A REPORT ON RATE DESIGN FOR THE RESIDENTIAL CLASS

Table of Contents

Attachments

Attachment 1 – Workshop Agenda and Discussion Paper
Attachment 2 – Manitoba Hydro Residential Rate Design Workshop Presentation
Attachment 3 – Intervener Submissions
Attachment 4 – Manitoba Hydro Zone Rates October 31 2001 (Urban Rural Rate Differential)

September 14, 2017

A REPORT ON RATE DESIGN FOR THE RESIDENTIAL CLASS

1. Overview

At the Pre-Hearing Conference on June 12, 2017, Manitoba Hydro committed to undertake efforts to investigate and prepare residential rate design alternatives that could be evaluated in the current public hearing process in conjunction with its current proposed Residential Rate design. The purpose of this alternative rate design would be to partially address the impact on residential electric heating bills of the proposed revenue increases in Manitoba Hydro's Application, while being revenue-neutral to the rate class as a whole.

Manitoba Hydro proposed to host a workshop with interested parties with a view to developing an alternative revenue neutral rate design for discussion in this GRA.

In its procedural Order 70/17, the PUB set out its expectation that Rate Design issues be advanced through a workshop with a Report to be filed by Manitoba Hydro during the current General Rate Application. The PUB stated that this report would be considered as evidence and subject to examination at the oral public hearing.

On July 13, 2017, Manitoba Hydro hosted a workshop on Residential Rate Design in order to solicit views and perspectives in an informal manner from registered interveners to this GRA. This document is Manitoba Hydro's Report on Rate Design for the Residential Class.

2. Manitoba Hydro Workshop – July 13, 2017

Manitoba Hydro hosted its workshop on the development of an alternative residential rate design at Manitoba Hydro Place on July 13, 2017. In advance of hosting this workshop, Manitoba Hydro provided interested parties with a workshop agenda and a discussion paper on the topic. Please see Attachment 1 to this Appendix for a copy of those materials, and Attachment 2 for a copy of the presentation provided by Manitoba Hydro during the workshop.

The purpose of this workshop session was to allow the participants to openly discuss issues and options with respect to residential rate design along with related topics of the impacts on lower income customers and the impacts on customers who rely on electricity for home heating. During the workshop session and in written submissions thereafter, the comments

of Manitoba Hydro and the participants were made on a "without prejudice" basis and are not to be considered to be binding upon the parties throughout the course of this General Rate Application.

During the workshop, Manitoba Hydro briefed the participants on the background to this rate design review and touched on matters addressed in the 2015-2017 Bill Affordability Working Group and the Demand Side Management (DSM) Advisory Committee with respect to bill affordability and examination of conservation rate options. Manitoba Hydro presented information on the characteristics of the residential class, influences of climate on customer bills, Manitoba Hydro's ratemaking objectives and its current residential rate design. Discussion also involved matters such as time-of-use rates and the differentiation of rate increases.

The session was interactive with participants asking questions of Manitoba Hydro staff during the presentation. Upon completion of Manitoba Hydro's presentation, each intervener had the opportunity to make their own presentation. All parties had the opportunity to ask questions of the participant to clarify and discuss the content of their presentation.

Representatives from the following parties participated in the workshop, either in person or by teleconference:

1. Assembly of Manitoba Chiefs
2. Consumer Coalition
3. Green Action Centre
4. Manitoba Keewatinowi Okimakanak (MKO)
5. Social Planning Council of Winnpeg
6. Winnipeg Harvest

PUB staff and PUB Advisors were in attendance in an observer capacity. Dr. John Gray, who was not able to attend the workshop, provided his comments in advance of the workshop by letter to all participants.

Manitoba Hydro obtained written submissions from the Consumer Coalition, Green Action Centre and MKO. Those submissions and the prior submission by Dr. John Gray are found as Attachment 3 to this Appendix.

3. Residential Customer Class Characteristics

The next section discusses the characteristics of the Residential customer class. The Residential class is composed of sub-classes including Residential Basic (Standard and All-Electric), Residential Seasonal, Residential Diesel and Residential Flat Rate Water Heating service. In 2016/17, there were approximately 500,660 residential customers served by Manitoba Hydro.

3.1 Residential Basic

Residential Basic customers, including both All-Electric and Standard, comprise 480,364 customers. Manitoba Hydro's billing system maintains energy end use information on residential customer accounts in order to appropriately apply the provincial energy tax on energy consumed (please see the response to Coalition/MH I-129c of this Application).

Electric Heat Billed (formerly All-Electric) are customers who have electric space heating included with their electric bill and Non Electric Heat Billed (formerly Standard) do not have electric space heating included with their electric bill. Of the Residential Basic customers, approximately 291,900 are Basic Standard or Non Heat Billed accounts and approximately 188,400 are Basic All Electric or Electric Heat Billed accounts.

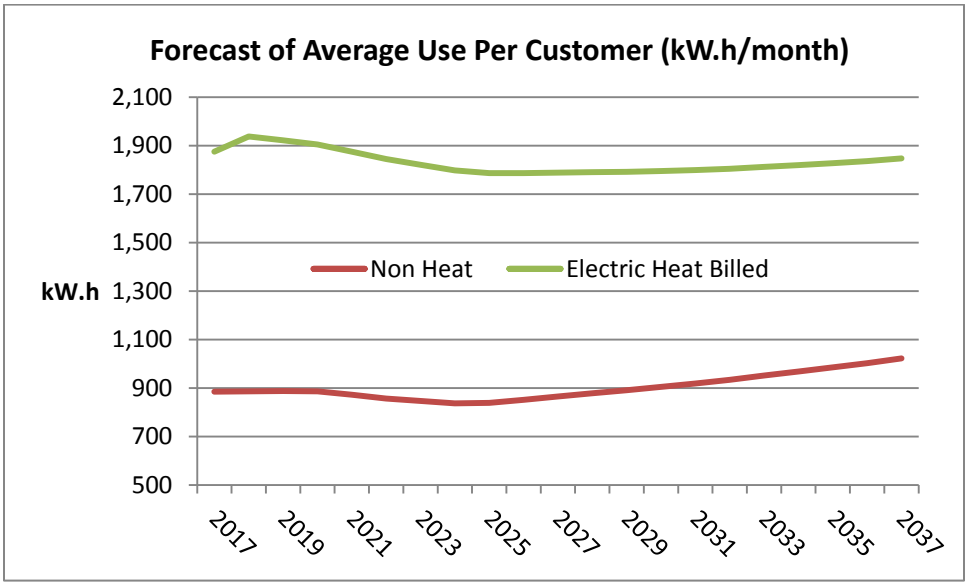
The majority of Residential Basic customers (54%) are in Winnipeg where natural gas is available, 29% are in natural gas available areas outside Winnipeg, and 17% are in areas where natural gas is not available. Residential occupancies reflect a mix of housing stock in the province, where 78% of residences were single detached homes, 9% were multi attached, and 13% were individually metered apartment suites.

Residential Basic has grown 107 GWh (1.7%) per year for the past 20 years and 109 GWh per year (1.6%) for the past 10 years reflecting the effect of past DSM initiatives. This sector is forecast to grow 52 GWh (0.7%) per year for the next 10 years and 108 GWh (1.3%) per year for the next 20 years, before future program-based DSM initiatives.

The primary driver of Residential Basic growth is population, which is forecast to grow 1.1% per year over the next 20 years. In the 2017 Load Forecast, it is noted that the average use (kWh/customer) for Electric Heat Billed customers is decreasing as individually metered apartment suites are making up a higher proportion of the growth. The average use for Non Electric Heat Billed customers is increasing mainly due to increased use of electric water

heating and miscellaneous end uses in dwellings, including computers and other household electronic devices. Please see Figure 1 below for the forecast of average use per month by customer, for both Electric Heat Billed and Non Heat Billed accounts.

Figure 1. Forecast of Average Use per Customer.



3.2 Residential Seasonal

In 2016/17 there were 19,707 Residential Seasonal customers that used 66 GWh, averaging 3,349 kWh per customer. Residential Seasonal are non-primary seasonal residences, typically cottages and vacation homes that are occupied on a seasonal basis and may be situated in remote locations throughout the province. Due to their remote location, meters are read and bills are issued twice each year, in spring and in fall.

The number of seasonal customers is expected to decrease to 16,224 customers by 2036/37 due to transfers of higher usage seasonal customers into the Residential Basic sector. The usage of Residential Seasonal customers is expected to decrease 0.2% a year to 63 GWh in 2036/37.

3.3 Residential Diesel

Residential customers situated in the four Diesel Communities are categorized as Residential Diesel accounts. There were 586 Residential Diesel customers that used 9 GWh in 2016/17 averaging 15,074 kWh per year per customer. Space heating in the four diesel communities is mainly provided by fuel oil. Residential Diesel services are limited to 60 amps and do not allow for electric space heating. The number of customers is expected to grow to 657 and usage is expected to increase 1.0% a year to 11 GWh by 2036/37.

3.4 Residential FRWH

Residential Flat Rate Water Heating is an unmetered service for domestic water heating usage. This service has been closed to new customers since November 11, 1969. There were 3,279 remaining services in 2016/17. The number of services and usage is expected to decrease 5% per year throughout the forecast period. Usage was 17 GWh in 2016/17 and that is forecast to decrease to 6 GWh by 2036/37.

3.5 Energy Consumption and Revenues by Sub-Class

The following Figure 2 shows the actual number of customers, energy consumed and revenues obtained from each of the five residential sub-classes for 2016/17.

Figure 2. Actual number of customers, energy consumption and revenue for 2016/17.

	Residential - 2016/17 Actual					
	Customers		**GW.h**	**Revenue**	**GW.h**	**Revenue**
				($million)	(%)	(%)
Basic Standard (non heat billed)	291,924	58.3%	3,264	$ 284.5	45.0%	46.2%
Basic All Electric (elec heat billed)	188,440	37.6%	3,894	$ 322.4	53.7%	52.4%
Residential Seasonal	19,707	3.9%	66	$ 6.9	0.9%	1.1%
Residential Diesel	586	0.1%	9	$ 0.7	0.1%	0.1%
Flat Rate Water Heating*	3,279		17	$ 1.1	0.2%	0.2%
	500,657		7,250	$ 615.6		

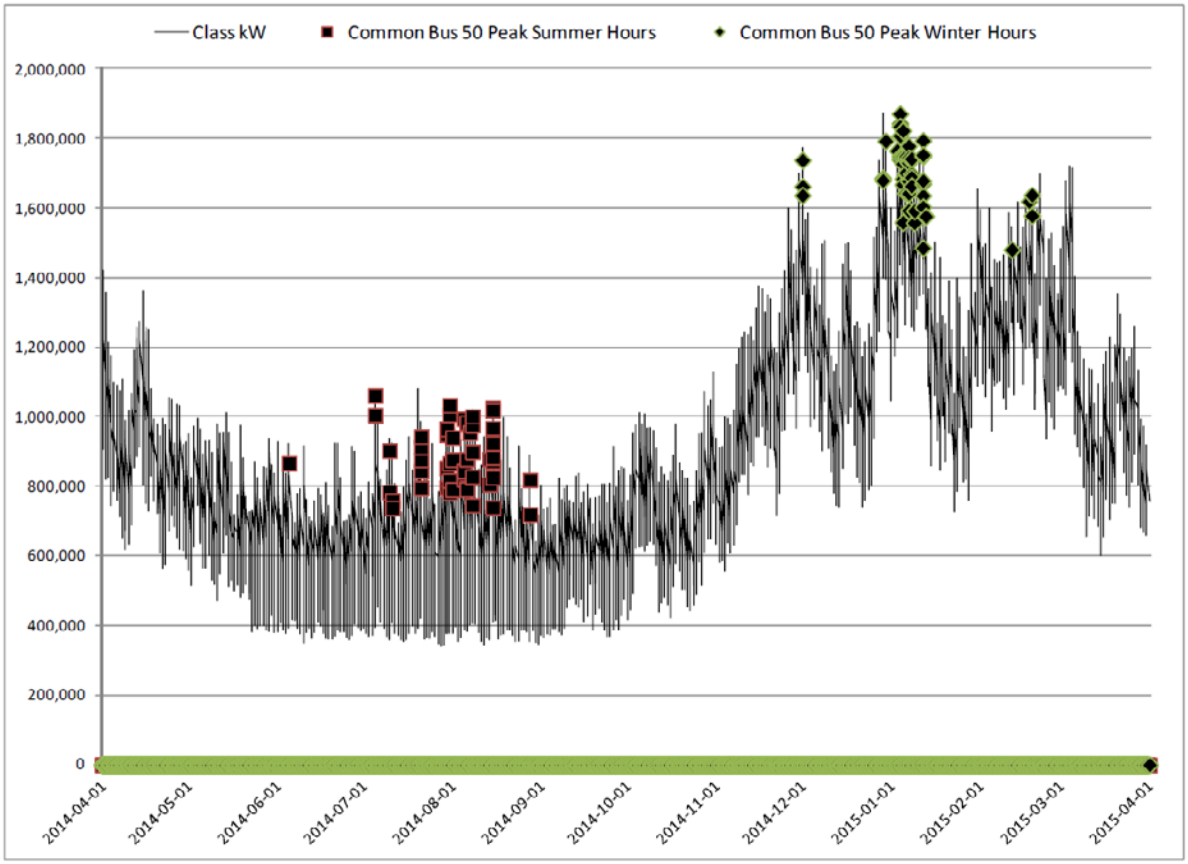
*FRWH customer count included in other sub classes

4. Residential Class Load Profile

The load profile for the Residential class is shown in Figure 3 below. Manitoba Hydro derives the load shape by analyzing load research data obtained from load monitoring equipment installed at 373 residential customers in Manitoba Hydro's service territory. Please see page 15 of Appendix 8.3 for the source graph.

This sample of 373 customers contains a cross section of residential occupancies and end uses. As shown in Figure 3, one can observe a distinct seasonal effect likely attributable to increased usage in the winter period as a result of heating load for electric heat billed customers, a general increase in the requirement for lighting due to fewer daylight hours and the increased use of energy for winter seasonal applications such as engine block heaters. Summer seasonal peak loads are significantly less than those experienced in the winter season. Peak hour loads in the summer may be attributable to air conditioning loads operating during higher outdoor temperatures occurring in the summer season.

Figure 3. Residential Class Load Profile (50 Peak Winter and 50 Peak Summer Hours).



5. Manitoba Hydro Residential Class Rate Design

Manitoba Hydro employs a two part rate design for its Residential Class, comprised of a basic charge and a single energy charge for all energy consumed during the month. The PUB approved rates in effect as of August 1, 2017 have a Basic Charge set at $8.08 per month and an energy charge of $0.08196/kWh. In this GRA, Manitoba Hydro is seeking approval of a 7.9% increase to both components of the residential rate for April 1, 2018. Inclusive of that increase, the Basic Charge would be $8.72 per month and the energy charge would be $0.08843, as found on page 2 of Appendix 9.4 (Updated).

Manitoba Hydro's rate design for the residential class has undergone significant change over the past decade. Prior to 2008, a declining block rate structure was employed. The last declining block rates were approved effective March 1, 2007 and included a Basic Charge of $6.24 per month, a first energy block of 175 kWh per month billed at $0.05940/kWh and all energy consumed in excess of 175 kWh to be billed at $0.05790/kWh.

On July 1, 2008, Manitoba Hydro implemented rates that featured an inversion of the block rate structure. The size of the first block was increased from 175 kWh to 900 kWh and all energy consumed in excess of the first block was priced at a higher rate than the first block. This rate structure is referred to as an inclining block or inverted rate design which is intended to send a price signal to consumers that higher energy consumption is more costly to serve and therefore provides an incentive for consumers to reduce energy usage.

The inclining block rate structure was introduced in 2008 with an inversion of 0.043 cents between the first and second or tail block. Compared to the previously approved declining block rate, the overall change in run off rate was 0.333 cents or a 5.75% increase in the tail block rate itself.

The inclining block rate structure was adjusted on April 1, 2009 and April 1, 2010 with the subsequent approved rate increases applied to both energy blocks while the Basic Charge was held constant at $6.85 per month.

However, the PUB recognized concerns about the inclining block rate design in Order 40/11, as it noted the following:

> *"With respect to Residential rates, when the inverted rate was established, circumstances were different than what they are now. Natural gas prices were very high, so high that there was a risk that property owners would consider switching their heating source from natural gas to electricity and MH has yet to reflect consideration of home heating loads in its rate design."*

The PUB directed that the rate increase approved in Order 40/11 was to be applied to the first block rate to eliminate the inversion and then to keep the two energy blocks equal. Manitoba Hydro's Residential class rates since April 1, 2011 have utilized a single energy charge along with the Basic Charge in its rate structure. Please see Figure 4 below for information on Residential rates approved through that time period.

Figure 4. PUB approved changes to Residential class rates (2007 - 2011).

	Basic Charge	Size of 1st block	Block 1 rate	Block 2 rate	Block Differential	
	($)	(kWh)	($)	($)	($)	(%)
March 1, 2007	$ 6.24	175	$ 0.05940	$ 0.05790	$ (0.00150)	-2.5%
July 1, 2008	$ 6.60	900	$ 0.06080	$ 0.06123	$ 0.00043	0.7%
April 1, 2009	$ 6.85	900	$ 0.06250	$ 0.06300	$ 0.00050	0.8%
April 1, 2010	$ 6.85	900	$ 0.06380	$ 0.06570	$ 0.00190	3.0%
April 1, 2011	$ 6.85	all energy	$ 0.06620	$ 0.06620	$0.00	0.0%

6. Consideration of Household Income and Energy Consumption

A change to the structure of residential rates will affect the collection of revenues between customers in the class. Rate structure changes result in certain customers experiencing lower energy bills than with the current rate design. Other customers in the class will experience higher energy bills. Overall, the same amount of revenue is to be obtained from the entire customer class, but the collection of those revenues shift within the class, generally between low energy users and high energy users.

A change to an inverted block rate design is intended to shift costs away from customers with lower consumption to customers with higher consumption, assuming no change with the fixed charge. The size of the first energy block and the degree of inversion will determine the extent to which the shift would occur.

In order to understand the impacts on lower income households of a potential change in rate structure, it is important to consider the available information on household energy consumption and household income.

The information in Figure 5 below is summarized from data collected in Manitoba Hydro's 2014 Residential End-Use Survey. The data suggests that approximately 32% of customers with annual income of $25,000 or less are low energy users (up to 5,000 kWh per year) while only 5% of customers with annual income between $100,001 and $150,000 are low energy users. However, as one moves down the chart into higher annual energy usage, the trend flattens considerably.

Not all lower income households are low consumers of energy. The data in Figure 5 shows that approximately 25% of households with incomes of $25,000 or less are also consuming over 2,080 kWh per month, or approximately 25,000 kWh per year. Similarly, approximately 26% of households with incomes between $25,001 and $50,000 are consuming at least 25,000 kWh annually. The number of lower or modest income households that consume at least 25,000 kWh per year is a consideration in proposing a rate design change that shifts costs to the higher usage customers.

Figure 5. Monthly Bill at Proposed April 1, 2018 Rates as per Appendix 9.2 (Updated), Reported Annual Income and Reported Energy Consumption from 2014 Residential End Use Survey.

Consumption (kWh)		Monthly	Bill	Reported Annual Income				
Annual	Monthly	Bill*	Impact*	$ 25,000	$ 50,000	$ 75,000	$100,000	$150,000
5,000	**417**	$ 45.57	$ 3.34	32%	19%	13%	8%	5%
10,000	**833**	$ 82.41	$ 6.03	24%	30%	28%	27%	19%
15,000	**1,250**	$ 119.26	$ 8.73	9%	16%	19%	21%	23%
20,000	**1,667**	$ 156.10	$ 11.42	10%	10%	10%	13%	18%
25,000	**2,083**	$ 192.95	$ 14.12	8%	10%	8%	9%	11%
30,000	**2,500**	$ 229.80	$ 16.82	9%	7%	8%	7%	7%
35,000	**2,917**	$ 266.64	$ 19.51	8%	9%	14%	16%	16%
				100%	100%	100%	100%	100%

*Monthly bill and bill impact of proposed April 1, 2018 versus Approved August 1, 2017 rates.

7. Manitoba Hydro's General Rate Making Objectives

This next section discusses the rate making objectives to be considered in the evaluation of an appropriate rate structure for the Residential class. In addition to the Corporation's rate making objectives, the topic of uniform rates will be discussed.

The selection of an appropriate rate design involves the consideration and weighing of a number of different rate setting objectives. Manitoba Hydro described its general rate making objectives on page 2 of Tab 9 of this Application. They are as follows:

1. Recovery of Revenue Requirement
2. Fairness and Equity
3. Rate Stability and Gradualism
4. Efficiency
5. Competitiveness of Rates
6. Simplicity and Understandability

It is necessary to recognize that there are conflicts between different rate design objectives. For example, some rate designs that are intended to promote the efficient use of energy, such as time-of-use rates, or rates with multiple energy blocks, may be relatively complicated to apply and difficult for customers to understand. This level of complexity conflicts with the goal of simplicity and understandability.

7.1 Uniform Rates for Electricity

In addition to these rate making objectives, Manitoba Hydro sets rates on an average cost or uniform rate basis. Uniform rates are mandated for the sale of electricity by legislation. Also known as "postage stamp" rate making, rates for each customer class are set on an average cost to serve without regard or distinction for the geographic location of the customer.

The actual cost to serve urban customers will differ from the cost to serve rural customers, as it is more expensive to serve customers that are more widely dispersed. The cost of serving rural and remote customers is much higher because of the greater amount of plant required to serve them as longer distances between customers require longer feeders. Similarly, operating costs associated with low density areas are higher than in high customer densities due to the greater travel distances and time required to maintain service, read meters and provide customer response.

Under uniform or postage stamp rates, all appropriate costs are pooled and rates are set to reflect the average cost of serving customers across the entire electrical distribution system. As a result, rates do not distinguish customers by virtue of their geographic location in Manitoba. This is beneficial rate treatment for widely dispersed customers situated in rural

areas, as the costs of serving them are pooled with the costs for serving higher concentrations of urban customers.

Uniform rates came into effect on November 1, 2001. Prior to that date, Manitoba Hydro administered three rate zones with basic charges and first block energy charges reflecting the increased cost of serving lower density zones. Please see Attachment 4 for information on zone rates in effect prior to November 1, 2001.

With the implementation of uniform rates, all rates were harmonized to the level of the former Zone 1 rate, which applied to the City of Winnipeg. As Zone 2 and 3 rates were formerly higher than Zone 1 in respect to the higher cost to serve customers in those Zones, there was a reduction to residential revenues of approximately $12.9 million. Stated differently, rural and remote customers saved approximately $12.9 million with the equalization of rates to the levels set for the City of Winnipeg as Zone 1.

Previously, the Cost of Service Study included an adjustment to class revenues to offset any revenue reduction that resulted from the implementation of uniform rates legislation. The adjustment ensured that the cost of the uniform rate policy was broadly shared among all customer classes. Order 164/16 eliminated this adjustment from the Cost of Service Study.

8. <u>Rate Design for Electric Heat Customers</u>

Manitoba Hydro provides the following alternative revenue neutral rate structure for information purposes only.

As previously stated, Manitoba Hydro's billing system maintains energy end use information on residential customer accounts in order to appropriately apply the provincial energy tax on energy consumed. The data shown in Figure 2 above separately identifies Electric Heat Billed (All Electric) versus Non Heat Billed customers (Standard).

The rate design scenario shown below segregates Electric Heat Billed customers from Non Heat Billed customers for the purpose of deliberately shifting a portion of the proposed overall rate increase away from the former and onto the latter.

As an initial step, the requested 7.9% increase is applied to all revenues and then an amount of revenue is shifted from the Electric Heat Billed customers to the Non Heat Billed customers such that the energy charge for Non Heat Billed customers would be

approximately two percentage points higher than the class average increase of 7.9%. This would result in the shift of approximately $5.2 million of revenue requirement from Electric Heat Billed customers to be paid by Non Heat Billed customers.

The resulting revenues by sub class are shown in Figure 6 below.

Figure 6. Revenue calculations for residential sub-classes (Illustrative for discussion purposes only). Forecast customer count and energy consumption for 2018/19 from the 2017 Electric Load Forecast.

	Customer Count Average	Energy GWh	Revenues Standard Design	Revenues Alternative Scenario	Revenue Adjustment (All Elec to Standard)
Residential Basic Standard	297,600	3,170	$ 311,434.9	$ 316,633.3	$5,198.4
Residential Basic All Electric	195,200	4,503	$ 419,745.6	$ 414,560.9	($5,184.8)
Residential Seasonal	19,300	73	$ 8,438.0	$ 8,438.0	
Residential Diesel	600	9	$ 851.7	$ 851.7	
Residential FRWH *	-	15	$ 1,161.1	$ 1,161.1	
	512,700	**7,770**	**$ 741,631.3**	**$ 741,645.0**	

*Residential FRWH services are included in the customer count for the other sub-classes.

The illustrative rates for Residential Basic Standard (Non Heat Billed) and Residential Basic All Electric (Electric Heat Billed) that would result in this revenue shift are shown in Figure 7 below.

Figure 7. Illustrative Rates - Basic All Electric & Basic Standard.

	Basic Charge	Energy Charge
Residential Basic Standard	$8.72	0.09007
Residential Basic All Electric	$8.72	0.08728

For information purposes, a comparison of the Proof of Revenue is provided in Figure 8 below. The Proof of Revenue for Manitoba Hydro's proposed residential rate for April 1, 2018 (a 7.9% increase on all rate components with no differentiation) is shown in the first table of Figure 8. An illustrative Proof of Revenue for the alternative rate scenario is shown in the bottom table of Figure 8.

Figure 8. Illustrative Proof of Revenues.

PROOF OF REVENUE

Approved August 1, 2017 Rates vs Proposed April 1, 2018 Rates
for 12 months ending March 31, 2019
Rates as per Appendix 9.2 (Updated)

	Calculated Revenue Aug 2017 Rates	Calculated Revenue Prop Apr 2018 Rates	Diff. in Revenue Dollars	Diff. in Revenue Percent
Basic Std	288,641,558	311,434,897	$22,793,340	7.90%
Basic AE	389,030,015	419,745,623	$30,715,608	7.90%
Diesel	789,348	851,675	$62,327	7.90%
Seasonal	7,820,199	8,438,031	$617,832	7.90%
FRWH	1,076,172	1,161,120	$84,948	7.89%
RESIDENTIAL	**687,357,292**	**741,631,347**	**$54,274,055**	**7.90%**

PROOF OF REVENUE

Approved August 1, 2017 Rates vs Alternative Rate Scenario
for 12 months ending March 31, 2019
Alternative Rate Scenario - Illustrative Rates

	Calculated Revenue Aug 2017 Rates	Calculated Revenue Prop Apr 2018 Rates	Diff. in Revenue Dollars	Diff. in Revenue Percent
Basic Std	288,641,558	316,633,296	$27,991,738	9.70%
Basic AE	389,030,015	414,560,867	$25,530,851	6.56%
Diesel	789,348	851,675	$62,327	7.90%
Seasonal	7,820,199	8,438,031	$617,832	7.90%
FRWH	1,076,195	1,161,120	$84,925	7.89%
RESIDENTIAL	**687,357,314**	**741,644,989**	**$54,287,674**	**7.90%**

Figure 9 below provides illustrative bill impacts for the alternative residential rate scenario.

Figure 9. Bill Impact Tables – Alternative Rate Scenario.

Residential Basic Standard (Illustrative Rates)

kWh	AUG 2017 $ / Month	APR 2018 $ / Month	Difference in $ / Month	Percent Change
250	$28.57	$31.24	$2.67	9.35%
750	$69.55	$76.27	$6.72	9.66%
1 000	$90.04	$98.79	$8.75	9.72%
2 000	$172.00	$188.86	$16.86	9.80%
5 000	$417.88	$459.07	$41.19	9.86%

Residential Basic All Electric (Illustrative Rates)

kWh	AUG 2017 $ / Month	APR 2018 $ / Month	Difference in $ / Month	Percent Change
250	$28.57	$30.54	$1.97	6.90%
750	$69.55	$74.18	$4.63	6.66%
1 000	$90.04	$96.00	$5.96	6.62%
2 000	$172.00	$183.28	$11.28	6.56%
5 000	$417.88	$445.12	$27.24	6.52%

9. Additional Considerations for Alternative Rate Scenarios

Intuitively, one would expect it to be more expensive to serve a residential electric heating load than a residential non-heating load, as the load profiles of the electric heat customer should reflect stronger seasonal variation. This suggests a different cost to serve between electric heat and non-electric heat customers within the residential class. As noted previously in this report, electric rates are set on a uniform rate basis, whereby the cost of serving all residential customers, electric heat and non-electric heat, urban and rural, are pooled and averaged so as not to distinguish rates on the basis of location.

Manitoba Hydro notes that its load research sample is designed to statistically measure the loads for the residential customer class. With a sample size of 373 customers, it is not known whether a sufficient sample size exists in current data collection to develop separate load profiles for residential electric heating and non-heating customers separately.

In the event that sufficient load research information became available in the future to properly model the load profiles of the two customer subgroups, Manitoba Hydro would be in a better position to determine whether a separate residential sub class may be considered.

Accordingly, if the creation of a residential electric heat subclass was to be considered, these rates would still be considered to be cost based, provided that there was acceptance that a lower Revenue to Cost Coverage (RCC) for a given sub class of customers was appropriate. However, significant additional modification would be required of the cost of service study to accommodate and report RCC information on residential sub classes. Once obtained, a determination of the RCC for electric heat residential customers could be evaluated. It is not known how much time and effort would be required to undertake such a modification, if one was deemed feasible and necessary.

Ultimately, adopting a rate structure that explicitly shifts a predetermined level of revenue requirement away from electric heating loads and recovers those amounts from non-heating customers would be undertaken based upon a public policy decision to shield a group of customers from the full impact of the proposed revenue increases. Such a decision would need to recognize that other customers in that class would bear a greater revenue burden as a consequence, in order to maintain revenue neutrality for the class as a whole.

10. Intervener Input – July 13, 2017 Workshop

Several interveners provided comments and perspectives on residential rate design in correspondence following the completion of the July 13, 2017 Workshop.

10.1 Input from the Consumer Coalition

The Consumer Coalition provided a letter dated July 31, 2017. While it did not propose a specific rate design option for consideration, it provided a discussion of potential issues and questions that merit consideration in relation to rate design and bill affordability. Its observations are found in detail in Attachment 3. Manitoba Hydro's understanding of the Consumer Coalition's observations are summarized as follows:

- Should the costs of subsidies or programing be funded by residential rate payers, all rate payers, the general taxpaying population or through the incremental water rentals paid to government upon Keeyask entering service?

- How broadly or narrowly should a rate design or program be targeted and what are the potential unintended consequences including the free-ridership of non-targeted customers obtaining the benefit of a rate design or program?
- Is sufficient information available about on-reserve populations and is there a need for further consumer engagement in order to make informed decisions on changes to rate design or programs?
- Is there appropriate consideration for long-run marginal costs in the design for a potential inverted or inclining block rate, given the level of embedded cost reflected in current and proposed rates?
- Energy efficiency and a focus on the condition of housing stock should be a focus of programming directed at customers experiencing higher energy burdens.

10.2 Input from Green Action Centre

Green Action Centre provided a presentation along with its examples of potential rate structure scenarios with respect to rates for LICO-125 customers, LICO-125 customers with electric heat, and non-LICO customers with electric heat.

GAC's consultant stated a number of qualifiers and limitations to the rate structure examples provided, namely that a full data set was not yet available (prior to round one information requests) and that the magnitude of discounts proposed in these examples was subject to judgment and may be scaled up or down as desired.

The theoretical rate examples provided by GAC's consultant were developed as inclining or inverted block rate structures, with a basic monthly charge, a first block that is deeply discounted to average embedded cost, and a second or tail block priced with a significant inversion to the first block. In addition, GAC's consultant proposed that the size of the first energy block for the LICO-125 and Non-LICO 125 electric heating rates be differentiated by four separate seasons, namely winter, spring, summer and fall.

Manitoba Hydro wishes to point out that it does not have customer specific data in its possession that would enable it to identify the actual number of customers and the actual usage of customers whose household incomes fall into the LICO-125 category. Manitoba Hydro has information that was volunteered by customers participating in the 2014 Residential End Use Survey which it has used to develop certain projections and estimates regarding the number of LICO-125 customers. Such data, however, is insufficient for rate forecasting purposes and any attempts to set rates based upon estimates of LICO-125

participants and their respective level of energy usage would present an unacceptably high risk of revenue forecast error.

With respect to differentiating first block size on a seasonal basis, Manitoba Hydro notes that customer meters are read on a bi-monthly basis and that bills are generated on billing cycles and are therefore not all issued at month end. Manitoba Hydro issues bills on 20 different billing cycles each month, and many customer billing cycles overlap the end and start of each month.

Adjusting block sizes four times each year would, by necessity, result in the majority of customer bills being pro-rated as the change in block size would occur on December 1, March 1, June 1 and September 1 of each year. Each pro-rated bill would present a different size of first block and rate chargeable for the portion of the billing period falling before and after the date of the seasonal block change. It is observed that this would likely result in significant customer confusion and potentially an increase in calls to Manitoba Hydro's contact center with these changes to customer bills.

10.3 Input from Dr. John Gray

Dr. Gray expressed his support for the development of a separate rate structure for customers utilizing electric heat.

Dr. Gray provided his observations that he and others have chosen to heat their homes with electricity for environmental reasons in that hydro-electricity is a renewable source of energy, is less polluting to consume than fossil fuels, has less climate change impact than fossil energy, is produced in Manitoba and is a reliable source of energy.

10.4 Input from MKO

MKO provided its position and perspectives on rate design matters as requested by Manitoba Hydro. MKO's positions are found in Attachment 3 to this Appendix. Manitoba Hydro has reviewed these suggestions and provides its perspective below.

MKO suggests that a rate design proposal should encompass both the residential class and First Nations customers in the GSS and GSM customer classes, with each class further sub classified with respect to First Nation and non-First Nation customers. MKO suggest that within those subgroups there should be a First Nation basic all-electric rate class.

MKO further suggests that the First Nation basic all-electric class should receive a discount from the uniform rates applicable to Manitoba Hydro's customer classes. In MKO's view, this discount should be based upon the bill amount paid by customers with natural gas heating and further remove the recovery of mitigation costs and water rental payments to the Province of Manitoba from the rate.

MKO suggests that the revenue shortfall attributed to the amount of discount related to mitigation costs and water rentals should be allocated to and recovered from all other customers in all electric customer classes. It further recommends that the shortfall associated with the "equivalent to natural gas" subsidy be allocated to and recovered from all natural gas customers.

Manitoba Hydro is of the view that its response to these suggestions and the underlying assumptions associated therewith are matters for argument and not evidence. Nevertheless Manitoba Hydro wishes to make clear that it does not accept that there exists a sound basis for excluding mitigation costs or water rental fees from rates applicable to First Nation customers. Further, Manitoba Hydro notes that under average cost ratemaking and uniform rates, rural and northern customers already receive a subsidy benefit due to the pooling of costs with those associated with service to higher customer density zones. The unbundling of the embedded cost rates would necessitate changes to uniform rates legislation and expose those customers to the higher cost of service associated with being served in remote and low customer density regions.

The matter of setting electric rates reflective of energy costs associated with another energy source is not a cost of service based approach, and in fact completely disconnects rates from the cost of providing electricity. Furthermore such a concept is short sighted and relies on the continuance of the current state of energy pricing, taxation and economics.

For example, the introduction of a carbon tax may have significant impacts on the cost of heating a home with natural gas and under the rate scenario described by MKO, such costs would necessarily be reflected in the rates to northern electrically heated homes. Furthermore, if there were to be a return to the mid 2000's natural gas market environment when prices were five times today's average natural gas price, rates under the MKO scenario may be well beyond the proposed and indicated level of Manitoba Hydro's electricity rates.

11. Conclusion

This report contains a number of rate structure options as identified by both Manitoba Hydro and interveners. Changes to rate structure result in the shift of revenue collection between customers within a class and rate structures must be carefully evaluated to understand the resulting consequences and bill impacts between customers within that class.

A clear understanding of rate making goals is necessary in order to evaluate different rate structure options. It is generally accepted that rate structures must provide the utility the opportunity to fully recover the revenue requirement that has been allocated to each class. Beyond that goal, other rate making considerations such as fairness and equity, rate stability and gradualism, efficiency, competitiveness of rates and the simplicity and understandability of the rate structure require thoughtful examination and evaluation.

Manitoba Hydro
Development of an Alternative Rate Design Proposal
Residential Customer Class
Engagement Process
July 20 – July 31, 2017

Introduction

Manitoba Hydro is undertaking efforts to develop an alternative revenue-neutral rate design proposal for its Residential Customer Class, for consideration during the current public hearing process for its 2017/18 & 2018/19 General Rate Application.

Alterations to rate designs can result in shifts in the collection of revenues between high energy users and low energy users in the residential class. Such shifts can result in positive or negative consequences to the size of monthly bills and therefore on the affordability of electricity for those respective groups of residential customers.

Background

In May, 2017, Manitoba Hydro filed its 2017/18 & 2018/19 General Rate Application with proposed rate schedules for the 2017/18 and 2018/19 fiscal year based on its current rate design for the Residential customer class. Manitoba Hydro's Residential rate design comprises a Basic Monthly Charge and a single Energy Charge for all energy consumed for monthly billing of Residential customers.

At the Pre-Hearing Conference held on June 12, 2017, Manitoba Hydro committed to undertake efforts to investigate and prepare a rate design alternative for the Residential class that could be evaluated in the public hearing process in conjunction with its current proposed Residential rate design. The purpose of this alternative rate design would be to partially address the impact on residential electric heating bills of the proposed revenue increases in Manitoba Hydro's Application. Manitoba Hydro is proposing this measure with recognition that the typical usage of a residential customer using electric heating is higher than that for a residential customer who relies on other energy sources for their residential heating requirement.

To this end, Manitoba Hydro will develop an alternative rate design proposal for the residential customer class, which differentiates the proposed rate increase between residential customers using electricity for home heating purposes and other purposes (Basic All-Electric) from residential customers using electricity for purposes other than space heating (Basic Standard).

Manitoba Hydro's rate structure proposals would be designed to provide the same overall level of revenues from the Residential class as a whole. In this regard, either the current rate design or an alternative rate design would be considered to be "revenue-neutral" as each would seek to recover the full revenue requirement attributable to the Residential class.

An alternative Residential rate design to differentiate the rate increase between Residential Basic All-Electric and Residential Basic Standard customers would introduce some explicit level of cross subsidy between customers within the Residential class. Shifting some level of revenue responsibility away from

the Residential Basic All-Electric customers would require that amount of revenue to be recovered from the Residential Basic Standard customers, in order to maintain revenue-neutrality for the Residential class as a whole.

Implications to Bill Affordability of potential rate design proposals:

Manitoba Hydro is interested in considering the implications to Bill Affordability for Residential class customers that may arise as the result of a potential change in Residential rate design.

Findings from research undertaken on behalf of the Bill Affordability Working Group in 2016 indicate a weak correlation between levels of household energy usage and levels of household income. It is expected that some sub-set of Residential Basic All-Electric customers would also be lower income households, and therefore a differentiated rate design that mitigates some portion of the overall rate increase to those households would be of benefit to them. However, the overall revenue requirement must be collected for the Residential class, and therefore rates must be set at a level that would recover the remaining revenues from the Residential Basic Standard customers. Manitoba Hydro further recognizes that some lower income customers are Residential Basic Standard customers and that their bills would necessarily be greater than they would be under Manitoba Hydro's current Residential rate design.

Process to develop an alternative to the current Residential rate design:

In developing an alternative to the current Residential rate design, Manitoba Hydro is interested in obtaining the views and perspectives of the following participants:

- Input from Interveners who have a defined interest in the residential customer class and that have been approved for participation as set out in the PUB's Procedural Order 70/17.
- Input from parties that participated in the Manitoba Hydro Bill Affordability Working Group in the 2015-2017 timeframe.

Manitoba Hydro intends to obtain this input by way of a workshop to be followed by the receipt of written input from the participating parties.

Manitoba Hydro also requests that these discussions be conducted on a "without prejudice" basis for the duration of the engagement process which includes the workshop and solicitation of input from interveners, for the period of July 20 to July 31, 2017. Manitoba Hydro intends that the workshop will not be transcribed and not be considered as evidence to this hearing, as it is intended to be an interactive discussion of issues and ideas. It is recognized that all parties are subject to advancing their own views on these matters through the course of the public hearing process and ought not be bound by any discussions undertaken during this engagement process.

Workshop session:

Manitoba Hydro views the use of a workshop to be useful in enabling it to advance the understanding of the rate design issues by:

- Briefly discussing the three steps of the rate-setting process, namely revenue requirement, cost of service study, and rate design.
- Briefly describe the customer base in the Residential customer class, as to number of customers using electricity for home heating and the customers who heat their homes with other energy sources instead of electricity.
- Explain Manitoba Hydro's current residential rate design and the application of its rates across Manitoba.
- Describing its rate design objectives and goals as set out in Tab 7 of its Application which underpin Manitoba Hydro's consideration of rate design matters.
- Discuss the issues identified by the PUB in Order 70/17 with respect to residential conservation rates, time-of-use rates, differentiated rate increases.
- Further to its mention in Order 70/17, Manitoba Hydro requests that Manitoba Keewatinowi Okimakanak to provide its perspectives on rate design issues for consideration.
- To solicit the perspectives of the participants in the possible alternatives that may be considered in the development of a revenue neutral rate design that addresses the situation with residential electric heating customers.
- To stimulate discussion and develop understanding of various factors to be taken into consideration in the examination of Residential rate design.

Manitoba Hydro notes that the following rate making matters will not be addressed in the workshop, but are matters to be are considered in the normal course of the public review process for this GRA:

- Potential differentiation of revenue recovery between customer classes arising from the examination of Revenue-to-Cost Coverage results from Manitoba Hydro's Cost of Service Study, PCOSS18.
- Re-balancing of energy and demand components of rates for general service customer classes, resulting from the output of demand and energy classification in PCOSS18.

Written input from participants:

Manitoba Hydro recognizes that parties may not be in a position to provide input during the workshop session, and following the completion of the workshop, parties are encouraged to provide Manitoba Hydro with their input by email by Thursday, July 31, 2017.

Manitoba Hydro's deliverables from this process:

Manitoba Hydro will prepare a report as soon as practical to be filed in the course of the 2017/18 & 2018/19 General Rate Application, which will include its proposed alternative Residential rate design.

It is recognized that parties will wish to file information requests on Manitoba Hydro's report and its proposal, and the accommodation for those information requests will need to be addressed by the parties and the PUB. The scheduling of information requests on this matter is to be addressed by legal counsel to this proceeding, outside of this workshop and the engagement process.

Registered interveners will have the capability of introducing their own rate design proposals if they so choose during the public hearing process:

Manitoba Hydro recognizes that various parties with an interest in Residential class customers may have non-aligned views in terms of proposed rate designs and the resulting impacts to subsets of customers within the Residential class. Manitoba Hydro also expects that its alternative Residential rate design may not address all of the issues and suggested approaches raised by interveners.

Manitoba Hydro's selection of an alternative rate design does not limit interveners from advancing their own respective rate design proposals during the course of this public hearing. Interveners are entitled to file evidence on their own residential rate design proposals at the Intervener Evidence stage of this public hearing process, scheduled for October 31, 2017 in accordance with the timetable found at Appendix B of Order 70/17.

Such proposals, if introduced, would be subject to examination through one round of Information Requests on Intervener Evidence, and intervener experts providing such evidence may be subject to cross-examination at the oral hearing.

Workshop Agenda
Thursday, July 13, 2017
9:00 am to 4:00 pm
Manitoba Hydro Place
Kelsey Meeting Room 3rd Floor - 304

1.	Opening remarks a. Review Agenda b. Housekeeping items – washrooms, breaks, lunch, cell phones, etc. c. "Without Prejudice" - discussions are not on the record	15 minutes	9:00 – 9:15
2.	Introduction of attendees. a. Introduction of individuals attending in person and on conference call	15 minutes	9:15 – 9:30
3.	Background to Manitoba Hydro's proposed process and workshop a. Manitoba Hydro's 2017/18 & 2018/18 General Rate Application b. 2015 – 2017 Bill Affordability Working Group Process c. DSM and conservation rates	30 minutes	9:30 – 10:00
4.	Scope of workshop and engagement process a. Residential customer class only b. Bill impacts on residential "all-electric" heating customers c. Deliverable is a report to PUB and accompanying rate design in GRA process	30 minutes	10:00 – 10:30
	Coffee Break	10 minutes	10:30 – 10:40
5.	Rate setting process a. Determining the revenue requirement b. Allocation of revenue requirement to customer classes c. Design of rate structures for each customer class	20 minutes	10:40 – 11:00
6.	Residential customer class characteristics a. Basic All-Electric, Basis Standard, Seasonal, Residential Diesel, Fixed Rate Water Heating customers. b. Breakdown by load and required revenues from each sub class of Residential customers. c. Manitoba climate and influence on customer bills	30 minutes	11:00 – 11:30
7.	Manitoba Hydro's current residential rate design	30 minutes	11:30 – 12:00
	Lunch to be served	30 minutes	12:00 – 12:30

8.	Manitoba Hydro rate design objectives a. Manitoba Hydro's rate design goals and objectives b. Uniform Rate Legislation in Manitoba c. Embedded cost rate making and recovery of class revenues	30 minutes	12:30 – 1:00
9.	Issues of electric heat, conservation rates, time-of-use rates, Differentiation of rate increases, etc.	45 minutes	1:00 – 1:45
10.	Solicitation of input from parties and discussion period a. MKO b. COALITION c. GAC d. Dr. John Gray e. Others in attendance, in order.	120 minutes	1:45 – 3:45
11.	Closing remarks and next steps	15 minutes	3:45 – 4:00
	Meeting close		4:00 pm

Manitoba Hydro Development of an Alternative Rate Design Proposal Residential Customer Class

Manitoba Hydro Workshop

Thursday, July 13, 2017

Agenda for today's workshop

Opening remarks	**15 minutes**	**9:00 – 9:15**
Introduction of attendees.	**15 minutes**	**9:15 – 9:30**
Background to Manitoba Hydro's proposed process and workshop	**30 minutes**	**9:30 – 10:00**
Scope of workshop and engagement process	**30 minutes**	**10:00 – 10:30**
Coffee Break	**10 minutes**	**10:30 – 10:40**
Rate setting process	**20 minutes**	**10:40 – 11:00**
Residential customer class characteristics	**30 minutes**	**11:00 – 11:30**
Manitoba Hydro's current residential rate design	**30 minutes**	**11:30 – 12:00**
Lunch Break	**30 minutes**	**12:00 – 12:30**
Manitoba Hydro rate design objectives	**30 minutes**	**12:30 – 1:00**
Issues of electric heat, conservation rates, time-of-use rates,	**45 minutes**	**1:00 – 1:45**
Differentiation of rate increases, etc.		
Solicitation of input from parties and discussion period	**120 minutes**	**1:45 – 3:45**
a. MKO		
b. COALITION		
c. GAC		
d. Dr. John Gray		
e. Others in attendance, in order.		
Closing remarks and next steps	**15 minutes**	**3:45 – 4:00**
Meeting close		**4:00 pm**

Process to develop an alternative to the current rate design for the Residential customer class

- Manitoba Hydro proposes to prepare an alternative rate design for the residential customer class to be reviewed in conjunction with rate schedules filed with the standard residential rate design.
- Engage with interveners and participants of the Bill Affordability Working Group to obtain input on rate design considerations, to be accomplished between July 20 and July 31 through a workshop with the receipt of written input to follow.
- Manitoba Hydro to prepare a report on its alternative rate design proposal to be filed for review in the current General Rate Application process.
- The nature of the discussion in this process is “without prejudice”. This session is not transcribed nor are the comments made by participants binding upon parties throughout the course of this General Rate Application.
- The intention of this workshop session and the input process is to promote an open conversation about the subject matter. Participants should feel free to ask questions and solicit answers from other participants.

Background to alternative residential rate design

- Manitoba Hydro's 2017/18 & 2018/19 General Rate Application
- 2015-2017 Bill Affordability Working Group
- Demand Side Management & conservation rates

Scope of the workshop and engagement process

- Manitoba Hydro is developing an alternative rate design for its Residential customer class to be evaluated in conjunction with the current residential rate design filed in its GRA materials.
- This Rate design alternative will only applicable for the Residential customer class.

The rate setting process

Revenue Requirement

- Determination of overall cost of providing service:
  - Operating, maintenance and adminstrative
  - Finance expense
  - Depreciation and amortization
  - Capital and other taxes
  - Fuel and power purchases
  - Water rentals and assessments
  - Contribution to reserves (net income)

Cost of Service

- Determination of a fair allocation of the Corporation's overall revenue requirement to each customer class based on how customers cause costs to be incurred

Rate Design

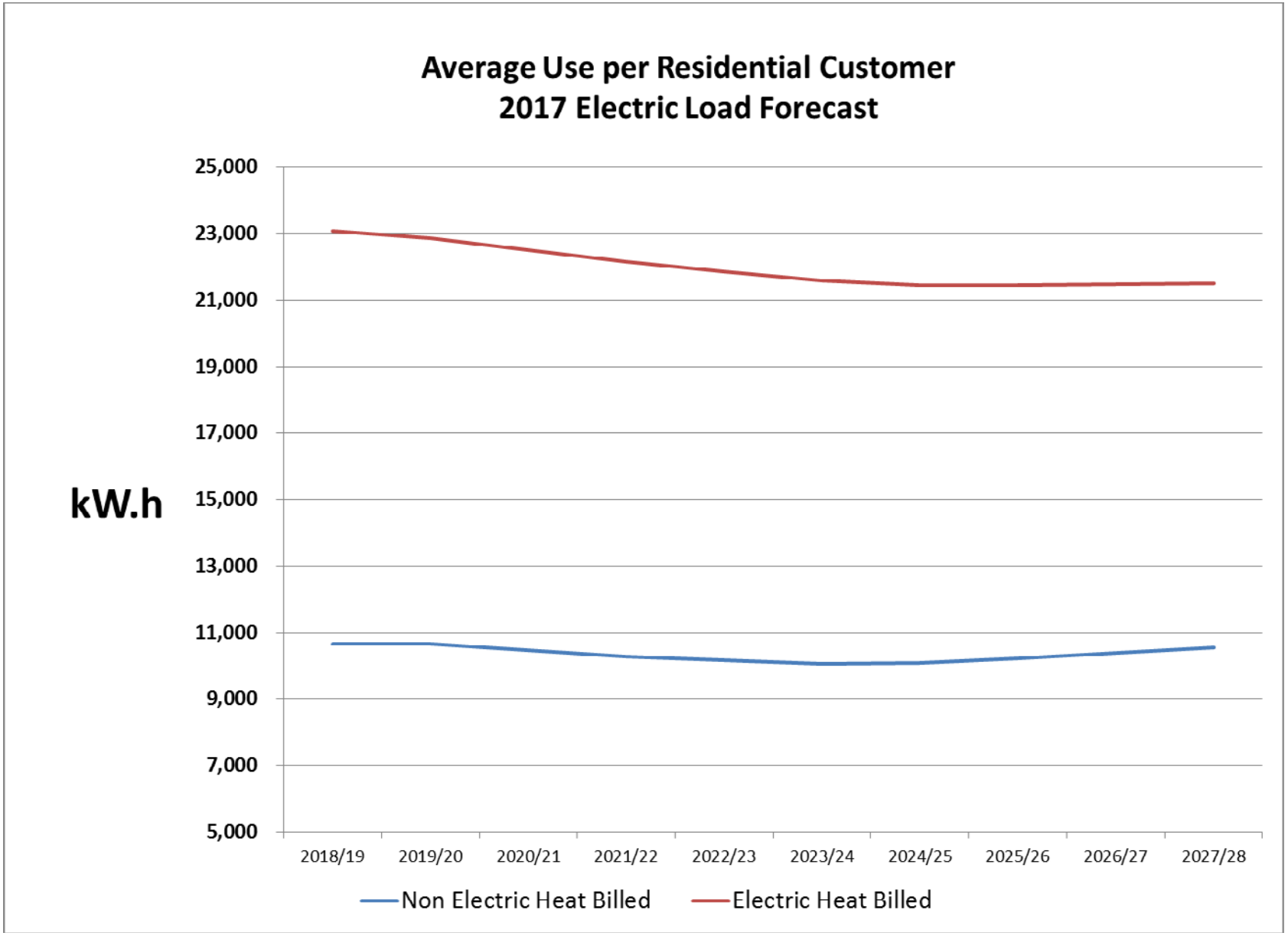
- Determination of how to recover each class' revenue requirement

Residential customer class

- Basic All-Electric
  - Residential electric customers who use electricity for domestic purposes and use electricity for home heating.
- Basic Standard
  - Residential electric customers who use electricity for domestic purposes and use other sources of energy for home heating.
- Seasonal
  - Seasonal use, non-primary residences, may be remotely located, meters read twice per year.
- Residential Diesel
  - Residential customers situated in the four off-grid communities served by diesel generation.
- Fixed Rate Water Heating
  - Unmetered electrical service only for domestic water heating purposes.
  - Rate is closed to new services, only applicable to existing FRWH customers.

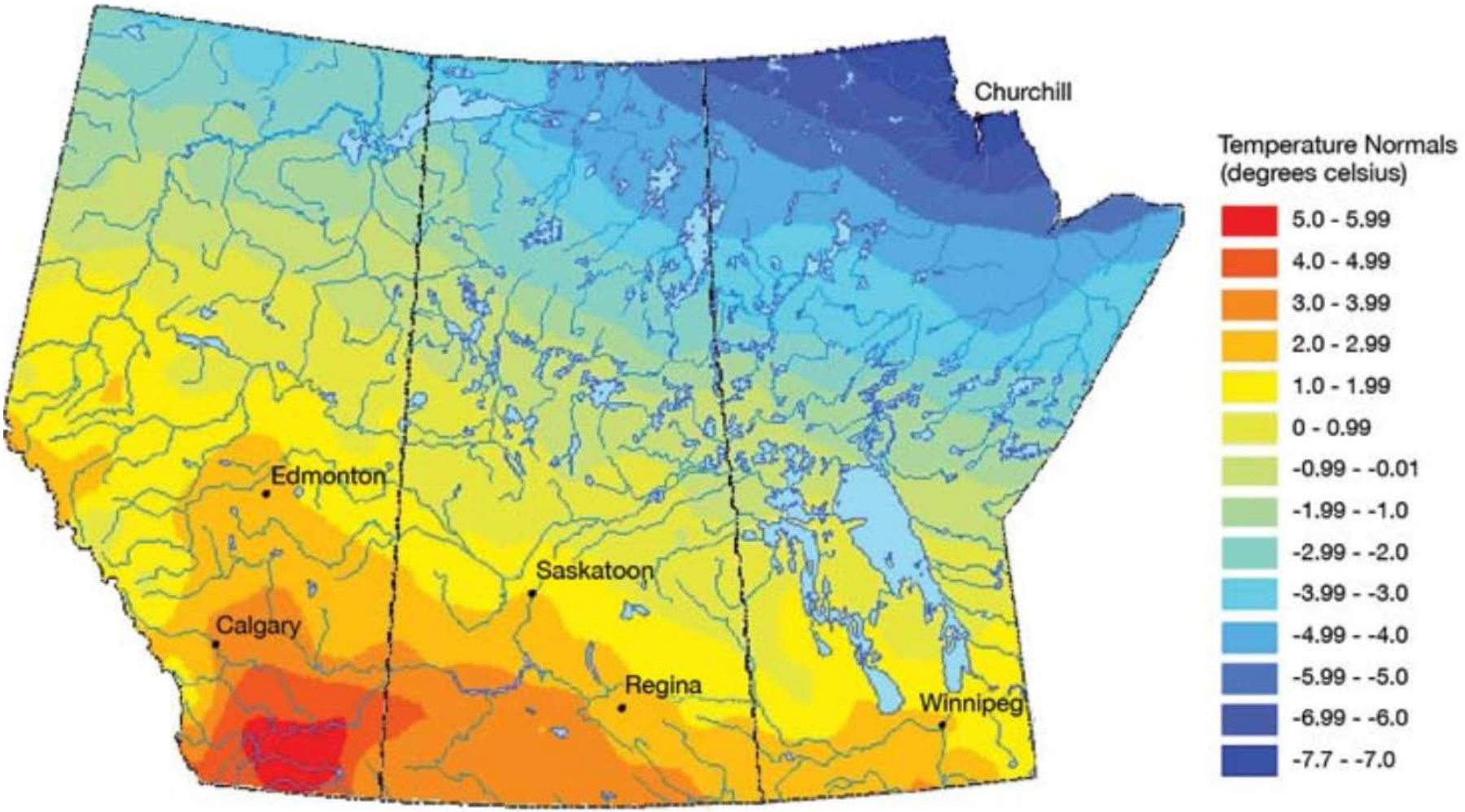
Breakdown of load and required revenues from each sub class of Residential customers

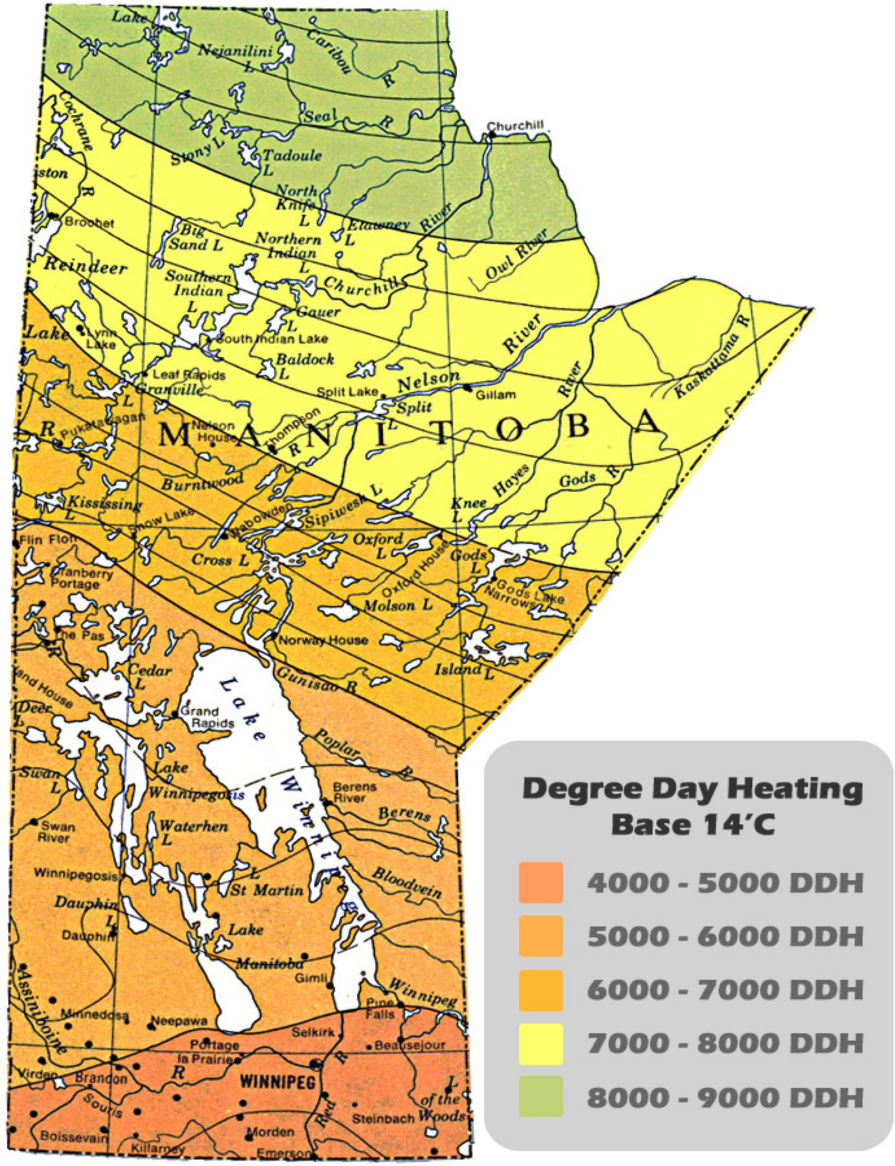
2016/17 Actual				
	GW.h	**($ millions)**	**GW.h**	**($ millions)**
Basic Residential Standard	3,264.4	$284.5	45.0%	46.2%
Basic Residential All-Electric	3,894.1	$322.4	53.7%	52.4%
Residential Seasonal	66.0	$6.9	0.9%	1.1%
Residential Diesel	8.8	$0.7	0.1%	0.1%
Flat Rate Water Heating	16.7	$1.1	0.2%	0.2%
	7,249.9	$615.7		


Average Use per Residential Customer
2017 Electric Load Forecast
kW.h
25,000
23,000
21,000
19,000
17,000
15,000
13,000
11,000
9,000
7,000
5,000
2018/19
2019/20
2020/21
2021/22
2022/23
2023/24
2024/25
2025/26
2026/27
2027/28
Non Electric Heat Billed
Electric Heat Billed

Manitoba climate and influence on residential customer bills

Normal average annual temperatures (celcius)




Degree Day Heating
Base 14'C
4000 - 5000 DDH
5000 - 6000 DDH
6000 - 7000 DDH
7000 - 8000 DDH
8000 - 9000 DDH
MANITOBA
Churchill
Gillam
Brochet
Lynn Lake
Leaf Rapids
South Indian Lake
Split Lake
Nelson House
Flin Flon
Cranberry Portage
The Pas
Norway House
Gods Lake Narrows
Oxford House
Grand Rapids
Berens River
Swan River
Winnipegosis
Dauphin
Gimli
Pine Falls
Minnedosa
Neepawa
Selkirk
Beausejour
Portage la Prairie
WINNIPEG
Virden
Brandon
Steinbach
Boissevain
Killarney
Morden
Emerson
Lake Winnipeg
Lake Winnipegosis
Lake Manitoba

Representative look at home heating bills in various communities in Manitoba

Actual data from 2014/15 (not weather normalized)

	Energy (kWh)		Annual Bills ($)	
	Average (all occupancies)	Single Family Detached	Average (all occupancies)	Single Family Detached
Churchill	25,090	32,390	$ 1,940	$ 2,480
Thompson	29,660	32,660	$ 2,270	$ 2,490
The Pas	30,120	31,730	$ 2,310	$ 2,430
Ashern	29,530	30,600	$ 2,270	$ 2,350
Lac du Bonnet	25,640	26,120	$ 1,970	$ 2,010
Pilot Mound	28,350	29,740	$ 2,180	$ 2,280
Sprague	23,490	23,600	$ 1,840	$ 1,850
Average	27,410	29,550	$ 2,110	$ 2,270
All Residentials	15,900		$ 1,240	

*all data rounded

Manitoba Hydro's rate design goals and objectives

Manitoba Hydro's general rate making objectives are as follows:

1. Recovery of Revenue Requirement – Rates must provide the Corporation the opportunity to fully recover its allowed revenue requirement.
2. Fairness and Equity – Rate design should provide for equitable treatment of customers both within a customer class (whereby similar customers receive similar treatment) and between customer classes (whereby dissimilar customers may be treated differently).
3. Rate Stability and Gradualism – In conformity with the principles of gradualism and sensitivity to customer impacts, annual adjustments to revenues by customer class should be less than two percentage points greater than the overall proposed increase.
4. Efficiency – Manitoba Hydro views this goal in designing rates as the need to provide appropriate price signals regarding the value of energy and to promote the efficient and economic use of energy. The determination of an appropriate price signal may recognize the application of marginal cost considerations.
5. Competitiveness of Rates - Maintain Manitoba Hydro's competitive position with respect to rates charged by other Canadian utilities for all rate classes.
6. Simplicity and Understandability – Rate design should be understandable to customers and should be easy to interpret and apply.

Manitoba Hydro's rate design goals and objectives

Uniform Rates Legislation (proclaimed November 1, 2001)

- Rates shall not be differentiated by geography for any customer class.
- Cost of service is determined on an average basis for all customers in the class
- Prior to November 1, 2001 Manitoba Hydro's service territory was comprised of three rate zones
  - Zone 1: Winnipeg (legal boundary)
  - Zone 2: Medium Density - 100 metered services or more with a line density of a least 15 customers per k of distribution line situated outside of Zone 1 boundaries
  - Zone 3: Low Density - less than 100 metered services, situated outside of all other rate zones

Representative bill calculations with rates as at October 31, 2001.

Residential <200 Amp Monthly Bill (before tax)

	1,000 kWh	2,000 kWh
Zone 1	$58.94	$110.54
Zone 2	$61.63	$113.23
Zone 3	$69.05	$120.65

Residential rate qualifications

RESIDENTIAL - TARIFF NO. 2017-01

Basic Charge:	**$ 8.44 PLUS**
Energy Charge: All kWh	**@ 8.556 ¢ / kWh**
Minimum Bill:	**$ 8.44**

Services over 200 amps will have $8.44 added to the Basic Charge.

Applicability:

The Residential rate is applicable for all residential purposes as follows:

a) individually metered single family dwellings including those in multiple residential projects and single or three phase farm operations served through the same meter if:

i. the connected business load does NOT exceed 3 kW; or

ii. the combined agricultural and residential load does NOT exceed a demand of 50 kW.

b) services for personal use outside the home, such as residential water wells, private garages, boat houses and swimming pools (use can be for household, recreational and hobby activities).

c) single metered multiple residential projects meeting all the following criteria:

i. monthly demand does not exceed 50 kVA;

ii. the meter serves four or less individual suites or dwelling units;

iii. none of the units are used for business purposes;

iv. individual dwelling units are:

- **self-contained rental apartments with common facilities; or**
- **row housing with self-contained rental dwelling units and common facilities; or**
- **buildings with condominium type dwellings incorporated under the Condominium Act; or**
- **individual residential services within a trailer park established prior to May 1, 1969.**

Seasonal Residential & Diesel Residential rate qualifications

SEASONAL - TARIFF NO. 2017-02

Annual Basic Charge:	**$ 101.28 PLUS**
Energy Charge: All kWh	**@ 8.556 ¢ / kWh**
Minimum Annual Bill:	**$ 101.28**

The account is billed twice a year, April and October, each for a six-month period. The April billing is for the Annual Basic Charge plus past winter season's consumption. The October billing is for the summer season's consumption only.

Applicability:

The Seasonal rate is applicable to customers outside of the Winnipeg area using less than 7,500 kWh per season and is for residential purposes on an individually metered service when usage is of a casual or intermittent nature.

DIESEL - TARIFF NO. 2017-03

Basic Charge:	**$ 8.44 PLUS**
Energy Charge: All kWh	**@ 8.556 ¢ / kWh**
Minimum Bill:	**$ 8.44**

Applicability:

The Residential rate applies to all residential services in the Diesel Communities, provided the service capacity does not exceed 60 A, 120/240 V, single phase.

Rate design issues

- Electric heat customers
- Conservation rate designs
- Time-of-use rate designs
- Differentiation of rate increases
  - Between customer classes (RCC's)
  - Within customer classes

Conservation rate design

- Encourage customers to reduce consumption by pricing the tail block higher than the first block of monthly consumption.
- Designed to be revenue neutral
- Advantage
  - Stronger price signal to customers to reduce marginal consumption
  - Lower bills for lower usage customers (possible benefit to some lower income customers)
- Disadvantage
  - Increased revenue volatility due to weather sensitivity of residential energy load
  - Negative impact on electric heating customer bills
  - 54% of MH's residential electrical load is for all electric customers
  - Large number of electric heat customers situated outside of gas-available territory.

Time-of-use rates

- Time-of-use rates have been implemented for residential customer classes in some jurisdictions, notably in Ontario.
- Time-of-use rates require additional infrastructure investment in the deployment of smart meters for each customer, installation of information technology for data transfer and billing system modifications.
- Significant customer education is required to assist residential customers in transitioning from a standard electric rate design to a time-of-use rate design.

Differentiation of rate increases

- Differentiation of rate increases between customer classes.
  - Rate increases are not applied “across-the-board” as an equal percentage increase to each individual customer class.
  - Some rationale must exist to differentiate the level of rate increase between customer classes. Notionally, this distinction may be considered on the basis of cost to serve the class compared to the revenues obtained from that class.
  - Manitoba Hydro’s alternative rate design proposal does not consider any further differentiation of revenues for the Residential class overall.
  - The matter of differentiation between customer classes is fully in scope for the GRA process and will be addressed by all parties in the course of the public hearing process.
- Differentiation of rate increases within a given customer class.
  - The residential customer class is comprised of customers that use electricity for all energy purposes including home heating requirements, and other customers that utilize other energy sources for home heating (i.e. natural gas where available) and utilize electricity for other domestic purposes

Input from participants

- Manitoba Keewatinowi Okimakanak
- Assembly of Manitoba Chiefs
- Consumer COALITION (with Winnipeg Harvest)
- Green Action Centre
- Dr. John Gray
- Others in attendance

PUBLIC
INTEREST
LAW
CENTRE

CENTRE
JURIDIQUE
DE
L'INTÉRÊT
PUBLIC

AN INDEPENDENT
SERVICE OF
LEGAL AID
MANITOBA

L'AIDE JURIDIQUE
DU MANITOBA

SUPPORTED BY
LEGAL AID MANITOBA
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MANITOBA LAW
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AND MEMBERS
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31 July 2017

Greg Barnlund
Division Manager
Rates & Regulatory Affairs
Manitoba Hydro
360 Portage Avenue
Winnipeg, MB
R3C 0G8

Dear Mr. Barnlund:

Re: Rate Design and Bill Affordability Workshop

The Consumers Coalition attended the Manitoba Hydro-led workshop on Rate Design and Bill Affordability on Thursday, 13 July 2017, at which time Manitoba Hydro asked for without prejudice preliminary comments by 31 July 2017.

The comments made in this letter are without prejudice to the final position taken by our clients, the Manitoba Branch of the Consumers' Association of Canada and Winnipeg Harvest (together, the Consumers Coalition), and does not represent any express position taken by our clients. Rather, these comments highlight nine potential issues or questions that should be considered relating to rate design and bill affordability. These comments reflect observations from the legal team, based upon a preliminary review of the literature, some consumer feedback and conversations over time with our clients.

By way of preamble, we note that faced with rate pressures of the magnitude proposed by Manitoba Hydro over the next half-decade, coupled with above-average rate increases over the last number of years, a critical element of affordability is testing the efficiency and prudence of Manitoba Hydro expenditures and re-imagining the focus of the corporation in the face of ongoing dramatic changes in the marketplace. In other words, in the face of monumental rate shock level increases, no rate design or bill affordability proposal can guarantee security from energy poverty for all vulnerable consumers.

We also note that the rate design and bill affordability discussion should be focused on the regulatory and public policy outcomes that it is intended to remedy. The objective of the remedy, whether it be targeted relief for a select vulnerable population or reducing the energy burden for a larger segment of consumers, should be identified before a particular rate design or bill affordability proposal is created and put forward.

Our clients are not able to take a final position on these issues because consumer engagement has yet to be completed and the issues and questions listed below have not been adequately addressed. While the following considerations do not necessarily reflect our clients' current position, they are offered for Manitoba Hydro's consideration.

1. **Consumer engagement**
   a) We note that there still remains significant consumer engagement to be conducted, both at the stakeholder and the consumer levels. It is our understanding that consumer engagement was included as part of the tasks for the Bill Affordability Collaborative Process but was not conducted. The legitimacy of any proposal comes into question if it has not been tested against meaningful consumer engagement.

2. **Energy efficiency and housing stock**
   a) In terms of energy poverty and bill impacts, there is significant literature finding that energy efficiency should be the primary focus of any remedial program. The Public Interest Law Centre ("PILC") was retained by the Manitoba Branch of the Consumers' Association of Canada to conduct a focus group on the topic of energy poverty in Pimicikamak. We were shocked by the annual monthly usage in winter months shown by some consumers. This was very concerning to the clients and to the research team. The focus group also highlighted gaps in or lack of knowledge about energy efficiency programs and a lack of trust in terms of Manitoba Hydro delivery of service. These issues may highlight utility, housing and social policy challenges as they relates to energy efficiency and housing stock.

3. **On-reserve population**
   a) Based on consumer feedback received, we note that there may be a need for a better understanding of populations on reserve who may be particularly vulnerable to Hydro rate increases. For example, at least one community has advised that senior citizens who were formerly on band assistance before becoming eligible for seniors benefits may face particular challenges in paying their Hydro bills.

4. **Cost principles, subsidy and government involvement**
   a) An issue relating to rate design or bill affordability programs identified in the literature is that a determination must be made regarding where the funding for any energy subsidy comes from. For example, where a rate design or bill affordability program moves away from cost-based principles, consideration should be given to whether the subsidy pool should be comprised of only residential consumers, or whether it should be comprised of the broader spectrum of consumers or taxpayers. An example of a broader consumer pool is where the industry has contributed to a subsidy in the high cost of service area fund at the Canadian Radio-television and Telecommunications Commission. When dealing with accessibility and affordability issues, the literature identifies that government can be an important possible source for rate design or bill affordability programs. For example, taxpayer-funded programs exist in Ontario, in the Northwest Territories and in the United Kingdom.

5. Water rentals

a) Based on the discussion by the Public Utilities Board in its report pursuant to the Needs For and Alternatives To process,[1] water rentals could be explored as a possibility to assist with bill affordability. For example, the option of a portion of water rentals directed back to communities could be examined, as there may be a duty owed by the government given the benefits received from projects, such as Keeyask, especially if this issue relates to public policy rather than a cost-based dialogue.

6. Unintended consequences

a) The literature suggests that any rate design proposal should take into consideration potential unintended consequences (e.g. a low-income person without electric space heat paying more in hydro bills to support a more affluent person in an all-electric area). This is an issue to consider both analytically and politically. Especially given Manitoba Hydro's 7.9% rate application and certain consumers potentially being impacted by even higher rates, there may be considerable consumer resistance to the subsidizing of customers classes.

7. Penetration rates

a) A consistent issue identified in the literature on bill affordability is that programs aimed at low-income people appear to have very disappointing results in terms of sign up rates and penetration rates. In effect, a program allegedly aimed to remedy affordability challenges may compound affordability challenges for a large portion of the vulnerable population in question. This issue should be examined before any rate design or bill affordability proposal is put forward.

8. Vulnerable groups

a) Based on a review of the literature, an issue to consider is whether a proposed rate design or bill affordability program should be targeted to the entire population or whether it should be more narrowly targeted by a redefinition of class. If the program attempts to target the most vulnerable populations, consideration may have to be given to how to establish a definition of class which is not based solely on geography (e.g. First Nation people living on-reserve or Indigenous people living adjacent to reserve).

9. Long-run marginal costs

a) Regarding conservation, inverted or inclining rates, consideration should be given to Manitoba Hydro's current estimate of long-run marginal costs. At least in terms of residential customers, current rates appear to be at or slightly above Hydro's estimated long-run marginal costs. If the focus of a rate design proposal is economic efficiency, including the efficient allocation of societal resources, consideration should be given to the fact that current residential rates already approximate long-run marginal costs, as estimated by Manitoba Hydro.

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1 Public Utilities Board, "Report on the Needs For and Alternatives To (NFAT)", June 2014, at p 252, online: http://www.pubmanitoba.ca/v1/nfat/pdf/finalreport_pdp.pdf.

Thank you for your consideration of these comments.

Sincerely,

Katrine Dilay
Attorney
Public Interest Law Centre

KD/vs

cc: Patti Ramage
Odette Fernandes
Consumers Coalition

Examples of Affordability Rates for Low-Income and Space-Heating Customers and Inclining-Block Rates for Residential Customers

Affordability Rates

For discussion purposes, we have calculated examples of affordability rates for the following three groups of customers:

- all LICO-125 customers,
- LICO-125 customers with electric space heat (ESH), and
- non-LICO customers with ESH.

Because of data limitations, the rates are only estimates. For assumptions about customer number and usage, we used data from the following sources:

- The proposed 2017/18 residential rates. Unfortunately, we have little data on Manitoba Hydro's projections for 2017/18, since the filing does not even include a standard proof of revenues.
- The 2014 Residential Energy Use Survey, for the number and average usage of various subgroups of residential customers, such as heating and non-heating, and LICO-125 and non-LICO customers.
- Bill frequency analyses for the basic (non-seasonal) residential class that Manitoba Hydro provided in 2010 and 2012.
- Residential sales by season from Appendix 8.5, page 4 of the Company's filing.

The data in our examples should be updated. In addition, the magnitude of the discounts (in the ¢/kWh discount and the number of kWh discounted) is a matter of judgment, and our examples can be scaled up or down as desired.

A Discount for All LICO-125 Customers

This example discounts the rate for all LICO-125 customers by eliminating the customer charge and reducing the proposed energy charge by 4¢/kWh for the first 500 kW.h/month, leaving the tail-block charge at the Company's proposed 8.556 ¢/kW.h. We selected the 500 kW.h first block because the bill frequency analysis indicated that about 94% of usage was in bills over 500 kWh, so that most of that usage block is inframarginal. Under this rate, LICO customers would save an average of $135 per year; customers using over 500 kWh each month would save $341 annually. If the rate discount were collected entirely from the non-LICO residential customers, the energy rate for those customers would increase 0.36¢/kWh. The increase in the energy charge would be much lower if the discount were recovered from all non-LICO customers.

A Targeted Discount for LICO ESH

The rate described above would benefit low-income customer in general, but would not do much to reduce the burden of electric rates on low-income space-heating customers. We modeled a rate for LICO ESH customers that applies the 4¢/kW.h discount to about 20% of space-heating use, estimated as the excess of seasonal usage over summer usage, as shown below.[1]

	Monthly Excess	Discounted kWh
Spring	820	150
Fall	1,204	250
Winter	2,590	500
Annual	14,409	2,800

This discount would reduce the bills to heating customers by up to $112 annually. If the non-LICO residential customers paid for this reduction in revenue, their rates would increase by 0.13¢/kWh. Again, that value would be reduced if it were spread more widely.

If this discount were combined with the previous one, LICO-125 customers would face a zero customer charge and a 4¢/kWh reduction in the energy charge

[1] Consumption may vary seasonally for other end-uses, such as lighting, but we do not have detailed bill-frequency data separately for heating and non-heating customers.

for the first 500 kW.h in the summer, 650 kW.h in the spring, 750 kW.h in the fall and 1,000 kW.h in the winter.

A Targeted Discount for Non-LICO Heating Customers

We also looked at a rate for non-LICO ESH customers, with a 4¢/kWh discount for the same seasonal kWh as in the LICO heating discount (150 kW.h per month in the spring, 250 kW.h per month in the fall, and 500 kW.h per month in the winter, for a total of 2,800 kW.h). Under this rate, the bills for heating customers would be reduced by about the same amount as in the previous examples. If the discount were borne by the non-LICO, non-heating residential customers alone, their energy charge would increase by 0.26¢/kWh.

Inclining Block Rates

In addition, we derived an inclining block rate structure for non-LICO customers where all of the requested increase is recovered in the tail block energy charge. We kept the customer charge and energy charge for the first 500 kW.h at current levels and increased the tail block to recover MH's requested 7.9% increase for these customers. The tail block charge would increase by about 0.09¢/kWh.

Summary of Rate Options

Monthly Bills	MH proposed	LICO-125 All	LICO-125 ESH	Non-LICO ESH	Non-LICO IBR
Basic Charge	$8.44	$0	$8.44	$8.44	$7.82
First Block ¢/kW.h	8.556¢	4.556¢	4.556¢	4.556¢	7.93¢
Remainder ¢/kW.h	8.556¢	8.556¢	8.556¢	8.556¢	8.556¢
First Block kW.h					
Summer	—	500	—	—	500
Spring	—	500	150	150	500
Fall	—	500	250	250	500
Winter	—	500	500	500	500
Recovery rate		0.36¢	0.13¢	0.26¢	0.09¢
Assuming recovery from		Non-LICO residential (NLR)		Non-discounted NLR kWh	NLR kWh >500
Recovery rate		0.096¢	0.036¢		
Assuming recovery from		Non-LICO, Non-SEP sales			

GREEN ACTION CENTRE ON AFFORDABILITY & RATE DESIGN

Manitoba Hydro Workshop

July 13, 2017

Green Action Centre perspectives

- Green Action Centre promotes sustainability and quality of life for all Manitobans – Living Green, Living Well.
- Sustainability includes justice – meeting human needs now and in the future – and efficient use of resources.
- We promote policies and practices that ensure that power is sustainably produced and used and able to meet the needs of all Manitobans, including low-income Manitobans.
- Smart policies that achieve multiple goals and values together require creative synergistic solutions. MH cannot fulfill its mandate without them.

Green Action Centre perspectives

- Inspired by best practices from other jurisdictions, e.g.
- Seattle City Light exemplifies a sustainable public utility with steeply inclined conservation rates, a strong affordability commitment (60% discounts for low-income customers), and a City Light Review Panel of appointed knowledgeable unpaid stakeholders, who work with the utility to create a strategic plan and supporting rates.
- But their rate structure must be modified to work here because of our cold climate with many dependent on electric heat.
- Need a “made-in-Manitoba” solution.

Manitoba Hydro's mandate

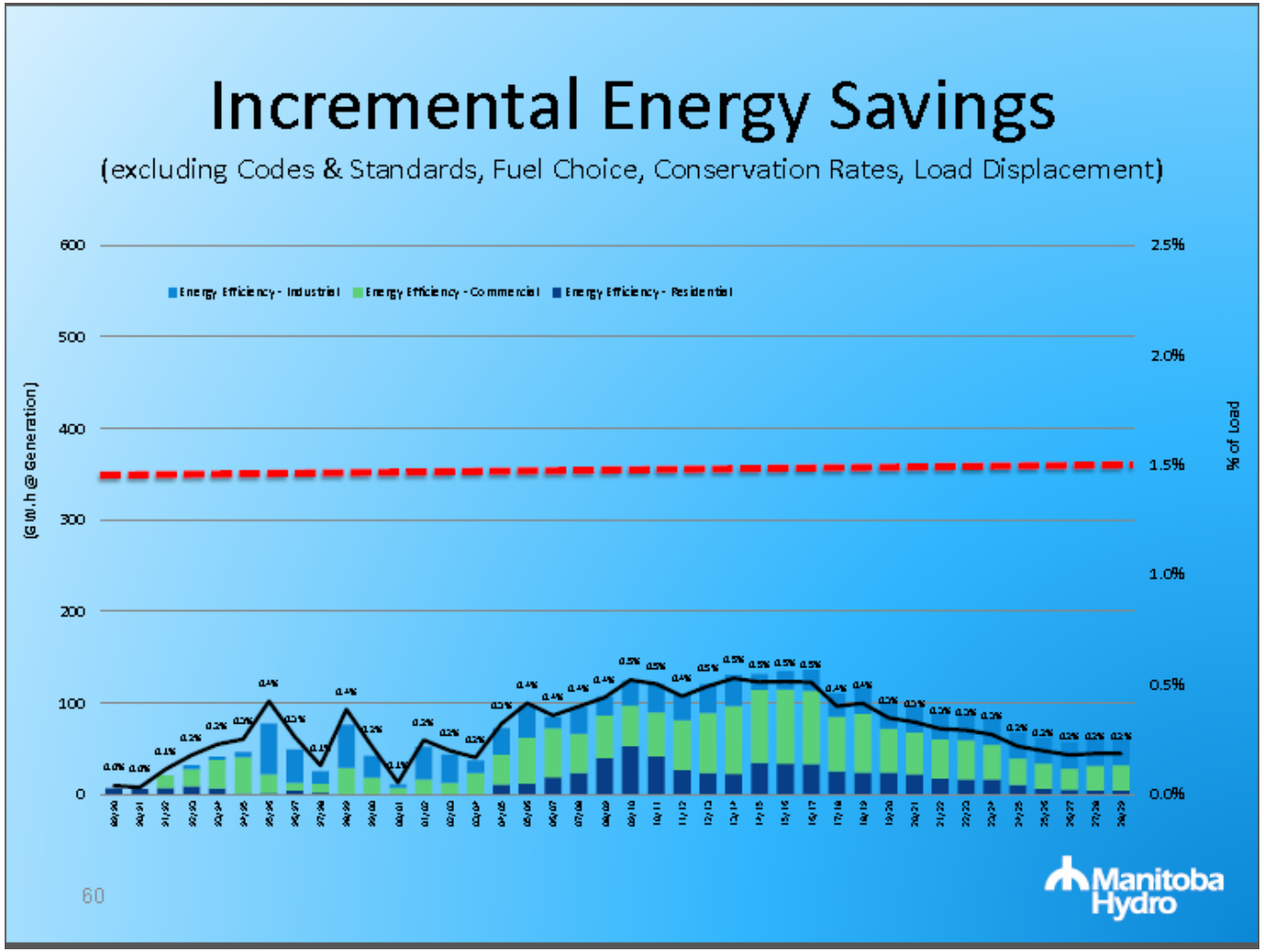
- "*to provide for the continuance of a supply of power adequate for the needs of the province, and to engage in and to promote economy and efficiency in the development, generation, transmission, distribution, supply and end-use of power…"* (Manitoba Hydro Act).
- Affordable energy has obvious social benefits to low-income families.
- **But affordability solutions are also critical for fulfilling MH's core mandate to provide power efficiently and economically to Manitobans.**

Following the linkages:

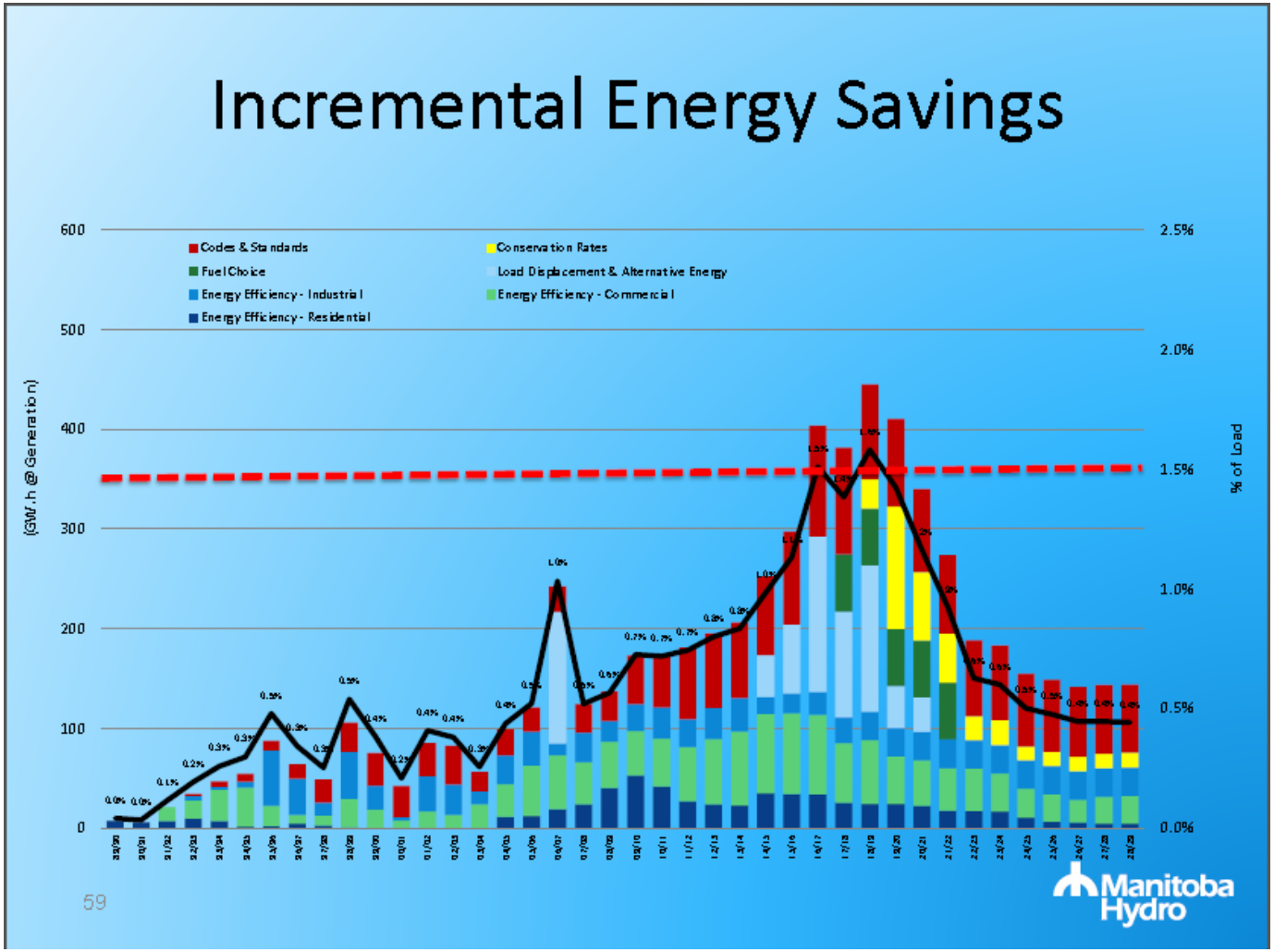
Least cost planning and DSM (Power Smart)

- PUB's NFAT report observed that MH'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.
- Aggressive DSM requires many tools including conservation rates.
- See next 2 NFAT slides showing a molehill vs. a mountain of savings when Codes & Standards, Fuel Choice, Conservation Rates, and Load Displacement (e.g. through solar on your roof) are added to standard Power Smart.

Standard PS yields molehill of savings



Augmented PS yields mountain of savings



Following the linkages: Conclusions

- 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?).
- 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 further.
- PLUS rapid rise in rates to meet MH revenue requirement requires mitigation for high energy burden customers.

Drivers of improved energy affordability

- Improve lives of high energy burden households.
- Improve Manitoba's health, education, employment and economic outcomes.
- Reduce social welfare burden on the province.

Enable aggressive levels of DSM that include conservation rate incentives and mitigate rising rates.

Lower demand curve of domestic load (a) to increase dependable energy available for sale bringing more dollars into MB and/or (b) postponing requirement for expensive new generation.

Improve customer bill payment performance and lower MH collection costs.

An important distinction

- Low average cost of energy compared to other jurisdictions vs.
- 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.
- Definition (Affordability WG Report): *Energy poverty refers to circumstances in which a household is, or would be, required to make sacrifices or trade-offs that would be considered unacceptable by most Manitobans in order to procure sufficient energy from Manitoba Hydro.*

An important graph

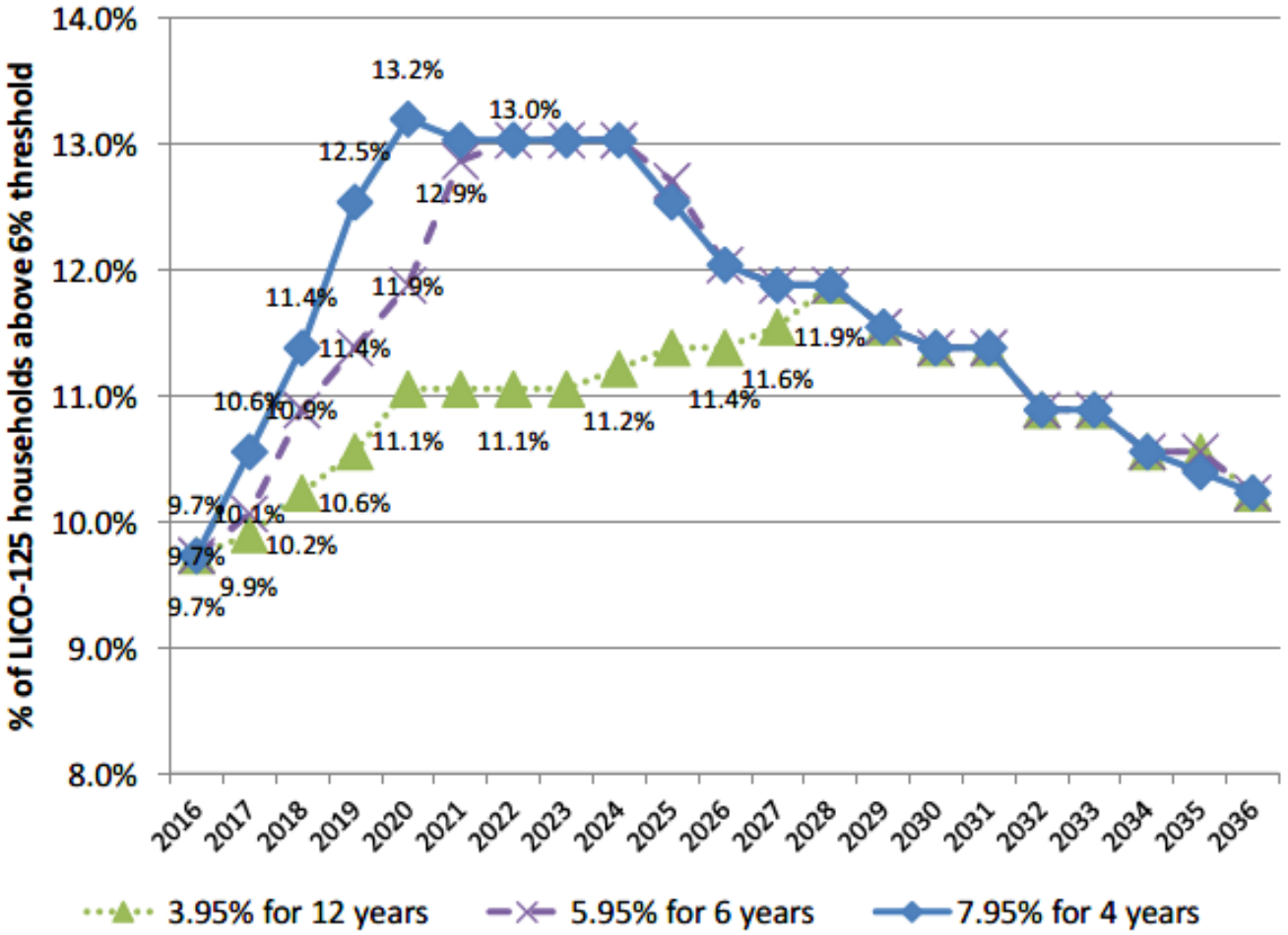


Figure 7: Impact of Manitoba Hydro rate increases on proportion of LICO-125 households above 6% energy poverty threshold, 2016–36, inclusive

Source: PRA calculations based on survey of Manitoba Hydro customers

3 approaches to energy pricing

- 1. Common commodity pricing without regard to ability to pay, like gasoline at the pump.
- 2. Regulated common pricing, with impacts on most energy poor used to maintain lowest possible rates for all income levels.
  - Sets up a trade-off between energy affordability and adequate revenue requirement for MH.
  - Risks unaffordable rates for some with highest energy burdens or low-balling MH revenue requirement, with consequent risks, or both.
- 3. Rate design for affordability. Paul Chernick will provide examples.
- NOTE: In Order 73/15, PUB found that legislation “does not prohibit the creation of a rate class that pays less than the average cost to serve such customers.”

Table 29: Evaluative criteria for bill affordability programs

Criterion	Description
Accuracy	Program beneficiaries should be clearly defined in order to minimize the occurrence of ineligible customers and maximize the occurrence of eligible customers receiving benefits (targeting benefits is central to program effectiveness).
Financial sustainability	Manitoba Hydro is, by law, a financially self-sufficient enterprise whose revenues (primarily from domestic and export customers) must cover its costs over time. This means that any increase in costs that Manitoba Hydro incurs for its suite of affordability programs must be balanced by 1) other cost savings; 2) additional revenue from ratepayers; and/or 3) another revenue source.
Transparency	The beneficiaries and contributors must be fully informed (some programs entail a subsidy from higher- to lower-income customers; this must be clear to all). Where costs of affordability programs are not fully recouped by generated savings (for example, through reduced arrears) this may cause upward pressure on rates paid by other customers, whose willingness to pay should be first assessed or government funding assigned.
Equity	The programs must treat equals equally and “unequals” proportionately (program recipients with higher need should receive proportionately more benefit; defining equality usually rests on an income test).
Evaluability	The outcomes and costs of the programs must be tracked and reported (all measures and assessment activities must have reasonable financial and time costs).
Participatory	Regardless of income status, all Manitoba Hydro customers should contribute something to the cost of their energy consumption.

July 31, 2017

Mr. Greg Barnlund
Manitoba Hydro

Dear Greg:

Re: Rate design for affordability

Thank you for hosting the productive workshop on July 13 with a focus on rate design alternatives to make bills more affordable for electric heating customers.

You have our input presented at the workshop, but I wish to add the following supplementary points for clarity and completeness.

1. Green Action Centre believes that rates should be designed to meet conservation and affordability objectives, among others, and that bill mitigation is an imperative companion for above inflationary rate increases, but we have not settled on a preferred design or set of designs. We believe that such a selection, for all of us, is best made when the design intentions and design implications as well as the evaluative criteria are made as explicit as possible.

2. At the workshop, Mr. Chernick presented a series of inclined rate examples (to preserve a conservation incentive) that variously targeted (a) all LICO-125 customers, (b) LICO-125 electric space heating customers, (c) non-LICO electric space heating customers, and (d) all non-LICO customers. Bill mitigation through discounting for (a), (b) and (c) was achieved by lowering the first block and, in one case, in addition, a basic charge waiver for the targeted customers. Mr. Chernick indicated that, although he treated these sub-groups separately, a comprehensive residential rate redesign would seek to find ways to combine and integrate examples designed for particular subgroups in addition to optimizing the separate rate components in light of better information from the customer database and a discussion of rate design objectives.

3. We also believe that, in addition to the material presented at the July 13 rate design workshop, at least one of the rate design options explored by the Bill Affordability Working Group should be examined further: a percentage of income payment plan (PIPP). PRA's supporting rate design modeling for the working group is found on pp. 117/242 to 124/242 of Appendix 10.5 of Manitoba Hydro's GRA filing. The PIPP design alone of the three designs modeled was able to eliminate energy poverty, because it was designed to do so. In order to preserve conservation incentives, we would recommend that the requisite discounts be applied to the basic charge and first block, as per Mr. Chernick's examples.

4. We also note the following discussion of the PIPP in the working group report, p. 28/242.

Percentage of income payment plan (PIPP): Further considerations

Noting that a PIPP could effectively eliminate energy poverty by design, the Working Group identified the PIPP as the rate option that best addresses both the accuracy and equity principles of energy affordability. However, in light of administrative costs related to implementation of an income-qualified program, and uncertainty about the sufficiency of potential offsets and overall costs of the PIPP at full subscription, the Working Group did not recommend this option, but instead agreed it may warrant further study by Manitoba Hydro. Further study may include consideration of the following measures to potentially reduce program costs:

- *Target only the poorest of the energy-poor by using a higher income threshold (10%).*
- *Introduce a pilot program prior to full implementation, possibly in a remote northern Indigenous community, and utilize the pilot to enhance understanding of likely administration costs, rates of participation and program efficacy.*
- *Offer PIPP for electric customers only, as existing measures are in place for gas customers, and electric heat costs are greater than gas costs and are rising.*
- *Set aside a dedicated pool of program funding and administer it to individuals on an application basis, prioritizing those most in need.*

5. One issue requiring further discussion in light of rate design objectives is whether bill-mitigating discounts should be directed to all electric space heating customers, all LICO-125 customers, all LICO-125 electric space heating customers, or only energy poor electric space heating customers. In light of pending steep and protracted electric rate increases, our inclination is to prioritize the latter two groups.

6. Finally, consideration must be given to an initial rate design modification, the principles guiding the rate design, and the direction of its evolution over time. See Seattle City Light at https://www.seattle.gov/light/rates/docs/citylightrates101_8_8.pdf and slides 13-18 of the attached SCL Rate Design Proposal for Review Panel meeting 3-19-2014 for examples of principles and direction of change. Manitoba's may differ, but should be equally explicit.

Thank you for the opportunity to make this supplemental submission.

Peter Miller, Green Action Centre

Seattle City Light

Rate Design Proposal

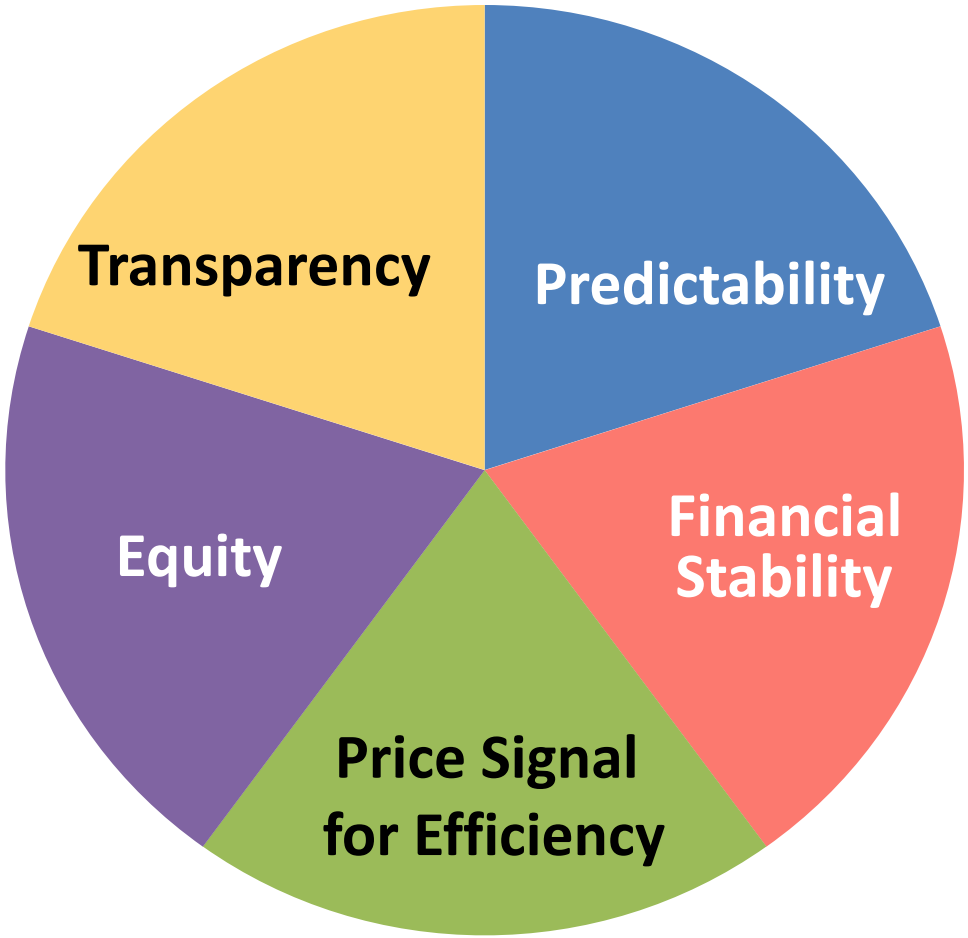
Review Panel Meeting

March 19, 2014

WHAT WILL WE ACHIEVE TODAY?

- Understand the rate design feedback received during public outreach
- Understand the rate design proposal for 2015-2016
- Understand the Utility's long-term vision for rate design
- Arrive at a Review Panel recommendation for 2015-2016

REFRESH ON GOALS FOR RATE DESIGN



Feedback from Public Outreach

What did our customers say?

FEEDBACK FROM PUBLIC OUTREACH

- **Rate predictability is important to us**
- **Support increasing fixed cost recovery, base service charge**
- **Support demand charge increase but consider pace**
- **Retain incentives for conservation**
- **Concerns over decreasing the low income discount to 50%**

Rate Design Proposal for 2015-2016

GOALS OF SCL'S FINAL RATE DESIGN PROPOSAL

Deliver on goals set forth by the Review Panel for the Rate Design Review

Place the utility on a path to achieve the goal of increased financial stability

Incorporate customer feedback from public outreach

RATE DESIGN FINAL PROPOSAL HIGHLIGHTS

1. **Increase fixed cost recovery while maintaining a price signal for energy that continues to incent conservation.**
   - **Implement base service charge**
   - **Increase recovery of distribution costs via demand charge**
   - **But at a more gradual pace than initial concept**

2. **Maintain Utility Discount Program (UDP) subsidy at 60%.**

3. **Implement Time of Use rates.**

RESIDENTIAL & LOW INCOME RATE DESIGN

Residential - City	BSC (per month)	First Block	End Block	Block	UDP
2013	$4.71	$0.0466	$0.1071	Seasonal	60%
Concept	$7.07	$0.0292	$0.1025	Same all year	50%
Final Proposal	$7.07	$0.0292	$0.1025	Same all year	60%

75% of Customer MC

Much lower first block buffers BSC increase

Slightly lower end block approximates MC

*Proposed and Concept rates are for illustrative purposes based on existing 2013 rates and do not include rate increases nor cost of service changes which will be reflected in actual 2015-2016 rates.

SMALL GENERAL SERVICE RATE DESIGN

Small - City	**BSC (per month)**	**Energy**
2013	$7.80 (minimum)	$0.0716
Concept	$49.80	$0.0497
Final Proposal	$28.76	$0.0589

100% of Customer MC
+
50% of Distribution MC

100% of Customer MC
+
25% of Distribution MC

*Proposed and Concept rates are for illustrative purposes based on existing 2013 rates and do not include rate increases nor cost of service changes which will be reflected in actual 2015-2016 rates.

MEDIUM AND LARGE GENERAL SERVICE RATE DESIGN

Medium - City	BSC (per month)	Demand ($/kW)	Energy ($/kWh)
2013	$0*	$2.13	$0.0566
Concept	$18.60	$5.95	$0.0460
Final Proposal	$18.60	$4.48	$0.0500

**minimum charge not actively billed*

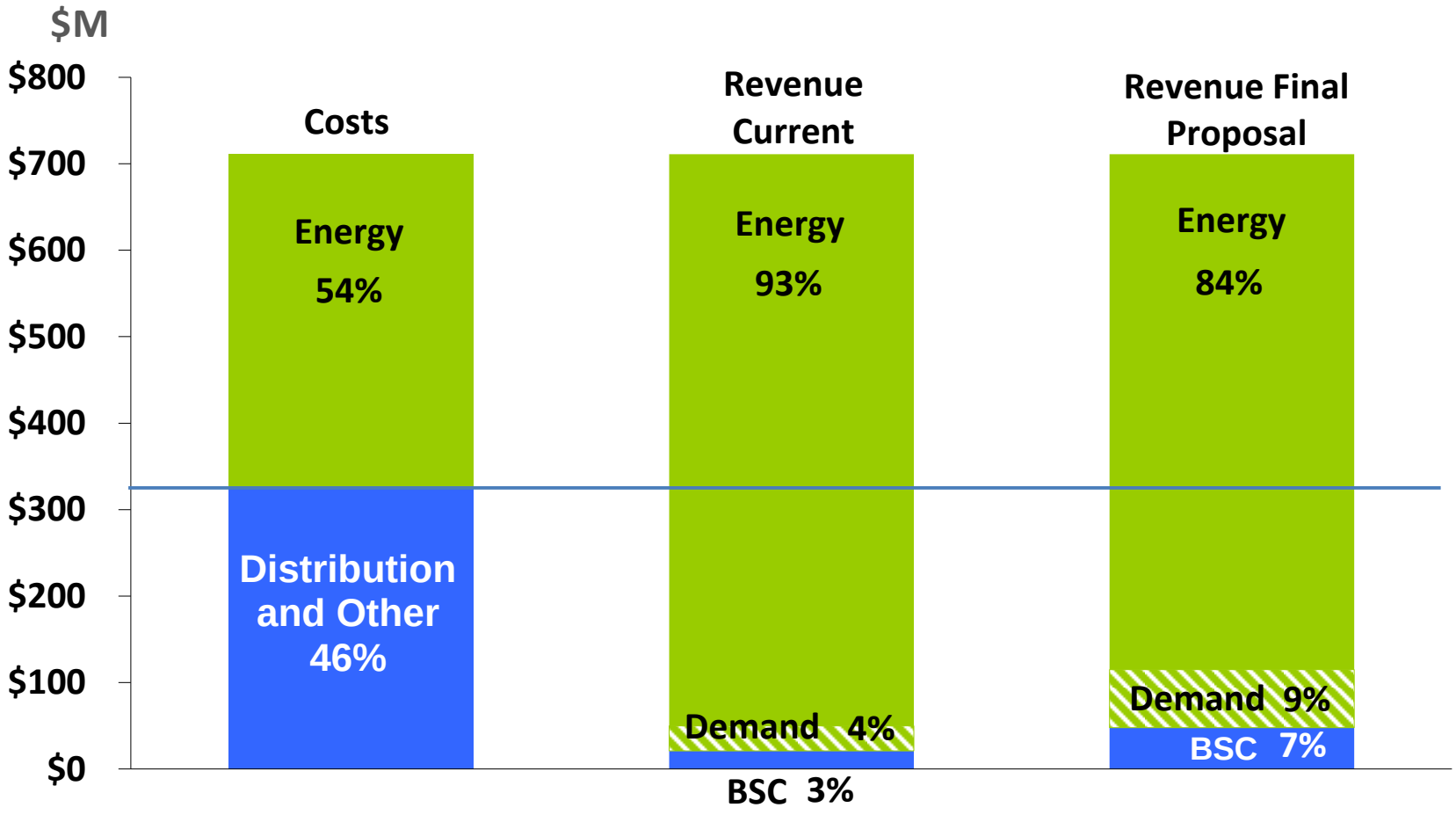
100% of Customer MC

50% of Distribution MC

38% of Distribution MC

*Proposed and Concept rates are for illustrative purposes based on existing 2013 rates and do not include rate increases nor cost of service changes which will be reflected in actual 2015-2016 rates.

FIXED AND VARIABLE COMPONENTS: FINAL PROPOSAL



Long-Term Strategy for Rate Design

LONG-TERM GOALS OF SCL RATE DESIGN STRATEGY

Base Service Charge: All customers pay a monthly base service charge equal to 100% of the marginal cost of customer service (e.g. billing, account maintenance, meter reading).

Demand Charge: All customers pay for 50% of distribution marginal cost through demand charges (or BSC).

Time of Use Rates: All other costs are recovered through variable energy charges priced higher at peak times (at marginal energy cost, or higher) than at off peak times.

LONG TERM RATE DESIGN STRATEGY: RESIDENTIAL

	2013-2014	2015-2016	2017-2018	2019-2020	2021-2022
% Customer MC In BSC	50%	75%	100%	100%	100%
% Distribution MC In Infrastructure Charge (or BSC)	0%	0%	10%	30%	50% or implement small demand charge
Energy Charge		Lower first block rate	Block rate to bridge into TOU	Implement TOU rates	TOU rates

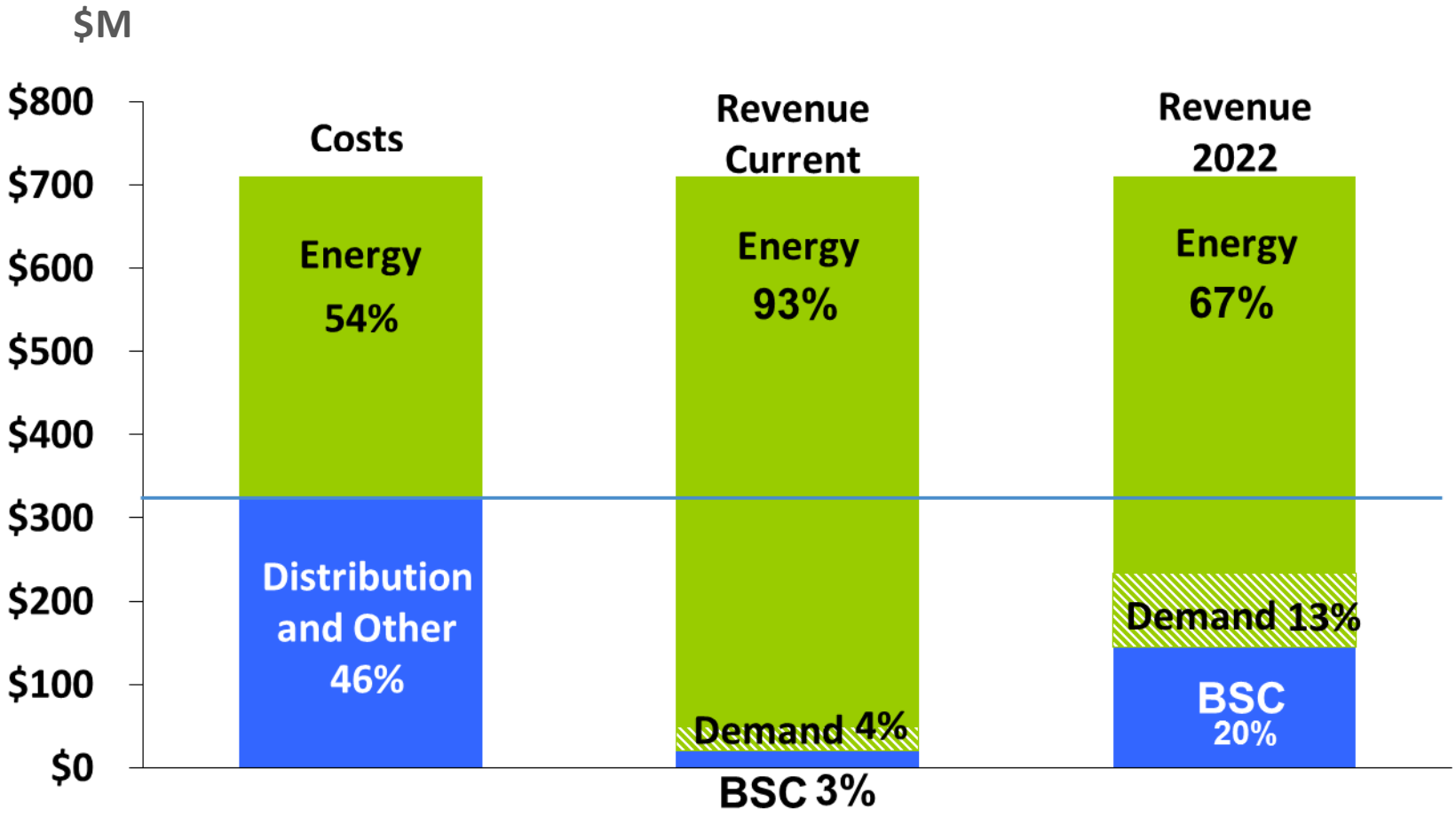
LONG TERM RATE DESIGN STRATEGY: SMALL GENERAL SERVICE

	2013-2014	2015-2016	2017-2018	2019-2020	2021-2022
% Customer MC In BSC	Minimum Charge Only	100%	100%	100%	100%
% Distribution MC In Infrastructure Charge (or BSC)		25%	40%	50%	50% or implement small demand charge
Energy Charge		Reduce energy rates	Reduce energy rates	Implement TOU rates	TOU rates

LONG TERM RATE DESIGN STRATEGY: MEDIUM, LARGE, HIGH DEMAND GENERAL SERVICE

	2013-2014	2015-2016	2017-2018	2019-2020	2021-2022
% Customer MC In BSC	Minimum Charge Only	100%	100%	100%	100%
% Distribution MC In Demand Charge	~16%	38%	50%	50%	50%
Energy Charge		Reduce energy rates	Reduce energy rates	TOU rates for all	TOU rates

LONG TERM STRATEGY: FIXED AND VARIABLE MIX IN 2022



Panel Discussion

John A. Gray
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July 12, 2017

Presentation for: **Residential Rate Design and Bill Affordability Workshop**, July 12, 2017

Manitoba Hydro's substantial proposed rate increase would have a very significant impact on those customers that use electricity for heating. There are a number of urban customers that have chosen electric heating for environmental and other reasons. There are a large number of rural, northern and remote customers dependent on electric heating where natural gas is not available.

Past hydro rate increases in excess of inflation have already disproportionately impacted electric heating customers. This is perhaps acknowledged in Manitoba Hydro's recent invoice inserts comparing the lifetime costs of electric heating with natural gas heating, encouraging people to swatih to natural gas.

It is proposed that Hyrdo be required to develop a separate rate structure for those all-electric or electric heating customers to substantially lower their overall utility costs to a level comparable that of other Manitobans. Hydro already operates separate rate schedules for other customers - commercial, business, and heavy industry.

I proposed a separate rate structure for electric heating customers at a Public Utilities Board hearing half a decade ago. The idea is not new.

I cannot claim to represent electric heating customers. They are not an organized group. It is not possible to identify or contact hem. Only Hydro can know who are electric heating customers.

Those like myself who have chosen electric heating have done so for environmental and other reasons: electricity is a renewable resource, electricity is less polluting that fossil fuels, electricity has less climate change impacts, electricity is produced in Manitoba, and we had thought of Manitoba Hydro as reliable energy source.

While there are a number of electric heating customers in Winnipeg, Brandon and other urban centers, there are likely many more rural, northern and remote electric heating customers and they are unlikely to appear here or before the Public Utilities Board. This may also include those electricity customers in Churchill who, I understand may be switched over to electric heating. I therefore hope that my concerns reflect those of these other electric heating customers.

MKO POSITION ON ALTERNATIVE RATE DESIGN

MKO welcomes the initiative made by Manitoba Hydro to open discussion and to review alternatives to the current rate design procedure.

MKO's thoughts on this matter can be summarized as follows:

1. The alternative should not be limited solely to the residential customer class. It should also apply to First Nations GSS and GSM customers.

2. The current customer classes should be further divided to include the first nations subgroup in each category.

3. Within these new subgroups there should be a basic all-electric category.

4. The first nation basic all-electric category should have a discount applied to it that translates to an amount that

    a. Is the equivalent to the amount paid by customers with natural gas heating and

    b. Does not include the amount paid that is attributed to:

        i. Mitigation costs

        ii. Water rental payments to the Province of Manitoba.

5. The revenue lost as a result of the recalculation for items for b i and ii should be reallocated among all classes.

6. The revenue lost as a result of the recalculation of 4 a should be allocated among all Manitoba Hydro classes and/or collected as an additional cost attributed to natural gas customers.

7. The method of phasing in this recalculation or the manner in which it ought to be implemented has not been explored at this point.

Rates Effective April 1, 1997 to October 31, 2001: *

	Zone 1	Zone 2	Zone 3
Monthly Basic Charge < 200 Amp	$ 6.25	$ 7.63	$13.65
Monthly Basic Charge > 200 Amp	$12.50	$13.88	$19.90
Energy Charge:			
First 175 kW.h @	$0.05780	$0.06530	$0.07330
Balance of kW.h @	$0.05160	$0.05160	$0.05160

* Prior to November 1, 2001 when uniform rates were introduced, the Manitoba Hydro's service territory was comprised of three rate zones.

Zone 1: Winnipeg (legal boundary)

Zone 2: Medium Density - 100 metered services or more with a line density of a least 15 customers per kilometre of distribution line situated outside of Zone 1 boundaries

Zone 3: Low Density - less than 100 metered services, situated outside of all other rate zones

Representative bill calculations with rates as at October 31, 2001.

Residential <200 Amp Monthly Bill (before tax)

	1,000 kWh	2,000 kWh
Zone 1	$58.94	$110.54
Zone 2	$61.63	$113.23
Zone 3	$69.05	$120.65