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# Introduction

## **A potential legacy for this extraordinary hearing**

Materially improved forecasting in areas such as debt financing and major capital projects

Improved accountability and transparency for key cost drivers including debt financing and major capital projects

Transparent mechanisms to protect and reward consumers for unforeseen variances in export market revenues both positive and negative and from unforeseen variances in financing costs

The use of revenue requirement signals to demand a renewed commitment and improved accountability for energy efficiency particularly as it affects low income persons

A transparent road map using modern statistical methodology for risk quantification and mitigation as they may affect the rate setting process

A revenue requirement that transparently addresses both test year and long term issues

A revenue requirement that acknowledges the current stresses of consumers, business and industry

**Openness and transparency are the clarion calls of this board.**

Citation from June 29, 2011 MPI Pre-hearing conference

## The Statutory, Legal and Regulatory Framework

# The Statutory, Legal and Regulatory Framework<sup>1</sup>

Relevant provisions of *The Public Utilities Board Act* include:

- S. 77(a) which sets out the Board's power to fix “just and reasonable” rates; and
- S. 82(1) which prohibits public utilities from imposing “any unjust or unreasonable, unjustly discriminatory, or unduly preferential ...” rates.

The underlying legislative purpose of the Board—whether setting rates for public utilities pursuant to the *Public Utilities Board Act* or Crown Corporations pursuant to the *Crown Corporations Act*—is the protection of the general public interest. The public interest is made up of two concerns: (i) the interests of ratepayers and (ii) the financial health of the utility or corporation.<sup>2</sup>

The Board's basic purpose of protecting the public interest is reflected in, and informs, s. 77 of the *Public Utilities Board Act*. A just and reasonable rate is one that protects the general public interest having regard to both the interest of ratepayers and the financial health of the utility or corporation.<sup>3</sup>

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<sup>1</sup> See Attachment 1 – Overview of the Statutory Regime for Rate Regulation.

<sup>2</sup> *CAC (MB) v Hydro*, 2005 MBCA 55 at para. 65; *CMMG v. PUB*, 1995 CarswellMan 433 at para. 23 (Man. CA).

<sup>3</sup> *Centra Gas Manitoba Inc. v. The Public Utilities Board of Manitoba*, 1997 CarswellMan 125 at para. 34 (Man. C.A.) [*Centra Gas*].

## The Statutory, Legal and Regulatory Framework

A central element of all rate reviews is a consideration of whether the Corporation had employed all reasonable cost efficiencies.

As, Bonbright observed in his seminal work, *Principles of Public Utility Rates*:

One standard of reasonable rates can fairly be said to outrank all others in the importance attached to it by experts and public opinion alike – the standard of costs of service, often qualified by the stipulation that the relevant cost is necessary . . . or reasonably or prudently incurred.<sup>4</sup>

Bonbright notes:

A cost standard of ratemaking has been most generally accepted in the regulation of the levels of rates charged by private utility companies. But even more significant is the widespread adherence to cost, or to some approximation of cost, as a basis of ratemaking under public ownership.<sup>5</sup>

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<sup>4</sup> Bonbright, J., Danielsen, A. and Kamerschen, D., *Principles of Public Utility Rates*, 2nd ed., (Arlington, Virginia: Public Utilities Reports, 1988), p. 109.

<sup>5</sup> Bonbright, *supra*, p.110.

## **The Statutory, Legal and Regulatory Framework**

The Board interprets its role as setting just and reasonable rates based on prudent expenditures.<sup>6</sup> To achieve its statutory purpose of setting just and reasonable rates, the Board must:

- Ensure that the corporation's forecasts are reasonably reliable;
- Ensure that actual and projected costs incurred are necessary and prudent;
- Assess the reasonable revenue needs of the Corporation while giving due consideration to the overall financial health of the Corporation;
- Determine an appropriate allocation of approved costs between classes;
- Set just and reasonable rates in accordance with the statutory objectives.

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<sup>6</sup> Chairman's remarks, Pre-Hearing Conference MPI 2012/13 GRA, June 29, 2011

## CAC/MSOS

# CAC/MSOS

### **CAC/MSOS are:**

Long time coalition before this Board seeking to represent the interests of all domestic residential ratepayers with a particular focus on vulnerable consumers, including those living on fixed or modest incomes;

CAC Manitoba is a non-profit, independent, volunteer organization focused on the provision of consumer education and information and on representing the consumer interest in Manitoba. Its core mandate is the enhancement of certain consumer rights including the right of consumers to participate in the making of government policies for the marketplace.

CAC Manitoba is governed by an elected board of directors. Through its office resource centre, web-site, consumer information line and outreach programs, CAC Manitoba estimates that it annually receives between 10,000 and 11,000 consumer contacts and information requests.

This will be the last proceeding in which we have the honour of representing MSOS – founded in 1979. MSOS advocates for Manitoba seniors on a broad range of issues including affordable access to housing, medical services, public utilities and transportation. MSOS will be missed.

Clients have gone to extraordinary lengths in preparing:

Day long workshop low income rate affordability - Focus  
Group rate impacts - Never ending reviews of positions

## CAC/MSOS

### **Introductory comments about the CAC/MSOS experts**

#### **The CAC/MSOS Team (the Analysts)**

Roger Higgin, PhD, MBA, BSC Engineering

served as regulator OEB two separate occasions  
former assistant deputy minister Energy, Ont  
expert witness CEC proceeding Wuskwatim

Wayne Simpson, PhD;

former Chair Department of Economics, U of M  
MPI expert witness (quantitative risk quantification,  
investment optimization)  
Payday Lending Evidence (consumer demographics)

Bill Harper; Master of Applied Science - (Applied Economics - Operations Research)

Ontario Hydro  
Regulatory matters in Quebec, BC, Ontario, Saskatchewan  
and Manitoba  
expert witness CEC proceeding Wuskwatim  
expert witness MB Hydro Rate Regulation



## CAC/MSOS

### **The CAC/MSOS Team (Expert Witnesses)**

Greg Matwichuk, CA;

Expertise regulatory accounting  
Assists Industry, Consumers and Regulators  
former Ernst and Young (clients include Ontario Hydro)  
expert witness Centra

Tom Carter, PhD;

Saskatchewan Housing  
Qualified expert Payday Lending  
Designed Housing and Anti-Poverty Strategy for the Province  
of Manitoba

John McCormick, LLB, CA, MBA (accounting)

**Allergic to bad forecasting (McC 7731)**

Expert Evidence Centra

improvements in forecasting attributable to  
McCormick

“enhancements” to IFF-10

improvements in forecasting attributable to  
McCormick

Scotia McLeod – billions placed

## CAC/MSOS

### **The CAC/MSOS Team**

- Strong skill sets (multi-disciplinary, accounting, economics, statistics, engineering, urban policy and poverty alleviation)
- Diverse Backgrounds

Regulators

Government

Academia/Trusted Researchers

Utility Industry

Investment Banking Industry

Accounting Industry

Diverse Clients

Reliable Numbers

Reliable Analysis

Principled, Practical Analysis - not ideologically driven - not end result driven

## The Independent Experts

# The Independent Experts

- Notwithstanding the results of cross examination of May 26 and May 31 and the candid statements found in their June 24, 2011 undertaking responses, these damaging admissions should not be taken as undermining the evidence of Professors Kubursi and Magee as a whole;
- Each Chapter should be carefully weighed taking into account the primary author, his respective expertise and giving due consideration to the specific analysis;
- it is important to recognize Independent Experts made an important contribution to the proceeding:

Professor Kubursi provided:

important advice about the importance of forecasting and means by which to improve forecasting

Professor Kubursi provides:

independent (non Hydro relationship) evaluation of allegations of whistle blower provides confidence to regulatory process and public

(Tr. 4801 through 4810) (See also Moody's Analysis in CAC/MSOS Exhibit 15, Tabs 5 and 6)

Professor Magee in Chapter 4:

provides important insight to the issue of risk associated with water flows by using a basic time series analysis to materially enhance the existing water flow risk assessment provided by MH. In particular, their approach:

## The Independent Experts

demonstrates that the approach taken by MH in determining dependable hydrology does not appear to be biased (i.e., excessively optimistic or pessimistic regarding the possibility of an adverse water event).<sup>7</sup>

Professor Magee in Chapter 4:

materially improves on the Manitoba Hyde process being explicitly stochastic provides a wider range of potential outcomes with associated probabilities (i.e. a proper estimated probability distribution of prospective water flow outcomes) that can be used for risk assessment and risk management.

illustrates how serial correlation can be introduced into the estimation of probability distributions associated with other risks facing MH.

- In their paper as a whole, Professors Kubursi and Magee present a modern, scientific approach to risk management that should be adopted by MH as part of its risk management strategy and its justification to the PUB for resources to manage risk.

That path has four elements:

- (1) identification of risk factors which have associated probability distributions of outcomes;
- (2) analysis of the probability distribution of each risk factor using updated historical data, including the nature of any correlation between risk factors;
- (3) the development of an integrated model of MH

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<sup>7</sup> K-M (p.162) find that their approach yields a similar estimate of the probability of an adverse water event to that found by MH.

## **The Independent Experts**

operations that links the risk factors and the financial outcomes of interest (net revenues);

(4) the performance of Monte Carlo simulations to assess the impact of risk on MH outcomes

- Compare very favourably to KPMG in terms of the scope and quality of their work at a significantly lower cost (see KPMG 3513 and 3516).

## The Independent Experts

### ***limitations of the independent experts given the demands of their retainer***

“WE HAD SO MANY THINGS TO DO” (Kub 6460)

- Daunting retainer

broad retainer

enormous amount of information to absorb

relatively tight time lines

much was asked of both Professor Kubursi and Magee

### ***area of primary expertise***

- Professor Kubursi clearly more comfortable discussing broader concepts of risk management and risk mitigation
  - Professor Kubursi quite frank in noting that Professor Magee more comfort in more technical areas of econometric analysis;
  - Yet, Professor Kubursi primary author Chapter Six – one of the two most technically demanding chapters;
  - Given many demands, area of primary comfort and significant technical challenges not surprising that there are material challenges with Chapter Six
- 
- The independent experts should be commended for their candour underlying their June 24, 2011 undertakings.
  - Cross examination and the candid response of independent experts to undertakings has raised fundamental concerns about:

the data underlying Chapter Six (Table 6.1);

## The Independent Experts

the probability distributions selected as a consequence of flawed data and limited observations (Figures 6.18 through Figure 6.44);

the analytic integrity of the model given:

the selection of generation as a proxy for water flows (See Attachment 4)

the use of the zero intercept model which produced a poorer fit and materially less reliable estimates than the CAC/MSOS model produced in cross examination (See Attachment 4)

(the zero intercept model is corrected in the June 24, 2011 undertaking response by the adoption of the CAC/MSOS approach. Among other amendments, this leads to a material amendment to their results.) (See Attachment 4)

even with the improvements resulting from the adoption of the simple linear regression proposed by CAC/MSOS, left a significant variation in generation unexplained by water flows, leaving considerable room for error in the amended figure for generation (See Attachment 4) ;

The analytic utility of the Chapter Six analysis given the focus on stress tests (Figures 6.2 through Figure 6.17) rather than probabilistic Monte Carlo Simulations (Figure 6.1)

- As a consequence, no reliance can be placed on:

the results of the Chapter Six Probabilistic Analysis (Figure 6.1)

the results of the Chapter Six Stress Tests (Figures 6.2 through Figure 6.17)

- Given data flaws and the limited sample size, extreme care should be taken with the employment of the probability distributions identified in Figures 6.18 through Figure 6.44;

## The Independent Experts

- No reliances can be placed on the estimates of the five year drought and the seven year drought flows given that the analysis flows from:

Table 6.1 Data and Chapter Six Probability Distributions

### ***A Flawed Initial Effort Should not Undermine an Important Conceptual Advance***

It would be surprising if we could not find fault with the initial efforts of two academics with limited exposure to Hydro's operations and could not improve on their effort substantially after a careful review of the model.

In rebuttal (p.86), MH clearly acknowledges that K-M have provided a useful illustrative exercise, even if their data and methodology are inadequate to assess the risk MH currently faces:

“Manitoba Hydro accepts as reasonable the concept and process outlined in the KM Report as being indicative of how a tool such as @Risk could be used to quantify financial risks when combined with a model that accurately represents the physical aspects of Manitoba Hydro’s system and the interdependencies and correlations. . .

Such an analysis, to be reliable, would require verified Manitoba Hydro data and would be required to take into consideration all relevant factors, including, for example, physical system capabilities (e.g. tie-lines, generation capacity), the effects of load growth, new contracts, new generation, changes in market rules, the effects of regulatory changes on operations (e.g. Brandon Unit #5), and correlations between parameters. These examples are not an exhaustive list, but are illustrative of the wide range of variables which must be considered to undertake a fulsome analysis and from which definitive conclusions could be drawn.”



## Our Clients' Understanding of the MH Position

# Our Clients' Understanding of the MH Position

### Context

- MH is undertaking a major decade of expansion<sup>8</sup>:
  - Wuskwatim (accelerated development sooner than domestic need date for purposes of export sales)<sup>9</sup>;
  - Bi-Pole III (needed for domestic reliability purposes – also necessary to bring product from post Wuskwatim expansion to South)<sup>10</sup>;
  - Keeyask (jumping the cue ahead of a more efficient plant and accelerated by over a decade for purposes of export sales)<sup>11</sup>;
  - Conawapa (primarily for domestic purposes).<sup>12</sup>

### Focusing on the Test Years, Hydro appears to take the position

- The financial consequences of a 2.9% rate increase as set out in IFF 09 are reasonable.
- Its forecasts are reasonably reliable;
- Its proposed expenditures within the test year period are reasonable and prudent;
- Capitalized planning expenditures related to major capital projects are necessary prudent and reasonable<sup>13</sup>;
- During the decade of investment, proposed rate increases above the rate of inflation are required to make a contribution to equity and to lower financing costs<sup>14</sup>;
- Current Equity is adequate to meet current debt/equity target.

### Focusing Beyond the Test Years, Hydro appears to take the position

- A deterioration in target 75/25 debt/equity is justifiable in time of major capital expansion based on the understanding that a decade of returns will follow a decade of returns.<sup>15</sup>

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<sup>8</sup> Application, TAB 3, PAGE 3

<sup>9</sup> PUB/MH I-53

<sup>10</sup> PUB/MH I-197 , Application TAB 8, PAGE 7

<sup>11</sup> PUB/MH I-200 a) and Appendix 5.3, Section 2, page 9.

<sup>12</sup> CAC/MSOS/H I-41 c) and d). It appears that Conawapa is being advance slightly in order to support new export contracts

<sup>13</sup> Please see (Bowman 7528-7531).

<sup>14</sup> Please see (Bowman starting p. 7521).

<sup>15</sup>Mr. Warden suggests that there is nothing wrong with letting debt rates decline if we have confidence in returns next decade.

# An Overview of CAC/MSOS Concerns Relating to Forecasts

## Citation from the record

Inaccuracies of forecasts carry both operational and planning risks.

Overestimation of revenues creates an optimistic atmosphere of complacency and over commitment. Underestimation would result in the opposite atmosphere.

Both are costly. (PUB/KM 1-17)

## Citation from the June 29, MPI Pre-hearing Conference

Arguably, MPI's lengthy record of inaccurate forecasts has lead to “ongoing and regular overcharging of customers.”

## Primary Areas of Concern in Terms of Forecasts

- Cumulative net income
- Systemic Overestimate of Financing Costs;
- Material Understatement of Capital Costs related to Bi-Pole III in IFF-09 and IFF-10;
- Significant variance export revenue forecasts from actual export revenues;
- Under performance in Residential DSM as compared to plan

CAC/MSOS will address forecasting concerns at various stages of their argument.

## **Cumulative under forecast of net income**

In the period 2005 to 2010 cumulative actual net income of 1.44 billion was greater than the cumulative forecast net income of 663 million.

So the difference, the variance there was 777 million, so over that period new income was 117 percent greater than forecast.

The under forecast net income suggests that GRA's have either overstated costs or understated revenues or both. (Mat 7660/61)

## **Do over forecasts of interest expense or under forecasts of revenues matter?**

Hydro appears to say no:

“To the extent that there are higher contributions to retained earnings as a result of this difference (over estimation of interest expense), there will be lower future rate increase requirements.” (page 22/96)

Our clients respectfully differ:

### **1) Getting Finance Cost Estimates More Accurate is particularly important as Hydro embarks on its era of expenditure**

Finance expense is the largest expense category at 28% in forecast 2010 (McC 7723) (Warden 5078)

It remain the largest expense in forecast 2020 rising to over \$900 million and 33% of expenses. (McC 7723) (Warden 5079)

We're embarking on a decade of investment and frankly, I'd rather know the cumulative consequences of the millions or perhaps billions of dollars of new debt that's going to be incurred over time, and I'd rather they were properly estimated. (McC 7736)

## **Do over forecasts of interest expense or under forecasts of revenues matter?**

### **2) There is little on the record to suggest that higher retained earnings means lower rate increases**

indeed the evidence of MIPUG expert Mr McLaren tellingly notes that in IFF-07 Hydro estimated lower rate increases than IFF 09 and IFF 10 notwithstanding lower expected retained earnings (McL 7368 through 7371)

notwithstanding the achievement of higher retained earnings than forecast in IFF 07, the Corporation is now seeking higher rate increases that forecast in IFF-07

### **3) There is no guarantee that excess revenues to collect over estimated costs will go to retained earnings**

Mr. Brennan's memos have documented challenges at the Departmental Level with Hydro's fidelity to cost control. (MH Exhibits 112 and 124)

### **4) Issues of Intergenerational Equity arise:**

getting estimates wrong in the forecast year raises concerns of intergenerational equity for consumers in the forecast year (McC slide 21)

its not an RRSP, its not something that I can get the year I need it. Its like, I've given it away and at some future year of unknown time some potentially illusionary benefit will be available to the customer, but not necessarily to me. (McC 7739)

## **Do over forecasts of interest expense or under forecasts of revenues matter?**

**5) In the context of Hydro's sister crown, this regulator has said they do matter.**

**Excerpt from Board Order 86/11, p. 9**

It is the view of this Board that assessing what the appropriate claims incurred result will be for each year is very important for ensuring just and reasonable rates.

**6) recent experience with MPI suggests getting forecasts right matters (a variance of hundreds of millions of dollars in forecast net income and actual net income over the 2005 through 2010 fiscal years)**

The Board stated that past rebates have been driven, in large part, by excess RSR, and are usually largely related to previously inaccurate forecasts of incurred claims. While ratepayers typically receive rebates warmly, there are four difficulties associated with the payment of rebates, those relating to intergenerational inequity and the concept of fair and reasonable rates.<sup>16</sup>

In the context of MPI - ratepayers happy to get rebate even happier to not have paid excessive rates in the first place.

We can say with confidence that from a consumer perspective, it is preferable to have money in one's pocket based on more accurate forecasts rather than in the pocket of the corporation based upon less accurate forecasts

Consumers tend to prefer to have it in their pocket because they have more confidence in their ability to spend it in a way that maximizes their self interest;

under forecasts matter to the low income consumer who may need a couple of extra dollars in their pocket to purchase a bus pass rather than find alternative transportation (Mat 7648)

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<sup>16</sup>Excerpt from Board Order 43/11, pp. 5.

## **Do over forecasts of interest expense or under forecasts of revenues matter?**

Without suggesting any motivation of personal gain, we are prepared to accept that, all other things being equal, many corporations tend to prefer to have excess forecasts in their pocket because it gives them more flexibility to spend and less need to ask for more the next time

**That is exactly why consumers prefer it in their pocket.**

I don't think Hydro is individually nefarious about their forecasting methodology, but I'll bet within an organization like that there is a much, much bigger desire to estimate just a little bit more generously than there is to grind things down to the last cent and potentially be low (McC p. 7740)

I've not objected to Hydro having a particular equity or income layer. I do object to defending a seriously flawed and substantially untested group of policies as part of a program that has the effect of maintaining or increasing income. I would prefer that if someone actually needed a higher level of income they would make that case directly rather than surreptitiously. (McC 7738)

## Hydro's Performance as Compared to the Expectations at the Time of its Rate Application

# Hydro's Performance as Compared to the Expectations at the Time of its Rate Application

### Summary (for additional details see Attachment 2)

- The original GRA Application (which requested 2.9% rates increases for 2010/11 and 2011/12) was based on IFF09-1.
- Since then the following information has become available:
  - 2009/10 Actual Results
  - Updated Forecasts for 2010/11 and 2011/12 (IFF10 and IFF10-2)
  - 3<sup>rd</sup> Quarter Actual Results for 2010/11.
- Also, since then the Board has approved interim rate increases of 2.9% for 2010/11 and 2% for 2011/12 (to be applied to all classes except AR&L).
- Collectively the new information suggests that the results, in terms of overall retained earnings and debt ratio, for 2011/12 will be better than initially forecast:
  - 2009/2010 Actual results exceeded the forecast used in the GRA application (see Section 2 of Attachment 2)
  - The current outlooks (IFF10 and IFF10-2) for 2010/11 and 2011/12 in terms of net income, year end retained earnings and debt ratio are both better than foreseen in IFF09
  - The most recent actual results for the first 9 months of 2010/2011 suggest that the financial results will be better than forecast in IFF09.
- Given these facts, the current outlook for the test period does not support the need for rate increases in either 2010/11 or 2011/12 greater than those already approved on an interim basis.
- Furthermore, if one were to view MH's original proposal as an acknowledgement that the year-end 2011/12 financial forecast as set out in IFF09 was reasonable, one could argue that the interim increases approved for these years could be rolled back and still yield results (in term of retained earnings and debt ratio) at least as favourable as those originally expected based on IFF09.
- Indeed, if one were to totally eliminate the 2% interim increase a first order approximation (using IFF10) would suggest a \$42 M reduction in net income for



## **Hydro's Performance as Compared to the Expectations at the Time of its Rate Application**

2011/12 and retained earnings for the end of the period. This would yield retained earnings of \$2437 M which is still in excess of the retained earnings forecast for 2011/12 in IFF09 of \$2396. (Note – there would also likely be increases in financing costs but it is unlikely these would reduce the retained earnings to levels at or below the original forecast.)

- Where the real pressure seems to come from for increasing rates in 2010/11 and 2011/12 is with regard to the financial outlook beyond 2011/12 and the uncertainty associated with that outlook. Indeed, this observation is supported by rationale set out in the PUB's Oder 40/11 regarding the April 1, 2011 interim rates. (Attachment 2)
- Looking closer at the risks/concerns noted by the PUB they are related primarily to uncertainty regarding the export market (prices and existence of firm contracts), the timing and cost of future capital spending for major Manitoba Hydro projects (e.g, BiPole III, Conawapa, Keeyask) and whether (at the end of day) the export prices will support cost of new generation projects.

### Comments

- The IFFs put forward by MH reflect a proposed (but not yet approved) development plan that is predicated on the assumption that major generation can be “pre-built” in advance of actual domestic need that will capitalize on export opportunities to the benefit of domestic ratepayers.
- The PUB's concerns are whether these benefits will materialize or whether future export prices and the actual cost of projects will be such that these benefits will not materialize as currently projected.
- The PUB is right to be concerned as MH's proposed development plan is yet untested. However, MH's development plan with respect to building for export will be subject to a full review and testing and will not proceed unless the benefits can be clearly demonstrated and substantiated in forthcoming (and promised) “Needs and Justification” review.. Furthermore, it is fair to say that the Province's past experience with the Wuskwatim review and subsequent outcomes will ensure the review is thorough and adequately addresses the risk involved.

## Intergenerational Equity

### Intergenerational Equity

- During the course of the proceeding issues/concerns regarding intergeneration equity have arisen:
- MH (Warden) responded to claims by MIPUG's experts (page 8041) that current ratepayers were pre-funding Keeyask and Conawapa by stating that all costs incurred were capitalized and only included in rates once the facilities concerned came into service and, as result, there was no pre-funding and no intergenerational issue.
- Comment:
  - MH is correct that the costs are capitalized and attract interest during construction. However, these costs for construction in progress do affect MH's balance sheet and its debt/equity ratio. More specifically, if the assets are funded through debt, the effect will be to increase the debt ratio.
  - Given MH's and the PUB's use of the debt ratio as a measure of financial soundness this will put pressure on both to increase current rates so as to maintain the debt ratio. As a result, while there is no direct pre-funding of such projects – the existence of such projects does create pressure for rate increases. If MH and the PUB respond to such pressures then such projects are affecting current rates – even before they come in-service – and current customers' rates are being influenced by facilities that they are not using.
- In Order 40/11, the PUB stated (pages 38 and 40) that current ratepayers are, in a sense, engaged in plans that involve risk, with the "costs" of those risks deferred to other generations. In this regard, reference is made to spending on Keeyask, Conawapa and BiPole III.
- Comment
  - These costs are part of the planning process that is required in order to ensure that supply is available to meet future demand. Future generations rightfully expect such planning will occur. In the case of MH, this planning also includes consideration of facility advancement/construction for exports where it can benefit future generations in terms of lower rates. Again, it is reasonable for future customers to expect current customers to pursue opportunities that will reduce future rates.
  - If the PUB's concern is the amount of money being spent and whether it is being spent on the right areas of investigation – these are legitimate concerns. However,

## **Intergenerational Equity**

unfortunately, these are not areas that the PUB can “investigate” and provide “direction” on – as MH’s capital planning is not subject to review and approval by the PUB. Furthermore, it should be noted that such concerns will not be addressed by the upcoming “Needs for Review” as they are concerned with the money being spent to get to the Needs to Review stage.

The real issue is therefore the outstanding concern of the PUB (and others) that it is precluded from reviewing MH’s capital program, including that part of the program that deals with the funding for studies regarding the “need” for future capital projects.

## Matters relating to the evidence of Mr. McCormick and the subject of interest costs

### Forecasts – Financing Costs

Right now we've had a period where forecast methods were largely un-codified. It was upwardly biased. And regretfully, it operated as a bit of a revenue grab. I think we can do better. (McC 7720)

#### Four elements required to adequately forecast financing expense

- composition of fixed and floating
- assumptions of interest rates
- currency of the issue
- term to maturity of underlying debt

#### Systemic Overestimation of Financing Costs

**embedded** in financing cost forecast IFF-09 – long standing approach

- forecast “all new debt as being long term debt” : (McCormick 7715)

- the debt streams were forecast to be thirty years (Sch 5115)

- the interest rate applied was a 10 year plus which is the average arithmetically of the calculations of tens and thirties (Sch 5115)

- “it's been a fairly longstanding practice” (Rai 5117)

- pre-dates Schulz (Sch 5117)

- pre-dates Rainkie (Rai 5117)

- notwithstanding policy up to 30% total debt floating or short term (McC 7716)

- notwithstanding – target range 15% – 25% long term debt target range (McC 7716)

#### Systemic Bias

- “assumption that all new debt would be expensive, long-term, fixed rate debt” (McCormick 7716)

- “totally indefensible” “upward bias” (McCormick 7716)

- initial estimate of \$5 M in saving in first year and more in second (McC 7717)

- estimate of savings would be much greater “because the current and prevailing interest rates over the last year are lower than what Hydro had in their forecast for the '10/11 and “11/12 period” (McC 7717)

## **Matters relating to the evidence of Mr. McCormick and the subject of interest costs**

The validity of Mr. McCormick's observations has been implicitly acknowledged in part by Manitoba Hydro with their adoption in IFF 10 of the "enhancement" to their long standing forecasting approach of assuming all new debt will be fixed for 30 years at 10 years plus rates  
both Mr. Schulz (5116) and Mr. Rainke (5118) describe it as an enhancement

The existence of this long standing policy underlies the CAC/MSOS argument of an **asymmetric** forecasting advantage for the Corporation

Pretend for a moment that Hydro had a methodology that was chronically and repeatedly under forecasting interest costs. Ask yourself how long it would take Hydro to get a team working on coming up with a superior methodology. (McC 7741)

And if you don't think it'd take very long, you and I are now in agreement that there is an asymmetric forecasting advantage in Hydro. (McC 7741)

While Hydro has partially corrected for Bias in IFF-10

embedded in IFF-09 on which the revenue requirement is based is the systemically biased approach (see McC 7718)

IFF-09 maintains "the fiction, that all new debt is going to be the most expensive debt" (McC 7719)

10/11

\$800 M at 4.65%

11/12

\$600 M at 5.2 %

While the enhancement with regard to Debt forecasting in IFF 10 is welcome – the 20% floating rate will still tend to bias the results

The rationale for the 27% is the fact that MH does not do all its forecast debt as 30 year fixed, some of it is done in short-term notes [up to \$500 million capacity, but rarely over \$300 M and sometimes down to nothing], and a bunch of long term debt at fixed terms less than 30 years [at lower interest rates than 30 year debt]

Given they have about 20% in floating, the justification for the extra 7% in floating is the other things they are not modeling like the notes and the shorter maturity debt.

(McC 7725 -7728) (McC 7782)

no express rationale for 20% floating as opposed to any other figure within target range

**Matters relating to the evidence of Mr. McCormick and the subject of interest costs**

(McC 7725)

Forecast Financing Costs<sup>17</sup> have been overtaken by reality

I haven't seen any statement that says, we now recognize that the 5.2 percent rate for long-term financing in 10/11 is really high, and we are prepared to embrace a reduction of the forecast rate in our revenue requirement (McC 7730)

Even looking at 2010 IFF we would see forecasts above those that are currently in the market (McC 7776)

I would much rather see the consumers paying rates in 2011/2012 based on what we know today about the forecast rates, the much more current rates, as opposed to superceded rates (McC 7775)

forecast 10/11 long bond rate (McC 7774)

the forecasts to the economic outlook have fallen fifty-five (55) basis points

Forecast Financing Costs have been overtaken by reality

2011/12 Year

short-term

2009 economic outlook targeted 3.8%

most recent information shows recent 3 month T-bill rate averaging about 1.5% for 2011/12 (McC slide 45)

long term

2009 economic outlook targets 3.95% for "10 Yr plus rate"

most recent information shows year rate forecasts averaging about 3.6% for 2011/12 (McC slide 46)

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<sup>17</sup>For a more detailed discussion of the forecasts of finance costs in IFF-09 please see Schulz at 5091 to 5104).

**Matters relating to the evidence of Mr. McCormick and the subject of interest costs**

Updated rates are indicative of significant excess interest costs being forecast in the revenue requirement. (McC slide 47)

Transparently assessing forecasters based on express criteria

When Hydro went shopping, they picked some well-known names off the packages of interest rate forecasts that were available. They picked BMO and Scotia and the federal government, but they didn't look at the ingredients. They didn't look at the raw material that was there or check to see if they package was stale dated. (McC 7731)

Personally, I'd like to get the guy with the best track record on my side as opposed to worrying about a cacophony of voices (McC 7721)

Professors Kubursi and Magee agree

The eclectic approach should not be based on a large number of forecasters but only on those that meet the accuracy criterion that MH must establish.

Averaging their forecasts assumes they are equally accurate, but they are not. (K and M PUB-KM 17)

John McCormick suggests:

## **Matters relating to the evidence of Mr. McCormick and the subject of interest costs**

Rather than being evidence based, Hydro's selection of economic forecasters has elements of arbitrariness

I'm happy to let them make choices. I'd just like to know there was a methodology out there that says we've made good choices. (McC 7732)

forecasting should employ the best forecasters creating the most robust forecasts (McC 7719)

Hydro already prunes their forecasts but do not appear to have “a logical and tested methodology for the selection of the forecasters they chose.”

no explanation why J.P.O Morgan, Desjardin and others are out while BOM and National Bank are in (McC 7720)

In a slightly different context with a materially different tone, Professors Kubursi and Magee agree

The untested presumption is the equal validity of all of the forecasts and forecasters. MH should determine from past performance as to some weighing in utilizing the various forecasters. (MH 34)

MH must look at the past performance of the economic forecaster. KM has been told by MH that the forecasters have not all been equally accurate. (MH 33)

KM have recommended the use of back-testing of forecasts and forecasters but for their accuracy and consistency. (PUB KM 1-7)

KM are of the view that MH should be considering the various forecasts as to their accuracy rather than simply averaging them (MH/KM – 32)

In terms of its export market price forecasters, Hydro suggests that it evaluates forecasters<sup>18</sup>

It has eliminated forecasters who are not MISO specific or who are less able to articulate the rationale for their estimates (Sur 5225 and 5228)

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<sup>18</sup>Interestingly neither ICF (Ros 3064/65) (Sur 5227) or KPMG ((3534 to 3536) (Sur 5227) evaluated Hydro's forecasting track record in terms of Wuskwatim export prices. There is a limited discussion of Hydro's track record in forecasting future export prices at the time of Wuskwatim at pages 5230 of the Transcript. Elsewhere, KPMG notes that pure market economists have a preference for transaction type data (3579)



## **The Optimal Range of 15% to 25% for floating interest rates might be considered a fiction**

“4 things come not back: the spoken word, the sped arrow, the past life and the neglected opportunity” (Bonbright)

I do believe that in handling its debt portfolio over the last number of years Hydro has missed or lost many opportunities to provide the consumers with lower interest costs without unduly increasing the risk of their performance. They've never been anywhere near the top range in a whole range of financial markets. (McC 7764)

Hydro's 15 to 25 percent range is something of a fiction. Based on the quarterly data that's been provided to us in this hearing, the real range, where they'd carry on their business, I believe has been between sixteen point six (16.6) to twenty-one point eight five (21.85) (McC 7746)<sup>19</sup>

Looking at that range for a moment and seeing the last ten (10) years of interest rate conditions, I have no idea what interest rate conditions would ever cause Hydro to get up towards the . . . 25 percent level, or even the 30 percent level. (McC 7746)

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<sup>19</sup> Mr. Schulz suggests that over a 9 year period the percentage was between 15% and 22%. In 7 of the 9 years it was between 17 and 19.

**Matters relating to the evidence of Mr. McCormick and the subject of interest costs**

We've had some of the most amazing short-term money sales in the last few years and we've had declining longer-term interest rates, so we could have had a double win-win (McC 7746) (see McC 7748 discussing slide 25 from pp. 7747 through 7750)

1. more short term debt when rates are in the one (1), one and a quarter ( $1 \frac{1}{4}$ ) rate
2. Had you gone short and hit the 25 or 30 percent maximum at the beginning of the Chart, you would have been able generally to finance at gradually lower rates as time went on. (McC 7748/49)

**Matters relating to the evidence of Mr. McCormick and the subject of interest costs**

**The Fear of Being Near the Top Range is Overstated  
because there are Mitigation tools available**

the fear of being at the top range is overstated relative to the risk because there are tools available to mitigate the risk of higher levels of floating rate debt (McC 7765)

Emera caps its exposure to 86 percent of its floating rate debt (McC 7771)

There are ways of increasing the exposure to short-term debt without placing the farm at risk, because we can pay a small insurance premium and have caps (McC 7782)

Regretably, there is no discussion of caps on floating rate debt in the NBF Report. (McC 7771)

**Matters relating to the evidence of Mr. McCormick and the subject of interest costs**

## **We have not seen a debt concentration policy for Hydro**

we've not seen a debt concentration policy for hydro (McC 7773)

but perhaps we should

in 2019 , 1.1 Billion of debt (13% of total) either maturing or interest rate obligations maturing (McC 7773)<sup>20</sup>

have \$ 4 billion in debt maturing over their six highest years, (McC 7773)

that's half the game. I don't know when the next interest rate spike is coming, but I do know there are gonna be a few unhappy people if it happens in 2018.

I would have like to see something on caps and I would have liked to see some discussion on our risk related to maturities (McC 7774)

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<sup>20</sup>Additional concerns may relate to what appears to be a move towards an extended average life of bonds (CAC 148 b). Questions may need to be asked about the maturity of Hydro debt issues (CAC II 149 (a) and PUB McCormick I-1) as compared to those of the Province.

## Matters relating to the evidence of Mr. McCormick and the subject of interest costs

### The National Bank Report

Just as with Professors Kubursi and Magee, while it must be recognized that there are significant limitations and errors in the NBF analysis suggesting there is more work to be done. However, there also are important insights.

### Limitations and errors

#### Important elements of their terms of retainer were not completed

- define an optimal relative weighting of fixed versus floating rate debt for scenarios flat/steep/inverted

**not done** (McC 7742/43)

this is important – because a powerful argument can be made that by:

artificially restricting itself to a much smaller range for floating debt (15 – 22% rather than 15 to 25%);

Manitoba has foregone during the 2009/10, 2010/11 fiscal years and continues to forego during the 2011/12 fiscal year a significant opportunity to reduce its debt financing cost

- provide a comparative report detailing policies of peers – not done properly (McC slide 28, 29, 30) (McC 7755 – 77607)

#### Important elements of their report were flawed

the infamous Table 14

only one of 9 values for floating rate percentage of MH and only 2 of 9 values for total debt of MH were correct (McC slide 26 and 27) (McC 7752 – 7754).

#### Important Substantiation of the Methodology was not provided

We were not provided with the detailed modelling to arrive at the range of 14 to 27% (McC slide 31)

I don't how they have set up their various data series, the

## **Matters relating to the evidence of Mr. McCormick and the subject of interest costs**

ranges (minimum and maximum) and the shape of the data (probability distribution) (McC 7751/7751 )

Arguably time period analyzed – too distinct and too short

Only four years (McC 7750)

starting near the time the yield curve went flat

Its a very special period

(i.e. While there are negative spreads in 17 months of the 10 year period set out in Mr. McCormick's slide 25– there are negative spreads in 17 months of the 4 year period set out in the NBF analysis) (McC 7749)

CAC/MSOS recognize that NBF may have chosen this period because it coincided with the opening of the MISO market. However, the relatively short and distinct period chosen suggests there may be utility in having an independent review of this issue (under regulatory supervision) in the future

## **Important Insight**

Insight into post MISO Market and the correlation between various risk factors

relatively strong positive correlation between MISO spot prices and short term interest rates provides insight into the utility of employing floating rates as a partial hedge against fluctuations in MISO markets

They were able to statistically determine that there was a correlation between short-term interest rates and MISO pricing from the 2005 to 2009 period such that they, in effect acted as a hedge (Sch 5119/20 and 5132)

such that if risk is measured in volatility of net incomes a 100% fixed rate portfolio and a 27% floating/73% fixed rate portfolio have essentially the same risk characteristics (Schulz 5128/29)

## **Matters relating to the evidence of Mr. McCormick and the subject of interest costs**

as well as insight into the utility of quantitative risk analysis as a tool to improve utility management

its conclusion that it did not expect there to be correlation between hydrology and macro-economic risk factors such interest rates (NBF excerpt- p. 31, CAC Exhibit 16. see for example pp. 16)

Has important implications for risk quantification – analytical inconsistent with Professor Kubursi and Magee's written evidence but not their evidence under cross examination

### There is no free money

the report makes the critical point that there is no Free Money and that excessive reliance on the certainty of long term fixed debt comes at a material cost<sup>21</sup>  
in terms of lost opportunity for lower debt cost

albeit with limited data and limited documentation – concludes that an optimal portfolio should have a broader range of 14 to 27%  
at the very least, the suggestion that the optimal range should have a higher upper target of 27% raises even more questions about why Hydro appears to be artificially restricting its range to less than 22%

and as Mr. McCormick points out every additional point may mean millions of dollars  
**each one of these points is worth millions of dollars of consumer interest savings. Right now the short-term/long term spread on base rates is over 3 percent. So, if you start doing math on 800 million, say 5 percent times 3 percent, you're coming up- with some fairly nice numbers (McC 7746)**

### Truly unfortunate – National Bank not presented as witnesses

no doubt they would have added greater value to the process than KPMG

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<sup>21</sup>Mr. Schulz discusses the adjusted return at p. 5129 and 5130.

## **Matters relating to the evidence of Mr. McCormick and the subject of interest costs**

would have offered greater insight into the utility of Monte Carlo assessments for risk assessment and risk mitigation

would have been insightful to explore the data and probability distributions relied upon in a manner similar to our approach to Independent Experts

would have been insightful to explore why they did not complete their mandate in terms of defining an optimal relative weighting of fixed versus floating rate debt for scenarios flat/steep/inverted



## Matters relating to the evidence of Mr. McCormick and the subject of interest costs

# Improving Hydro's Financial forecasts via an Interest Deferral Account and/or more reliable forecasting

Clients of the view:

- improvement to new debt at 20% floating/80% fixed significant improvement over 100% fixed – thank McCormick and commend Hydro for enhancing forecast in that manner;
- for the purpose of the revenue requirement current rate application (IFF-09) financing costs should be redone based upon a floating/fixed component that more appropriately reflects:
  - Hydro Policy floating and fixed debt
  - Hydro practice floating and fixed debt
  - Reasonable Practice of a prudent and reasonable utility seeking to achieve appropriate returns at an acceptable level of risk;

1. Prefer floating not at 20% but towards higher end NBF range (i.e. 25 - 27%)

consistent with prudent and reasonable practice – according to Hydro's expert similar risk in terms of revenue volatility to 100% fixed but significantly higher return

Not all long-term debt is really long term debt (McC 7727)

a forecast of a slightly greater portion of floating rate debt will moderate the financial impact of forecasting fixed debt at 10 years plus rates for a 30 year term while periodically undertaking shorter terms (say five to ten year financings) (McC slide 11)

- They recommend that the interest deferral mechanism proposed by Mr. McCormick should be implemented. Hydro should be advised that the extent of any corporate recoveries from the mechanism will be contingent on a determination that it has been managing its financing costs prudently.

## **Clarification of the Existing Hydro Policy<sup>22</sup>**

Hydro's views on a number of subjects are described as policies, guidelines, and in this case case, a long term objective. But while I've asked for the documents that provided them so that I could read the, if you like, ingredients, they didn't seem to be written down anywhere. (McC 7732)

CAC/MSOS/MH II-119 Revised

Note that Manitoba Hydro's floating rate policy does not state it is applicable for each quarter. It has been long-standing Corporate practice to be in compliance with the target at year end. (McC 7734)

Having a short-term debt policy that only applies on one day a year could lead to mischief.

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<sup>22</sup> Mr. Warden confirmed during cross examination that Hydro had not been able to locate the written Board policy capping the percentage of floating rate or setting the target range.

**Evidence Related to the evidence of Mr. Matiwchuk including  
Export Revenue Forecast Variances and the Rate Stabilization Mechanism**

## **Rate Stabilization Mechanism**

Based on the history, the capital, the expenditures, and the operations, there appears to be general commitment in Manitoba Hydro to exporting power. (Mat 7658)

Assuming a general commitment to exporting power, it is essential to understand how domestic ratepayers are involved and to ensure they are impacted appropriately. (Mat 7658)

If the goal of participating in the export market is to provide benefits to domestic ratepayers, there should be an explicit and transparent mechanism where one can observe, identify, quantify and deliver the upside and the downside of participation in that marketplace as reflected in variances from forecast (Mat 7658)

Currently, Manitoba Hydro does not make use of an explicit, immediate and formalized regulatory mechanism to adjust domestic bills when the actual amount of export revenues differs from forecast. (Mat 7659)

The RSM offers a tool for the regulator who prefers not to leave the treatment of export revenue variances from forecast to the discretion of the Company (Mat 7673)

- With 27 years of regulatory experience, Mr. Matwchuk states:

I'm not aware of another regulated entity where actuals vary so significantly and continually from forecast and there is simple reliance on cost of service without the use of another tool. (7691)

## **Evidence Related to the evidence of Mr. Matiwchuk including Export Revenue Forecast Variances and the Rate Stabilization Mechanism**

### Hydro Export Revenue Forecasts

National Bank states:

The primary source of net income variability relates to the substantial level of hydrology risk 1 that is present in Manitoba Hydro's operations. (7660)

Mr. Matwchuk confirms

- the forecast to actual export revenue variance is significant – as high as 48% of forecast and on average 22% off the mark (7640);

contrast to 3% average variance for domestic revenue 2001 through 2009 (Mat 7641)

- forecast export revenues 2001 – 2009 tend to materially understate actual export revenues (7640)

under forecast by \$441 M 2001 through 2009 (Mat 7641)

### Who Bears Risks

Investor Owned Utility

shareholder – diminished value (Mat – 7644)

MB Hydro – resident ratepayers bear risk if Hydro fails to meet expectations (Mat 7644 - 65)

either through rates or through taxes <sup>23</sup>

### Symmetry of Risk

risk is the spread of actual outcomes around the expected outcome as measured by the variance of the standard deviation (Mat - 7645)

downside – single event outcomes lower worth than expected

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<sup>23</sup> CAC/MSOS see some merit in the argument that residential ratepayers who pay based upon usage have some distinguishing characteristics from taxpayers who pay graduated income tax based upon level of income. They note that there is a considerable body of Hydro ratepayers who are low income and high usage.

## **Evidence Related to the evidence of Mr. Matiwchuk including Export Revenue Forecast Variances and the Rate Stabilization Mechanism**

upside – single event outcomes – higher worth than expected

### Regulatory Risk

rates set prospectively based on forecast (Mat 7467/68) – risks relate to variance from forecast

### Asymmetry of Risk

- poorer than expected result (Mat 7649)

we can be relatively confident that Hydro will go back to the ratepayer in the down years (Mat slide 29)

drought of 2004 (7657)

- better than expected result (Mat 7649)

money may go to a good place

it may not

### Transparency

from an investors perspective

“An investor who bears a risk should see a clear and explicit opportunity for a return.” (Mat 7650)

### Formalized Transparent Elements of Rate Setting Process

Determine Revenue Requirement prospective basis (Mat 7651);

Determine Cost of Service prospective basis including forecast export revenues based on median water flows (Mat 7651);

Rate design (Mat 7652);

Transparent/Accountable Mechanisms;

Ratepayers expressly benefit from forecast export revenues (Mat 7653).

## **Evidence Related to the evidence of Mr. Matiwchuk including Export Revenue Forecast Variances and the Rate Stabilization Mechanism**

### Determining whether a RSM is required?

known contingencies but with great uncertainty regarding timing and magnitude (Mat 7663)

NEB Criteria for RSM (Mat 7663)

absence of control

inability to reasonably forecast

materiality

### RSM accepted regulatory tool in a number of jurisdictions

(Mat slide 51)

### Why isn't retained earnings an appropriate vehicle to deal with significant variances between forecast and actuals?

- Historical accounting of cumulative net income
- Not a cash balance
- In the case of Hydro supported by capital investment in infrastructures
- NOT ACCESSIBLE LIQUIDITY

How the RSM Functions (Mat oral presentation slide 46) PUB/CAC/MSOS(Matwchuk) 1-22 (Mat 7666 – 7670)

- Will not be explained in extensive detail given the Chair's comments at page 7670

The Chairperson

We have your point and understand what you're doing (Chair 7670);

- Important point - Illustrative example performed at request of PUB using parameters defined by PUB (Mat 7666)  
**Q.** (Wil 7670)

## **Evidence Related to the evidence of Mr. Matiwchuk including Export Revenue Forecast Variances and the Rate Stabilization Mechanism**

recognizing illustrative example

drought year of 2004 in addition to significant negative variance from forecast exports there was also a negative variance in terms of imports of power

that was not reflected in illustrative example

A. (Mat 7670/71)

“But in my evidence, Mr. Williams and Mr. Chairman, my definition of net export revenue ultimately to be used for this mechanism does include the - - netting of power purchases because it's the definition from the prospective cost of service study.”

- While Chair clearly understood what Mr. Matwchuk was doing
- during the cross examination of Mr. Matwchuk by Counsel for both MIPUG and Manitoba Hydro it became clear that

their clients did not fully understand the RSM

using the illustrative example found between slides 67 and 69 – counsel for both MIPUG and Manitoba Hydro

sought to make much of the fact that the illustrative example as presented in the graph might have led to a bill reduction at the height of the 2003/04 drought;

the inference being that the message sent to ratepayers was contra-intuitive

it is important to note as was done in the excerpt from direct examination set out on the previous page that

illustrative example performed at the request of PUB – did not fully reflect the definition of variance employed by Mr. Matwchuk

purple line would have been lower because of netting of power purchases

## **Evidence Related to the evidence of Mr. Matiwchuk including Export Revenue Forecast Variances and the Rate Stabilization Mechanism**

note also comment (Mat 7669)

And 2004, which we all recognize, was a year of a drought and forecast export revenue was not attained, actuals were much lower, and therefore we had to reflect for symmetry purposes that there was a negative variance”

(Mat 7693) Referring to the 2004 drought “The RSM would provide explicit identification and quantification of variance, and then the variance would be amortized over a reasonable period.”

Outcome (Mat slide 50, Tr. 7675/76)

Transparency

Rate Smoothing

Reduce Moral Hazard



## **Evidence Related to the evidence of Mr. Matiwchuk including Export Revenue Forecast Variances and the Rate Stabilization Mechanism**

### **Implementation**

Please refer to Attachment 8 to the CAC/MSOS submissions

The amortization approach is consistent with approaches used where forecasting is “weather” dependent, such as temperature and wind issues that give rise to rate stabilization mechanisms for gas LDCs.

MIPUG’s comments in its IR response (PUB/MIPUG I – 2, page 2, lines 14 - 22) and in cross of MGM regarding non test years does not appear to appreciate the mechanics of the recommended RSM.

There are three possible scenarios (see Attachment 8):

- Variances, amortization and resulting rider are only determined in test years.
- Variances are only determined in test years, amortization occurs annually and the resulting rider continues to be effective until the next test year.
- Variances, amortization and riders are updated annually, in both test years and non-test years. Please see attached table detailed mechanics.

There are pros and cons to each of the approaches and the selection really depends on the Board’s objectives.

The most reliable results will be achieved using variances determined in test years.

The more up-to-date variances will be achieved using IFFs, whether they are part of a GRA or not.

We would recommend the latter, as the forecast is a basis for determining the starting point for the variance measurement and as long as the method for forecasting export revenues is consistently applied, in a manner approved by the Board. That would be scenario #3.

**Regarding Reasonableness and Prudence of  
Certain Expenditures including O, M and A**

**Regarding Reasonableness and Prudence of  
Certain Expenditures including O, M and A**

**Are Expenditures Prudent and Reasonable?**

Within the fabric of this proceeding, there are at least four possible approaches one can bring to the determination of whether existing spending controls by Manitoba Hydro are prudent and reasonable.

**The MIPUG Perspective**

MIPUG witnesses Mr. Bowman and Mr. McClaren look at trends in O, M and A and normal spending since IFF – 07 (McL 7369 - 7370). They identify a disturbing upward trend. In their view,

OM&A and Normal Capital spending is increasing from earlier forecasts and requires additional controls from Hydro and the regulator.

In the view of Mr. Bowman,

If there is a level of discomfort with ongoing cost escalation sending a message through the revenue requirement would be “entirely consistent” with our evidence. (Bowman 7378)

One of the issues is finding a way in the short term to support Mr. Brennan in his efforts to impose cost control and to get people to pay attention to that. (Bowman 7391)

**The Perspective of CAC/MSOS Exhibit 14, Tabs 8, 9 (as amended)<sup>24</sup>, 10 and 11 (Tables 2 through 6)**

These exhibits look at O, M and A expenditures per customer as set out in IFF-09 and IFF-10 as compared to inflation.

They suggest that O, M and A per customer is growing at a faster pace than inflation both before (significantly more than inflation) and after the revisions for CICA Accounting Rules.

**The perspective of Mr. Rainkie and the Hydro Rebuttal**

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<sup>24</sup>(Rai 5238)

## **Regarding Reasonableness and Prudence of Certain Expenditures including O, M and A**

In cross examination, Mr. Rainkie vigorously defended the prudence of Hydro's expenditures.<sup>25</sup> Hydro's rebuttal evidence suggests there is no problem with OM&A increases in excess of inflation if one recognizes the accounting changes, the fact assets are aging and the vacancies that existed at the end of 2006/07.

### **Mr. Brennan appears to disagree with Mr. Rainkie**

In 2009, he states:

For some time now, I have been concerned about the substantial increase to Manitoba Hydro's Operating, Maintenance and Administrative (OM&A) expense. For the 11 month period ended February 28, 2009, OM&A expense has increased by over 8% at the Corporate level with even greater year-over-year increases in some divisions.

It is not acceptable for Operating Budgets to be over-expended to the extent we are seeing in fiscal year 2008/09. (MH Exhibit 124)

In August of 2010, he suggests that:

Over the past five years, travel expense has increased at an average annual rate of 6.6% per year.

Wages, salaries and benefits account for close to 75% of Manitoba Hydro's total operating expense. Over the past five years, this component of operating expense increased at an average rate of 5.0% per year, including a 6.2% increase over the past year. Equivalent Full-Time Employees (EFTs) peaked at an all-time high of 6620 during 2009/10.<sup>26</sup>

Over time costs have grown at a very significant average rate of 8.3% per year over the past five years. In 2009/10, overtime costs exceeded \$50 million, an increase of 9.6% over the past year. (MH Exhibit 112)

The perspective of Mr. Rainkie and the Hydro panel would seem at odds with the perspective of Mr. Brennan and the MIPUG witnesses. Hydro's suggests that there is no problem with increases in excess of inflation given the accounting changes, the fact assets are aging and the vacancies that existed at the end of 2006/07.

However, in EX 124, Mr. Brennan cites the aging of assets and surely is aware of the vacancy issue. He still expresses alarm at the annual increase being experienced in OM&A. This is a critical internal acknowledgement of a problem that they were unwilling to acknowledge externally in the GRA. It

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<sup>25</sup> See the discussion between pp. 5238 and 5272.

<sup>26</sup>Manitoba Hydro has been rightly recognized as a Top 100 Employer in Canada. Its compensation received an A grade from the Globe and Mail evaluators. (Warden 5246)

## **Regarding Reasonableness and Prudence of Certain Expenditures including O, M and A**

fatally undermines their argument that ongoing expenditure controls are prudent and reasonable.

It also is noteworthy that the numbers reported in EX 124 are gross values prior to any a capitalization/accounting adjustments

It also is important to recognize the measures being implemented by Mr. Brennan are really short term measures that can not be relied upon to restrain OM&A in over the long term. This observation applies to the measures outlined in both Ex 112 and 124.

It is not clear that any of the measures contribute to ongoing operational efficiency (as suggested in Brennan's opening paragraph of the Aug 2010 (ex. 112) memo. For long term cost control what is needed is measures/actions that will contribute to productivity and efficiency on an ongoing and long term basis.

The Board may wish to consider directing Hydro to demonstrate action and commitment in this area and report back on what it is doing and savings achieved.

Reference is made on the last page of Ex 112 to capital rationalization and only approving those projects necessary to provide an ongoing safe and reliable supply of energy. In future hearings, MH should be required to demonstrate what new processes/requirement have been introduced in its planning/budgeting to ensure this.

- The Board may wish to consider directing MH to include an indication as to how this directive from Brennan is being implemented as part of the anticipated reports to the Board on Asset Condition and its 20 year plan for capital and maintenance (see page 5173).

Professors Kubursi and Magee warn of the risk that a regulatory regime may set rates to cover the public utility costs and allow it to pass the costs of its mistakes, inefficiencies and and risks to domestic customers. (Kur p. 6251 to 6525)

- Given this new evidence that has come to light, our Clients would recommend that the finalization of the 2011/12 rate order send a message to Hydro that this regulator at this time will not allow it to pass through the full cost of its inefficiencies.

## Capital Program Justification

# Capital Program Justification

### Factual Background

- Manitoba Hydro is highly capital intensive, as evidenced by the fact that over half of the actual expenses for Electric Operations in 2009/10 were for depreciation and financing costs associated with its assets (i.e., \$731 M out of \$1418 M, per PUB/MH PreAsk 9). As a result capital spending is a major driver of Manitoba Hydro's revenue requirement.
- Compounding this issue is the uncertainty that has arisen in this hearing regarding the "accuracy" of capital cost estimates used for major projects including BiPole III, Wuskwatim, Keeyask and Conawapa. This uncertainty is one of the key risks the Board as noted in making its decision regarding the need for the interim rate increases approved to date (Order 18/10, page 6 and Order 40/11, page 34).
- The treatment of cost estimates associated with Bi-Pole III are a matter of significant concerns.
- There are a number of fundamental concerns about the Bi-Pole III budget:

CPJs are typically signed off by executive not the board – Bipole III was an exception (4981/82)

Earlier CPJs for BP 3 were constituted as placeholder budgets which are not typically taken forward (War 4885 - 4887)

Earlier CPJs did not contain material contingency which is not typical in circumstances where the project was many years from initiation. A significant contingency would normally be expected (War 4888/48) Generally, we would expect a larger contingency (5002)

By September 2009, a revised CPJ signed off by the responsible business units and suggesting a near doubling of the forecast costs of the project was available to senior management but was not signed off on. (War 4853)

The order of magnitude of the revision was unprecedented (War 4856)

Senior management was aware of the rough numbers by September 09. Members of the audit committee were aware of the rough numbers by September 2009 (War 4878)

## Capital Program Justification

The \$3.9 B estimate appears to languish in a strange type of limbo for over a year. (War 4858, 4872, 4873) (the word “limbo” is selected by CAC/MSOS and not attributed to Mr. Warden)

No external consultant was retained by Hydro to review these figures for more than a year. (War 4853/54)

Members of EMC including the CEO were aware by September 2009 that a materially larger estimate was being presented by the responsible business units.

Yet no revised forecast relating to BI-Pole III was included in IFF-09 or IFF 10.<sup>27</sup> (War 4988)

In essence, the discredited 2007 CPJ remained in effect until March/April 2011 (War 4879)

IFF 10 contained the same \$2.2 B estimate a full 14 months after the updated \$3.9 B estimate was signed off on by the responsible business unit. (War 4880)

These revised approve CPJ of \$3.2 had approximately a 6% impact on capital program cost (5068/69) as well as impacts on debt.

Mr. Warden suggests nothing wrong with letting the debt rate decline if we have confidence in the returns of the next decade. (War 5068/5069)

These revised approve CPJ of \$3.2 B includes two major factors:

reduced contingency (5054); and,

different technology (5066/5067)

These revised approve CPJ of \$3.2 B would appear to continue to contain material uncertainties (will source condenser work in this particular circumstance)  
(5063/5064)

also will turnkey approach work to reduce costs? (5073/74) (5202)

First appearance of the concept of management reserves (War 5004) which is still somewhat opaque (War 5196 through 5199)

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<sup>27</sup>No note was attached to the IFF or any information response of the Corporation suggesting that a materially larger estimate had been presented to senior management in September 2009.

## Capital Program Justification

### Capital Approvals

- Since the PUB does not have the jurisdiction to review and approve MH's capital plans it is not in a position to directly address the risks posed by such plans (i.e., approve/disallow the spending).
- However, capital spending does influence the revenue requirement and uncertainty regarding the level of capital spending influences the Board's assessment of the risks that MH is exposed to and the rates increases that may be required to offset these risks
- Therefore, at a minimum it is important that the Board have up-to-date information regarding what MH considers to be its future capital cost and to also have a fully understanding as to the provisions for risk (i.e., contingencies and management reserve) that MH has built into the capital costs for the projects included in its capital expenditure program.
- As part of its GRA MH traditionally files its 10-year Capital Expenditure Forecast (CEF) which lists its planned capital projects and sets out for each a brief description, the annual spending over the period and any change in total project cost from the previous plan.
- What the CEF does not provide is any information regarding the risks associated with a particular capital project and any allowances that MH has incorporated in the project's costs to address these risks. However, this information is documented by MH through its Capital Project Justification framework (Main Application, Tab 3, page 10) and can be found in the Capital Project Justification (CPJ) forms established for each project. In order to assist the PUB in understanding the risks associated with MH's planned capital project and the extent to which these risks are addressed through contingency allowances in the capital cost estimates it would be useful if the PUB required (as part of the initial filing in a GRA) the CPJ forms for all major projects. As a start, one could suggest that these forms be filed for all projects with costs in excess of \$100 M.
- As noted in the Main Application (Tab 3, page 10), the CPJ's are reviewed and approved by the Executive Committee prior to their inclusion in the CEF. During the course of the current proceeding it became evident that there was some discretion exercised by MH's management as to when/if the CPJ's that have been signed off by the operating divisions are forwarded to the Executive Committee for review. As a result, to ensure that the PUB is fully informed it would be useful if it was advised as to the existence of any CPJ's that have been fully signed off by the operating units but not yet forwarded to Executive Committee for approval.

## Asset Management

# Asset Management (see Attachment 7)

- In t116/08 Report the PUB stated (page 101-102 in revised Order):

MH's justification for the level and growth of OM&A expenditures includes an indicated need for increased maintenance and/or replacement of ageing capital assets to maintain the safety and integrity of its electrical system. Recently this assertion is difficult for the Board to evaluate, as the Board lacks jurisdiction over MH's capital expenditures, yet capital expenditures are the major driver of rates.

One item that is lacking is sufficient support for the level of maintenance and upgrades to the existing capital assets of the Corporation. The Board notes Mr. Harper's suggestion that as a best practice, MH should undertake an Asset Condition Assessment, and his view that such a study will provide information on the degree of degradation of existing assets and the need for rehabilitation and/or replacement of capital assets.

Despite prior cautions from the Board, MH intends to spend, on average, \$385 million a year on capital construction through to and including 2017/18, capital expenditures that are not related to major generation and transmission projects, which are accounted for separately. In an effort to better justify and demonstrate the necessity of such normal capital expenditures, the Board agrees with interveners on the need for a periodic Asset Condition Assessment Study.

The Board agrees that a study of this nature, done at reasonable intervals, will assist in evaluating MH's progress in maintaining the electrical system, and should also provide additional support for the level of OM&A being incurred and forecast. The Board believes it's appropriate that MH undertake such a study.



## Asset Management

### Current Application

- In the current Application MH indicated (Tab 13, page 11) that:

Manitoba Hydro will consider the extent to which this issue can be addressed as part of its Depreciation Study (to be completed post-IFRS implementation) and will provide a specific timeline by April 1, 2010.

- In response to IR (CAC/MSOS/MH I-17 d)) MH indicate that this study was one of the drivers behind increasing costs:

In order to meet these requirements, considerable work demands will be placed on internal resources throughout the Corporation as many of the major directives require input and collaboration from a number of areas. In some cases the use of internal resources adds incremental dollars in that overtime must be scheduled to assure that attention is paid to regular workload as well as to responding to the many recent PUB directives. In other cases, the use of internal resources does not add incremental dollars, but defers other work requirements which may result in inefficiencies and overall higher costs. As well, many of the directives require funding for external services, including consulting resources which provide the necessary level of independence and expertise.

- In response to IR PUB/MH I-176 c) MH has indicated that:

Manitoba Hydro will provide an update on the status of projects related to the Asset Condition Assessment by **June 1, 2011** (related projects include: IFRS, Depreciation Study, Enterprise Asset Management Project, GIS Enabled Transmission Line Asset Maintenance and Inspection System, Asset Investment Planning System).

- During cross examination (TR 5167) MH acknowledged that the terms of reference which the Board directed it to file for June 2009 has not been filed.

## Asset Management

# Asset Management and Investment Planning

### Current MH Approach

- In IR CAC/MSOS/MH I-17 c) MH was asked to describe how it determined its maintenance and replacement requirements. The response is telling in that:
  - It deals with each functional area separately and talks about the tools and processes used by each area to determine its individual needs.
  - While there is discussion under each area of “prioritization” there is no indication of how this prioritization is done – i.e, no assurance that the same values and objectives are used by each business area
  - There appears to be no process for prioritizing projects across the various function (G/T/D) areas
- During cross examination (TR 5172-5174) MH indicated that a “status report” would be provided in June 2011.
- During the same cross they also indicated that the development of asset management planning practices was being done by functional area. They also stated that they were doing generation first (as it is 50% of the activity) and would be able to use it to support their 2012 GRA.
- When pressed for additional details on its future plans MH said it preferred to address these in the update (TR 5175). However, this Update has not yet been filed and the hearing is virtually over.

### Issues and Recommendations

- Asset management plans are increasingly used by regulators (CAC/MSOS Ex. 16, pages 19-23)
- The Board may wish to direct that these issues be addressed in the next GRA and that MH provide an asset management plan that is based on a comprehensive asset condition assessment. Note that Mr. Warden agreed that it is important for the MH to put the asset management plan in a form that the regulator (MPUB) can accept and approve – i.e, up to MH to demonstrate that it is doing the right things (TR. 5177).
- In terms of translating the asset condition assessment in to an asset management plan MH need to clearly indicate
  - In each functional area –how projects will be prioritized?
  - What criteria are used for prioritization and are the same criteria used in each functional area
  - Are trade-offs made between investments in different functional areas and, if so, how is this done and who is responsible for it?

## Target of Retained Earnings for Rate Setting Purposes

# Target of Retained Earnings for Rate Setting Purposes

Hydro takes the position that a deterioration in target 75/25 debt/equity ratio is justifiable in time of major capital expansion

Mr. Warden suggests nothing wrong with letting the debt rate decline if we have confidence in the returns of the next decade. (War 5068/5069)

MIPUG concurs

Page 7314-7315

The requirement to meet a 75/25 debt-equity ratio actually, by the end of the long-term IFF period with all the massive investment we're talking about, actually exceeds the estimates of the five (5) year drought by about a billion dollars (see KPMG Appendix J)

So there's a little bit of discomfort that those two (2) get a bit delinked as you go forward and it underlines a caution we have had about using a 75:25 measure as the overriding factor.<sup>28</sup>

**MIPUG takes the view that 2.9 and 2.0 are perfectly reasonable even in the face of uncertainty related to the decade of investment** (Bowman 7383, 7384, 7387, 7390)

Mr. Matwichuk

strongly suggests that less reliance should be placed on retained earnings for the purposes of rate setting on a going forward basis

in terms of rate stability he prefers to rely on the smoothing effect of the RSM

in terms of access to capital – he points out the dominant factor is the provincial debt guarantee and that there has been substantial variance in hydro's debt/equity ratio with no apparent impact

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<sup>28</sup> And to some extent, some of the Monte Carlo type of tolls that have been discussed could be of value. They would take some reorienting to say, enough of this focusing on my net loss. I'm not here to spend time figuring out rates to protect my lender. My lender will be okay. I'm here trying to figure out my ability to maintain stable rates. (PIPUG 7136)

## Target of Retained Earnings for Rate Setting Purposes

on the province's rating he notes the supportive regulatory environment in the context of adverse events

and that in the aftermath of the 2003/04 drought the equity to capital ratio was 12/88 with no commensurate diminution of the province's bond rating grade.

he notes that major firms with healthy retained earnings have been pushed into bankruptcy when their operating capital is interrupted

### **CAC/MSOS concur that less reliance should be placed on debt/equity for rate setting in this application**

in terms of access to capital they point to the Underlying Advantages of Hydro

Monopoly

Supportive Regulatory Environment at times of drought

Provincial Debt Guarantee Fee

in terms of rate stability they prefer to rely on the smoothing effect of the RSM

## Conclusion of CAC/MSOS

For the test years, the debt/equity ratio remains at 74/26 under IFF 10 and IFF-10 with Bi-Pole;

Given significant future capital obligations regardless of whether the preferred, alternative or other scenarios eventually receive regulatory approval, the Board for the purposes of its determination of the revenue requirement in this proceeding will give less weight to the maintenance of the existing debt/equity target in the time frame beyond the test years.

A determination of whether the existing debt/equity target should be maintained for the purposes of rate setting will be made when there is greater clarity in terms of which capital programs have been approved and the costs of the approved capital programs.

## Have the benefits of the preferred plan been established?

# Have the benefits of the preferred plan been established?

- In supporting its rate application, Hydro has asserted that the benefits of its preferred plans outweigh its costs. It has asserted that its preferred scenario is preferable to the alternative scenario.
- CAC/MSOS notes there is new evidence since the interim rate hearing related to the signing of export contracts with both Wisconsin Power and Minnesota Power. This new evidence removes a significant uncertainty relating to the merits of Hydro's preferred plan. However, material uncertainty related to Hydro's preferred plan remains.
- These uncertainties are well summarized in the evidence of Mr. Judah Rose on behalf of ICF who notes:

Over the mid-term, Hydro expects to sell a bit more than half its exports under short term contracts (pp. 3019)

This makes future price uncertainty extremely relevant

- Mr. Rose also notes:

significant changes in natural gas forecasts (2955)

Wall street does not think gas will go as high as ICF does (3006/07)

significant changes in the expected timing of CO2 adders as well as the expectation of their value (pp. 2960)

anticipated coal retirements are more modest than in 2009 (2980, 2986, 2993, 2994)

this includes the MISO region (3014 – 3017)

he advises that while there are significant administrative effects that will put upward pressure on prices (2980), these do not offset the fact that stringent or moderate CO2 regulation is less likely than in 2009 (2975, 2978, 2979) (see also 3007 through 3009)

CAC/MSOS also note that purported benefits of the preferred plan as compared to the alternative plan of \$150 M presented by KPMG are dwarfed by a comparison to net consumer

## Target of Retained Earnings for Rate Setting Purposes

revenues between 2009/10 and 2019/20<sup>29</sup>

CAC/MSOS also are of the view that the benefits of the preferred plan must be examined in greater detail given the Wuskwatim experience which saw significant and unexpected capital cost escalation ((5189 to /5192) along with forecast price deterioration (for a variety of reasons including normalization and the recession). (5214 through 5218)

## Recommendations

- There is new evidence since the interim rate hearing related to the signing of export contracts with both Wisconsin Power and Minnesota Power. This new evidence removes a significant uncertainty relating to the merits of Hydro's preferred plan. However, material uncertainty related to Hydro's preferred plan remains.
- In supporting its rate application, Hydro has asserted that the benefits of its preferred plans outweigh its costs. It has asserted that its preferred scenario is preferable to the alternative scenario. On a balance of probabilities based on the evidence currently before the Board, these assertions cannot be verified and will not be relied upon for the purpose of this General Rate Application.
- As *obiter* comment, the merits of these assertion can only be properly tested in a Needs for and Alternatives Proceeding. Colloquially put, “if the beef is not there, the sandwich will not be bought”.
- As *obiter* comment, any such assessment of the preferred, alternative and other alternatives must involve a more complete disclosure of information than existed in this proceeding. As *obiter* comment, given the lack of ambition which appears to underly Manitoba Hydro's future DSM plans, it cannot be stated with confidence that Hydro has adequately canvassed existing alternatives. Hydro's preferred and alternative scenarios might appear materially different if they were supported by a more ambitious DSM plan.

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<sup>29</sup>See p. 5184, at 6% discount \$11 B and 8% discount \$10 B.

## Risk Quantification

# Risk Quantification<sup>30</sup>

Elsewhere in their submission, CAC/MSOS have commented on many of the positive contributions of Professors Kubursi and Magee

They also have highlighted concerns regarding certain aspects of the Professors work.

In this section, CAC/MSOS regrettably assume the task of presenting a more critical analysis of the work of (KM). Any criticism is offered with the greatest of respect.

(more technical discussions of their work can be found in Attachments 3 and 4)

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<sup>30</sup>A more detailed history of efforts by the regulator to address issues relating to risk and rate setting can be found in the transcript of the cross examination by CAC/MSOS at 4790 through 4708. The MIPUG expert witnesses provide an interest analysis in the pre-filed expert report. An analysis of Hydro's regulatory costs from 2001 through 2009/10 suggests that they were about 15 M (Tr 4782/4783) or about 1/10 of one percent of their domestic revenues in the range of \$15 Billion. See also CAC/MSOS Hydro 127 a) - c)

## Risk Quantification

# Background to the evidence of Professors Kubursi and Magee

At page 18 of their evidence, Professors K and M make recommendations that might be interpreted as suggesting a massive increase to the target earnings in anticipation of risk

they appear to combine a number of factors together including long term drought, a high Canadian dollar, high interest rates and high import prices

the statement by the Professors was concerning to CAC/MSOS because:

- a) they had an underlying concern with the quantification of risk set out in Chapter Six of the exports report;
- b) the statement on its face appeared to give no consideration to probability and the nature of the correlation if any between these risks – this was seen as inconsistent with the Professors legitimate focus on probabilistic risk management<sup>31</sup>

It is important to understand that the primary estimates of risk placed on the record by Professors K and M flow from Chapter Six:

The estimate of a five year drought and a 7 year drought relies upon the underlying data and probability distributions of Chapter Six (Kub 6504, MH-KM– 8)

The data for these estimates is derived from Table 6.1, The underlying probability distributions are derived from Figure 6.18 through Figure 6.44 as further amended by the K and M report of June 10, 2011.

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<sup>31</sup>The statement also was concerning because it seemed to place little emphasis on material changes in the status of Hydro since the 2003/04 drought.



## Risk Quantification

### **The Concerns of CAC/MSOS with Chapter Six** (please also see Attachments 3 & 4)

This was despite the concern of Professors K and M that:

they did not think the actual series would produce the best correlation.

Professor Kubursi and Professor Magee would be the first to say that estimates cannot reasonably be relied upon if:

their data is flawed;

the probability distributions derived from the underlying data is wrong;

Professor Magee candidly confirmed that a different distribution would give a different result (6500)

the underlying methodology is wrong.

The record of this proceeding has amply demonstrated all three realities. The material downward estimates of many of the important calculations in Chapter Six found in the K and M's Undertaking Response of June 24, 2011 only serves to underscore the point. (See Attachment 4)

#### Flawed Data

The material flaws in Table 6.1 are amply demonstrated in the Hydro Rebuttal and the CAC/MSOS cross of Mr. Cormie on this point on April 7, 2011.

Professor Magee freely admits at pages 6082 and 6496 that we might have ended up with better data covering a longer period of time using Hydro information.

#### Flawed and a Limited amount of data leads to flawed probability distributions

Probability Distributions Matter.

Professor Magee states:

## Risk Quantification

Its not simply the number its the distribution. (6453)<sup>32</sup>

In selecting a probability distribution there always is the potential for error. (See Attachment 3)

But as Profesor Magee candidly confirmed, the fewer the samples the higher the probability of selecting the wrong distribution (pp. 6488)

This possibility is only enhanced when one is relying on analytically vulnerable data from a small sample.

The fragility of the probability distributions selected by KM is amply demonstrated by Figure 6.18 and its triangular distribution for exchange rates.

Recall the evidence of Professor Kubursi.

The logic of figure 6.18 is that there is a zero probability of an exchange rate above 93.8 cents US to buy a Canadian dollar. (6484/85)

The chosen distribution does not allow for a value above 93.8 cents US to buy a Canadian dollar (6485)

The illegitimacy of the chosen distribution is amply displayed by CAC/MSOS Exhibit 27 which provides evidence of situations where it requires more than 1 dollar US to buy one Canadian dollar (see PP. 6571 and 6573)

### The Use of Generation as a proxy for water flow

CAC/MSOS were stunned to learn that Chapter six did not model Hydro's biggest risk

instead it employed generation as proxy for water flow (Tr. 6647 – see also Attachment 4)

They became further concerned when they discovered the zero intercept linear regression was employed.

During cross examination on May 31, 2011, CAC/MSOS introduced a simple linear regression

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<sup>32</sup>See to similar affect Professor Kubursi at page 6070.

## Risk Quantification

with intercept. For the purposes of their undertaking response and the document dated June 10, 2011, KM have replicated the simple linear regression of water produced at the hearing by CAC/MSOS<sup>33</sup> and tested it against their original approach without an intercept.

KM confirm that:

both statistical and practical considerations favour the use of the with-intercept regression line.

It has been shown that that not using the intercept produced a poorer fit and hence poorer estimates of generation for any given water flow.<sup>34</sup>

K and M candidly confirm their more serious error in Chapter Six was the mistake involving generation.<sup>35</sup>

The use of the superior CAC/MSOS approach has led to a material downward revision in a number of figures found in Chapter Six of between 37% and 75% (see Attachment 4)

But fundamental concerns remain with the modestly improved calculations and more fundamentally with the use of generation as a proxy.

The R2 value from the original CAC/MSOS Exhibit provides a value of 0.88 for this regression which implies about 12% of the variation in generation was left unexplained by water flows.

This leaves **considerable room for error** in KM's figure of 18,770.2. used to estimate Tables 3 and 4.

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<sup>33</sup> In their graph on page 12, the with intercept line replicates the simple linear regression adduced by CAC/MSOS in cross examination on May 31, 2011.

<sup>34</sup> p. 8 and 9.

<sup>35</sup> p. 3.

## Risk Quantification

### The reliance on stress tests with no probability attached

It is notable that of the results delivered by Figures 6.1 through Figure 6.17, only one is a true probabilistic assessment (Figure 6.1)

The remainder as freely acknowledged by Professor Magee and more reluctantly by Professor Kurbursi are stress tests to which no reasonable probability can be attached <sup>36</sup>

In their report of June 10, 2011, Professors K and M appropriately acknowledge that the selected simulations using fixed variables are stress tests rather than probabilistic scenarios.

Yet the witnesses freely acknowledge the central importance of probabilistic assessment (see , 6535, 6545, 6546)

Mr. Wallach makes this point eloquently as well (7137 through 7141)

the limitation of using this relatively extreme form of stress analysis was candidly under scored by Professor Magee when he conceded that close to 95% of the values presented in Figure 6.2 did not appear in the probabilistic assessment set out in Figure 6.1

close to 95% of the simulated variables did not appear in the base case (6740)

as Mr. Cormie noted

you would actually have to go over 9 standard deviations before you got a loss of \$755 M

### Extreme Calculations such as Figure 6.17 are inconsistent with *a priori* assumptions and have not been tested

In their pre-filed evidence, Professor K correctly concedes that the probability of Figure 6.17 is extremely unlikely<sup>37</sup>

the fixing of drought and a number of micro-economic variables without regard for correlation is inconsistent with:

the position of National Bank (see p. 44 of report, p. 6551, p. 6553)

inconsistent with Professor K's

<sup>36</sup> See pages 6443, 6578 and 6581

<sup>37</sup> Any inference that there was a material correlation between drought and high import prices in the post 2005 MISO era might also be questioned in light of K's concession that Hydro was a price taker in the supplying and buying from the MISO market.

## **Risk Quantification**

a priori assumption there will be no correlation between interest rates and drought (6555, 6556)

Professor Kubursi also indicated that he didn't have clue when asked to discuss whether he believed there was a correlation between exchange rate and drought.

### Changes since the 2003/04 Drought

It also should be acknowledged that there appears to be significant consensus between Mr. Rose, Professor Kubursi and Mr. Cormie on how the situation for Hydro has changed since the opening of the MISO market in 2005 and other events.

Professor Kubursi provides a thoughtful discussion on the issue of shortage pricing and transmission constraints at PP. 6554 through 6557. (See also CAC/MSOS/Hydro I-62)

Mr. Rose comments in even greater detail at pages 3024 and 3041.

Perhaps the best analysis is provided by Mr. Cormie at pages 5343 – 5352.

## Risk Quantification

### Recommendations

Professors Kubursi and Magee should be commended for the candour of their June 24, 2011 undertaking response which acknowledges that using the zero intercept model for the purposes of calculating the relationship between generation and water flows produced a poorer fit and hence materially less reliable estimates than the CAC/MSOS model introduced through cross examination.

The Board should find that fundamental concerns exist with regard to Chapter Six with regard to the:

data underlying Chapter Six (Table 6.1);

the probability distributions selected as a consequence of flawed data and limited observations (Figures 6.18 through Figure 6.44);

the analytic integrity of the model given:

the selection of generation as a proxy for water flows

the use of the zero intercept model which produced a poorer fit and hence materially less reliable estimates than the CAC/MSOS model produced in cross examination

(the zero intercept model is corrected in the June 24, 2011 undertaking response by the adoption of the CAC/MSOS approach. Among other amendments, this leads to a material amendment to their results.)

even with the improvements resulting from the adoption of the simple linear regression proposed by CAC/MSOS, left a significant variation in generation unexplained by water flows, leaving considerable room for error in the amended figure for generation;

The analytic utility of the Chapter Six analysis given the focus on stress tests (Figures 6.2 through Figure 6.17) rather than probabilistic Monte Carlo Simulations (Figure 6.1)

- The analysis of the five year and seven year drought scenarios relied upon the data from Table 6.1 and the probability distributions set out in Figures 6.18 through Figure 6.44;
- As a consequence, no reliance can be placed on:

## **Risk Quantification**

the results of the Chapter Six Probabilistic Analysis (Figure 6.1)

the results of the Chapter Six Stress Tests (Figures 6.2 through Figure 6.17)

- Given data flaws and the limited sample size, extreme care should be taken with the employment of the probability distributions identified in Figures 6.18 through Figure 6.44;
- No reliances can be placed on the estimates of the five year drought and the seven year drought flows given that the analysis flows from:

Table 6.1 Data and Chapter Six Probability Distributions

## Demand Side Management

# Demand Side Management

- Manitoba Hydro has struggled to defend its achievements and future plans relating to energy efficiency in the current proceeding (See the cross examination of Board Counsel, beginning at pp. 4496);
- It offers a pessimistic vision of the future arguing that there may not be the same value of future opportunities as existing opportunities that can be captured in a cost effective manner (4496/97);
- A primary objective appears to be to manage expectations (4520) (4580);
- Hydro has successfully managed to dim expectations for its performance.
- Mr. Chernick concludes that Hydro appears to be spending less and aiming low (7157)
- Mr. Chernick argues that Hydro has not demonstrated a commitment to maximizing benefits for customers. (7157)
- CAC/MSOS agree.<sup>38</sup>

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<sup>38</sup>CAC/MSOS do not support the suggestion that Manitoba Hydro cannot be a energy efficiency leader given its rates. It notes that ICF has identified a number of jurisdictions in the United States which had relative high population growth, relatively high economic growth, relatively low rates and relatively low usage growth. See Rose (2949 through 2955). As Mr. Dunsky noted during the last GRA, there are far more profound barriers to energy efficiency than rates.



## Demand Side Management

# The Review of Hydro Exhibit 157 also suggests ongoing challenges with the program

### Overview of the 2009/10 Power Smart Annual Review

Manitoba Hydro's corporate approved Power Smart DSM targets for electric energy and average winter demand savings at generation are 3,271 GW.h/year and 915 MW by 2024/25, as outlined under the *2009 Power Smart Plan*.

These targets represent the expected impact of electricity efficiency codes and standards, customer service initiatives and incentive-based program activities.

Manitoba Hydro's incentive-based Power Smart programs are expected to contribute the greatest portion of the savings, with projected energy and demand savings of 1,980 GW.h/year and 638 MW by 2024/25.

In 2009/10, the electric Power Smart program achieved 264 GW.h and 218 MW in electric savings (at generation) which was below the planned savings of 311 GW.h and 253 MW.

Below are the significant drivers of the 47 GW.h energy variance:

Energy savings for the Performance Optimization Program and the Bioenergy Optimization Program were 13 GW.h and 14 GW.h above plan respectively.

Delayed program launch of the Water & Energy Saver Program, Fridge Recycling Program and delayed program activity of the Power Smart Energy Manager Program accounted for 19 GW.h of the negative variance.

Overly optimistic planned codes and standards savings resulted in a variance of 19 GW.h.

The Commercial Lighting Program was 14 GW.h below energy savings targets, however over the last two years, the energy savings have increased by 14%. The in-year shortfall is a result of a higher proportion of program participants who took on smaller lighting projects than in past years.

The Compact Fluorescent Lighting (CFL) Program fell short of planned energy savings by 9 GW.h, although the program succeeded in a year over year energy savings improvement of 64%. (it should be

## Demand Side Management

noted that Hydro employs more optimistic inputs for its CFL program than some other well respected jurisdictions such as the Ontario Power Authority (see CAC/MSOS/Hydro/79 part c).

The School initiative exceeded their target by 13 GW.h, although the shortfall in the Instant Rebate initiative more than offset those gains. The Instant Rebate initiative was 20 GW.h behind plan.

The Lower Income Energy Efficiency Program and the Commercial Network Energy Manager Program's energy savings were 8 GW.h and 6 GW.h below plan respectively; both due to lower than planned program participation. Nevertheless, the Lower Income Energy Efficiency Program achieved a year over year energy savings improvement of 50%.

The primary explanation for the 35 MW negative demand variance was the Curtailable Rate Program. The program was 28 MW below plan due to the indefinite shutdown during the 2nd quarter of 2009/10 of one of its **four industrial**

- Note future challenges include the fact that in 2012 incandescent lights will no longer be sold in Canada so that CFL sales/installations that are a primary source of residential conservation savings will no longer be part of Power Smart. Put another way free-ridership for the largest residential measure will be 100% and no savings can be claimed in 2012 and beyond
- While Hydro seeks to diminish expectations, other well respected analysts suggests it has significant unrealized opportunities in demand side management;
- Mr. Phillippe Dunsky was a thoughtful and well received witness on behalf of CAC/MSOS at the last Hydro GRA;
- His evidence which is part of the record of this proceeding suggests the energy efficiency future is not as bleak as Hydro's evidence might lead observers to believe;

## Demand Side Management

### **CAC/MSOS recommend that the PUB make the following findings:**

- Recognize that there are a number of staff within the Demand Side Management area of Hydro and the broader Corporation with a strong commitment to developing and maintaining industry best practices;
- Recognize that Manitoba Hydro has a relatively strong historical reputation along with BC, Ontario and Quebec in offering relatively strong programming within the Canadian context;
- Recognize that a literature review as Professor Carter's did, will no doubt identify some favourable commentary about Manitoba Hydro and energy efficiency.

#### Assessment of Current Practices

- Note that the DSM savings that Hydro attributes to some of its more successful residential programs such as CFLs are considerably more optimistic than those adopted by other well respected bodies in the area of energy efficiency such as the Ontario Power Authority (see CAC/MSOS/Hydro/79 part c);
- Determine that Power Smart Residential incentive-based programs (largest source of planned savings) are lagging relative to plan. The major factors appear to be lower participation rates.
- Determine that particularly concerning is the low participation rates in the Lower Income Energy Efficiency Program (LIEEP) and the low spend from the Affordable Energy Fund.

#### Hydro's Future Plans

- Accept the conclusion of Mr. Chernick that the 2009 and 2010 DSM plans appear to be spending less and aiming lower in terms of their targets;

## Demand Side Management

- Accept the conclusion of Mr. Chernick that Manitoba Hydro's DSM programming has not demonstrated a commitment to maximizing benefits for customers;
- Accept the conclusion of Mr. Dunsky that leadership in energy efficiency will require new, more ambitious electricity savings goals, as well as reconsideration of its current portfolio of programs and strategies.

### Recommendations relating to the rate setting process

- Identify that a critical factor in the reduction of the approved interim rate was the finding that the Corporation's ongoing operation of its energy efficiency program is not prudent and reasonable and is not consistent with industry best practice;
- Determine that ongoing challenges in the LIEEP suggests the need for a strategic review and for an independent third party Evaluation and Audit of its operations which is to be filed with the next rate application. Manitoba Hydro is to consult with the Regulator and interested interveners prior to finalizing the terms of the retainer;
- Determine that Manitoba Hydro should be directed to report back at the next rate application on whether it would be appropriate to target a proportionate or higher share of DSM expenditures to vulnerable customers and renters calculated by their numerical proportion of the residential rate base;
- Find that the relatively poor performance of Power Smart in 2009/2010 reinforces the need to make major changes such as those recommended by Dunsky including:

Adopt more aggressive savings targets;

Close program gaps by creating or expanding programs for: multifamily residential housing, manufactured new homes, consumer electronics and office equipment, appliance retirement, commercial new construction, commercial custom retrofits and small commercial retrofits;

Develop upstream strategies (market actor training and incentives);

Launch or consider an expert-supported public stakeholder review process;

## Demand Side Management

Consider strategies to facilitate market access for third-party initiatives and innovations;

Modify cost-benefit screening to focus on utility (UCT) or societal (SCT or TRC) perspectives. Use comprehensive (not incremental) screening for alternative program designs.

- Determine that there is a broader need for an independent third party Evaluation and Audit of Power Smart which includes a quantitative *before and after* Dunsky assessment in terms of targets inputs, achievement and budgets. Included in the scope would be input assumptions (unit savings, Free Ridership etc). Manitoba Hydro is to consult with the Regulator and interested interveners prior to finalizing the terms of the retainer. (see Chernick, 7152, 7153, 7157)

## Cost of Service and Revenue to Cost Ratios

### Cost of Service and Revenue to Cost Ratios

- During the course of the proceeding MH provided cost of service studies based on April 1, 2009 Rates/IFF08 (PCOSS10) and April 1, 2010 Rates/IFF09 (PCOSS11). The results are summarized below (Appendix 58, page 4):
- One issue that has arisen in the application of the Cost of Service Study results is whether to look at the ratios before or after the allocation of net export revenues. Use of the before net export revenue ratios fails to provide domestic customers with the full benefit of export sales to which they are entitled and therefore is an inappropriate ratio.
- There are a number of reasons why the ratios (even those after the allocation of net export revenues) must be used with caution:
  - In its COSS MH has not implemented all of the recommendations of the PUB arising from its last review of COSS methodology. Furthermore, there are other areas where, while MH has adopted the PUB's recommendations, it has ongoing reservations about their appropriateness. In order to fully vet these issues, MH has hired a 3<sup>rd</sup> party consultant to review and make recommendations on these issues.
  - During the course of this proceeding Mr. Chernick provided evidence questioning a number of other aspects of MH's COSS methodology. MH has indicated that these concerns will also be identified for consideration by its consultant.
  - In Order 117/06 the PUB indicated that it would also consider the results of Marginal Cost based COSS analysis (Tr. 4846) in determining the fairness of customers' rates. MH has not provided such an analysis in this proceeding.
  - However, a simple comparison of marginal cost and average revenues by customer class (CAC/MSOS Exhibit 14, Tab 1) would suggest that while revenues are less than marginal cost for all classes the residential rates and revenues are the closest to "costs" of any other class. This is in direct contrast with the results of the PCOSS results which would suggest that Residential is one of only two classes whose revenues under contribute relative to costs.

## Cost of Service and Revenue to Cost Ratios

### Recommendation

- There is uncertainty about Hydro's current PCOSS methodology with Hydro initiating an independent review of all COSS areas and Mr. Chernick suggesting that the existing COSS overstates residential costs;
- The existing COSS lacks a robust marginal cost based analysis (although current evidence suggests it would yield materially different results compared to the embedded cost analysis).
- No further rebalancing of revenues between the customer classes over and above that already subsumed in the interim approved rates will be granted.

## **Inverted Rates**

# **Inverted Rates**

The table below predates the Board's interim order regarding the 2011/12 rates.

It presents two snap shots in time in terms of rates for monthly residential usage at certain consumption levels in March 31, 2004 versus March 31, 2011

It illustrates a basis for the level of discomfort that many consumers who heated their home with electric heat may have felt with inverted rates as originally implemented



## Inverted Rates

### Historic Change in Residential Bills (Revised)

Residential Monthly Use (kWh)	<u>Monthly Bill as of</u>		% <u>Change</u>
	<u>Mar-31 2004</u>	<u>Mar-31 2011</u>	
500	33.135	38.75	16.95%
1000	58.935	\$70.84	20.20%
1500	84.735	\$103.69	22.37%
2000	110.535	\$136.54	23.53%
2500	136.335	\$169.39	24.25%
Cumulative Average Rate Increase			22.05%
Cumulative Increase in Inflation			12.80%
<b>Sources:</b>			
2003/04 Rates - 2004 GRA, CAC/MSOS/MH I-42 a)			
2010/11 Rates - Board Order 33/10			
Average Rate Increase - 2010 GRA, PUB/MH I- 2b)			
Cumulative Inflation based on response to Undertaking #108 - MH Exhibit 103			

## Inverted Residential Rates

In its Decision on the April 1, 2011 interim rate increase (Order 40/11, page 45) the Board directed that the Residential increase be added to the first block energy rate so as to eliminate the inversion in the rate and keep the two blocks equal. The rationale for this direction appears to be:

- Concerns about the recent decrease in natural gas prices<sup>39</sup> which may encourage customers to switch from electricity to natural gas (page 30), and
- Concern about the impact of inverted rates on customers with electric heating (page 30).

<sup>39</sup> CAC/MSOS note that the advent of shale gas and the revisiting of dated analysis is now starting to raise issues related to the social utility of natural gas supplied by shale gas. On the record of this proceeding is the Cornell study which argues that the GHG footprint of shale gas approaches or exceeds coal. (6511)

## Inverted Rates

### Background

1. In the original Decision that approved the introduction of inverted rates effective July 1, 2009 (Orders 90/08, 91/08 and 116/08) the PUB:
  - Encouraged MH to employ inverted rates for all customer classes and agreed with the principle of inverted rates(116/08, page 306)
  - Noted that a natural gas heated home with a conventional furnace would pay significantly more for space heating
  - Expressed concern regarding the impact sharply inverted rates would have on low-income and space heating customers. But noted that the inversion in the approved rate was “nominal” (116/08, page 306)
  - Referenced MH’s views that the rate for the 2<sup>nd</sup> Block should move towards marginal costs (116/08, page 284) and the rate structure overall should continue to encourage natural gas as the appropriate fuel choice in areas of the province served by natural gas
  - In its Decision on April 1, 2010 interim rates, the PUB directed that the 2.9% increase be applied such that the first block recovered 1/3 of the increase and the balance is recovered from the second block (Order 30/10, page 46). This resulted in the following rates (as compared to those previously in existence):

	April 1, 2009	April 1, 2010	% change
Monthly Charge	\$6.85	\$6.85	-
1 <sup>st</sup> Block (per kWh)	\$0.0625	\$0.0638	2.1%
2 <sup>nd</sup> Block (per kWh)	\$0.0630	\$0.0653	4.3%

### Comments

- Our clients have a great deal of sympathy for the reasons presented by the Board. They are concerned with the relative lack of progress in introducing DSM programs that will assist in mitigating the impact of steeper inverted rates (particularly for low income customers) per 116/08, pages 307-308.
- At the same time, it is important to note that the rate design change adopted by the PUB for April 1, 2011 results in higher than average bill impacts for customers with a moderate level of use (since the increase is applied primarily to the rate for kWh use below 900 kWh per month).

## **Inverted Rates**

### **Recommendations**

- No inverted rate for the residential class should be introduced for the 2011/12 year. Further discussion on the merits of an inverted rate should take into account the progress of Hydro in addressing energy efficiency needs for all customers including vulnerable persons and tenants.

**Temporary Billing Demand Concession Program and Board Order 126/09**

**Temporary Billing Demand Concession Program  
and Board Order 126/09**

Recommendations regarding the Temporary Billing Demand Concession Program and Board Order 126/09 are reserved until Monday. (Attachment 9 to these arguments provides a brief summary of pros and cons)

## Vulnerable Ratepayers and the Recommendations of Mr. Colton

# Vulnerable Ratepayers and the Recommendations of Mr. Colton

- CAC/MSOS commend Green Action Centre for bringing recommendations relating to energy poverty to the attention of the Board;

### Arrears Management and Crisis Intervention

- Endorse the recommendations of Mr. Colton with regard to the arrears management program and the crisis intervention program.

### Low Income Energy Efficiency

- CAC/MSOS propose that the PUB adopt the recommendations of Mr. Colton with regard to low income energy efficiency as an interim objective with the understanding that further review will be necessary following:

the independent strategic review and third part Evaluation and Audit of LIEEP;

Manitoba Hydro reporting back on whether it would be appropriate to target a proportionate or higher share of DSM expenditures to low income customers calculated by their numerical proportion of the residential rate base;

- CAC/MSOS strongly believe that Manitoba Hydro can do better on low income energy efficiency that Mr. Colton suggests
- This is especially the case if the efforts of Manitoba Hydro can be focused on one particular aspect of supporting vulnerable persons rather than have its limited administrative resources dissipated in a number of directions;
- CAC/MSOS strongly believe that the primary objective of Manitoba Hydro in terms of support for vulnerable consumers should be low income energy efficiency

## Vulnerable Ratepayers and the Recommendations of Mr. Colton

### Low Income Rate Assistance

- Note that the issue of Lifeline or means tested utility rates was first brought before the Public Utilities Board by consumer organizations represented by the Public Interest Law Centre. The particular context at that point in time was telephone rates.

### The Roots of Energy Poverty

- Recognize that for persons of modest means including those on fixed incomes there often is a problem of energy underconsumption rather than over consumption<sup>40</sup>; (6989)
- Recognize that underconsumption by low income person is an enduring issue not just for those individuals but for society as a whole;
- Conclude that energy poverty is the function of three specific factors:
  - energy prices in the particular jurisdiction;
  - the income of the person in question;
  - the energy usage of the person in question as determined by the relative energy efficiency of the home of the person in question and other factors including level of income.

### US Experience in terms of eligibility and re-enrollment<sup>41</sup>

- Find that best practice jurisdictions for which information is on the record have participation rates ranging between approximately 25% (Citizen Gas and Coke) (7071) and 45% (New Jersey and perhaps Columbia); (Colton, CAC 28, pp, 22, 38, 35 ) (6942, 6944)
  - note that despite being targeted to payment troubled low income customers, Columbia has failed to achieve 50% participation rates. (6945)
- Determine that programs with the highest participation rate are highly integrated with other means tested programs; (6934, 6935)
- Note that a significant factor in the success of best practice jurisdictions such as New Jersey is their close integration with the Federal Bill Assistance Program known as LIHEAP and other federal programs such as SNAP; (6934, 69385) (6979)

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<sup>40</sup> CAC/MSOS appreciate Mr. Colton's candour and insight on this point. While pricing signals certainly have some utility for selected consumers, there are many more barriers to efficiency than price.

<sup>41</sup> The material in this section is primarily drawn from the Cross Examination of Mr. Colton or the Colton book of documents prepared by CAC/MSOS, better citations will be provided on July 4, 2011.

## **Vulnerable Ratepayers and the Recommendations of Mr. Colton**

- Recognize that while the level of participation rates in social benefits programs is an issue for all low income persons, empirical research demonstrates that the problem is particularly acute for the working poor; (CAC 28, 80, WINS)
- Find that program reviews in the United States suggest that while most customers remain in need of program assistance, only 40 to 65 percent re-enroll or re-certify; (6948)
- Conclude that the most challenging persons to re-enroll are persons who are not involved in means testing programs; (6937, 6950, 6951)
- Determine that among the factors impeding program participation are:
  - stigma, (6980)
  - administrative burden exacerbated by the day to day burden of being poor,
  - lack of knowledge

### Sustainability, Adequacy and Reach in the United States<sup>42</sup>

- Best practice jurisdictions in the United States demonstrate ongoing challenges in terms of sustainability and reach:

New Jersey is widely considered to be a national leader with funding in the range of \$111. However, if all eligible households were served almost 4 times as much (\$400 M) would be required (Colton, CAC 28, p. 16)

best practice jurisdiction New Hampshire faces material limitations imposed by budget constraints. The Systems Benefits Charge has not been increased since the program's inception. The SBC is not indexed to fuel prices or program participation. Increases in eligibility levels resulted in a substantial decrease in per-participant benefits (Colton, CAC 28, p. 39)

In 2007, best practice jurisdiction Maryland's program became stressed in the face of substantial price spikes. As the need for affordability grew, the burden of meeting that need outstripped the ability to meet that burden. (Colton, CAC 28, p. 40)

### Aggressive Disinterest in certain US Program Administrators

- In the face of funding restraint, some programs such as Iowa LIHEAP have displayed

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<sup>42</sup> The material in this section is primarily drawn from the Cross Examination of Mr. Colton or the Colton book of documents prepared by CAC/MSOS, better citations will be provided on July 4, 2011.

## **Vulnerable Ratepayers and the Recommendations of Mr. Colton**

“aggressive disinterest” in enhancing program participation. (6982)

### US Implementation often associated with Market Deregulation and Price Spikes

- Many programs have been initiated in the context of a market deregulation or a major price spike. (Colton, CAC 28, p. 38) (6940-6941)

### American Analysis Collection Costs and Cost Neutrality

- Despite the significant reduction in the number of collection actions and service terminations, the reduction in collection costs is small averaging seven to sixteen dollars per participant. (Colton, CAC 28, p. 28);
- If a program results in large reductions in payments by customers, it is unlikely to be cost neutral. (Colton, CAC 28, p. 28);

### The Significance of Low Participation Rates

Low participation rates have at least two fundamental ramifications:

(1) given that significant benefit conferring rate assistance programs will not be cost neutral, other ratepayers must pick up the shortfall (Carter 7949)

given a low income participation rate of only 25%, this suggest that the introduction of a low income rate will increase costs to the other 75% of the low income population who do not participate (or in cases where their social agency pays the costs, additional costs for the social agency)

(2) the existence of a program, no matter how ineffective may serve to mute the concern of rate regulating agencies in terms of the impacts of rate increase on non participating low income persons. (7950)

It comes as no surprise to CAC/MSOS that Low Income Rate Assistance Programs in the United States have often accompanied moves to market deregulation or sharp price increases. To some observers, they may be seen as part of the package.

### Challenges in the United Kingdom relating to Sustainability

- While UK integrated program originally had great success in moving a significant portion of persons out of energy poverty, rising energy prices have undermined its achievements; (Carter



## Vulnerable Ratepayers and the Recommendations of Mr. Colton

pre-filed evidence and direct evidence)

- The future of cold weather payments in the United Kingdom is currently under review.

### The Poor in Manitoba

- The poorest of the poor in Manitoba tend to be persons living on income assistance or general assistance (welfare) as provided by the Department of Family services under *The Employment and Income Assistance Act*. For persons living off reserve, well over 50 percent of those persons living at or below LICO 100% are persons living on welfare. (6953-6954) (Carter 7920, 7944-7945)
- The poor in Manitoba are disproportionately persons with disabilities, aboriginal persons, single parents and renters.
- **The poor are mobile in two senses:**

**tend to move more often**

**while there is a significant proportion of the population in long term poverty, majority duration of two or less years** (Carter pre-filed evidence and direct evidence)

### There is no Canadian LIHEAP

A key distinction between the US and Manitoba is the absence of a Canadian equivalent to the US LIHEAP. This removes a key source of program referral and may have ramifications for administrative costs and participation rates.

### The objectives as set out by Mr. Colton in his pre-filed evidence

- particular focus the poorest of the poor (those on welfare) (Cross examination of Mr. Colton and pre-filed evidence); (6956)
- particular focus on the affordability gap for the poorest of the poor (those on welfare) (Cross examination of Mr. Colton and pre-filed evidence); (6957-6960)
- primary intake matching social assistance programs (Colton, CAC 28, p. 60) (6960, 6966, 6967)
- most will recertify through appropriate social service agency (Colton, CAC 28, p. 60) (6967)
- expectation that focusing on the poorest of the poor will approximate US best practice 40% participation at cost of \$10.8 M annually (although he expected some of those costs to be

## **Vulnerable Ratepayers and the Recommendations of Mr. Colton**

reduced reductions in normal operating costs including collections costs (Colton, CAC 28, p. 60)

- substantial social utility. (6962)

### A key factual oversight

- Operating from a US social policy perspective, Mr. Colton was not aware that provision for the payment of utilities is set out both in the *Employment and Income Assistance Regulation 404/88* and in the *Employment and Income Assistance Administrative Manual (CAC 33)*; (6968-6970)

payment can occur in a number of manners:

(i) in the event that utility payments are not included in the rent, a budget line will be created based upon an estimate of the monthly cost of the respective utility (see Direct evidence of Professor Carter and affidavit of Catherine Wirt Exhibit CAC/MSOS 33);

a) in the interests of enhancing autonomy that payment can be made to the recipient who is then responsible for the payment of his bill;

b) alternatively, the Department may pay Hydro directly.

The Policy Manual provides for reconciliation on at least an annual basis

(see Direct evidence of Professor Carter and affidavit of Catherine Wirt Exhibit CAC/MSOS 33);

those recipients whose cost of utilities is included in the rent receive a higher rental allowance in recognition of their utility costs.

### Double Dipping is not an Option

Double Dipping would not appear to be an issue. There simply will not be a material benefit for the poorest of the poor.

## **Vulnerable Ratepayers and the Recommendations of Mr. Colton**

Under the *Employment and Income Assistance Act* and *Regulation 404/88*, there is an obligation to report a material change in circumstances and to avail oneself of available resources under other programs. (See Attachment 6)

By virtue of s. 5.3.1 of *The Act* and s. 4(1), 8(1) and Schedule A of the Regulation 404/88, any Low Income Rate Assistance Program would be a non exempt resource and included in the calculation of eligibility and budget. Any additional dollar from Manitoba Hydro would simply be deducted on a one for one basis from the monthly budget. (See Attachment 6)

Persons on welfare appear unlikely to benefit from Low Income Rate Assistance as the benefit is already provided by Income Assistance.

This eliminates the vast majority of the poorest of the poor from program participation.

It removes over 50% of those at or under 100% LICO from participation. (See direct examination of Professor Carter) (7920, 7944, 7945)

This is a numerically dominant population of the means tested group that is easiest to enrol and easiest to re-certify. This also is the off-reserve group most likely to remain in long term poverty.

This removes many persons from the prime intake and re-certification pool (those on means tested programs)

Many of the remaining eligible persons are persons who may not be associated with means tested programs.

Much of the remaining eligible population will be harder to enrol and re-certify.

Many of the persons in the remaining eligible population are less likely to remain on poverty for longer than a year or two.

Eligible program participants will tend to be less poor, harder to identify, harder to recertify and more likely to leave poverty.

This has important ramifications for program participation rates, program administrative costs and overall utility both from a societal perspective and a program benefits perspective.

## Vulnerable Ratepayers and the Recommendations of Mr. Colton

The poorest of the poor - those with the highest poverty gap – will tend not to benefit.

### A key analytical error

- Cross examination by Manitoba Hydro and the response of Mr. Colton in Exhibit 14 suggests that Mr. Colton massively underestimated the cost of low income rate assistance. He estimates that a program designed to meet a 6% energy burden would cost approximately \$40 M, (7037)

8% (\$31.4 M)

10% (\$25 M)

- Mr. Colton did not suggest that the \$10.8 million estimated program cost would be cost neutral. A program of substantially higher expense will increase the rate burden for many other consumers including the many low income consumers who will not be participating in this program.
- The response of Mr. Colton is to suggest that the Board either raise the poverty threshold, cap the amount of credits or do both;

Any such recommendations will make the program less effective in reducing the social and fiscal energy poverty burden and also result in a lower payback in terms of reduced collection costs.

### Energy Efficiency More Effective

Evidence put on the record as an attachment to the evidence of Mr. Colton suggests:

payment assistance for energy bills has typically received the most funding, although such assistance is often just a temporary solution. (Penn State University 2009, CAC 28, p. 75) (7004, 7005)

most experts agree that, in the long run, the approach with the greatest impact for low income households, as well as many other households, is weatherization. (Penn State University 2009, CAC 28, p. 75)

## **Vulnerable Ratepayers and the Recommendations of Mr. Colton**

Weatherization services are often seen as the best solution for households living in fuel poverty. As Power and Clark (2005) state., “ There is a far stronger connection between housing [condition] and the incidence of energy hardships that between income and non-payment of bills. (Penn State University 2009, CAC 28, p. 75)

Powell and Clark conclude that “a home in good repair is significantly less likely to run up bills beyond the residents means.” (Penn State University 2009, CAC 28, p. 77)

## The Evidence of Professor Carter

# The Evidence of Professor Carter

Professor Carter came to the issue of low income rate affordability from a very different experiential perspective to that of Mr, Colton but with at least four material comparative advantages:

much deeper knowledge of the living, breathing characteristics of poverty and the social safety net in Manitoba derived from his hands on experience in developing critical social programs (housing), decades of social science research and a rich legacy of poverty alleviation strategising on behalf of housing authorities, government and think tanks (7891-93, 7898)

hands on experience within the context of the delivery of a major poverty program in terms of identifying and keeping in touch with the poor

an ability to keep an eye on the bigger picture

an ability to look at the issue with fresh eyes and no preconceptions

he did not profess to have experience in utility business case analysis

(7899)

his starting point was an analysis of the poor in Manitoba (7904)

key target groups (pp. 9 – 26 of his written evidence) including the working poor (7906) (18-19) of his report and renters (7910)

(more could have been done on persons living on reserve – PILC's oversight)<sup>43</sup>

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<sup>43</sup> A major oversight in the record of this proceeding is data relating to person's on reserves. Please accept our apology.

## **The Evidence of Professor Carter**

he considered the depth of poverty including the plight of the poorest of the poor  
those living on welfare as single employables or persons on disability

trends in terms of poverty (Ex 32) (7914/15-18)

key characteristics of the poor for the purposes of social program design

including mobility (renters less likely to stay in the same location for an  
extended period of time)

mobility in and out of poverty (page 8 of report) (7908)

of the persons living in poverty in Canada for six year period –  
most live in poverty for one year (40%) or two years (20%)

enduring poverty for a significant population (11% all six years) and  
strongly associated with the population on welfare (7909)

critical to his paper was an analysis of the three drivers of energy poverty(Report, 6) (7921)

price

household energy efficiency

low household income

## The Evidence of Professor Carter

in direct evidence he addressed asked the poorest of the poor and considered what if any assistance they receive in terms of energy poverty? (Exhibit 33)  
(7923-7925)

Regulation 404/88

administrative practice

(note some people fall through cracks of reconciliation policy – either moving or exiting poverty)

what are the characteristics of a good poverty alleviation program ? (7925-26, 7958)

an integrated program

not in the sense of

energy efficiency, arrears management, crisis management  
and rate support

not in the richer sense of the British experience

rate regulation, energy efficiency and income support

but in the true sense of a broader poverty alleviation strategy



## **The Evidence of Professor Carter**

integrated with other programming, targeting all vulnerable persons within the target group and addressing systemic issues such as education

what are the criteria of a good poverty alleviation program (direct evidence of Professor Carter) (7926-7929)

horizontal equity

Adequacy/ability to reduce poverty

a meaningful sustainable reduction

sustainability

participation

achieving high levels of participation

challenges in delivering energy poverty programming (Report, 42 to 45, 30 – 34 and 40)

low participation rates (7931)

hard to identify the working poor (7932)

the high mobility rates of renter and the poor in general (7932)

## **The Evidence of Professor Carter**

stigma (7932)

burdens of everyday experienced (7933)

lower levels of education (7933)

non standard means of communication (7933)

language and literacy (7933)

within the context of energy poverty what are examples of intriguing programming?

Lessons of the US experience?

Participation rates and sustainability major challenges (7947, 7948, 7952)

More permanent contribution energy efficiency as compared to temporary rate supports

## The Evidence of Professor Carter

Lessons learned from the UK experience (Report pp. 30 – 34, 49) (7394)

National approach to addressing all three drivers of energy poverty

energy efficiency

income

energy prices

Relatively High participation rates through more inclusive program design and broader linkage across government (7936)

However, current status – **threatened by significant increases in energy prices and potential policy changes** (7936)

price stability must be a central element of any good poverty alleviation program

without price stability, the sustainability of energy poverty programming is thrown into question

many of the households leaving energy poverty in the earlier year of the British Program

are reentering it in the face of sharply rising prices

## **The Evidence of Professor Carter**

one enduring legacy of the British experience – comes via energy efficiency – a permanent legacy that brought bills down, put a little bit more money in the pockets of consumers on a permanent basis and created jobs

not as sexy, not as quick - but far more long reaching

Price is the a critical thing missing from the Colton/Tree/RCM approach to energy poverty alleviation

the lesson from the UK is also the lesson from Maryland and from Indiana

look at the so called best practice states such as Maryland under price deregulation – greater demand and less benefits per person at the very time they are needed more

what is the best mechanism by which – a public utility regulator can participate in the alleviation of energy poverty

concern – patchwork programs – finger in the dike strategy – not getting the job done

Professor Carter's advice

remember there are three sides to energy poverty equation

price stability

## The Evidence of Professor Carter

energy efficiency

income stability

do what you do best – hold the utility's feet to the fire by demanding that it operate more efficiently – assist in the creation of price stability

do what you also are good at – focus on energy efficiency

on the income side

recognize that while politicians grasp at low hanging fruit

the real solution will come from:

the economy – with a well paying job being one of the best poverty alleviation tools in existence, and (7918)

from government, with education, skills training and adequate income support to enable vulnerable persons to either leave poverty via a job or live in some level of dignity (recognizing the current inadequacy of income and general assistance) (7918)

## **The Evidence of Professor Carter**

Isn't putting some more money in the pockets of a a certain percentage of low income persons better than nothing

No

not if it involves:

taking money out the pockets of a significant percentage of the same subgroup of consumers (Carter – risk in the face of low participation rates that those in energy poverty may end up paying higher energy rates - Too many low income persons will be left behind due to low participation rates) (7949)

not if it means diverting scarce resources away from approaches that are more long term solutions such as energy efficiency (7955-7956)

administrative challenges of Hydro delivery

one area which requires further analysis by Professor Carter's evidence

Research should be undertaken on reserve

## **The Evidence of Professor Carter**

### Pilot Project

the submissions of CAC/MSOS on pilot projects is reserved until July 4, 2011

### Other administrators

another challenge Hydro – not in a position to deliver

not an easy task for anyone to deliver

### Jurisdiction

Determine that it is an open question, whether the Board has jurisdiction given the unique Manitoba statutory framework. Acknowledge that while the better view is that Board does not have jurisdiction, a reasonably arguable case can be advanced that it does (Attachment 5)

## The Evidence of Professor Carter

### Recommendation

- The Board determine that the best way to assist all vulnerable consumers through the regulatory process is to:

insist upon ongoing prudence in the operations of Manitoba Hydro in order to assist Manitoba Hydro in achieving rates that are just and reasonable;

invest significantly in low income energy efficiency.



## **Confidential Hearings**

# **Confidential Hearings**

## **Confidential Hearings**

- Acknowledge the legitimacy of the concerns expressed by Mr. Chernick and Mr. Wallach. Initiate a technical conference and invite representatives of the authority charged with the Need For and Alternatives public participation process

**Thank you for the opportunity to present these submissions on behalf of CAC/MSOS**