Submission on behalf of RCM/TREE

INTRODUCTION

Submitting written argument after a hearing of this length and complexity is a daunting task. In this written brief, our first priority is to address our central areas of concern; lay out the perspectives, principles, laws and analysis that guide us; and make our recommendations on these core issues. Once we have dealt with our central topics, we will comment on some of the other topics raised by the Chair in his closing remarks.

It is particularly important to focus on the most controversial of our issues of concern, the inclusion of bill assistance as a component in an energy affordability program as recommended by Roger Colton, which has become something of a *cause célèbre***.** Manitoba Hydro dug in its heels in its rebuttal saying that such a program would inappropriately take on government's responsibilities and is outside Hydro's legislative authority. Then Graham Starmer of the Manitoba Chambers of Commerce took up the cause. And finally the Winnipeg Free Press, with editorial bluster, presented a truncated view of the law and a caricature of Colton's position, which it called an "Abuse of Hydro."

Yet the PUB's directive to Manitoba Hydro to design and implement a bill assistance program for low-income customers dates back to Order 116/08, Directive 18(d), restated in 150/08. MH's request to review and vary Directive 18(d) in 116/08 related only to the deadline (150/08 pp. 44-45) not to the content of the order.

> **MH's Request for Review and Variance**
>
> MH has indicated that it will comply with all aspect of Directive 18 except for:d) Manitoba Hydro will assess possible low-income bill assistance programs and the Corporation will consider implementing such a program. However, providing a proposal to the PUB by September 30, 2008 will not be possible.
>
> Manitoba Hydro requests that the PUB defer the date for the submission of a report on a low-income bill assistance program (Directive d).

Moreover the Coalition, in response to MH's 2008 review and vary request, submitted its own. The Coalition "applied to the Board seeking an Order revising and varying Order 90/08 and rolling back the 5% rate increase to 2.9%, at least until such time as MH has presented, and the Board has approved, a low-income bill assistance program" (150/08, p. 5).

Thus, coming out of the 2008 hearing, Manitoba Hydro viewed Directive 18(d) to develop a low-income bill assistance program in the face of rising rates as a reasonable request (or at least not an illegal one). And the Coalition viewed the directive to be an essential complement to raising rates, putting pressure on MH to develop, and the PUB to approve, such a program.

RCM/TREE contend that there is an appropriate legislative framework in Manitoba to adjudicate this issue, which is intimately linked to Manitoba Hydro's and the PUB's legislated mandates, and that Manitoba Hydro, in its rebuttal, has failed to consider the full practical, social and legal context for its opinion. We hope, in closing, that MH will have a more considered view of the matter and that in its order the PUB can give further guidance.

Another major area of concern demanding attention is the apparent total abandonment, in the April 1, 2011 interim rate increase, of what little progress had been made in developing rate inversion for the residential class. In Order 40/11 the PUB directed MH to remove the first and second block differential to create a single flat energy rate. This regressive move, from a conservation standpoint, points to a close link between conservation and affordability issues, particularly among lower-income customers dependent on electric heat. Hence we spend some effort reviewing the evidentiary and judicial foundation for including marginal cost pricing in the rate structure and exploring the link between conservation and affordability. Our only consolation is the reminder in 40/11 (p. 44) that " Interim increases to rates do not bind the Board, in any way, in making its final GRA rulings and directives."

PERSPECTIVES, PRINCIPLES AND LAW

In our opening statement last January, RCM/TREE noted a number of considerations and principles that inform our approach, which bear repeating.

The value of Manitoba Hydro and hydropower

We all recognize that Manitoba Hydro is one of Manitoba's most important assets and a key engine of our prosperity. The historic core of Hydro's business is the supply and sale, at home and abroad, of its premium product – reliable, storable, renewable, dispatchable low-carbon hydroelectric power – and the provision of associated energy services to Manitobans.

This high-value product energizes our homes, institutions, commerce and industry. Moreover our hydropower will electrify a growing portion of Manitoba's transportation fleet as plug-in hybrids and electric vehicles are deployed.

Despite its environmental footprint, hydropower is relatively clean per kilowatt hour in comparison with other sources. Its adjustable output and storage capacity can match variable market demand and prices and make feasible and economic other clean but intermittent sources like wind and solar power. Its firming capability greatly expands the potential for the production of green electricity in Manitoba and export markets where hydropower, augmented by power from wind, solar and biofuel resources, can displace fossil fuel generation.

The potential to firm and store wind power is reflected in Manitoba Hydro's recently announced contract with Minnesota Power, which includes a provision for MH to store power from a wind farm in

North Dakota owned by MP's parent company Allete. Presumably MH does the same for the wind power purchased from Manitoba producers and could do more in pursuit of the provincial commitment to develop 1000 MW of wind power between 2005 and 2015 (2005 throne speech).

Thus, although the historic core of Manitoba Hydro's business is the delivery of hydropower (supplemented by thermal resources), its present and future include the enabling of alternative renewable energy technologies and the efficient end-use of energy, as reflected in the corporate goal to "Promote cost effective energy sustainability, conservation and innovation" (Corporate Strategic Plan 2010/2011 (CSP), 18-19).

In addition, through the acquisition of Centra Gas, Manitoba Hydro has become the distributor in Manitoba of a "bridge" fossil fuel on the way to a renewable energy future– natural gas. The gas side of the business presents special challenges both in relation to the "purposes and objects" of the Manitoba Hydro Act and in mapping the transition to a more sustainable future. The problematic nature of Hydro's supply of both gas and electricity is illustrated by the corporation's extreme recalcitrance in producing and providing to the PUB a report on the economic and environmental implications of fuel switching, due two years ago under Directive 17 of PUB Order 116/08.

Our deliberations should ensure that the Hydro asset and its premium product, hydroelectric power, are properly valued, that the benefits of power are optimized—not squandered, that the corporation and its assets and development plans are protected from major risks, and that costs and benefits are distributed justly.

RCM/TREE's brief is an attempt to draw the implications of the foregoing considerations guided by principles of sustainability and justice. This means, in short, that we support aggressive power smart efficiency and conservation measures, power smart rates that reflect full marginal and environmental costs, and an affordable energy program that addresses unaffordable energy burdens of low-income customers. In addition, the utility's investment program should be guided, not only by expected costs and revenues attributable to particular projects, but also by how alternative development scenarios affect the sustainability and risks associated with Manitoba Hydro's portfolio of assets.

Sustainable Development and Manitoba Hydro's mandate

Manitoba Hydro is, of course, governed by The Manitoba Hydro Act, which has the following oft-cited "purposes and objects":

> 2 The purposes and objects of this Act are 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 and, in addition, are

> (a)to provide and market products, services and expertise related to the development, generation, transmission, distribution, supply and end-use of power, within and outside the province; and
>
> (b)to market and supply power to persons outside the province on terms and conditions acceptable to the board.

It is noteworthy, though, that the corporation, in the pursuit of its legislated mandate, articulates nine corporate goals, which reflect social and environmental values as much as corporate priorities and go far beyond the bare bones of the purposes and objects of The Manitoba Hydro Act (CSP, 3).

GOALS

- Improve safety in the work environment.
- Provide customers with exceptional value.
- Strengthen working relationships with Aboriginal peoples.
- Maintain a strong financial structure.
- Extend and protect access to North American energy markets and profitable export sales.
- Attract, develop, and retain a highly skilled and motivated workforce that reflects the demographics of Manitoba.
- Protect the environment in everything that we do.
- Promote cost effective energy sustainability, conservation and innovation.
- Be recognized as an outstanding corporate citizen and a supporter of economic development in Manitoba.

In addition to these corporately articulated goals, Manitoba Hydro, as a crown corporation, is subject to The Sustainable Development Act, which articulates broad environmental and social principles and guidelines.

The Sustainable Development Act has the following purpose:

> The purpose of this Act is to create a framework through which sustainable development will be implemented in the provincial public sector and promoted in private industry and in society generally.

The Act provides this definition of sustainable development:

> "sustainable development" means meeting the needs of the present without compromising the ability of future generations to meet their own needs; (« développement durable »)

In addition the Act contains principles and guidelines that further specify how agents of sustainable development should govern themselves (Schedules A and B). It is useful to remind ourselves what some of these principles and guidelines prescribe.

Principles (Schedule A)

Integration of Environmental and Economic Decisions

Economic decisions should adequately reflect environmental, human health and social effects.

Stewardship

The economy, the environment, human health and social well-being should be managed for the equal benefit of present and future generations.

Global Responsibility

Manitobans should think globally when acting locally, recognizing that there is economic, ecological and social interdependence among provinces and nations, and working cooperatively, within Canada and internationally, to integrate economic, environmental, human health and social factors in decision-making while developing comprehensive and equitable solutions to problems.

Guidelines (Schedule B)

Efficient Use of Resources - which means

(a) encouraging and facilitating development and application of systems for proper resource pricing, demand management and resource allocation together with incentives to encourage efficient use of resources; and
(b) employing full-cost accounting to provide better information for decision makers. [1]

Access to Information - which means

(a) encouraging and facilitating the improvement and refinement of economic, environmental, human health and social information; and

(b) promoting the opportunity for equal and timely access to information by all Manitobans.

[1] Note: "'full-cost accounting' means accounting for the economic, environmental, land use, human health, social and heritage costs and benefits of a particular decision or action to ensure no costs associated with the decision or action, including externalised costs, are left unaccounted for" (Sustainable Development Act, Section 1).

Integrated Decision Making and Planning - which means encouraging and facilitating decision making and planning processes that are efficient, timely, accountable and cross-sectoral and which incorporate an inter-generational perspective of future needs and consequences.

Fairness and justice

As in previous interventions, RCM/TREE invoke principles of justice to complement sustainability as guides to our recommendations. It is important to recognize that justice is not a singular concept but rather requires balancing at least three principles.

- Intergenerational equity is the just distribution of costs and benefits between present and future generations. This concept has been frequently alluded to in discussing whether rate increases during "the decade of investment" are in fact a prefunding of benefits to be reaped by customers during "the decade of returns" and whether or not such prefunding is fair, particularly in the context of current customers enjoying the benefits of a previous generation's investment in Limestone.
- Interclass equity is the just distribution of services, costs (including a recognition of external costs) and revenue recovery between customer classes. The development of a Cost of Service Study (COSS) is intended to provide some guidance in determining interclass equity.
- Social justice is associated with meeting basic needs and equality of opportunity and respect (in addition to remediation of and compensation for harms). The operations of Manitoba Hydro recognize these aspects of social justice in particular ways.
    - The moratorium on disconnections in the heating months (whether or not customers pay their bills) recognizes that energy is a basic need for households and that a just energy system should address the basic energy needs of customers.
    - The goal to strengthen working relationships with Aboriginal people through continued mitigation of hydro effects and provision of employment and business opportunities recognizes compensatory and restorative aspects of social justice as well as creating economic opportunities.
    - The goal to attract, develop, and retain a highly skilled and motivated workforce that reflects Manitoba's demographics likewise links the corporation's labour needs with the provision of a socially inclusive range of employment opportunities.

The concept of sustainable development (meeting the needs of the present without compromising the ability of future generations to meet their own needs) reflects both intergenerational equity and the societal purpose to meet basic human needs.

In its report *Manitoba Hydro Affordable Energy Program***,** MH states that "Manitoba Hydro must achieve a balance between improving the affordability of energy for lower income customers and maintaining social equity for the general body of rate payers" (3). MH's concept of "social equity" in this passage

obviously excludes the notion of social justice in favour of a much narrower concept of equity aligned with the COSS. But when all the elements of justice are taken into account, provision of affordable energy for lower income customers enhances rather than detracts from social equity, just as Aboriginal initiatives and employment equity in other corporate practices do.

A question that Manitoba Hydro, the PUB and other parties have pondered in dealing with the COSS is what is the fairest allocation of net export earnings, given that the province owns the corporation on behalf of us all? Is there more social equity in subsidizing the plasma TVs, hot tubs and giant homes of high energy consumers by giving them the largest share of net export earnings through volumetric allocations or is it more equitable to allocate some of these earnings to high energy burden customers and to reducing the basic charge and first block rates of all residential customers equally? RCM/TREE think it is obvious, given a robust concept of equity which includes social justice, that the latter allocations are more equitable than the former (in addition to providing better Power Smart incentives).

Our conclusion is reinforced by a review of MH's Appendix 50, 2009 Residential Energy Use Survey Report: Low-Income Cut-Off (LICO) Sector, which observes, "In general, LICO households use about 30% less electric energy (kW.h) on an annual basis compared to non-LICO households" (p. 26). This means that, on average, a non-LICO household receives a greater subsidy from MH's net export earnings, which are allocated on a volumetric basis, than a low-income household.

The determination of just and reasonable rates should be based on a robust concept of justice.

Synergies required for the efficient delivery of energy services

The Manitoba Hydro Act mandates "economy and efficiency in the development, generation, transmission, distribution, supply and end-use of power." On one reading, this is simply the least-cost provision of the benefits of electric power. However the mandate becomes considerably more complicated when it is qualified by multiple technical requirements and alternatives, corporate goals, temporal perspectives, and societal and environmental values. With conjoint objectives at stake, optimal solutions will often be those that synergistically realize multiple objectives at once.

Power Smart programs are often described in these terms. A Power Smart investment lowers the cost of power to consumers, increases power available for export sales (thereby increasing the flow of dollars into Manitoba), and reduces environmental impacts of the electrical system through GHG mitigation in export markets and/or forestalling impacts of new generation and transmission.

We argue that Power Smart rates to complement Power Smart DSM programs and an affordability program for low-income customers can likewise be justified as synergistic realizations of objectives to which Manitoba Hydro should be responsive.

JURISDICTION

The Public Utilities Board has the jurisdiction to review rates for services provided by Manitoba Hydro pursuant to Section 26(1) of **The Crown Corporations Public Review and Accountability Act**. The legislature has specifically empowered the PUB to taken into consideration any compelling policy considerations that the Board considers relevant to the matter and any other factors that the Board considers relevant to the matter (Section 26(4)).

The question before the Board at any rate hearing is a determination of just and reasonable rates. In making its decision on what is "just and reasonable", the Board has been given significant discretion by the legislature.

Criticism of the low income affordability plan proposed by RCM/TREE through Mr. Colton has been made by the Manitoba Chambers of Commerce and through the evidence of Professor Tom Carter on behalf of CAC/MSOS. The Chambers acknowledge that the PUB, in its words "may have or may not have legal jurisdiction to set Manitoba Hydro rates in a way that provides low income support". The Chambers take the position that a low income affordability program is the responsibility of government. Professor Carter also argued that the responsibility for solving the poverty issue rests with government, not Manitoba Hydro.

The position of RCM/TREE is that the PUB has an obligation to consider the special circumstances of low income rate-payers when deciding what is a just and reasonable rate. It would be inappropriate for the Board to ignore the energy poverty described by Mr. Colton when making a determination of a just and reasonable rate. It would appear to be self-evident that what is a just and reasonable rate for a person living below the poverty line is different than it would be for a family, for example, that spends less than 2% of its household income on energy.

It is the position of RCM/TREE that the PUB does have the jurisdiction to order the implementation of a low income energy affordability program. The issue was considered in the Ontario Superior Court of Justice in the case ***Advocacy Centre for Tenants-Ontario v. Ontario (Energy Board)*** 2008 CarswellOnt 2830. In this case, the Ontario Energy Board had held that an affordability program is an issue of public policy to be dealt with by the Ontario legislature and outside the jurisdiction of its mandate. The Court disagreed with the conclusion reached by the Ontario Energy Board.

The Court held at paragraph 37:

> The Board was asked to consider the application of the utility to establish rates. In that context, an intervenor asked the Board to consider whether, as a factor in rate-setting, the Board could consider the interests of low-income consumers and establish a rate affordability program. That issue of rate-setting is squarely within the jurisdiction of the Board.

In the Ontario legislation, the Board is authorized to employ any method or technique that it considers appropriate to fix just and reasonable rates. The Manitoba legislation provides even wider powers to the PUB.

In the ***Advocacy Centre*** case, the Court discussed the power of the Ontario Energy Board as follows at paragraphs 55 and 56:

> Rather, the Board in the consideration of its statutory objectives might consider it appropriate to use a specific "method or technique" in the implementation of its basic "cost of service" calculation to arrive at a final fixing of rates that are considered "just and reasonable rates". This could mean, for example, to further the objective "energy conservation", the use of incentive rates or differential pricing dependent upon the quantity of energy consumed. As well, to further the objective of protecting "the interests of consumers" this could mean taking into account income levels in pricing to achieve the delivery of affordable energy to low income consumers on the basis that this meets the objective of protecting "the interests of consumers with respect to prices".
>
> The Board is engaged in rate-setting within the context of the interpretation of its statute in a fair, large and liberal manner. It is not engaged in setting social policy.

Further, at paragraph 61, the Court held:

> In our view, and we so find, the Board has the jurisdiction to take into account the ability to pay in setting rates.

It is the position of RCM/TREE that the ***Advocacy Centre*** case is strong judicial authority that the PUB does have the jurisdiction to order Manitoba Hydro to implement a low income energy affordability program. In ordering such a program, the Board would not be invoking social policy. Rather, the Board would be fulfilling its mandate to establish just and reasonable rates for an identifiable class of rate-payers.

Critics of Mr. Colton's plan take the view that the program interferes with the role of government and usurps the role of social agencies. The argument of RCM/TREE reaches the opposite conclusion. An affordability program would be the fulfilment of the Board's responsibilities. RCM/TREE's position is that those that argue that the Board should leave the issue of energy poverty to the government and social agencies are urging the Board to abrogate its responsibilities in fixing just and reasonable rates for a class of rate-payers.

In its rebuttal Manitoba Hydro raises a number of concerns. The first is that *The Manitoba Hydro Act* speaks to the requirement to recover the full cost of supplying power. The argument is that Mr Colton's plan would somehow offend s 39(1) of the Act. The reality is that over the past number of GRA's very few classes of ratepayers have paid the full cost of supplying power. Most of the classes have consistently paid less than the cost of supplying power due to the subsidy achieved as a result of export sales. It is the Manitoba advantage that has arisen numerous times in this and other hearings. Our proposal to create an energy affordability program would not be significantly different than the subsidies applied to all residential customers at present. It would differ only in degree. The program could not therefore be said to offend the Act anymore than any of the existing rate structures do.

The second concern is that the Act prohibits the funds of the Corporation being employed for the purposes of government in s.43(4). It may be that the Corporation did not understand the mechanics of Mr Colton's plan at the time the rebuttal was prepared. Mr Colton does not suggest that those ratepayers that are on social assistance would be entitled to take part in the energy affordability program. If social assistance pays the account of a ratepayer that person would not be eligible. The

ratepayers that would be eligible to participate in the program would be those people that do not receive government assistance. As a result, there would be no funding that would otherwise be paid by the government or any other social agency. No breach of s43(4) could occur.

The argument raised by Manitoba Hydro that Mr Colton's program would result in Manitoba Hydro assuming government responsibilities by directly addressing social issues was considered in the Advocacy Centre case. It was rejected as flawed reasoning. That same analysis applies in the present case. This is not an issue of social programs. It is an issue of just and reasonable rates and the power and obligation of the Board to perform the task of rate setting.

Cost Recovery from Customers

s. 39(1) of the Manitoba Hydro Act speaks of the requirement to recover the full cost of supplying power. This requirement has always been interpreted in the aggregate. Customers collectively, including export customers, must provide sufficient revenue to run the utility without infusions from government. But, for a number of reasons, cost recovery is not specific to the individual domestic customer nor even to domestic customers as a whole.

1. As pointed out, no domestic residential customer pays their full share of the costs of their supply because of the subsidy from export earnings.

2. Apart from that, customers lumped together in a common class impose different costs on the system. (For example, a customer near the origin of a distribution line requires less "poles and wire" to service them than a customer at the end of the line.)

3. Customers who, for whatever reason, don't pay their bills, particularly during the heating season moratorium on disconnections, are subsidized by other customers (including export customers) who do pay their bills.

4. The costs that a customer imposes on the system differ according to the kinds of COSS that define the costs. Thus a COSS built solely on embedded historic costs fails to capture the potentially large incremental costs of growing consumption requiring newer, more expensive generation and transmission and reducing export revenues. All customers pick up the additional costs imposed by a growing load. A marginal cost COSS or marginal cost based rate structure better insures that the larger or growing loads in each class pay the incremental costs they impose on the system. Manitoba Hydro's rebuttal in the 2005-2006 COSS hearing put this point well (3-4).

> The MIPUG witnesses have noted in their response to MH/MIPUG-3 that the SEP Program and its predecessors should be viewed as exceptions to the strict cost basis of rate design, apparently because "the customer elects to accept service that can be interrupted by the utility in accordance with market or other specified conditions." However, Manitoba Hydro is not aware of any legislation or regulatory directive that limits consideration of market pricing to offerings such as SEP.

> The assertion of the MIPUG witnesses also fails to recognize that there are multiple accepted interpretations of the term "cost", including historic cost, marginal cost, avoided cost and replacement cost. In Principles of Public Utility Rates, James Bonbright discusses the many conflicting interpretations and notes that "a cost-based standard is subject to many different interpretations and that the interpretation which would best comport with any single objective of ratemaking is almost sure to be ill-adapted to the attainment of the other objectives" (page 113). Manitoba's legislators appear to have recognized the need to continually balance various objectives and refrained from imposing a definition of cost, instead electing to create a system of ratemaking allowing for the consideration of not only costs but also other relevant policy considerations.
>
> Consequently, the PUB is empowered to look beyond strict historic cost considerations or past practices in determining fair and reasonable allocation of cost among customer classes or as a basis for just and reasonable rates. In particular, the PUB is empowered to consider such concepts as market based rates, or the treatment of export revenues inside or outside a cost of service study on bases other than those adopted to date.

For reasons such as this, and to comply with Manitoba's Sustainable Development Act, Board Order 117/06 Directive 2 prescribed:

> 2. Future Cost of Service filings should also include supplemental information by customer class, including approximate revenue to costs ratios, related to the inclusion of marginal cost information and the allocation of notional environmental emissions costs. [2]

Looking more closely at point 3. above (customers who don't or can't pay their bills), a number of responses are possible.

- MH can initiate negotiations with customers to help manage their bill payments by putting them on an equal payment plan and setting a monthly due date to suit the customer.
- MH can refer "those customers who genuinely need assistance" to Neighbours Helping Neighbours for a one-time emergency payment up to $450, which is capped at the amount of the customer's arrears. I.e. it appears that the contributions made to NHN are used, not to help customers with current charges, but only to erase part of their prior debt to MH.

[2] As explained on p. 4 of 117/06, "The Board fully recognizes the responsibilities placed on public agencies, including MH and the Board, by the SDA. To assist in the review of future rate applications, MH is directed to provide the Board with supplemental information with respect to marginal and environmental costs associated with its domestic and exports sales, factors currently neither measured nor reported. The Board intends to take into account supplemental information related to marginal costs and carbon emissions, along with other factors, in evaluating future MH rate applications."

- The provincial government might bail out MH, as it does for customers on social assistance, whose bills are paid directly by the province.
- MH can initiate its collections process with warning and follow-up letters, leading up to disconnections and legal proceedings to recover the debt owed. (See the potential sequence described in Board Counsel's cross-examination of Manitoba Hydro at 4610ff.)
- When it is clear that MH cannot recover customer debt, or that it would not be cost-effective to take further measures, the debt is written off.

Other customers (including export customers) underwrite the costs of these incremental activities and in that sense already subsidize non-paying customers.

Mr. Colton's proposal of a fixed credit applied to offset the bills of customers who are not covered by social assistance would add one more response to MH's arsenal for the subset of LICO-125 customers with unaffordable bills, i.e. those whose energy burden exceeds 6% to 8%. For customers in that situation, it is more productive and more humane to spend the subsidy on the fixed credits needed to make their bills affordable (expecting responsible bill payment in return) than to spend it on the various other activities which occur when bills are not or cannot be paid. Experience in other jurisdictions has shown that the revenue recovered from customers presented with affordable bills can be greater than when they are presented with unaffordable bills even as collection costs are reduced.

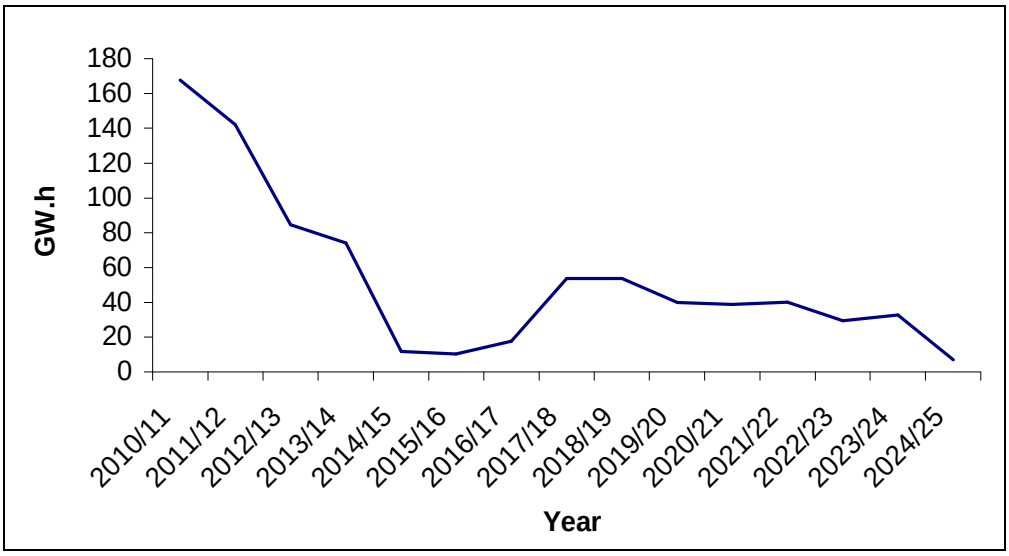
Comments and recommendations on primary issues of concern

As indicated previously, our brief is an attempt to draw the implications of the foregoing perspectives, principles and law. In the next several sections we comment on the need for aggressive power smart efficiency and conservation measures, power smart rates that reflect full marginal and environmental costs, an affordable energy program that addresses unaffordable energy burdens of low-income customers, and an appropriate approach to development and export costs and risks.

AGGRESSIVE POWER SMART EFFICIENCY AND CONSERVATION MEASURES.

RCM/TREE acknowledge the excellent work on DSM efforts made by Manitoba Hydro in the past. Manitoba Hydro has a well trained and dedicated staff responsible for DSM for the corporation. In particular, RCM/TREE approves of the recently unveiled refrigerator program and the efforts being made with the Diesel Communities. There is a concern, however, that Manitoba Hydro is not planning to continue its DSM efforts as aggressively in the future. At page 43 of Mr. Chernick's testimony (RCM/TREE #6), Mr. Chernick has graphed the projected DSM savings to the year 2025. Mr. Chernick notes the precipitous decline in DSM efforts and annual incremental savings.

Figure 1: Manitoba Hydro's Planned DSM Savings



Mr. Chernick further compares Manitoba Hydro to other leading programs in North America. (Table 4) He notes that most jurisdictions have targeted savings in excess of 1%. Several jurisdictions have targets over 2%. Mr. Chernick notes that Manitoba Hydro's forecasts begin at 0.6% and then decline to 0.2%.

Table 4: Comparison of DSM Target Savings Ratios

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
AZ		1.03%	1.02%	1.20%	1.58%	1.56%	1.54%	1.51%	1.49%	1.47%	1.45%	1.43%
CA	1.31%	1.26%	1.27%	1.28%	1.41%	0.92%	0.88%	0.90%	0.90%	0.91%	0.90%	0.89%
CO	0.53%	0.76%	0.80%	0.85%	0.90%	0.95%	1.00%	1.05%	1.10%	1.15%	1.20%	1.20%
CT	1.0%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
DE	0.5%	0.8%	1.3%	2.5%	3.0%	3.0%	4.0%					
HI	0.6%	0.6%	0.8%	0.8%	1.0%	1.0%	1.3%	1.3%	1.5%	1.5%	1.8%	1.8%
IL	0.4%	0.6%	0.8%	1.0%	1.4%	1.8%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
IN		0.3%	0.5%	0.7%	0.9%	1.1%	1.3%	1.5%	1.7%	1.9%	2.0%	2.0%
IA	1.0%	1.2%	1.3%	1.4%	1.4%							
MD	1.0%	1.2%	1.7%	2.2%	2.7%	2.6%	3.1%					
MA	1.0%	1.5%	2.0%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%
MI	0.3%	0.5%	0.8%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
MN		1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
NM		0.9%	0.9%	0.8%	0.8%	0.8%	0.6%	0.6%	0.6%	0.6%	0.8%	0.8%
NY	2.1%	2.1%	2.2%	2.2%	2.2%	2.2%	2.3%					
OH	0.3%	0.5%	0.7%	0.8%	0.9%	1.0%	1.0%	1.0%	1.0%	1.0%	2.0%	2.0%
PA			1.0%	1.0%	1.0%							
RI	1.2%	1.2%	1.1%									
TX	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
VT	2.6%	2.6%	2.6%									
WA	0.7%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
MB	0.6%	0.7%	0.6%	0.3%	0.3%	0.0%	0.0%	0.1%	0.2%	0.2%	0.1%	0.1%

Targets have not been set for the years in grey.

S*ources:* "Advancing Energy Efficiency in Arkansas," M. Neubauer, et al., American Council for an Energy-Efficient Economy, June 2010, Table 14; Manitoba savings from Appendix 9.1, Appendix A.3; Manitoba sales from Appendix 7.1, Table 1.

At page 45 (Table 5) of Mr. Chernick's written testimony, he demonstrates that Manitoba Hydro is spending much less than other leading programs. Mr. Chernick concludes that Manitoba Hydro should be able to double or triple its energy efficiency spending and savings from current levels and maintain the higher levels for the planning period.

Table 5: Comparison of 2009 Electric DSM Spending Rates per MW.h

Jurisdiction	Total Sales (MW.h)	2009 Budget ($M)	Budget per MW.h
VT	5,496,513	$30.7	$5.59
RI	7,617,629	$29.5	$3.87
CA	259,583,623	$998.3	$3.85
HI	10,126,185	$35.5	$3.51
MA	54,359,198	$183.8	$3.38
NY	140,034,397	$378.3	$2.70
CT	29,715,764	$73.4	$2.47
ME	11,282,967	$20.8	$1.84
OR	47,566,897	$84.7	$1.78
NJ	75,779,853	$132.3	$1.75
MN	64,004,463	$111.2	$1.74
UT	27,586,700	$45.4	$1.65
WA	90,164,701	$146.5	$1.62
WI	66,286,439	$101.1	$1.53
NH	10,698,493	$15.2	$1.42
ID	22,753,779	$31.5	$1.38
IA	43,641,195	$55.6	$1.27
NV	34,283,654	$41.9	$1.22
MB	24,080,000	$27.7	$1.15

Note: Native dollars (U.S. for U.S. states, Canadian for Manitoba)

Source: "2010 State Energy Efficiency Scorecard," American Council for an Energy-Efficient Economy, October 2010, Report E107, Table 4.; Manitoba Filing Appendix 7-1, Table 1.

The Board has the Dunsky report (Appendix 71). Again, RCM/TREE applauds Manitoba Hydro for retaining Mr. Dunsky to prepare this report. Mr. Dunsky has identified numerous strategies to improve the DSM efforts of Manitoba Hydro. On cross-examination, Manitoba Hydro confirmed that various recommendations of Mr. Dunsky have not been implemented because they are being investigated further (pages 5751, 5761, 5762).

RCM/TREE recognizes that it is not the role of the Board to micromanage Manitoba Hydro in its DSM activities. The Board should, however, set targets for Manitoba Hydro to reach.

RCM/TREE recommend:

(a) That the Board direct Manitoba Hydro to benchmark its DSM programs to the programs of the three leading providers as identified by Mr. Dunsky, Pacific Gas and Electric (California), Efficiency Vermont and Xcel Energy Minnesota;
(b) That the Board require Manitoba Hydro to increase its efficiency investments and achievements to reach the 90th percentile of North American jurisdictions; and
(c) That the Board direct Manitoba Hydro to abandon the use of the RIM in program design or screening.

POWER SMART RATES

The links between Power Smart DSM programs, Power Smart rates, and affordability

Rates and rate structures that fail to provide appropriate price signals to conserve energy undermine the performance of Power Smart DSM programs by offering contrary incentives that, in effect, subsidize higher consumption by applying embedded cost savings and export earnings volumetrically. If incremental use of electricity is underpriced, the true costs of growth imposed on other users, the utility, the province and the global environment are hidden and conservation and self-generation options become less cost effective or suffer a longer pay-back period. It is important to bring incentives contained in rates into accord with the conservation objective of Power Smart programs. A guiding principle of rate design that promotes conservation and reflects the costs of incremental usage is that most customers should face the marginal cost of consumption on their bills (including external environmental costs, we add). We call rates that are so structured Power Smart rates.

A hearing on Manitoba Hydro's Cost of Service Study in 2005-2006 produced extensive evidence on the link between rates and conservation. Manitoba Hydro's response to RCM/TREE/MH II-26(b) in that hearing (attached) cited research indicating that "Short run elasticities based on more current studies show a range of -0.20 to -0.44 for Residential; -0.12 to -0.38 for Commercial and -0.39 to -0.69 for Industrial. Long run elasticities based on more current studies range from -0.35 to -2.23 for Residential; -0.29 to -1.65 for Commercial and -0.76 to -2.87 for Industrial." Additional information is presented in MH's response to RCM/TREE/MH I-68(a) in the present hearing.

Mr. Lazar's evidence in 2005-2006 showed hypothetically what the conservation and revenue implications might be if Manitoba Hydro's rates were to reflect 100% of the marginal costs plus a $20/tonne opportunity cost for displacing CO2 in the export market, assuming a -0.25 arc elasticity. [3] Mr. Lazar calculated that, under these hypothetical conditions, and assuming the then-average export price of 5.5 cents/kW.h, Manitobans would reduce their consumption by a third (which is in the order of magnitude of Conawapa's prospective output) and the province would earn an additional $388 million annually from export sales. The PUB and MH noted that the export interties did not have the capacity to

[33] The example was hypothetical and not recommended for implementation by Mr. Lazar.

deliver all the additional power freed up through conservation at peak hours, so off-peak pricing would reduce the export revenues. But the example is illustrative of the opportunity costs to the province of low domestic rates, especially when marginal costs are not reflected in marginal prices through inclined rates. And the intertie constraint will be relieved under the new "package" of export contracts plus new transmission and generation (Order 117/06, 62-63).

In Manitoba Hydro's 2008/09 GRA, Mr. Kuczek provided a concrete illustration of the effect of rates on electricity consumption despite the best efforts of Power Smart conservation programs. He testified (a) that MH at that time led the pack in North America in per capita expenditures on energy efficiency, (b) that "SaskPower recently contracted with Manitoba Hydro to help them develop their energy efficiency plan," yet [(c) Saskatchewan's electrical consumption was decreasing at a rate of 2.9%/year, whereas (d) Manitoba's electrical consumption was increasing at a rate of 7%/year]. [1] The different directions of electrical consumption in the two provinces was attributed in part to fuel switching from gas to electric water heating in Manitoba, but not in Saskatchewan (2008 transcripts March 3, pp. 94-95, and March 10, pp. 741-744). The evidence above suggests that price elasticity of demand and differential price incentives for conservation would contribute to the combined 10% difference in electricity consumption trends between MB and SK and their different fuel choices for water heating.

PUB Order 117/06 recognized the importance of the link between rate design and the promotion of energy efficiency and its benefits.

> The Board seeks to assure itself that MH's rate design and rates are consistent with the pursuit of the environmental objectives of The Sustainable Development Act (SDA). As a further response to the risk that higher domestic consumption poses for net income and domestic rate levels, MH is directed to bring proposals forward to the Board to eliminate declining block rate schedules, and to introduce inverted and time of use rates, initially for large volume non-residential customers. Energy efficiency presents the potential for a virtuous circle, wherein lower domestic consumption results in reduced customer bills, higher MH aggregate net export revenue and net income, and lower carbon emissions by MH's American export customers (3).

PUB Order 116/08 reiterated the importance of conservation incentives in rates and urged that inverted rates be extended to all customer classes.

> Inverted Rates
>
> The Board encourages MH to develop plans to employ an inverted rate structure for all customer classes, initially to be designed on a revenue neutral (to MH) basis and to send a "price signal" for every kilowatt hour of energy used, to promote conservation (306).

The PUB also directed that bill impacts on low-income customers, especially those with heating load, should be addressed (Directive 18).

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[1] Note: although these are the figures given by Mr. Kuczek in the transcript, Hydro later indicated that they represent 4-year, not annual changes. So the SK decline in residential consumption is ~0.7%/year and the Manitoba increase is ~1.7%/year.

Manitoba Hydro, as well, recognizes the link between rates and conservation in its Corporate Strategic Plan 2010/11. An explicit strategy to meet the corporate goal to "Promote cost-effective energy sustainability, conservation and innovation" is to "Transition to a rate structure that delivers more transparent price signals to encourage energy efficiency." [Note that higher marginal rates also contribute to the cost-effectiveness of independent generation and solar thermal or biomass heating systems in addition to energy efficiency.]

So both the PUB and MH have committed to a positive direction of rate restructuring. Yet, after the two interim rate increases, the train has left the tracks. With the April 1, 2011 rate increase, residential rates moved backwards to a flat rate with the basic charge unchanged! What happened?

MH's original GRA filing proposed both lowering the basic charge by a dollar each year and increasing the degree of inversion between the first and second blocks when recovering revenues in the energy charge. Both of these are progressive moves from a conservation standpoint. As well, MH indicated, "These decreases [in the basic charge] are being proposed to assist low income customers with low metered monthly consumption" (Tab 10, 3). MH also proposed continuing to rebalance energy and demand charges by putting the entire rate increase in the energy charge for GS customers and eliminating the winter ratchet. MH has not yet proposed time of use rates that reflect marginal costs nor inclined rates for its General Service (GS) customers.

For the first interim rate increase, effective April 1, 2010, the PUB did not approve a lowering of the basic charge but did approve an increase in the differential between the first and second energy blocks.

Mr. Chernick's evidence supported Manitoba Hydro's original rate proposals, as far as they went, but also urged the elimination of demand charges, the introduction of time of use rates, and the introduction of inclined rates in the GS classes, incorporating a baseline calculation.

But then, after Mr. Chernick's evidence was written, MH switched to new rate proposals for 2011/12, in which the basic charge remained unchanged and the inclination between blocks was less than half the differential in the original proposal.

And finally, the PUB, in Order 40/11, directed that the second interim rate increase be applied so as to eliminate altogether the block differential for residential rates, with no change to the basic charge.

This is a puzzling retrenchment from the previously ordered direction of change, perhaps best explained by a concern for customer impacts. As Order 40/11 explains " MH has yet to reflect consideration of home heating loads in its rate design" (30). Manitoba Hydro did note that its originally proposed basic charge would lower bills for low-income customers with low consumption, but it has yet to produce a mitigative bill assistance program for low-income customers with higher bills, especially those living in electrically heated homes.

If this reading of the PUB's thinking in Order 40/11 is correct, it illustrates a tight link between affordability goals and conservation goals in rate-setting. Thus we argue that Manitoba Hydro's mandate to promote economy and efficiency in the end-use of electricity cannot be fulfilled adequately without supportive rate structures (Power Smart rates). But a just energy system must recognize, and mitigate, the potential impacts of higher marginal rates on some customers who are least able to afford the energy they need. In short, Manitoba Hydro cannot deliver on its mandate to provide Manitobans the benefits of electric power economically and efficiently unless it can also deliver on effective measures to mitigate unaffordable energy burdens among its low-income and electric heat customers.

The upshot of this discussion is that MH's rates and customer service departments need to coordinate their efforts to create simultaneous progress on both low-income rate affordability and Power Smart rates. The PUB should not only reiterate its previous directives from Orders 117/06, 116/08 and 32/09 to do so, but also give more specific directions on how to do so.

Mr. Chernick's recommendations for Power Smart rates

In his evidence, Mr. Chernick evaluates aspects of Manitoba Hydro's cost of service and marginal cost calculations and makes recommendations on rate structures. We consider these in turn.

Cost of service

Although inter-class allocations of costs are not the sole basis for the determination of just rates, they are a component to the extent that cost causation is a determining factor. The Cost of Service Study (COSS) is the main instrument for allocating costs to classes.

Mr. Chernick, at pp. 47-48 of his evidence, summarizes his recommendations on cost allocations.

Q: Please summarize your recommendations to the Board on cost-allocation issues.

A: The Board should recognize that Hydro's existing cost-of-service methodology overstates the costs of serving residential customers in the following ways:

- The costs of the subtransmission system, driven by the coincident loads of customers of all classes other than GS Large >100kV, are currently allocated on class non-coincident peaks.
- The costs of substations—driven by a mix of peak loadings in different seasons, months, days, and times, resulting from various mixes of class loads on each substation—are currently allocated on class non-coincident peaks, representing entirely winter loads, including class peaks that do not coincide with any identified substation peaks.

- An arbitrary 40% of conductor and pole costs are allocated equally to each distribution customer, regardless of size, even though little if any of these costs are caused by the number of customers.
- Energy usage over many hours of the year contributes to the cost of distribution plant, especially for the summer-peaking portions of the system, but Hydro allocates no distribution costs on energy.

The Board should instruct Hydro to address and correct these problems in its ongoing redesign of its cost-of-service methodology. Until a new cost-of-service methodology is adopted, the Board should not shift cost responsibility onto residential consumers.

RCM/TREE endorse these recommendations for improving the embedded cost COSS, while also recalling Directive 2 from Order 117/06:

> 2. Future Cost of Service filings should also include supplemental information by customer class, including approximate revenue to costs ratios, related to the inclusion of marginal cost information and the allocation of notional environmental emissions costs.

Marginal costs

According to Mr. Chernick (on p. 22 of his evidence),

> Marginal costs indicate the value of load reductions and the cost of load increases. Those values are important in both the evaluation of DSM options and the design of rates (e.g. Inclining block rate with tail block charge set at marginal cost).

Mr. Chernick's estimates of marginal costs from generation, transmission and distribution only are set out in Table 2 on p. 29 of his evidence.

Table 2: Marginal Cost by Rate Schedule

Rate Schedule	Generation	Transmission	Distribution	Total
Residential	6.9	1.0	0.6	8.5
GS Small, Non-Demand	6.9	1.0	0.6	8.5
GS Small, Demand-metered	6.8	1.0	0.5	8.3
GS Medium	6.8	1.0	0.5	8.3
GS Large (less than 30Kv)	6.7	1.0	0.4	8.2
GS Large (30–100Kv)	6.5	1.0	0.2	7.7
GS Large (more than 100kV)	6.4	1.0	–	7.5

The above marginal costs (a) exceed the proposed tail-block energy charges for all classes in MH's originally proposed rate schedules for 2011/12, but (b) are still too low, because they exclude CO2 external costs. As Mr. Chernick observes (p. 29),

> Reducing domestic sales either increases exports, reduces purchases, or reduces Manitoba Hydro's thermal generation. Any of these effects will reduce emissions of conventional pollutants—various combinations of particulates, SO_2, and NO_x, depending on the thermal units turned down—and CO_2. The costs of some of the conventional pollutants are internalized for U.S. utilities through cap-and-trade systems, but the costs of greenhouse gases are currently not internalized. The total social cost of domestic consumption of electricity is thus greater than the direct costs above.

Thus, in order to provide appropriate price signals, inclined rates are needed for all classes with tail-block rates raised to marginal costs that include a GHG adder.

Rate structures

In his written evidence (p. 33), Mr. Chernick provided this favourable evaluation of MH's original residential rate proposal.

> The Company's residential rate proposal provides significant improvement both in economic efficiency and low-income customer rate impacts. In future cases, the Company should continue to shift revenue recovery into the tail block charge, bringing it closer to marginal cost.

However subsequently, after Mr. Chernick had completed his written evidence, MH changed its rate proposal for April 1, 2011 to one that makes no progress in addressing low-income customer impacts and less progress in economic efficiency.

And, as we have seen, the whole project of rate design for economic efficiency was completely derailed in the PUB's interim rate Order 40/11, which scrapped both MH's original basic charge reduction and the existing modest inclined rate structure.

It is time to get back on track, and for that we must move forward to Mr. Chernick's oral evidence on June 2, 2011 and backward to his written evidence from 2008.

In the June 2, 2011 transcript, pp. 7124 ff. Mr. Chernick recommends reinstating an approximation of MH's original second year proposal for residential customers, but beginning from the altered starting point of the first year interim rate increase. This means reducing the basic charge by around a dollar and recovering the lost revenue in a two block energy charge, with the second block about 5% higher than the 900 kW.h/month first block.

In the longer term (within a couple more years) two further changes should ensue. First the basic charge should be reduced at least to the $4.85 that MH had originally proposed. And second, the first block should be reduced in size from 900 kW.h/month to 600 kW.h/month, so that more non-heating customers would face marginal rates to further incent conservation.

Mr. Chernick offers a more detailed discussion of the break point between first and second blocks in his Feb. 1, 2008 written evidence for MH's 2008/2009 GRA (pp. 21-22), with which RCM/TREE concur.

> Q: What is Manitoba Hydro's rationale for the initial block size of 900 kW.h?
>
> A: Manitoba Hydro assumes that 900 kW.h per month covers the use of basic appliances and lighting. In Manitoba Hydro's view, apparently, other electric uses are more price responsive and therefore more appropriately charged at marginal cost:
>
> > This structure prices energy above standard residential usage (lighting, basic appliances) with a higher rate than the initial block.... the intention is that the price in the second block will move toward marginal cost, thereby sending a more appropriate price signal for uses which are discretionary (e.g. air conditioning, pool heating) or for which competing fuels are available (space and water heating). (PUB/MH I-12(a))
>
> Q: Is 900 kW.h an appropriate cut-off for the first block?
>
> A: No, for several reasons: First, with such a high cut-off, the proposed rate will not provide sufficient incentives for such prudent usage and purchase of basic appliances and lighting as the following:
>
> - selecting efficient lighting and turning it off when it is unneeded;
> - selecting the efficiency of computers;
> - deciding the energy-saving settings on computers;
> - deciding when to manually turn off computers and peripherals, audio and video equipment;
> - bothering to unplug (or use a power strip to switch off) parasitic loads, such as battery chargers, computer peripherals, audio and video equipment;
> - avoiding energy-hogging features (such as through-the-door icemakers);
> - selecting the size of refrigerators;
> - deciding whether to continue operating an older refrigerator;
> - choosing the length and temperature of showers;

- determining when the dishwasher is full enough to run, and whether to use the electric drying feature;
- selecting clothes-drying cycles;
- deciding whether to air-dry or power-dry clothes.

Second, Manitoba Hydro's determination of the 900 kW.h cut-off is based on the average monthly usage of non-heating customers, not on an actual study of the average energy use of basic appliances and lighting (COALITION/MH I- 50). The usage of 900 kW.h by non-heating customers is also likely to include price-responsive "discretionary" uses (such as air conditioning and pool heating), "uses for which competing fuels are available" (such as water heating) and even some space-heating use (such as room space heaters and circulation fans).

Third, too few non-heating customers would face the higher tail block charge. Only 35% of bills of this subclass exceed the 900 kW.h cut-off point and customers would have to consume significantly more than the 900 kW.h breakpoint in order for the tail block charge to be an effective conservation incentive (COALITION/MH I-49(b)).

RCM/TREE support Manitoba Hydro's initial proposal to reduce the residential basic charge by two dollars over two-years. We also support Mr. Chernick's recommendation to re-initiate rate inversion or inclination by making the tailblock 5% higher than the first block, in the first instance. For subsequent years, the first block should be reduced to no more than 600 kW.h/month and the tailblock rate moved towards marginal costs. The point is that most customers should reach the second block rather than avoid it.[4]

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[4] Mr. Chernick summarized his recommended approach to residential rate-setting in his 2008 evidence (22-23). Only the block energy charges need to be updated.

Q: Have you developed an alternative approach for residential rate design?

A: Yes. I recommend that the rate structure for the residential class be derived as follows:

- Set the tail-block energy charge as the current energy charge, plus the percentage allowed revenue increase for the class, plus five percentage points. At Hydro's proposed 2008 energy rate of 5.98¢/kW.h (RCM/TREE/MH 1-8), a five-percent increase in the tail-block rate would bring the rate to 6.28¢/kW.h.
- Reduce the non-heating initial block size to a level likely to be inframarginal for the vast majority of bills. The initial block size should be no greater than 600 kW.h per month, so that 84% of non-heating sales would be on bills above the initial block.
- For existing heating customers, add kW.hs to the initial block in the heating season to increase the percentage of heating energy served on the initial block to roughly the 54% that the non-heating customers receive. That additional allowance would total about 6,400 kW.h over the year. Depending on the number of months included in the heating season, and the extent to which Manitoba Hydro shapes the heating allowance by month, the monthly heating allowances might be about 1,100 over six months, or 700 kW.h for bills rendered in April and November, 1,100 in December and March, and 1,400 kW.h/month in January and February.

Electric heat customers

Finally, in his oral testimony (7126 ff.), Mr. Chernick reiterated his earlier proposal to mitigate the heating burden of existing electric heat customers by offering them a larger first block of lower cost energy in the winter months. The size of the first block would be set with the objective that the average heating and non-heating customers would end up paying the same blended energy rate over the two blocks (or, equivalently, having the same proportion of their bills in the first block).

Unfortunately MH did not initiate this mitigating measure, which led the PUB to remove differentiation between the blocks in its April 1, 2011 interim rate order.

MH has cited the unreliability of the coding of electric heat customers in the company's database and their reluctance to incent fuel switching from gas to electricity to garner the lower first block advantage. There are responses to each of these.

RCM/TREE note that the heating load is taxed differently than the non-heating load and that if the company's coding is good enough for the tax man, it ought to be good enough for the corporation. But secondly, the load profile should provide an accurate enough discrimination. If a typical winter month load is double a summer month load, it is most likely the case that the house is heated electrically. A load difference above a certain threshold or percentage should be a sufficient basis for classifying the house as electrically heated. Indeed such a threshold or percentage could be made definitional to qualify for a special rate.

Incentives to fuel-switch to electric heat can be eliminated if the classification of electrically heated homes qualifying for a larger first block is for existing electric heat homes only. Newer homes would be expected to manage electric heat costs by building to a higher heat retention standard (as the new building code prescribes) and contemplate geothermal or other alternative heating technologies (e.g. wood pellet furnaces and solar thermal) to reduce electric bills if they are unable to access gas. Manitoba Hydro could create a recommended Power Smart electric home standard that exceeds the new building code.

- Reduce the customer charge to offset the increased revenue from the five-percent increment in the tail block. At Hydro's proposed 2008 rates, a five-percent increase in the tail-block rate (with about 54% of energy charged in the first block) would increase revenues about $7.5 million, allowing the customer charge to be reduced about $1.50 per month.
- Set the initial-block charge as the current energy charge, plus the allowed revenue increase. In future rate cases, if the revenues from the tail-block price increase exceed the revenue reduction from eliminating the customer charge, reduce the initial block charge to absorb the excess.
- In future rate cases, if the previous step would cause the initial-block price to be less than 80% of the current energy charge (or 4.6¢/kW.h), set the initial-block price at that level and add an intermediate block of 400 kW.h to absorb the remainder of the excess revenues. This intermediate block would not be needed in this rate case, but would be needed in the future, as the tail-block price continues to rise toward marginal cost.

RCM/TREE are also supportive of Mr. Chernick's proposed changes to rate structure for the non-residential classes, as summarized at pp. 48-49.

Q: What are your recommendations to the Board on rate design issues?

A: The Board should instruct Hydro to modify rates in the following ways over the next several years:

- increase tail-block energy rates to marginal costs, including environmental costs.
- implement marginal-cost-based rates for larger GS customers, using a two-part rate if necessary.
- use the increased revenues from tail-block sales to reduce customer demand and inner-block energy charges; fund enhanced energy-efficiency programs, low-income-customer discounts, and economic development; and improve Hydro's financial structure.
- implement time-of-use energy charges, starting with the largest customers, and move revenue-collection from demand charges to time-of-use energy charges.

Implementation of all of these initiatives—meaning actual changes in retail rates—can start in Hydro's next rate proceeding. Time-of-use rates will require appropriate metering, but even that can be implemented for many large customers in the next proceeding.

If the Board increases funding for DSM, low-income programs, economic development, or strengthening Hydro's balance sheet, the additional costs should be recovered through energy rates and through tail-block energy charges where possible.

AFFORDABLE ENERGY

Manitoba Hydro and the province boast of the utility's delivery of affordable energy to Manitobans.[5] Yet, ironically, in its rebuttal, Hydro states that "Manitoba Hydro's mandate does not extend to issues associated with the 'affordability' of electricity" (p. 88). It is one thing for Hydro and the province to boast of low rates, but, with no accommodation to energy burdens and ability to pay, it is a misuse of the term to call these rates "affordable." Other jurisdictions with higher

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5 E.g. in the November 10, 2010 issue of Insights at http://www.hydro.mb.ca/news/insights/issues.shtml:

"We're very proud of our role as an acknowledged utility leader in the promotion of bioenergy alternatives," said Bob Brennan, President and CEO of Manitoba Hydro. "The successful demonstration of the viability of these new technologies **fits with our mandate to provide clean, renewable, and affordable energy**. (emphasis added).

rates and mitigating bill assistance for lower-income customers have a more legitimate claim to being purveyors of affordable energy.

Manitoba Hydro tries to reconcile this discrepancy between affordability rhetoric and lower income reality by downplaying the seriousness of affordability issues in Manitoba. The report on the *Manitoba Hydro Affordable Energy Program* states:

> In reviewing the energy burden of Manitoba Hydro's lower income customers, it has been determined that the energy burden is not at a crisis level (p. 4).

Our witness, Roger Colton, comes to a very different conclusion and proposes a multi-component low-income affordability program for Hydro. This is a more straightforward way to bring rhetoric and reality together, and the one we propose. It is also in accord with previous Board directives in Board Order 116/08 and subsequently in Board Order 32/09, which contains the following discussion (pp. 37-39).

> **Low Income Bill Assistance Program**
>
> In Order 116/08, the Board reported that the low-income, high-energy burden problem is extensive in Manitoba, with a significant percentage of households being low-income. To assist low-income consumers, MH has relied on its Power Smart programs (problems exist in that many low-income families are unable to meet the co-funding or pre-funding requirements) to allow energy efficiency to hold down bills, efforts to work out reasonable payment schedules for households experiencing financial distress, and a voluntary program, Neighbours Helping Neighbours, administered by the Salvation Army. Under this voluntary program, MH customers donate to a fund that assists low income families and seniors who are unable to pay their natural gas and/or electricity bills, MH matches the private donations and advertises the program to all of its customers.
>
> The Board noted that while the voluntary program is beneficial, the needs are such that the program as it now operates is not sufficient to meet the need. A low-income bill assistance program should assist in reducing the energy burden faced by low-income households, and could lead to significant non-energy benefits such as increased comfort, reduced health costs, lower bad debt write-offs, etc. Manitoba's climate is such that heat is a necessity in at least nine of each twelve months.
>
> The Board further stated that energy affordability for low-income families is very much an issue that requires immediate attention in Manitoba. In Order 116/08 and subsequently revised in Order 150/08 the Board directed:
>
> > *"MH to propose for Board approval (by a date to be requested by MH in its November 30, 2008 update and approved by the Board) a low-income bill assistance program, where such a program would occur in conjunction with and complimentary to an expanded low-income DSM program."*
>
> In Order 116/08 the Board further stated:

> *"MH should address the issues of: how such a rate affordability assistance program should be funded, how eligibility criteria should be determined and how levels of assistance should be determined. Consultation with the Coalition and RCM/TREE may be of assistance to MH."*

In response, MH filed a report on Low income bill assistance on March 4, 2009. In that report, MH discussed possible bill assistance program expansion, and indicated it will investigate the viability of potential program expansion. MH has cited many variables that will need to be investigated, including;

- Determining Program eligibility;
- Determining Program costs;
- Determining and Quantifying program benefits;
- Determination of program funding;
- Program cost allocation;
- Customer feedback;
- Administration and implementation of the program; and
- Evaluation criteria.

The Board accepts MH's indication that implementation of a specific low-income bill assistance program will require the addressing of issues that are complex and far reaching. The Board also accepts that MH has committed to looking at all options for some form of bill assistance, and that the Utility may consider enhancements to existing programs. The Board is particularly pleased that MH has further indicated that it will consult with stakeholders and that, after these consultations, will put forward a recommendation to MH's Board with options, implications and a process on how and if to move forward, with a report to be made to the Public Utilities Board as to MH's plans.

While the Board is encouraged by the commitments and steps made and currently being undertaken by MH with respect to a low-income bill assistance program the Board expects MH to provide a report well ahead of the next heating season, and will direct MH to provide such a report by July 31, 2009.

The report [should] list options, provide details and implications related to the options, assess the merits of each, and recommend a specific and implementable course of action that can be put in place no later than October 31, 2009.

In its research, the Board urges MH to look to programs in other jurisdictions, and assess their potential applicability in Manitoba.

Particularly, given the current economic downturn it is vitally important to put in place protection for low-income customers with an effective bill assistance program. MH is embarking on a capital program that is predicated on consistent future rate increases, while too often low-income families do not benefit from annual increases in household income. The Board is cognizant of the impact on low-income consumers of rate increases, and expects MH to put forward its preferred low-

> income bill assistance program with an indication as to how many households it expects may be assisted in the near future.

Obviously the various milestone dates proposed by the Board for MH to formulate and deliver "an effective bill assistance program" have long since come and gone. Why?

The most fundamental roadblock to progress in direct bill assistance is MH's belief that *"the issue of whether energy is affordable is outside the scope of Manitoba Hydro's mandate and is a matter of policy for legislators and government agencies responsible for these matters"* **(**RCM/TREE/MH-I-94). We have replied to this claim earlier. But there may be ancillary reasons for lack of sufficient progress.

One reason may be a lack of capacity within MH to design such a program. Their experience lies in the design and delivery of Power Smart programs, not bill assistance programs (although customer service must regularly deal with short payments or non payments, arrears, collections, disconnect and reconnect orders, and negotiated payment plans). The conceptual confusions, programmatic shortcomings, and absence of an appropriate evaluative framework for the Affordable Energy Program, as documented in Part 2 of Mr. Colton's report, are indicative of this design shortfall.

RCM/TREE contend that Mr. Colton's report, *HOME ENERGY AFFORDABILITY IN MANITOBA: A Low-Income Affordability Program for Manitoba Hydro*, provides a program design template, which can be tweaked in the light of further evidence provided in the course of the hearing.

A second reason may be the belief that bill assistance is akin to welfare requiring the skills of a social worker to assess needs and deliver help, which customer service representatives cannot be expected to have. Hence the utility turns over the job of distributing Neighbours Helping Neighbours emergency funds to the Salvation Army, who are given the task of determining "those customers that genuinely need the assistance"(5) in the absence of more objective energy burden criteria, whose application could be automated by customer service computers.

But, as indicated previously, RCM/TREE (and Mr. Colton) are not proposing that MH take over provincial welfare responsibilities or that MH customer service representatives take on a social worker role. Indeed a hoped-for outcome of the program is that many fewer interactions between customers and customer service representatives will be required to solve the problems associated with the inability to pay unaffordable bills once the criteria for program eligibility and the programmatic responses are clearly defined and implemented.

What we are proposing is that Manitoba Hydro reconsider its relationship to the subset of customers below the LICO-125 threshold whose bills are unaffordable (relative to family income) under current rates. Instead of chasing them, with limited success, for bills too high to pay, why not establish a different relationship by sending out affordable bills and expecting regular, responsible payments in return?

Savings from avoided new arrears, write-offs, collection activities, disconnections, reconnections, phone calls, letters, negotiations, legal actions and the like plus increased revenues from customers who pay their bills would then provide an offset to the credits needed to create this new relationship based on affordable bills.

In other jurisdictions, utilities have actually increased their revenues from low-income customers when they presented affordable bills. Mr. Colton's written evidence (his Exhibit 2 report) discusses an evaluation of Indiana's Universal Service Program (USP) on pp. 86-95 and concludes:

> The ultimate conclusion is that a low-income program can be justified through a business case analysis. The low-income programs that have been implemented in other jurisdictions have found that the result is both an improved effectiveness in collecting revenue, and an improved productivity in collecting revenue (both on an individual collection activity basis and an aggregate collection activity basis). In addition, the low-income programs help utilities to achieve their objective of providing an uninterrupted supply of the product that they seek to sell (95).

In a powerpoint presentation of these results (RCM/TREE Exhibit #12), reviewed in oral testimony, Mr. Colton summarizes a "net back" calculation of cost-effectiveness of Indiana's USP. The slide headed "Net Back: Putting it All Together" provides a dollarized comparison of the effectiveness and productivity of the program in comparison with collection activities without the program. Although revenue billed with the program was only 90% of the billing without the program ($273,626 vs. $304,072), revenues collected were more and collection costs less under the program. The bottom line (net back) showed $223,209 (82% of the billed amount) with the program and $215,542 (71% of the billed amount) without the program. Pages 93-95 of Mr. Colton's report provide further commentary on these results.

The PUB appears to be already aware of the major themes of Mr. Colton's written report, which we touch on only lightly here.

1. Home energy affordability is a significant social and utility issue in Manitoba.

> Dr. Carter's testimony only reinforces the extent of non-affordable energy as a social problem and concurs that 6% is an appropriate threshold for defining an unaffordable energy burden, particularly amongst the poorest households.
>
> However Dr. Carter does not claim to be an expert in energy utility regulation and did not consider the issues from the standpoint of regulatory concepts or solving utility problems of non-payment, arrears, collections, write-offs, disconnections, reconnections, customer service demands, and the like.

2. The Manitoba Hydro response to the issues is inadequate, both conceptually and programmatically, in ways detailed in Part 2 of Mr. Colton's report

3. In Part 3, Mr. Colton recommends a 4-part low-income affordability program consisting of

    a. A rate affordability component that brings the bills of low-income customers within the range of affordability through off-setting credits calculated on the basis of the utility's bill estimation program (e.g. for equal payment plans).

    b. An arrearage management program, which retires a customer's arrears over 3 years in exchange for monthly contributions by the customer to his arrearage retirement.

    c. A crisis intervention component that addresses the income fragility of low-income households.

    d. An energy efficiency component, much like Manitoba Hydro's Low-Income Energy Efficiency Program (LIEEP) but with better integration with the other components, better targeting on high consumption and/or high burden households, and more accelerated roll-out.

    Part 3 also sets out an estimate of program costs for components a, b and c plus program administration and a design for cost recovery through a meters charges and late fees. We consider the issues of cost estimation in the next section.

4. Finally, Part 4 of Mr. Colton's report assesses the Business Case for the low-income program, which we take up in a subsequent section.

Cost estimation and the business case for a low-income affordability program.

In his closing remarks, the PUB Chair welcomed "a summary of the gross costs and the net costs to the utility of any proposed program." He also asked, "should non-utility costs and benefits be included in any cost benefit analysis that underpins a low income rate affordability program by the utility?" and "Should low Income programs be run by agencies outside the utility?"

Estimating program costs has proven problematic for a variety of reasons. Mr. Colton originally estimated the costs of (a) rate affordability through credits, (b) arrearage management through customer co-payments and partial foregiveness over three years, and (c) crisis intervention plus administration at $15.5 million. However, following cross-examination he found an error in his spreadsheet and recomputed the total program costs at $44.2 million including the provision of rate discounts sufficient to reduce energy burdens to no more than 6% for LICO-125 households (Undertaking 165).

In Undertaking 165, Mr. Colton also pointed out that policy variations in setting energy burden thresholds for program purposes would yield different total program costs. I.e. “program costs and the program policy design choices are inter-dependent....”

He then produced a set of scenarios in which total program costs ranged between $44.2 million and $24.9 million. The scenarios were created by varying energy burden thresholds between 6% and 10% (with non-heating electric service at half those percentages) and costing the options of uncapped vs. capped benefits at $2000 all-electric and $1000 base electric.

Note that the bulk of these costs are not in the form of direct expenditures (like the distribution of a welfare cheque or payroll) but rather take the form of revenues foregone through the provision of rate discounts and partial arrears foregiveness. Only relative to a hypothetical 100% payment of the full bills and full arrears, without discounts or forgiveness, do they represent a revenue shortfall or cost.

Moreover, RCM/TREE believe that these scenarios systematically overstate program costs because Mr. Colton’s calculations make no provision for eliminating from the eligibility pool those customers for whom social assistance pays specifically for 100% of their MH bills, whether directly or indirectly.

Mr. Carter’s updated evidence (CAC/MSOS Exhibit #32) indicates that the 2009/10 caseload for provincial social assistance was 33,233 (households presumably) with 59,734 individual participants. Assuming that their electricity costs are 100% covered by social assistance, such households would not face the energy burden that the discount program was designed to address.

In addition, for lack of sufficient data, we have no estimation of offsetting utility benefits or “netback” from reduced collection costs, reduced write-offs and increased revenue collection from participants. Because only the gross program costs are quantified, we are unable to determine the cost-effectiveness or net back for the utility of such a program.

There also appear to be discrepancies in data provided to Mr. Colton for his calculations (Transcript, 6881 f.)

<u>So our conclusions on program costs are:</u>

1. The costs calculated in Undertaking 165 provide theoretical upper bounds for several program variations, with the highest of these at $44.2 million for a 6% defined unaffordability threshold with uncapped benefits.

2. These costs consist mostly of theoretically foregone revenue, not outlays, on the contrary-to-fact hypothetical assumption that 100% of the undiscounted bills and arrears would otherwise have been paid.

3. The costs are based on all LICO-125 households that are customers of Manitoba Hydro without subtracting those whose bills are covered through social assistance.

4. We have no dollarized estimates of either utility or social benefits that would result from such a program in Manitoba, so a net dollar cost cannot be calculated.

5. Mr. Colton provided a net back calculation of a similar program in Indiana based not on theoretical costs and countervailing benefits but a comparison of the utility's actual dealings with two sets of low-income customers, on and off the program, compared with respect to (a) the effectiveness in collecting revenues both in absolute amounts and as a percentage of bills and (b) the productivity of collection efforts. Affordability program customers paid 3.5% more than those off the program; they paid 82% of their billed amounts vs. 71% for the others; and they required lower collection efforts and costs to collect that revenue than did those off the program.

6. Xcel Energy's Pilot Energy Assistance Program (PEAP) in Colorado has shown a similar positive net back in a recent evaluation (Colton Exhibit 2, p. 89)

7. Cost-neutrality is in most instances difficult to assess for lack of data derived from an experimental design, but "programs that result in large reductions in payments by customers are unlikely to be cost neutral" (MH Book of Documents for Colton X-exam Tab 1, p. 15).

Further conclusions

1. The determination of just and reasonable rates is a legislated core responsibility of the PUB. A robust concept of what is just or equitable is multi-dimensional and cannot be blind to meeting basic needs and ability to pay. Affordability issues are regularly taken into account in making the determination of just and reasonable rates when concepts of "customer impacts" and "rate shock" are discussed. Customer impacts are obviously quite different for the customer who spends 10% or more of monthly income on energy and the one who spends 1% or 2%.

2. MH's legislated core purpose is the economic and efficient supply of power for the benefit of Manitobans. That purpose is stymied if simultaneous attention is not paid to affordability, particularly for lower-income electric heat customers. It is stymied for individual customers by the interruption of their supply of electricity through disconnection when they can't afford to pay. And the efficiency mandate for the corporation is stymied if the PUB will not approve

Power Smart rates that reflect the corporate conservation goal when they are insensitive to affordability for customers. And, as Mr. Lazar showed in 2006, the resultant load growth can be expensive either in lost opportunities on the export market or in new construction with much higher costs than the embedded costs of existing assets.

3. Although netbacks from some bill assistance programs appear to beat the costs of traditional collection methods and thus be revenue-positive to the utility, the ultimate justification for such a program is not that it must be a profit centre. Rather it is justified insofar as it can address mandates of the PUB and MH, as above, and serve the public interest in meeting basic energy needs and encouraging responsible bill-paying behaviour with now-affordable electric bills and manageable arrears.

4. But because Manitoba Hydro is also mandated to provide its services economically, the offsetting features of a net back calculation have a role to play. At this point their potential for Manitoba Hydro is conceptual and unquantified.

5. An added benefit of such a program is that it might provide MH an economic incentive to target Low Income Energy Efficiency Program (LIEEP) services to high energy burden customers, thus lowering or eliminating the discount needed to make their bills affordable.

Recommendations

"New Jersey is not California" (Apprise presentation)

"Perhaps even more than New Jersey, we are not California" (Marla Boyd)

RCM/TREE agree that further work is needed to adapt Mr. Colton's proposals to Manitoba.

1. We concur with CAC/MSOS that the arrears management, crisis intervention and LIEEP components provide useful guidance for improvements to Manitoba Hydro's corresponding programs and should be adopted.

   We also note that the above components are prima facie less expensive than direct bill discounting, which Mr. Colton budgets at around 75% of total program costs. But keep in mind that these discounts are not actual cash outlays but the difference between discounted bills and full bills, which might not get paid.

2. We further recommend that the PUB exercise its powers under section 76 (a) of the Public Utilities Board Act to investigate and recommend the design of a pilot energy affordability program (PEAP), as Xcel in Colorado did. Since low-income gas customers have the benefit of a

furnace replacement program to address their affordable heating needs, we suggest that the pilot program be targeted at low-income electric heat customers.

3. We further recommend that, as a collaborative investigation by the PUB, the PUB establish a working group facilitated by PUB staff that would contain interested stakeholders, MH rates dept, MH customer service dept., and MB Family Services with the ability to consult Mr. Colton, Dr. Carter or anyone else.

4. The PUB in its order resulting from this process can set some general parameters, such as budget limits and other program constraints along with instructions along the lines of those contained on pp. 37-39 of PUB Order 32/09. Mr. Colton's recommendations for Manitoba can serve as a partial template, which must be adapted so as not to duplicate services provided by Manitoba social assistance, but also achieve some coordination with them. The program might be designed to serve the needs of the working poor or those just emerging from social assistance and facing the "welfare wall" that awaits those transitioning from, say, 100% coverage of their electric bills by social assistance to no coverage.

5. The pilot should also be designed to generate sufficient information for program evaluation and costing.

Forecasting, development, exports and risk

We noted at the outset the multiple values of our hydroelectric asset and the power it supplies. To these can be added the relatively low cost of production of our hydropower based on historic generation and transmission assets and near-zero fuel costs and the ability to earn hundreds of millions of dollars for Manitoba every year from export sales. A now-ample supply of low-cost power capable of serving Manitoba customers and earning significant returns from exports together constitute the Manitoba advantage.

The existence of this asset and these benefits is made possible by Manitoba's natural endowment as a recipient of flows from a vast watershed stretching from near Lake Superior to the Rockies and well into the U.S. Current flooding in central and western Manitoba demonstrate that these flows are not always benign. They vary greatly from flood to drought in various parts of the watershed.

But this natural endowment becomes a hydroelectric resource only in combination with significant planning and engineering achievements to create an integrated system of assets and controls that enable the supply of power to users. Thus the first purpose in the Manitoba Hydro Act is "to provide for the continuance of a supply of power adequate for the needs of the province." But an auxiliary purpose, necessary to enhance the economic value and reliability of our hydroelectric system, is "to market and supply power to persons outside the province...."

Provision for the continuance of a supply of power is essentially a forward-looking exercise, which ensures, in the short term, that use and operation of existing resources is optimized in value and that the lights are on 365 days of the year. But in the longer term provision for continuance of power must address growing Manitoba load, including prospects for major new uses in Manitoba like the electrification of transportation, new industries, and fuel-switching to electricity for space and water heating. And, to optimize a growing system, provision for continuance of power must examine new export opportunities. Because such forward-looking activities face uncertainties and contingencies, they must take into account risk. Mr. Wallach defines risk as "a measure of adverse outcomes due to uncertainty in the key risk factors that give rise to these outcomes" " (RCM/TREE Exhibit 7, p4).

RCM/TREE have no comment on the shorter term operational risks, based on existing plant and hydrological conditions, to insure the dependable and reliable supply of power for Manitobans and firm export customers while also pursuing other short term market opportunities. But we do have comments on longer range planning and development activities and their associated risks.

One reason we have all aged as much as we have in the course of this hearing is the added complexity arising from issues of the risks facing Manitoba Hydro, and thus its customers and the province. In some scenarios the financial losses from a prolonged drought, especially with adverse pricing, could be enormous. It is important that we be able to understand, quantify and assess the probability of such events. Unfortunately the numerous redactions in the relevant documents and lack of disclosure in IR responses made it impossible for our consultant Jonathan Wallach to confirm numerical results.

We comment upon various risk and development issues posed by the Chair in the section that follows.

Risk Consultants

RCM/TREE had concerns in this hearing of the value of the risk experts. There appeared to be limitations as to the value of the data the experts were using. It appeared to be the out of date term sheets. It appeared that rather than a rigorous examination of issues the risk experts accepted the positions adopted by Manitoba Hydro without conducting the sceptical review expected of an expert analyst. RCM/TREE also had concerns over the failure of KPMG to involve Board staff in charting a course for the review. Finally, the redactions and non-disclosures substantially hampered our expert in conducting the type of review that would have benefitted all parties.

RCM/TREE was concerned about conclusions based on dated term sheets, which were originally created in a period prior to new forecasts of more plentiful and lower priced gas and postponed carbon pricing. These concerns have been somewhat reduced with the announcement of new export contracts with Wisconsin State Power and Minnesota Power and the attestation of Mr. Cormie that they had retained

the pricing value of the earlier term sheets. It would be better if other eyes could review these conclusions as well and we would encourage the PUB and its experts doing so.

Comment upon the reliability of current construction cost forecasts , projected revenues and projected domestic rate increases? Concerns regarding opportunity export sale prices in relation to lowered gas prices and delayed carbon pricing. Will export revenues pay a sufficient premium to allow for the advancement of the capital projects without requiring rate increases greater than Manitoba Hydro's projections?

RCM/TREE distinguish two perspectives on carbon prices: what should they be? and what will they be? The first, prescriptive, perspective asks what is required to alter energy regimes sufficiently to mitigate the damages from climate variation beyond the range in which the planet's current complement of species, societies and institutions have developed and to which they have adapted. The second, predictive, perspective asks what is the likelihood of that happening and to what degree in the relevant jurisdictions and markets. As indicated earlier in this brief, we believe that jurisdictions and utilities governed by principles of sustainability should be guided by the prescriptive perspective in their own energy pricing and in their attempts to influence collective behaviour beyond their own jurisdiction.

Predictively, carbon prices are but one of the variable factors affecting opportunistic energy prices and, consequently, forecast revenues.

A second observation is that any selected precise number for any of the forecast variables is probably going to be wrong (unless tied to a contract, in which case it still might be wrong if the contracts are broken or reopened or are conditional in form). That is why fixed long-term contracts and loans provide important points of stability in a sea of uncertainty.

A third observation, based on the evidence of several of the consultants, is that forecasts are best represented by a range of values for the various inputs. MH has traditionally used expected values bracketed by higher and lower alternative values to produce sensitivities around the expected values. Drs. Kubursi and Magee and Mr. Wallach have recommended the wider use of stochastic forecasting models that produce a distributed range of values having different probabilities.

RCM/TREE do not feel competent to make a pronouncement on where the factors affecting costs and revenues will fall out under a proper forecast risk review using credible sensitivities or probabilities. It is our view that these questions would be a proper task for review in a future hearing into the need for and alternatives to a project or portfolio of projects. RCM/TREE feel that the deficiencies in the evidence as a result of the claims of confidentiality prevent a proper analysis.

A further point is that the type of forecast risk analysis described above should not be applied at the end of a process of selection of a preferred alternative to see if it is acceptable. Rather it should be applied at an earlier stage in the planning process to provide a comparative evaluation of a number of plausible

resource portfolios. Moreover the alternatives should not be exclusively generated within the bowels of Manitoba Hydro but should be subject to a public forum that considers the merits of various resource options including both the criteria for selection and some technical analysis, including risk analysis of the options, as Mr. Wallach recommends.

RCM/TREE would nominate for consideration in such a broader review the further consideration of wind and DSM resources, as we did in the Wuskwatim hearing. In 2005, the province committed to the development of 1000 MW of wind generation by 2015. Yet the MH resource plan throughout the planning period contains nothing following the St. Joseph wind farm, which brings wind capacity up to only 238 MW. Wind may add nothing to our electrical capacity, but it does add to the province's dependable energy supply in a way that reduces MH's drought risk – a central topic of this hearing. As Mr. Wallach notes in the following exchange (transcript 7102 f.).

MR. WILLIAM GANGE: And you've just
16 mentioned that the -- the potential for mitigation. Why
17 is it that addition of these addi -- alternative
18 resources to the resource portfolio might reduce
19 portfolio risk?
20 MR. JONATHAN WALLACH: Well, for example,
21 a wind resource might offer three (3) risk-mitigating
22 attributes. First of all, unlike hydraulic generation,
23 wind resource offers annual output that is fairly stable
24 and fairly predictable from year to year.
25 So when -- if you were to add a wind

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1 resource to your portfolio, a portfolio which is heavily
2 weighted towards hydro and, therefore, has an overall
3 portfolio output which varies widely from year to year,
4 by adding the wind resource what you're doing is you're
5 dampening the -- the overall variation from year to year
6 of -- of the output from that portfolio.
7 The second risk-mitigating attribute is
8 that if your wind resource happens to be a contract to
9 purchase power from a wind facility, what you've probably
10 done is offloaded the capital cost risk associated with
11 that facility onto the developer of the facility.
12 And, finally, a wind facility -- or the
13 wind resource offers more planning flexibility than --
14 than a hydro alternative in the sense that it has a
15 shorter lead time and -- and can be -- it's -- it's
16 modular, so it can be more closely sized to your needs so
17 that the -- the planning flexibility offered by the wind
18 resource mitigates the risk associated with uncertainty
19 in your forecasted requirements.

We earlier commented on MH's precipitous decline in projected DSM savings between now and 2015, as shown in Mr. Chernick's Figure 1 (p. 13 above), despite the high energy usage profiles of many MH customers, including some lower income customers. DSM savings often follow peak demand periods and, since most of the population is in the south, much of the power freed up for sale is already near export markets, unlike new northern generation (i.e. it is already accommodated by existing transmission if used in the south and then, through DSM, diverted to export markets).

We note that the biggest prize in the negotiated export contracts was to secure a commitment to the building of new transmission capacity across the border to Minnesota and Wisconsin. Besides permitting more exports at peak hours, this transmission enhances Manitoba system reliability by enabling greater imports as well.

Other comments on issues raised by the Board

1. Should the Board approve the interim rates?

The rates set by the Board as interim rates are not excessive. RCM/TREE recommend that the Board approve as final the April 1st 2010 rate. Further the Board should approve the 2 % rate increase for the period April 1st 2011 to the date of the Board's order in this hearing and then approve a rate increase as requested of 2.9% for the balance of the year to April 1st 2012.

At the same time, the Board should make the following changes to the rate structure in the residential class.

- Reintroduce an inclined rate structure, but with the first block reduced to 600 kW.h/month. The entire increase should go to the second block. The move off a flat rate is an ideal time to change the block size.
- Introduce a larger first block for existing electric heat customers by following Mr. Chernick's recommendation to distribute an extra 6400 kW.h to first blocks over the heating season, as described by Mr. Chernick in footnote 4 on p. 23 of this brief.
- Identify existing electric heat customers by their customer database coding or by an automated review of summer and winter consumption volumes (e.g. if January volumes are twice August volumes or more, then classify as electric heat) or both. Let MH refine the screen, but insist that it be ready for the 2011/12 heating season.

2. Should the Board approve an April 1st 2012 rate increase and if so on what basis?

RCM/TREE recommend that the Board approve an interim rate commencing April 1 2012 for a one year period. The rate increase should be consistent with the projected rate increase forecast by Manitoba Hydro of 3.5%. That increase would then be subject to review and justification in a rate hearing for the

April 1st 2013 period. The regulatory burden arising out of the complexity of the present GRA could be ameliorated by waiting a year for a further review.

4. Risk tolerance

Most domestic customers have no knowledge or ability to understand what the risks in the Manitoba Hydro operation are. The evidence heard establishes that there are no risk free scenarios for Manitoba Hydro. What is clear in our view however is that there is a need for a study of alternative development models that could provide a proper base for discussion on risk and alternative methods of dealing with risk.

9. Alternative development approaches.

RCM/TREE recommend that the Board accept Mr. Wallach's suggestion that alternative development approaches be required of Manitoba Hydro. This approach is consistent with the evidence of Messrs Bowman and McLaren on behalf of MIPUG on pages 7419 -7422. It would appear that there was agreement of these three experts that Manitoba Hydro would benefit from conducting alternative development approaches that seriously considered the relative strengths of different portfolio options open to Manitoba Hydro.

10. Do new hydro projects increase the risk associated with drought?

The evidence of Mr Wallach was that the risk associated with drought is increased by virtue of the proposed new development. Mr Wallach was of the view that one method of protecting Manitoba Hydro from the risks associated with drought would be to diversify the sources of generation. This would be an argument in favour of increased wind production. On the other hand KPMG modelled MH's preferred and alternative scenarios and found that the additional intertie capacity of the preferred scenario actually reduced risk. The components of increased dependence exclusively on hydroelectric generation and new intertie capacity appear to counterbalance each other.

11. Are projected retained earnings sufficient for the risk involved?

RCM/TREE would have been more comfortable with the projected level of retained earnings if Manitoba Hydro had exceeded the 75/25 ratio by a greater margin before the debt load began to rise again due to new construction. As a result, RCM/TREE does have a concern that the increase in debt load may impose a significant strain on the retained earnings of the corporation.

12. Is the 75/25 debt equity ratio still a valid target?

RCM/TREE recommend that the proper debt equity ratio be expressed in a range that would vary depending upon the stage of the construction cycle. It would be realistic to expect that as construction progresses and therefore borrowings increase, the debt equity ratio would worsen. RCM/TREE do not believe they are in a position to recommend what that range should be. There is not a sufficient evidentiary basis to make an informed comment.

13. Should the Board comment on risk practices?

RCM/TREE recommend that the Board accept Mr. Wallach's recommendation that Manitoba Hydro incorporate risk analysis in multiple scenario planning before a preferred development option is selected.

14. Permanent billing concessions.

RCM/TREE recommend that the billing concessions be made permanent. The Board has been granted significant discretion pursuant to s.26 of *The Crown Corporations Public Review and Accountability Act.* The Board has the power to take into account factors that the Board considers relevant. On this issue, the Board ought to make the concessions permanent.

15. Energy Intensive Industry Rate

RCM/TREE agree that there ought to be consultations. They have not occurred with non-industrial stakeholders as of yet. It is difficult to know if this delay in establishing the consultation process is due to the length of this hearing or otherwise. What is clear however is that industrial usage has the prospect of affecting system costs. This would affect all ratepayers no matter what class. As a result, consultation with interested parties and groups outside of the large industrial rate class is essential.

16. Reduction of the basic monthly charge

RCM/TREE recommend that the basic monthly charge be reduced. RCM/TREE believe that reduction of the basic monthly charge is a fair use of the export earnings surplus. Secondly, the reduction of the basic monthly charge brings the energy cost closer to the marginal cost. This promotes conservation and promotes equity. In sum, this proposal permits ratepayers to have access to cheap affordable energy if they do not use too much of it.

17 Needs and Justification hearing

RCM/TREE recommend that a needs and justification hearing is required. In the current GRA, Manitoba Hydro has considered one preferred scenario. There has been no consideration of environmental issues. It is our view that Manitoba Hydro needs to present alternative scenarios for analysis.

12. Is the 75/25 debt equity ratio still a valid target?