with the position advanced by the City of Winnipeg and, by Order 90/08, did not approve any rate increase for the Area and Roadway Lighting class for either July 1, 2008 or April 1, 2009.

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19.0 Board Directives

20. MH to provide and file with the Board by January 15, 2009 a revamped Marginal Cost (MC)-COSS analysis, one reflecting needed refinements to generation, transmission and distribution marginal costs. This should include specific demonstrations of how alternative MC adjustments could be applied to an embedded COSS. Among the scenarios to be explored, MH should consider the addition or blending of marginal costs to embedded costs prior to comparison to class revenues;
21. MH to file all appropriate data [e.g. SEP/ NEB/ MISO clearinghouse information and avoided cost information etc.] required for input to the marginal cost determinations for generation, transmission and distribution and to further define the key assumptions employed by MH in support of this process, with the Board [on a confidential basis if necessary] on or before September 30, 2008;
22. MH to provide a planned implementation strategy outline by September 30, 2008 for TOU Rates as appropriate to the classes with required metering technology already in place. Alternative rate strategies should be included for consideration at the upcoming Energy Intensive Industry rate hearing;
23. MH file a plan by January 15, 2009 outlining the pros and cons of the various potential inverted rate strategies under consideration, and the MH-proposed course of action to address this issue over the next five years;
24. MH to plan to re-balance demand and energy charges on a revenue-neutral basis, and submit a 5-year transition plan for the Board's approval at the earliest of June 30, 2009, or the next GRA;

MANITOBA

Board Order 5/12

THE PUBLIC UTILITIES BOARD ACT

THE MANITOBA HYDRO ACT

THE CROWN CORPORATIONS PUBLIC
REVIEW AND ACCOUNTABILITY ACT

January 17, 2012

Before: Graham Lane CA, Chairman
Robert Mayer Q.C., Vice-Chair

A FINAL ORDER WITH RESPECT TO MANITOBA HYDRO'S
APPLICATION FOR INCREASED 2010/11 AND 2011/12
RATES AND OTHER RELATED MATTERS

20.0.0 RATE DESIGN

In addition to various rate matters addressed in section 3.0.0 of this Order, there are other rate and rate design issues to be addressed.

20.1.0 INVERTED RATES

Board Order No. 116/08 directed MH to file a report on Inverted Rates (in particular dealing with electric heating customer impacts) by January 15, 2009. There has been no action by MH to date with respect to that directive. MH has acknowledged that a rate accommodation will be required for electric heating customers, but has not provided any specific proposals that would mitigate a significant inverted rate strategy.

Aside from the Residential class, where prior to the Board's interim April 1, 2011 rate Order, there was only a modestly higher second block rate, the only movement toward inverted rates and toward eliminating the rate discount for higher levels of consumption appears to lie in the multi-year freeze of demand charges. However, for GSS/GSM customers energy rate adjustments are still applied on an equal percentage basis to all energy blocks in the ongoing consolidation of GSS and GSM subclasses. There has been no indication of the elimination of declining block prices for these subclasses.

20.2.0 RATE REBALANCING

MH continues to hold the demand charge at constant levels and is seeking the entire approved class rate increase via the energy charge. This process may have a limit short of fully rebalancing rates, but MH has not defined it to date.

20.3.0 CLASS CONSOLIDATION

MH continues to move the GSS and GSM subclasses toward a common rate structure. Apparently this process will be completed, within a few years, on a revenue neutral basis.

20.12.0 BOARD FINDINGS

The Board notes that MH's responses on the various special rate issues remain outstanding and should receive more timely attention. The Board invites MH to provide all stakeholders (including the Board) with an overall strategy to co-ordinate the changing of rate structures for MH's various customer classes.

The Board requires MH to file preliminary reports (and status updates on):

- Inverted Rates, with a view to creating a significantly higher-priced second energy block, but providing an accommodation to electric heat customers, some of which do not have access to natural gas for heating;
- GSS and GSM Class consolidation with a view to defining the end-product and the specific timeframe for completion;
- Demand/Energy Rate Rebalancing with a view to defining the optimum balance and timeframe to achieve that balance through the allocation of Class Rate increases to the energy component;
- Time-of-Use Rates with a view to applying these in the near future to Top Consumers and industrial customers that already have the necessary metering capability;
- Limited-Use Demand billing with an update of the continued need for this rate in light of the elimination of the Winter Ratchet;

the Energy Intensive Industry Rate, with justification for either abandoning the rate proposal or providing an alternative on-peak rate scenario as directed in Board Order 112/09; and
- the Service Extension Policy, including a proposal for the Board's review and possible acceptance in accordance with Order 112/09.



P.O. Box 815 • Winnipeg Manitoba Canada • R3C 2P4
 Street Location for DELIVERY: 22nd floor- 360 Portage Avenue
 Telephone / N° de telephone : (204) 360-3946 • Fax/ N° de telecopieur : (204) 360-6147
 pjramage@hydro.mb.ca

February 5, 2016

Mr. K. Simonsen
 The Public Utilities Board
 400 - 330 Portage Avenue
 WINNIPEG, Manitoba
 R3C 0C4

Dear Mr. Simonsen:

RE: MANITOBA HYDRO COST OF SERVICE REVIEW

Manitoba Hydro filed materials to facilitate review of its Cost of Service Study ("COSS") methodology on December 4, 2015. On December 8, 2015, the Public Utilities Board ("PUB") directed Manitoba Hydro file additional materials, identified in the PUB's August 22, 2014 correspondence as Minimum Filing Requirements (MFRs), and requested Intervenor of past record provide comments regarding possible additional MFRs. Intervenor of past record, including the Consumers Association of Canada (Manitoba) and Winnipeg Harvest ("COALITION"), the City of Winnipeg ("COW") and the Manitoba Industrial Power Users Group ("MIPUG") each provided comments regarding additional MFRs. Manitoba Hydro filed materials in response to the PUB's direction regarding MFRs on December 18, 2015.

On January 22, 2016, the PUB distributed process directions regarding "Manitoba Hydro's Cost of Service Study Methodology Review Application and Rate Related Matters". The January 22, 2016 process directions included:

- A determination that in addition to Cost of Service matters ("COS"), the PUB would also be considering rate related matters raised in MIPUG's COS MFR submission including rate rebalancing, rate design matters and the review of terms and conditions, including service extension policies;
- Direction that Manitoba Hydro respond to COALITION and MIPUG proposed MFRs by February 5, 2016;
- Advice that the PUB had retained the law firm Hill Sokalski Walsh Olson to assist the PUB in understanding the views and position of General Service Small and Medium customers; and
- Advice that a "non-evidentiary Pre Hearing Conference" will be held Friday, February 12, 2016 with the expectation that 20 minute presentations will be made by Manitoba Hydro and Intervenor and that technical experts should be on hand to deal with issues related to the scope of the hearing.

Manitoba Hydro believes it useful to provide comments prior to the Pre Hearing Conference both with respect to the scope of the hearing and the current initiatives underway between Manitoba Hydro, the PUB and intervenors as a result of the direction provided in Order 73/15.

The Public Utilities Board
February 5, 2016
Page 5

of Net Export Revenues to domestic customer classes is a critical issue in this context. The cost allocation treatment with respect to those issues should be the critical focus of this review, and could be undertaken in a reasonable timeline in advance of the next GRA. The review of these matters would leverage the efforts undertaken by Manitoba Hydro and interested stakeholders in the COS stakeholder engagement in the fall of 2014.

Rate Design and Rate Rebalancing Matters

In its letter of January 22nd, the PUB indicated its interest in considering various rate design matters, such as the respective levels of Basic Monthly Charges, energy charges and demand charges, and the rate design considerations for Time-of-Use Rates for General Service Large customers and conservation rates for residential class customers.

In Order 73/15, the PUB directed Manitoba Hydro to lead a collaborative process to develop a bill affordability program harmonized with Manitoba Hydro's other programs supporting low income ratepayers. In addition, Manitoba Hydro has incorporated plans for developing a conservation rate design for residential customers, as part of its future PowerSmart programming initiatives. In December 2015, the Province of Manitoba announced "Manitoba's Climate Change and Green Economy Action Plan" which requires Manitoba Hydro to develop a conservation rate structure to be brought before the PUB in its next General Rate Application.

Manitoba Hydro is currently working on both above noted initiatives. With respect to residential conservation rates, Manitoba Hydro is currently retaining an expert to prepare analysis and alternative rate options for consideration. These alternative rate option scenarios would consider appropriate levels for the Basic Monthly Charge, the level and size of the first energy block, and the level and degree of inversion for the run-off block.

Manitoba Hydro expects to engage stakeholders in the discussion of these alternative rate options later in 2016, and prior to the finalization of its next GRA filing before the PUB. Given the potential intersection of issues with respect to customer bill affordability, Manitoba Hydro expects to take advantage of its current stakeholder engagement with parties on bill affordability programming and to have those parties provide input and feedback on the various rate design alternatives that may be prepared. Upon receipt of that stakeholder feedback, Manitoba Hydro would finalize its residential conservation rate design proposal and upon direction of the Manitoba Hydro-Electric Board, incorporate that proposal into its upcoming GRA.

Manitoba Hydro believes that this order of sequence is appropriate in light of past direction of the PUB (for bill affordability programming) and the current policy impetus to develop and introduce residential conservation rates to be examined by the PUB in the next General Rate Application.

With respect to Time-of-Use rate design for the General Service Large customers served at voltage levels greater than 30 kV, Manitoba Hydro is of the view that such a proposal could be addressed at the next GRA. Should the PUB wish to examine the TOU concept in this process, it should only do so if there is sufficient time and resources available in a manner that would not detract or negatively impact the review of the COSS.

The Public Utilities Board
 February 5, 2016
 Page 6

In Manitoba Hydro's view rate rebalancing is best dealt with subsequent to the review of COS, taking into account other competing factors and policy considerations in the context of a rate setting proceeding.

Terms and Conditions & Service Extension

Manitoba Hydro can provide information regarding its terms and conditions of service for the provision of power, however *The Manitoba Hydro Act* clearly places jurisdiction over the terms and conditions with the Manitoba Hydro Electric Board, which jurisdiction is, with respect to certain aspect of the terms and conditions, subject to Lieutenant Governor in Council approval:

Regulations as to supply of power

The board may, by regulation, prescribe

- (a) the terms, and conditions upon and subject to which the corporation will supply power to the users of the power supplied by it;
- (b) the standards governing the construction, installation, maintenance, repair, extension, alteration, and use of electric wiring and related facilities using or intended to use power supplied by the corporation;
- (c) such other conditions relating to the supply of power to users of that power, not inconsistent with this Act, as the corporation deems necessary for the proper carrying out of this Act and for the efficient administration thereof.

Regulations

For the purpose of carrying out the provisions of this Act according to their intent, the board, with the approval of the Lieutenant Governor in Council, may make such regulations and orders as are ancillary thereto and are not inconsistent therewith; and every regulation or order made under, and in accordance with the authority granted by, this section has the force of law; and, without restricting the generality of the foregoing, the board, with the approval of the Lieutenant Governor in Council, may make regulations and orders:

- (a) requiring the owner of any power plant or works to furnish to the board any information required by the board regarding
 - (i) his plant and works including the capacity, output, cost, and use thereof;
 - (ii) his assets, liabilities, revenues, expenses, and operations;
 - (iii) the supply of power by him to other persons including particulars of quantities, prices, terms, conditions, points of delivery and use;
- (b) requiring any person to furnish to the board information regarding the supply of power to him, including particulars of quantities, prices, terms, conditions, points of delivery, use, and by whom supplied;
- (c) providing for the entry upon, and inspection of property, plant and works including the making of inventories and valuations thereof, the examination of books, accounts, records, and documents relating thereto, and generally the obtaining of information in connection therewith;
- (d) providing for the discontinuance of the supply of power to any customer who is in default in payment of any account for power or any monthly charge levied under the on-meter efficiency improvements

BEFORE THE
MANITOBA PUBLIC UTILITY BOARD

Manitoba Hydro
2014/15 and 2015/16 General
Rate Application

Docket No. _____

DIRECT TESTIMONY AND EXHIBITS OF
ROGERD. COLTON

ON BEHALF OF
GREEN ACTION CENTRE (GAC)

April 24, 2015

1 Q. **DO YOU CONCLUDE THAT THE DOLLARS SAVED ON A LOW-INCOME**
 2 **BILL AFFORDABILITY PROGRAM WILL EXCEED THE DOLLARS**
 3 **EXPENDED ON A BILL AFFORDABILITY PROGRAM?**

4 A. No. That analysis is a cost-benefit analysis, an analysis that is inappropriate to an
 5 evaluation of low-income bill affordability assistance. To apply a cost-benefit analysis to
 6 a bill affordability program is to make an inappropriate choice of the four alternative
 7 economic appraisal mechanisms for program evaluation.

8 }, First, a cost-benefit analysis does not specify the public policy decision that has
 9 been made that utility service should be preserved where feasible.

10 }, Second, a cost-benefit analysis would need to identify the entire range of benefits
 11 over time, a task that would be difficult, if not impossible, to do. For example,
 12 the reduced financing costs arising from the increased stability in revenue would
 13 be difficult.

14 Y Third, a cost-benefit analysis in this instance would assume that all financial and
 15 economic benefits can be identified, dollarized and measured. That assumption
 16 would be wrong. For example, it is difficult, if not impossible, to dollarize (and
 17 then to measure) the benefit to the utility of increased sales to customers whose
 18 service has not been disconnected for nonpayment. It is also difficult, if not
 19 impossible, to dollarize (and measure) the benefit to the utility of re-directing
 20 collection efforts away from customers who not afford to pay so that those
 21 collection activities are instead directed toward customers who can afford to
 22 pay.²⁶

²⁶The alternative means of determining benefits for a cost-benefit analysis in these circumstances is through a willingness-to-pay analysis. Utility customers, when asked, have expressed a willingness-to-pay for low-income

1 'r Fourth, preparing a cost-benefit analysis would require the utility to identify the
 2 incremental costs of the affordability program. The cost of a bill affordability
 3 program is, of course, *not* simply the dollar difference between bills at the
 4 standard residential rate and bills at the affordable rate. To assert that would be to
 5 imply that, in the absence of the affordability program, 100% of the billed
 6 revenue would have been collected, an assertion that is manifestly in error. The
 7 utility would instead, need to determine, over time, what incremental amount of
 8 billed revenue would not be collected because of the grant of an affordability
 9 discount. As I will discuss further below, that dollar amount is not at all clearly a
 10 positive number.

11 These are merely illustrations of why it is inappropriate to apply a cost-benefit test to a
 12 bill affordability initiative. No utility collection effort is held against a cost-benefit
 13 standard.

14
 15 **Q. IS THERE ANY OTHER UTILITY ACTIVITY THAT IS SIMILARLY NOT**
 16 **HELD AGAINST A COST-BENEFIT STANDARD?**

17 **A.** Yes. Another example of a practice that Manitoba Hydro would not subject to a cost-
 18 benefit analysis would be worker safety. Reasonable utility management, in other words,
 19 would not accept worker injury or death based on the economic analysis that preventing
 20 the injury or death would cost more than the benefits returned by protecting the worker.

21 As with low-income bill affordability, the proper test is cost-effectiveness. The analysis

affordable bill programs of roughly \$1 per month. Willingness-to-pay surveys are summarized in the January/February 2015 issue of FSC's Law and Economics Insights ("The Public, When Asked, Indicates a Willingness to Pay for Rate Affordability Assistance for the Poor"). Available at the following URL: www.fsconline.com/04_news/news. This result is also consistent with what the Ontario Energy Board found in its 2014 public survey of willingness-to-pay.

1 assesses how to minimize the cost per unit of output (worker safety) and/or how to
 2 maximize the output per dollar of input.

3
 4 **Q. HAS COST-EFFECTIVENESS ANALYSIS BEEN ACCEPTED AS AN**
 5 **APPROPRIATE EVALUATION TECHNIQUE IN MAKING CANADIAN**
 6 **REGULATORY DECISIONS?**

7 A. Yes. Cost-effectiveness analysis is not only an "accepted" technique, it is the *preferred*
 8 technique in the circumstances presented by low-income inability-to-pay. As the
 9 Treasury Board of Canada stated in its "Canadian Cost-Benefit Analysis Guide:
 10 Regulatory Proposals" in 2007:

11 When benefits cannot be expressed in monetary values in a meaningful way,
 12 *a cost-effectiveness analysis ("CEA") should be carried out* to assist in
 13 making effective decisions. A CEA calculates cost-effectiveness ratios so
 14 that the most efficient option is chosen. In a sense, a CEA ensures technical
 15 efficiency in the process of achieving a desired outcome.

16
 17 (emphasis added). With these observations in mind, I turn to a discussion of the cost-
 18 effectiveness of a bill affordability program in helping a utility to collect billed revenue.²⁷

²⁷ "Cost effectiveness analysis evaluates the costs of different means of achieving a pre-determined goal." Driesen (2005). Is Cost-Benefit Analysis Neutral, Syracuse University College of Law. A significant body of literature exists distinguishing a "cost-effectiveness" analysis from a cost-benefit analysis. See generally, Diana Fuguitt and Shanton Wilcox. Cost-Benefit Analysis for Public Sector Decision Makers, Quorum Books: Westport (CT) (1999). See also, note 24, supra.

1

2

B. Increased "Net Back."

3

Q. PLEASE DESCRIBE THE SECOND EXPECTED BUSINESS-RELATED IMPACT ARISING FROM A LOW-INCOME AFFORDABILITY PROGRAM.

4

5

A. A corollary to the increased bill payment coverage ratio of bill affordability program participants is an increase in the "net back" experienced by the utilities offering affordable low-income bills. Stated conceptually, it is better for a utility to collect 90% of a \$70 bill ($\$70 \times 0.90 = \63) than it is for that utility to collect 60% of a \$100 bill ($\$100 \times 0.60 = \60). Under an affordable bill plan, in other words, even though a portion of the bill is discounted, the extent to which payments increase is such that total cash collections go up. This increase in revenue is accompanied by a decrease in the cost of collecting that revenue.

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Q. PLEASE EXPLAIN WHAT YOU MEAN WHEN YOU REFER TO "NET BACK."

15

A. "Net back" is a common metric in measuring the cost-effectiveness of collecting revenue. The "net back" criterion focuses on whether a utility offering affordable bills experiences an increase in net revenues if customer bills are paid in a more complete fashion as a result of the affordable bill. As a type of cost-effectiveness measure, "net back" provides not only a measurement of the effectiveness of the low-income programs (through the "payment coverage ratio" measure), it also provides for a measurement of the cost of the program as well. By combining the two measurements into one criterion, "net back" provides for a balancing of both factors (effectiveness of the programs on the one hand and costs of the programs on the other hand).

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2 Q. **PLEASE EXPLAIN THE BASIS FOR CONCLUDING THAT AN AFFORDABLE**
 3 **BILL PROGRAM WILL RESULT IN A HIGHER NET BACK.**

4 A. The results of bill affordability programs can be compared to the large, and growing,
 5 collections problem for Manitoba Hydro. The increase in revenue resulting from a bill
 6 affordability program has been found for both the Colorado and Indiana low-income
 7 programs. In assessing the impact of improved customer payment performance on total
 8 revenue, the Colorado evaluation reported that "the PEAP program generated a revenue
 9 neutrality when PEAP participants were compared to other low-income customers, but
 10 not when compared to the residential population as a whole." It continued on to state
 11 that:

12 The lesson learned from [the PSCO data] is that PEAP generates a
 13 sufficiently substantial improvement in payment coverage ratios relative to
 14 the low-income (nonparticipant) population to more than offset the discount
 15 provided. To the extent that the low-income [non-participants had] a prior
 16 history of non-payment, the revenue neutrality will be somewhat (but not
 17 substantially) greater.³⁰

18
 19 By the end of the pilot project period, PSCO's affordability participants paid more
 20 revenue than they would have had they paid at the non-participant bill payment coverage
 21 ratio, despite the fact that program participants were receiving a substantial discount on
 22 their bills. Over the entire participant population, PSCO pocketed nearly a half-million
 23 dollars more in revenue despite providing the program discounts. The PSCO results
 24 showed, also, that the benefit of added revenue to the company grew over time.

25

³⁰ Colton (2012). Public Service Company of Colorado's (PSCO) Pilot Energy Assistance Program (PEAP) and Electric Assistance Program (EAP): 2011 Final Evaluation Report, prepared for Public Service Company of Colorado: Denver (CO).

1 The same results were found for Indiana's low-income programs. A 2007 evaluation of
 2 the CGCU low-income program (called, the Universal Service Program, or "USP")
 3 found:³¹

4 Customers that participated in the Citizens Gas USP made substantively
 5 greater payments than did that company's nonparticipant population. Over
 6 the months of January through March 2007, USP participants paid 79% of
 7 their current utility bill. While billed \$273,627 during those winter months,
 8 the USP participants paid \$215,897. In contrast, the Citizen Gas
 9 nonparticipants paid only 64% of their January through March billings.
 10 While billed \$304,072, these customers paid \$194,577. As can be seen, the
 11 USP was better than revenue neutral to Citizens Gas. While USP participants
 12 were billed 90% of what nonparticipants were billed, they paid 111% what
 13 nonparticipants paid.³²

14
 15 As can be seen, the Indiana results were the same as found in Colorado: the increased
 16 payment performance generated more cash collections even despite the billing discount.

17
 18 **Q. PLEASE EXPLAIN THE BASIS FOR CONCLUDING THAT, AS TOTAL CSH**
 19 **COLLECTIONS INCREASE, THE COSTS INCURRED TO COLLECT THAT**
 20 **REVENUE WILL DECREASE.**

21 **A.** The benefits of the increase in revenue identified above are further enhanced when the
 22 decreased expenses are also taken into account. The cost of collection decreases because
 23 of improvements in the relative efficiency and effectiveness of collection activities for the
 24 participant customer populations relative to the non-participant population. The
 25 reduction in expenses can be derived by comparing the incremental costs to generate the
 26 customer payments received from the comparison non-participant population had those

³¹ All dollar figures presented in this analysis, unless other explicitly noted to the contrary, are associated with the sample population and not the total population.

³² Colton (2007). An Outcome Evaluation of Indiana's Low-Income Rate Affordability Programs, prepared for Citizens Gas and Coke Utility, Vectren Energy, and Northern Indiana Public Service Company.

1 payments been generated at the same efficiency as the payments were from the
 2 participant population.

3
 4 The expected impact resulting from a reduced collection expense was confirmed in the
 5 PSCO program evaluation. Stated quite simply, PSCO had to work less hard to collect
 6 revenue from program participants than it did to collect revenue from non-participants.
 7 Looking at the cost of PSCO's most common collection activity (issuing notices of
 8 disconnection for nonpayment), the company's cost of collection from program
 9 participants was more than 65% less than the company's cost of collection from program
 10 non-participants.

11
 12 Overall, in other words, a utility such as Manitoba Hydro can be expected not only to
 13 collect more money through an affordable bill, but to spend less money in the process of
 14 collection in so doing.³³

15
 16 **C. Increased Efficiency/ Productivity of Collection Efforts.**

17 **Q. PLEASE DESCRIBE THE THIRD EXPECTED BUSINESS-RELATED IMPACT**
 18 **ARISING FROM A LOW-INCOME AFFORDABILITY PROGRAM.**

³³ This is classic cost-effectiveness analysis. Cost-effectiveness is assessed based on what is termed the "cost-effectiveness plane." This cost-effectiveness plane consists of a two-dimensional assessment as follows:

4. Less effective and more expensive	1. More effective and more expensive
3. Less effective and less expensive	2. More effective and less expensive