

1 **REFERENCE: Chapter 8: Determination and Description of Development Plans; MH**  
2 **July 15/17, 2013 Presentations attachment located in Technical Reports**

3  
4 **QUESTION:**

5 Please provide a summary description and tabulation (as per the attached table) of export  
6 commitments that Manitoba Hydro has/expects to make from 2020/21 onward in support of  
7 the recommended PRP.

8  
9 **RESPONSE:**

10 Please see the following table for a summary of the Minimum Annual Energy Obligation,  
11 Maximum Annual Achievable Energy Sales, [REDACTED] and  
12 Pricing.

13  
14 Manitoba Hydro has no fixed price energy purchase obligations under any of its export  
15 contracts. All import energy is at market prices.

Contract	Capacity	Min. Annual Energy Obligation	Maximum Annual Achievable Energy Sales	[REDACTED]	Pricing
NSP 375/325 MW	375 MW Summer, 325 MW Winter	[REDACTED]			
NSP 125 MW	125 MW Year Round				
NSP 350MW Diversity	350 MW Summer				
MP 250 MW	250 MW Year Round				
WPS 100 MW	100 MW Year Round				

Contract	Capacity	Min. Annual Energy Obligation	Maximum Annual Achievable Energy Sales	[Redacted]	Pricing
WPS 108 MW	108 MW Year Round	[Redacted]			
WPS 300 MW	300 MW Year Round				
GRE 200 MW Diversity	200 MW Summer				

16

**REFERENCE: Chapter 8: Determination and Description of Development plans; MH July 15/17, 2013 Presentations**

**QUESTION:**

Please provide a summary description of Manitoba Hydro's available drought relief scenario for each of the firm (dependable energy contracts with NSP/MP/WPS covering the issue as follows:

Drought Severity "Force Majeure"

Beyond Historical Record only cost is loss of sale revenue

Drought Severity "Adverse Water Within Historical Record Clause" which caps Manitoba Hydro's delivery cost"

**RESPONSE:**

For the NSP 125MW System Power Sale, the MP 250MW System Power Sale, the WPS 100MW System Power Sale, the WPS 108MW System Power Sale and the WPS 308MW System Power Sale, the following drought relief provisions are common and specific to each of these agreements:

I. Common to each of the Agreements

A. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

B. Drought Scenario – Adverse Water within Historical Record

Manitoba Hydro can utilize the following features to receive relief of its energy obligations during periods of drought:

1. Market & Third Party Purchases –The agreements provide that Manitoba Hydro can utilize market mechanisms to meet its energy obligations under the contract. These mechanisms include an offer process whereby the energy to be sold to the buyer under the agreement is offered through the MISO Day-Ahead Energy Market. Manitoba Hydro has the sole discretion to set the price that is attached to the energy offer and any energy offer that does not clear the MISO market is then supplied to the buyer from the MISO market. Therefore during periods of low water conditions, energy can be purchased from the MISO market to supply the agreement when the value of Manitoba generation exceeds the clearing price for energy in the MISO market.

In addition to the MISO market, Manitoba Hydro can purchase energy from third parties to meet its energy obligations under the contract.

2. Curtailments – Manitoba Hydro has the right to curtail scheduled energy deliveries under the contract with no financial penalties if Manitoba Hydro experiences a derate on any of its generating facilities as a result of low water flows in order to avoid Manitoba load curtailments.

## II. Specific to Individual Agreements

### NSP 125MW System Power Sale

This agreement has a drought relief provision that would apply during a drought scenario of adverse water within historical record as follows:

#### **10.1 Adverse Water Right**

*For all Fixed Price Energy (including any MH's Must Offer Energy component thereof), if MH provides written notice to NSP prior to September 15 of any Contract Year during the Contract Term, that it has declared Adverse Water Conditions for that Contract Year, MH shall have the right (the "Adverse Water Right") in respect of the Fixed Price Energy, excluding MH's Must Offer Energy*

component thereof, that is to be sold by MH to NSP and is to be purchased by NSP from MH for that upcoming Winter Season, to nominate an amount of Adverse Water Right MW's (in multiples of 50 MWs except for the remaining 25 MWs of Fixed Price Energy) of that Fixed Price Energy, which nominated amount will: (a) in respect of the Fixed Price Energy, notwithstanding Section 2.4 and Article 5, not be required to be sold by MH to NSP and will not be required to be purchased by NSP from MH during that Winter Season (the "Adverse Water Energy"), and the amount of Adverse Water Energy will decrement the amount of the Fixed Price Energy that is to be sold and purchased during the Contract Term; and (b) in respect of MH's Must Offer Energy component MH shall remain obligated to offer MH's Must Offer Energy component of the Fixed Price Energy into the Day-Ahead Energy and Operating Reserve Market. Notwithstanding any provision of this Agreement to the contrary, for MH's Must Offer Energy component of Fixed Price Energy that is associated with Adverse Water Energy, if such MH's Must Offer component clears the Day-Ahead Energy and Operating Reserve Market it shall be treated as MH's Additional Energy for purposes of pricing and payment. If such MH's Must Offer Energy component does not clear the Day-Ahead Energy and Operating Reserve Market then such energy shall not be delivered and shall not otherwise be scheduled or offered and such amount will be decremented from NSP's obligation to pay under this Agreement and from MH's obligation to make energy available. The Parties also acknowledge that the provisions of Section 3.2(12) shall not apply to such quantity of energy.

Under the contract Adverse Water Conditions is defined as:

**"Adverse Water Conditions"** shall mean

[REDACTED]

**MP 250MW System Power Sale**

This agreement has drought relief provisions that would apply during a drought scenario of adverse water within historical record as follows:

**3.10 Adverse Water Conditions**

*(1) MP agrees that for such time period during which MH has declared Adverse Water Conditions, MH shall have the right, but not the obligation, to cease the sale and delivery of such quantities of Weekend Energy and Additional Energy (but not Weekday Energy and not any component of the Weekend Energy or Additional Energy, which is Must Offer Energy), as MH may designate, from time to time, provided:*

*(a) MH gives a minimum of thirty (30) days notice of the amount of Weekend Energy that MH has designated as being the amount of energy that MH will be ceasing the sale and delivery of during the Adverse Water Conditions;*

*(b) MH shall provide weekly progress reports on the status of the Adverse Water Conditions; and*

*(c) MH shall provide MP with notice once the Adverse Water Conditions end.*

*(2) Notwithstanding the provisions of Section 3.10(1), MH shall after declaring Adverse Water Conditions, but prior to such conditions ending, be entitled on providing a minimum of thirty (30) days notice to MP, or lesser notice with the consent of MP, to withdraw or revise the designation referred to in Section 3.10(1). For greater certainty the Financial Schedule provisions of Section 3.2(12) do not apply to the amount of Weekend Energy and/or Additional Energy designated by MH pursuant to this Section 3.10.*

*(3) [REDACTED]*

*[REDACTED]*

*[REDACTED]*

*[REDACTED]*

*[REDACTED]*

Under the contract Adverse Water Conditions is defined as:

*"Adverse Water Conditions" shall mean*

[REDACTED]

[REDACTED]

### ***WPS 100MW System Power***

This agreement has drought relief provisions that would apply during a drought scenario of adverse water within historical record as follows:

### ***3.11 Adverse Water Conditions***

*WPS agrees that for such time period during which MH has declared Adverse Water Conditions, MH shall have the right, but not the obligation,*

[REDACTED]

*(b)MH shall provide weekly written progress reports on the status of the Adverse Water Conditions; and*

*(c)MH shall provide WPS with written notice once the Adverse Water Conditions end.*



1  
2 *Notwithstanding the foregoing, MH shall after declaring Adverse Water*  
3 *Conditions, but prior to such conditions ending, be entitled on providing a*  
4 *minimum of thirty (30) days' advance written notice to WPS, or lesser notice with the*  
5 *consent of WPS, to withdraw or revise the designation referred to in this Section 3.11(a).*

6 [REDACTED]  
7 [REDACTED]  
8 [REDACTED]

9  
10 Under the contract Adverse Water Conditions is defined as

11 *"Adverse Water Conditions" shall mean* [REDACTED]  
12 [REDACTED]  
13 [REDACTED]  
14 [REDACTED]  
15 [REDACTED]  
16 [REDACTED]  
17 [REDACTED]  
18 [REDACTED]  
19 [REDACTED]

20  
21 **WPS 308MW System Power Sale**

22 This agreement has drought relief provisions that would apply during a drought scenario of  
23 adverse water within historical record as follows:

24 *3.11 Adverse Water Conditions*

25 *WPS agrees that for such time period during which MH has declared Adverse Water*  
26 *Conditions, MH shall have the right, but not the obligation, to cease the sale and delivery*  
27 *of such quantities of Weekend Energy and Additional Energy (but not Weekday Energy,*  
28 *and not any component of the Weekend Energy or Additional Energy which is Must Offer*  
29 *Energy), as MH may designate, from time to time, provided:*

(a) MH gives a minimum of thirty (30) days' advance written notice of the amount of Weekend Energy and/or Additional Energy that MH has designated as being the amount of energy that MH will be ceasing the sale and delivery of during the Adverse Water Conditions;

(b) MH shall provide weekly written progress reports on the status of the Adverse Water Conditions; and

(c) MH shall provide WPS with written notice once the Adverse Water Conditions end.

Notwithstanding the foregoing, MH shall after declaring Adverse Water Conditions, but prior to such conditions ending, be entitled on providing a minimum of thirty (30) days' advance written notice to WPS, or lesser notice with the consent of WPS, to withdraw or revise the designation referred to in this Section 3.11(a). For greater certainty, the Financial Schedule provisions of Section 3.2(12) do not apply to and WPS shall not pay for the amount of Weekend Energy and/or Additional Energy designated by MH pursuant to Section 3.11(a).

Under the contract Adverse Water Conditions is defined as:

"Adverse Water Conditions" shall mean

[REDACTED]

**REFERENCE: Volume: Chapter 11: Financial Evaluation of Development Plans;  
PUB/MH I-134, 2012 GRA**

**QUESTION:**

Please provide detailed calculations in support of the revenue from the facility once in operation related to JKDA.

**RESPONSE:**

The detailed calculations for the Keeyask revenue are shown on the attached table for the Preferred Development Plan under the reference scenario. The product of on-peak and off-peak energies with the respective unit energy values gives the generation revenue for the plant. These unit energy values are based on the JKDA. The calculations include the energy value for MH system export sales and import purchases. These revenues are subsequently reduced by the transmission costs and by the marketing risk. The marketing risk is equal to 3% of the generation revenue minus the transmission cost.

This calculation for Keeyask revenue is based on the JKDA Power Purchase Agreement and is not necessarily equivalent to the overall benefits that Keeyask would provide to Manitoba Hydro.

## Revenue for Keeyask Generating Station (Millions of Nominal Canadian Dollars)

Fiscal Year	Keeyask Generation			Unit Energy Values Based on JKDA		Revenue for Keeyask Generating Station			
	On-Peak (GWh)	Off-Peak (GWh)	Total (GWh)	On-Peak (\$/MWh)	Off-Peak (\$/MWh)	Generation Revenue (M \$ Cdn)	Less Transmission Cost (M \$ Cdn)	Less Marketing Risk (M \$ Cdn)	Net Revenue (M \$ Cdn)
2019/20						31.27	0.64	0.92	29.71
2020/21						222.03	3.74	6.55	211.74
2021/22						282.89	4.25	8.36	270.29
2022/23						297.33	4.33	8.79	284.21
2023/24						304.82	4.39	9.01	291.42
2024/25						312.75	4.44	9.25	299.05
2025/26						309.44	4.38	9.15	295.91
2026/27						316.59	4.09	9.38	303.13
2027/28						321.07	4.05	9.51	307.51
2028/29						331.08	4.12	9.81	317.15
2029/30						339.77	4.18	10.07	325.52
2030/31						348.66	4.23	10.33	334.09
2031/32						358.10	4.29	10.61	343.20
2032/33						367.85	4.36	10.90	352.59
2033/34						377.49	4.43	11.19	361.86
2034/35						387.81	4.51	11.50	371.80
2035/36						392.01	4.60	11.62	375.79
2036/37						391.06	4.73	11.59	374.74
2037/38						395.69	4.82	11.73	379.15
2038/39						403.93	4.90	11.97	387.06
2039/40						407.67	4.98	12.08	390.61
2040/41						420.98	5.07	12.48	403.44
2041/42						429.22	5.13	12.72	411.37
2042/43						441.40	5.21	13.09	423.10

Note: Marketing Risk = (Generation Revenue - Transmission Cost) \* 3%

1 **REFERENCE: Chapter 6: The Window of Opportunity; New Media Services/Chinta**  
2 **Puxley Press Releases**

3  
4 **QUESTION:**

5 Please provide the detailed calculations of energy volumes/unit prices that support the \$3  
6 Billion/10 year value of the announced sale to XCEL Energy (NSP).

7  
8 **RESPONSE:**

9 The press release by the Province of Manitoba on May 28, 2010 announced that the  
10 375/325MW Sale, the 125MW Sale and the 350MW Seasonal Diversity Sale have an estimated  
11 value of \$3 billion. The detailed calculations supporting this value are as follows:

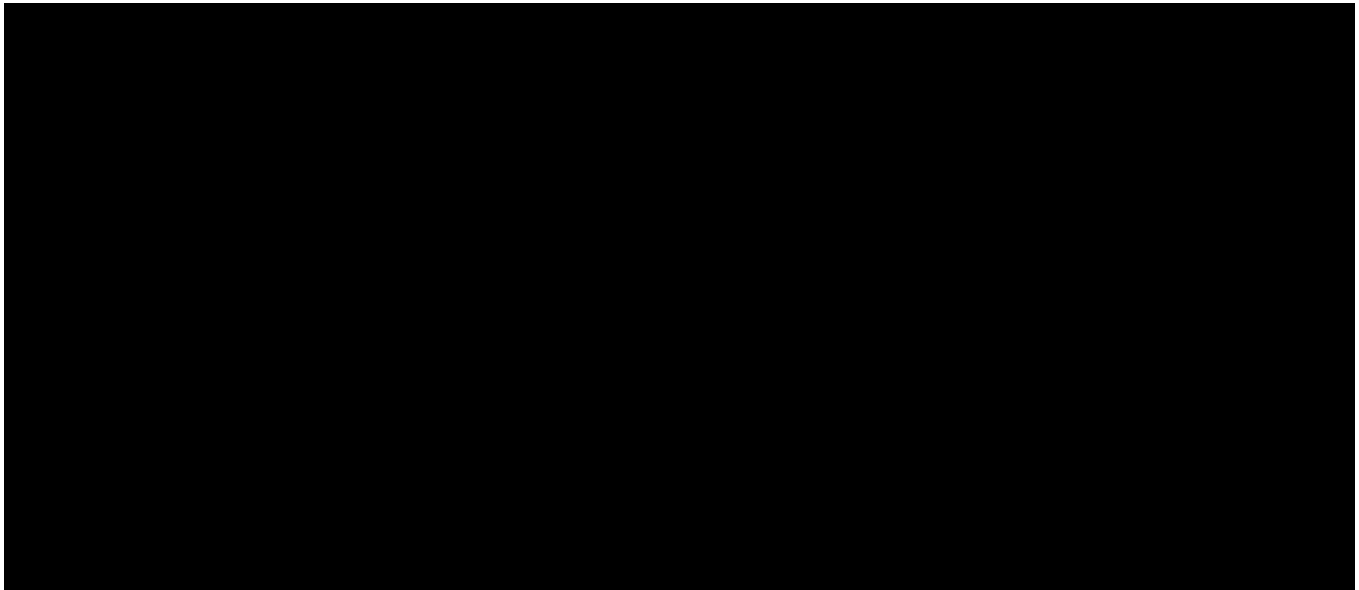
1 **REFERENCE: Chapter 6: The Window of Opportunity; New Media Services/Chinta**  
2 **Puxley Press Releases**

3  
4 **QUESTION:**

5 Please provide the detailed calculations of energy volumes/unit prices that support the \$4  
6 Billion/15 year value of the announced sale to Minnesota Power (MP) and Wisconsin Public  
7 Service (WPS).

8  
9 **RESPONSE:**

10 The press release by the Province of Manitoba on May 25, 2011 announced that the MP  
11 250MW sale and the WPS 100MW Sale combined with the NSP 125MW have an estimated  
12 value of \$4 billion. The detailed calculations supporting this value are as follows:



2

1 **REFERENCE: Chapter 6: The Window of Opportunity; New Media Services/Chinta**  
2 **Puxley Press Releases**

3

4 **QUESTION:**

5 Please fill out the attached tables.

6

7 **RESPONSE:**

8 Contract and Term Sheet Pricing

	Time- Frame	Minimum Supply Obligations	Average/ Maximum Supply Anticipated	Firm Capacity Price + Escalation	Firm Energy Price + Escalation	Additional Energy Sales	CO <sub>2</sub> Premiums
		(GWh/yr)	(GWh/yr)	(\$/MW- Month)	(\$/MWh)	(\$/MWh)	(\$/MWh)
<b>NSP</b>							
500 MW (5x16)	2005- 2015						
150 MW (Diversity)	1991- 2015						
375 MW (5x16 Summer)	2015- 2025						



	Time- Frame	Minimum Supply Obligations	Average/ Maximum Supply Anticipated	Firm Capacity Price + Escalation	Firm Energy Price + Escalation	Additional Energy Sales	CO <sub>2</sub> Premiums
325 MW (5x12 Winter)							
350 MW (Diversity)							
125 MW (5x16 Summer)							
125 MW (5x12 Winter)							

	Time- Frame	Minimum Supply Obligations	Average/ Maximum Supply Anticipated	Firm Capacity Price + Escalation	Firm Energy Price + Escalation	Additional Energy Sales	CO <sub>2</sub> Premiums
<b>MP</b>							
250 MW (5x16)	2020- 2035						
250 MW (2x16)	2020- 2035						

	Time- Frame	Minimum Supply Obligations	Average/ Maximum Supply Anticipated	Firm Capacity Price + Escalation	Firm Energy Price + Escalation	Additional Energy Sales	CO <sub>2</sub> Premiums
<b>WPS</b>							
308 MW (5x16)	2027- 2036						
308 MW (2x16)	2027- 2036						
100 MW (5x16) Product A	2021- 2025						
100 MW (2x16) Product A	2021- 2025						

	Time- Frame	Minimum Supply Obligations	Average/ Maximum Supply Anticipated	Firm Capacity Price + Escalation	Firm Energy Price + Escalation	Additional Energy Sales	CO <sub>2</sub> Premiums
GRE							
150 MW (Diversity)	1991- 2014						

**REFERENCE: Chapter 6: The Window of Opportunity; Export Contracts & Term Sheets**

**QUESTION:**

Please confirm that Manitoba Hydro has agreed to [REDACTED] NSP/MP and maybe WPS for all firm price energy and all market priced energy that is purchased under the contracts with these utilities.

**RESPONSE:**

Manitoba Hydro's obligations regarding [REDACTED] under its sales agreements are confidential and are subject to Non Disclosure Agreements.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]