

# **Manitoba Hydro NFAT Review**

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**TO THE:  
MANITOBA PUBLIC UTILITIES BOARD**

**AT THE REQUEST OF:  
PUBLIC INTEREST LAW CENTRE  
ON BEHALF OF  
CONSUMERS ASSOCIATION OF CANADA MANITOBA**

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# **Demand and Load Forecast**

## **Observations**

### **Residential load forecasts**

MH forecasts robust load growth of 1.6% over the next 20 years despite:

- minor load growth in recent years (2007-12),
- projected real rate increases of 1.5-2% for the next 20 years

### **Price elasticity/ demand;**

**No allowance in base forecast**

### **Fuel Switching & DSM**

**2013 PowerSmart Plan 1.5X**

## **Load Forecast (Continued)**

### **MH Potential Updates- 2014 LF?**

**New Pipeline Load (+1,700 GWh) – 2019/20**

**New Codes/Standards (-300 GWh) – 2027/28**

**Price Elasticity (-500-600 GWh) – 2027/28**

**Fuel Switching (-100 GWh) – 2027/28**

**Level 2 DSM -additional initiatives aimed at fuel switching conservation & rates (2027/28 - 2,961GWh.)**

### **2015-2018 PowerSmart Plan**

**- Meets 86% of forecast demand growth** over the 3-year period,  
i.e. demand is held nearly flat

**-Costs MH approximately 2 cents/kWh**

produces nearly as much MW half as much energy savings, as the  
past 14 years of DSM

**-Produces average incremental annual savings of over 1.3%/yr,**  
i.e. roughly 3-4 times more

### **Supplemental Report 2015-2029**

#### **Load Reduction**

**1,136 MW 3,978 GWh. Meets 66% of Load growth.**

**Cost \$818 m +\$30 m AEF**

#### **Impacts**

**Domestic need date pushed back 2027-2030**

**Funding of DSM (Rates)**

**MH-89 MH-153 MH-180**

## **Export Markets**

### **Observations**

**Confidence in the forecast is critical to the economics of the Preferred Plan(s).**

**One of the critical issues for Export prices and revenues is the MH forecasts of US Carbon Pricing and Renewable Portfolio Standards. The Potomac, MNP and La Capra Associates work (Redacted Reports) for the MPUB on these issues is noted.**

### **Provincial Clean Energy Strategy**

- **New export contracts worth over \$4 billion are already on offer, with the potential to be added to, if desired. The proceeds will help pay down the cost of the projects, *while helping sustain Manitoba's low rates for decades.***

**[Manitoba Innovation, Energy and Mines, Focused on What Matters Most: Manitoba's Clean Energy Strategy, December 2012, pg 14.]**

## **Export Markets (continued)**

### **MH Updates**

**On February 28, 2014, MH signed two major power sales with Wisconsin Public Service:**

**108 megawatts (MW) of firm power from 2016–2021\*;  
308 MW of firm power for up to 10 years, starting in 2027.**

**“These sales will use some of the electrical capacity from the proposed Keeyask and Conawapa generating stations. The 308 MW sale will also require the new 500,000-volt Manitoba–Minnesota transmission line, currently in the planning stages.”**

### **Impact on NFAT**

**Requires larger Intertie (750MW)**

**Removes Pathways/Plans with Smaller intertie**

MH has been asked for Economic and Financial updates to several plans that have a 750 MW intertie and include DSM (and Plan 2 and 4)

MH-104-15 Hearing Tr. 7630

## **Capital Escalation**

### **Observations**

**The Financial and other consequences of Capital Escalation are so large, it is suggested that the MPUB Panel consider recommending that MH be required to provide the Government and MPUB with comprehensive Public domain annual Cost/Financial reports. If significant cost escalation begins to be evident, then since the MPUB does not have Statutory authority to review MH Capital Plans, we suggest the Government should authorize the MPUB to hold an inquiry on the Report in the public interest.**

### **MH Update**

**MH updated the in-service capital cost estimates for both Keeyask (up from \$6.2 B to \$6.5 B) and Conawapa (up from \$10.2 B to \$10.7 B).**

**Exhibit MH 95, pages 101 and 103**

## **Sustainability and Macro-Environment**

### **Observations**

- Provincial Policy including the Sustainability Act**
- The MH Planning Process**
- Macro-Environmental Considerations related to Preferred Plan**
- Alternatives that may affect development of Preferred Plan or timing**

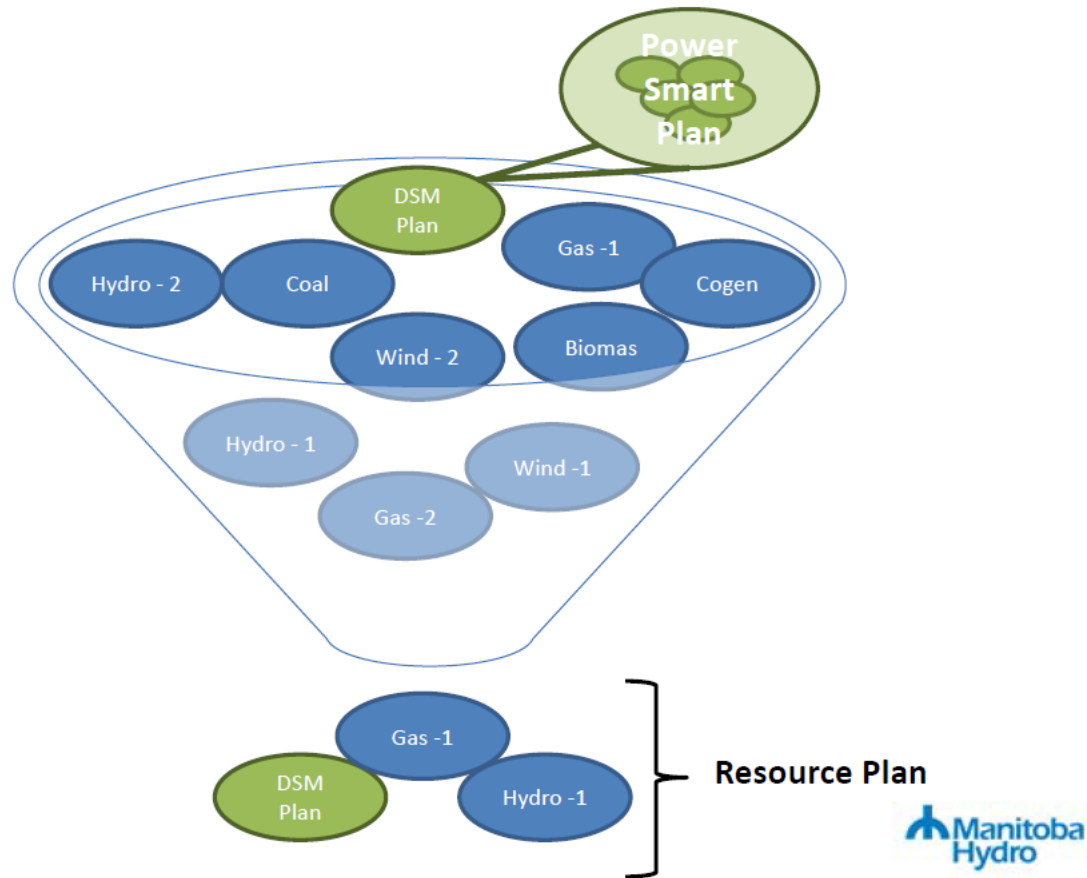
### **Key Issue**

**Sustainability of the Preferred Plan(s) when assessed in an Integrated Resource Planning framework.**

**Is MH's IRP Process Appropriate?**



# Manitoba Hydro's IRP Process



(Used in NFAT Business Case?)

## AFFORDABILITY OF PREFERRED PLAN

### Observations

Impact on MH ratepayers bills in the short term (2015-2025) is *not acceptable*; particularly for Vulnerable Consumers.

Plan	2013	2023	2013-2023 increase
K19ExpC 25 750 MW	\$1831	\$2683	46.5% (\$852)
All Gas*	\$1831	\$2561	39.9% (\$730)

Higgin Evidence Appendix B

Further, since the benefits are very long term, (78 years) the intergenerational inequity due to high rates in the first 10 years and modest rate increases in later years is very large.

### Rate/Bill Impact Mitigation Options

Clean Energy Benefit (Govt. account)

Aggressive DSM Programs (ratepayer costs)

### MH Updates

MH Proposals (to 2031/32)

Rate Smoothing 3.95+%

Financial Mitigation (D/E and ICR)

Hearing Tr. 2773-2776 MH-104 12.1

## ECONOMIC TRANSFERS

### Observations

MH MA-BCA approach, includes the benefits associated with cash transfers to the Province (Government Account) but omits the cash transfers from Ratepayers (Customer Account)

PDP

Government Account 2015-2025\*

~17% of Gross Revenue

\$5,452 million cumulative

Ratepayer Account 2015-2025

Costs Provided based on discount rate of 1.86%

\*PUB/MH I-073a Attach 1 page 139

## MH Proposed Decision Points

1. Should Keeyask be next supply built for Manitoba Load?

NO ► Stay on Pathway 1 (Gas 1st)

YES ► Start on Pathway 2 (Keeyask 1st)

2. If yes, should Keeyask be advanced to take advantage of opportunity for interconnection infrastructure and exports?

NO ► Stay on Pathway 2 (Keeyask later for MB Load)

YES ► 750MW ► Start down Pathway 5 (Keeyask 2019, 750 MW Line)

[MH Panel 2 Slide 146]

### Updated Observation

Is the Information provided by MH sufficient to definitively answer either of these questions?

## Summary of CAC Consultants Strategic Policy Observations [Current]

Element	Sub- Issues	Observations	NFAT Considerations
Demand & Load Forecast	Price Elasticity	Model may be inadequate -result Load Forecast too high at 1.6%	Need- drives comparison of Plans and timing for Keeyask I/S for domestic load
	DSM	DSM Expectations built in Load Forecast too low. Achievable Potential- 1.5X DSM. Higher Target 16-18% Load and 1600 GW by 2023 <b>LEVEL 2 DSM</b>	Timing of Keeyask and lower cost DSM not considered as Resource <b>Keeyask Domestic Need 2027 . Advance 7-8 years</b>
	Fuel Switching Electric to Gas	2012 study needs update for space heating and DHW costs 2025 <b>Potential 100MW incremental Fuel Switching</b>	Timing for Keeyask I/S Gas heat as an Economic choice
Export Markets	Price Forecast	MISO Market Congestion, Carbon Tax. Brattle price OK?. Is MH price high?- Potomac (confidential)	Critical to \$9.3 m export revenue forecast and comparison of Plans
	Intertie	MH to finance 750 MW line? <b>WPS 305 MW build US portion 750 MW Intertie</b>	Critical- Plan 4 vs Plan 14 <b>(also critical Plan 5)</b>
	Contracts	No firm WPS Contract <b>New Contract Executed Feb 2014</b>	Condition Precedent
Risk of Capital Escalation	Capital Cost Estimates and Control	PP vulnerable to Capital Escalation. MPUB has no ongoing oversight of MH Capital Investment. MH estimates reviewed by Knight Piesold . Civil contract cost bids may provide confidence. <b>CAPEX increases Keeyask \$6.3 B; Conawapa \$10.8 B</b>	Critical Issue-major risk to Preferred Plan MPUB to be given mandate re Capital Cost Reporting & Review
Affordability of Electricity under PP	Residential Bill Increases	Bill Increase PP 2023 46 % 2010-2013 12% <b>Update Average 4.33%/yr</b> (All Gas 2023 39% )	Affordability key issue per CES. Mitigation of Bill impacts required 2015-2025 <b>Direct- DSM and Government Policy e.g. CES</b> <b>Indirect- MH mitigation To 3.95%</b> <b>Financial Impacts D/E &amp; ICR</b>
	Vulnerable Electric Heat Consumers	Bill Increase PP 2023 46% -\$852/yr (Relative to All Gas 39%-\$730/yr) <b>Impacts now higher (unless mitigated)</b>	
	Affordable Utility Rate Act Comparison	Gap to other Provinces maintained in 2023 but narrowed due to higher electricity costs	
Sustainability & Macro-Environment	Sustainability/IRP	Maximization of cost effective energy efficiency and robust alternatives analysis central to sustainability analysis. Phasing of PP K + 22 could allow for Sustainability and IRP assessment	Is current record sufficiently robust to draw Macro Environmental conclusions? <b>Phasing</b> of Plan would allow detailed IRP and Macro Economic assessments in parallel with development of PP including Conawapa
	Macro- Environmental Cumulative Impacts	Uncertainty with respect to key elements. Additional information will provide superior information. MNP suggest more assessment and monitoring	
Economic Evaluation and Transfers	Economic Evaluation	Uncertainty related to inputs and to alternatives analysis. PP is <u>an</u> economic Option 250 MW intertie keeps a ~2031 I/S date for C 750 MW intertie (and WPS + added investment) keeps a 2025+ ISD for C	Phasing of PP will allow better information for decisions on next steps. MA-CBA analysis can be made more robust
	Economic Transfers	Additional considerations re transfers to Ratepayers and First Nations	
Overall Cost/Benefit	Risks	PP may be <u>an</u> Economic option if negative social/macro-environmental issues can be/will be mitigated	Advancing Keeyask is for Export “Opportunities” consistent with CES
Conditions Precedent	Licensing Contracts Intertie	CEC Recommendation WPS Contract execution and NEB Approval <b>WPS Contact 305 MW 2027</b> Financing of Intertie	Keeyask for Domestic Load would change timing and open other options <b>There is no Need</b> <b>Is there enough information re the “Export Opportunity”?</b>

**Does not Include Socio-Economic Evidence from CAC Experts**

## **RECAP OF CHANGES TO OBSERVATIONS**

### **Increased Uncertainties**

#### **Domestic Need**

- **Pursue DSM Level 2 (or higher?)**
- **Load Forecast Lower-> Need Date ~2027**

#### **Export Opportunities-Advancement of Keeyask**

- **Export Price even more critical**
- **Affordability**
- **Intergenerational issues**

**[Incomplete Information at this time]**

**Original Observations**

**Phasing of the NFAT Review :**

Phase I Report in June 2014 that addresses the overall merits/concerns of the Preferred Plan (or a modified version), together with Specific Recommendations related to the licensing Keeyask I/S (20XX ) and proceeding with meeting Conditions Precedent such as Contracts, the Intertie and other critical components, such as expanded Demand Side Management.

Phase II would proceed in parallel with the development of Keeyask and the other key short term elements of the Preferred Plan.

Phase II would address the Longer Term in an updated Plan that includes inter-alia, significant expansion of DSM and local generation (including potentially Wind and Solar) together with the development of required evidence for the conventional Natural Gas and Conawapa Generation. All the above in an Integrated Resource Planning (IRP) framework.

The Second Phase of the Plan should seek to balance the trade-offs between demand and sustainability differently than in the current MH Business Case.

## Current Observations

Considered Three options for Phase I:

1. Proceed with Economic DSM; No Build till Domestic Need date
2. Proceed with Economic DSM and MH Return with updated Information on Export Opportunities
3. Proceed with Economic DSM and Keeyask and 750 MW intertie with Conditions

In addressing whether to update Phase I observations considered the NFAT Terms of Reference:

**Meeting Domestic Need  
AND  
Export Opportunities**





The Government of Manitoba wishes to have the PUB conduct an NFAT review of Manitoba Hydro's proposed preferred development plan for meeting a growing provincial demand for electricity and for taking advantage of export opportunities, which includes the Keeyask and Conawapa Generating Stations, their associated AC transmission facilities, and a new Canada-USA transmission interconnection, in accordance with the attached Terms of Reference.

## Updated Observations re Phasing (Option 3)

### Phase I

**Path: DSM for Domestic Need and Keyask for Export Opportunity with 750 MW Intertie with certain conditions to be met in the 2015-2018 Period:**

- 1. DSM Program (Level 2 or higher) :**
- 2. Capital Cost Reporting:**
- 3. Rate Impact Mitigation Strategy (MH and Govt):**

### Process:

- » **Annual Review of Conditions 1 & 2 by PUB (Public Review)**
- » **Review of Regional Cumulative Effects Study (CEC )**
- » **Updated Business Case Filed prior to Keyask ISD, including  
Appropriate Rate Impact Mitigation Proposal(s)**

**PHASE II : Post-Keyask Plan based on Updated Business Case  
(Comprehensive IRP Framework)**