

1 **CAC/MPA 1-001(a)**

2 **REFERENCE:**

3 MPA Report, page 12 (lines 4-7)

4 **PREAMBLE:**

5 The Report observes that Plans 4 and 6, which were largely indistinguishable from each other,
6 resulted in costs to ratepayers that appear to be lower than other Resource Plans in many
7 scenarios. It goes on to state that this suggests that proceeding with Keeyask may be a prudent
8 step to take.

9 **QUESTION:**

10 Please confirm that the recommendation to proceed with Keeyask is Keeyask with a 2019/20 in-
11 service date.

12 **RESPONSE:**

13 Both plans 4 and 6 include Keeyask with a targeted in-service date in 2019/20. By stating that
14 proceeding with Keeyask may be prudent in the context of the options we analyzed, we are
15 making no comment on the possibility of delaying the timing of construction of Keeyask if that
16 should prove more economically advantageous upon further analysis.

17 Manitoba Hydro did provide a full set of economic and financial data for one plan which
18 included a later start date for Keeyask (Plan 2: Keeyask 2022/23 plus natural gas beginning in
19 2029-30), however, this plan did not include any new transmission facilities or export contracts,
20 and in Manitoba Hydro's analysis was less attractive than Plans 4 and 6. We chose to analyse
21 Plans 4 and 6 rather than Plan 2.

22 A critical element in considering delay of the Keeyask in-service date is whether it would be
23 possible to coordinate new transmission facilities and new firm export contracts with such a
24 delay of in-service, given the apparent value of these features.

25

1 **CAC/MPA 1-001(b)**

2 **REFERENCE:**

3

4 **PREAMBLE:**

5

6 **QUESTION:**

7 One key distinguishing feature between Plans 4 and 6 is the size of the U.S. intertie, i.e. 230 kV
8 versus 500 kV. As a commitment regarding the size of the intertie must be made in 2014, what
9 are MPA's recommendations as the appropriate size of the intertie? Please also provide the
10 rationale for this recommendation.

11 **RESPONSE:**

12 In our financial analysis, Plan 4, with the smaller intertie, was consistently superior to Plan 6
13 from the perspective of ratepayer costs.

14 However, a larger intertie would provide greater future flexibility to pursue strategies (such as
15 additional export contracts beyond those currently contemplated, or increased imports as a
16 substitute for future construction) which have not been examined in detail by Manitoba Hydro.
17 As La Capra (another Independent Expert Consultant) has pointed out in their report to the
18 Board, Manitoba Hydro has not pursued the optimization of each of the potential strategies
19 that could be pursued. In a future which includes Keeyask and gas plants, a larger transmission
20 intertie would provide a significant additional tool for optimization of Manitoba's resources.

21 Finally, as Manitoba Hydro itself has argued in the Business Case, building the larger intertie
22 would provide Manitoba with the option to pursue the Conawapa project if it is determined to
23 be warranted. The smaller intertie would be less likely to be optimal if that second project were
24 to be pursued.

25

1 **CAC/MPA 1-002**

2 **REFERENCE:**

3 MPA Report, page 18 (lines 1-2)

4 **PREAMBLE:**

5

6 **QUESTION:**

7 Please provide any documentation that supports the statement that the 25% target level of
8 equity has either been agreed to or is required by the shareholder.

9 **RESPONSE:**

10 MPA has received no documentation which explicitly states that the Government of Manitoba
11 has agreed to the 75:25 debt to equity target for Manitoba Hydro.

12 However, the Board of Directors of Manitoba Hydro adopted this policy in 1995, as noted in our
13 Report. The Board of Directors is appointed by the Government of Manitoba, and since 1995
14 the Government has had ample opportunity to raise objections to this policy if it were
15 considered to be a concern. Moreover, the target ratio is referred to by credit rating agencies
16 when they consider whether Manitoba Hydro is financially self-supporting, and given the
17 importance of this view of Manitoba Hydro, if the ratio were of concern then the Government
18 would likely have suggested a change. Finally, the Government interacts with Manitoba Hydro
19 with respect to debt arrangements. If there were any concern with respect to financial targets
20 as important as the debt ratio of the corporation, then it must be presumed that the issue
21 would have been addressed at some point over the past 18 years.

22

1 **CAC/MPA 1-003**

2 **REFERENCE:**

3 MPA Report, page 24 (lines 17-20)

4 **PREAMBLE:**

5

6 **QUESTION:**

7 Specifically in which terms sheets does the counterparty require that Manitoba Hydro proceed

8 with new construction of hydroelectric generating stations as a necessary condition to be met

9 by Manitoba Hydro.

10 **RESPONSE:**

11 The Manitoba Hydro Business Case, Appendix 9.3, Tables 1.9 and 1.11, provides a listing of the

12 export agreements which are contingent upon construction of hydroelectric generating

13 stations.

14

1 **CAC/MPA 1-004**

2 **REFERENCE:**

3 MPA Report, page 25 (lines 26-27)

4 **PREAMBLE:**

5

6 **QUESTION:**

7 Specifically how does MPA define and calculate “risk-adjusted cost”?

8 **RESPONSE:**

9 Ultimately, a risk-adjusted cost is a judgement about the likely range of outcomes for a
10 particular Plan. In our Report, we focused on the testing of various scenarios through our
11 financial model to arrive at a better judgement about the likely range of costs to ratepayers for
12 each of the Plans considered. However, this is not just a mathematical exercise, particularly
13 given the many, many assumptions that are embedded in all of the modeling, from Manitoba
14 Hydro’s SPLASH model, to the 27 scenarios they define, to the possible weightings of those
15 scenarios, back even to the construction of the Plans themselves.

16

1 **CAC/MPA 1-005**

2 **REFERENCE:**

3 MPA Report, page 30 (lines 10-16)

4 **PREAMBLE:**

5

6 **QUESTION:**

7 Does the omission of the additional option discussed in the second paragraph affect the
8 robustness of MPA’s recommendation on page 12 that Manitoba Hydro should proceed with
9 Keeyask? If so, how and what qualifiers if any need to be attached to the recommendation?

10 **RESPONSE:**

11 Our recommendation that proceeding with Keeyask be given consideration is based on the data
12 available to us at the time of writing of the report. If additional information comes to light
13 subsequently which suggests that an alternative strategy would be superior, then we would
14 reconsider our recommendation. Our understanding is that some of the additional DSM-related
15 information is to be available prior to the NFAT hearings. We look forward to examining that
16 information when it is available.

17

1 **CAC/MPA 1-006**

2 **REFERENCE:**

3 MPA Report, page 34 (lines 29-30)

4 **PREAMBLE:**

5

6 **QUESTION:**

7 Given the existence of the MISO export market, please explain more fully how large, extremely
8 long-lived (generation) resources are susceptible to becoming “stranded assets”.

9 **RESPONSE:**

10 The MISO market is far larger than Manitoba Hydro’s electricity system, and could absorb all
11 power conceivably exported by Manitoba Hydro *at some price*. However, while electricity
12 generation assets in Manitoba are unlikely to be physically “stranded” from market, there are
13 scenarios where the assets are financially stranded, in the sense that they will not generate
14 revenues sufficient to cover their costs at rates that are reasonable for ratepayers.

15 For example, our analysis of the Preferred Development Plan suggests that under the
16 Reference/Reference/Reference scenario, Manitoba domestic rates would have to rise for
17 more than 20 years at twice the rate of inflation before any rate flexibility could be achieved.
18 Moreover, if during that time period the province were to suffer a drought, the corporation
19 would be under potentially severe financial pressure. If at that time, technological change were
20 to also reduce demand in the MISO market such that export prices fell, further putting pressure
21 on Manitoba Hydro, then rates would be under tremendous strain. However, if technology is
22 driving rates down in other jurisdictions, and Manitoba rates were being driven up by
23 accumulated debts, then the province’s competitive advantage in electricity prices would be
24 progressively eroded. It is such a “downward spiral” scenario which creates the risk of financial
25 stranding.

- 1 It should be noted that a similar scenario was suffered in Ontario after the cost overruns
- 2 associated with the Darlington nuclear station in the 1990s. In that jurisdiction, the government
- 3 ultimately chose to reorganize Ontario Hydro, and specifically identify and refinance a
- 4 “stranded debt”, notwithstanding the fact that at the time the Darlington nuclear station had
- 5 many, many years of useful operating life ahead of it.

1 **CAC/MPA 1-007(a)**

2 **REFERENCE:**

3 MPA Report, page 39

4 **PREAMBLE:**

5

6 **QUESTION:**

7 What was the decision rule used to determine annual rate changes for Manitoba domestic
8 customers – prior to the application of the two times the rate of inflation ceiling (per lines 20-
9 21)?

10 **RESPONSE:**

11 Please see MH/MPA 1-007 for detailed information on the design of the rate portion of our
12 financial model.

13

1 **CAC/MPA 1-007(a)(i)**

2 **REFERENCE:**

3

4 **PREAMBLE:**

5

6 **QUESTION:**

7 If the decision rule was linked to Manitoba Hydro's financial ratios, what targets were used and
8 was any analyses undertaken by MPA to determine the continued appropriateness of these
9 targets throughout the 47 year study period?

10 **RESPONSE:**

11 Please see MH/MPA 1-007 for detailed information on the design of the rate portion of our
12 financial model.

13

1 **CAC/MPA 1-007(b)**

2 **REFERENCE:**

3

4 **PREAMBLE:**

5

6 **QUESTION:**

7 What was MPA’s rationale for selecting 6% and 10% as the appropriate (nominal) discount rates
8 to reflect lower or higher “time value of money” for rate payers (per lines 22-24)?

9 **RESPONSE:**

10 MPA makes no contention that 6% and 10% are necessarily optimal discount rates. It is possible
11 using our model to calculate the NPVs at any discount rate desired.

12 We chose to depict 6% and 10% as examples to show the potential impact on decision-making
13 of different time values of money. Given the heterogeneity of Manitoba Hydro ratepayers and
14 other stakeholders, it did not appear appropriate to examine a single discount rate.

15 A 6% nominal discount rate, with long term inflation expectations in the range of 1% to 3%,
16 represents someone with a fairly low time value of money (i.e., someone more willing to wait
17 for benefits to accrue from an investment). Alternatively, a 10% nominal rate under the same
18 inflation expectations would represent someone who has higher value alternative uses for their
19 capital, and would be less willing to wait to accrue benefits.

20 Finally, 6% and 10% are a potentially more realistic range for the Weighted Average Cost of
21 Capital (WACC) that might be faced by Manitoba Hydro in the future. For more discussion of
22 interest rate and WACC issues, please see PUB/MPA 1-029, and PUB/MPA 1-030.

23

24

1 **CAC/MPA 1-008(a)**

2 **REFERENCE:**

3 MPA Report, page 41

4 **PREAMBLE:**

5

6 **QUESTION:**

7 Please confirm that the “nine different sets of variables” were the three possible export price
8 scenarios x the three possible capital cost scenarios (per lines 10-13). If this is not the case,
9 please clarify.

10 **RESPONSE:**

11 Yes, the nine sets of variables consist of the various combinations of export price and capital
12 cost scenarios.

13

1 **CAC/MPA 1-008(b)**

2 **REFERENCE:**

3

4 **PREAMBLE:**

5

6 **QUESTION:**

7 Is there any reason why MPA did not also used Manitoba Hydro's probabilities for each of the
8 Economics scenarios to calculate an overall expected value for each Development Plan at 6%
9 and at 10%?

10 **RESPONSE:**

11 A single blended average ratepayer cost NPV can be calculated for each of the Plans at each of
12 the discount rates using Manitoba Hydro's probability weightings. In Appendix C of our report
13 we have provided the outputs of our model for all 27 scenarios for each of the plans, so any
14 observer may do so, at the probabilities provided by Manitoba Hydro, or at any other
15 probability weighting.

16 However, we found it instructive to consider the scenario outcomes separately. Additional
17 insights were possible based on the less blended presentation of the information. Also, given
18 the extremely powerful impact of the Economics variables on the PVs, we believe that
19 highlighting this distinction is useful.

20

1 **CAC/MPA 1-008(b)(i)**

2 **REFERENCE:**

3

4 **PREAMBLE:**

5

6 **QUESTION:**

7 If yes, please outline what it was and why such a calculation is inappropriate?

8 **RESPONSE:**

9 N/A.

10

1 **CAC/MPA 1-008(b)(ii)**

2 **REFERENCE:**

3

4 **PREAMBLE:**

5

6 **QUESTION:**

7 If not, please provide a schedule setting out the results of such a calculation.

8 **RESPONSE:**

| PV of Domestic Revenue Probability-weighted Blended Averages All Scenarios (in millions) | | |
|--|-------------|-------------|
| Discount Rate | 6% | 10% |
| Plan 1 | \$46,325.42 | \$24,551.02 |
| Plan 4 | \$45,517.28 | \$24,541.21 |
| Plan 6 | \$45,939.47 | \$24,724.60 |
| Plan 12 | \$47,564.71 | \$25,524.09 |
| Plan 14 | \$47,241.58 | \$25,525.73 |

9

10

1 **CAC/MPA 1-009**

2 **REFERENCE:**

3 MPA Report, pages 48-49

4 **PREAMBLE:**

5

6 **QUESTION:**

7 For purposes of Section 4.2.2 was the in-service for new generation altered in each of the load

8 forecast scenarios to account for changes in the “need” date as a result of high/lower load

9 growth?

10 **RESPONSE:**

11 In-service for new generation was not altered in the development plans considered by MPA for

12 use in the preparation of the financial model and report.

13

1 **CAC/MPA 1-010**

2 **REFERENCE:**

3 MPA Report, page 52 (lines 10-12)

4 **PREAMBLE:**

5

6 **QUESTION:**

7 What is MPA's understanding as to the discount rate (i.e., time value of money) actually used
8 by the Federal and Provincial governments in Canada when undertaking economic evaluations
9 of proposed government programs?

10 **RESPONSE:**

11 Governments, like most other investors and stakeholders, typically use discount rates that are
12 related to the cost of money for the specific program or asset in question. Since most
13 governments in Canada finance their investments through debt, their average cost of debt is
14 often used in discount rate calculations. However, every situation is different, and MPA knows
15 of no other typical standard that is applied.

16

1 **CAC/MPA 1-011**

2 **REFERENCE:**

3 MPA Report, pages 51 and 53

4 **PREAMBLE:**

5

6 **QUESTION:**

7 Please confirm that the statement on page 53 (lines 11-13) that with higher exports the
8 province as a whole should be receiving a benefit is based on the assumption that (as discussed
9 on page 51, lines 20-23) export prices are sufficiently high to generate a benefit overall. If not,
10 please reconcile the statements on pages 51 and 53.

11 **RESPONSE:**

12 Yes, the statement on page 53 assumes that increasing the volume of exports does not result in
13 negative consequences for ratepayers. Note 30, which is associated with these lines, makes
14 clear the caveat “other things being equal” is critical, as pursuing a strategy which leads to
15 declining competitiveness for Manitoba would not be beneficial even if it included a higher
16 proportion of export revenues in Manitoba Hydro’s annual results.

17

1 **CAC/MPA 1-012(a)**

2 **REFERENCE:**

3 MPA Report, pages 60-61

4 **PREAMBLE:**

5

6 **QUESTION:**

7 Do the interest ratio calculations include both interest capitalized as well as interest expensed
8 to operations?

9 **RESPONSE:**

10 Interest ratio calculations refer to interest paid on outstanding debts. Such interest payments
11 are an expense item during the fiscal year. The outstanding debts are a liability on the balance
12 sheet.

13 Interest capitalized during construction of an asset becomes part of the book value of the asset
14 and is depreciated over time. It is an accounting convention that is meant to ensure that the full
15 cost of constructing an asset is included in its book value.

16 The interest ratio calculations do not include interest capitalized, only interest expensed.

17

1 **CAC/MPA 1-012(b)**

2 **REFERENCE:**

3

4 **PREAMBLE:**

5

6 **QUESTION:**

7 Which interest coverage ratio (i.e. one that includes or excludes interest payments capitalized
8 during the year) does MPA consider the more appropriate metric and why?

9 **RESPONSE:**

10 Please see the response to CAC/MPA 1-012(a).

11

1 **CAC/MPA 1-012(c)**

2 **REFERENCE:**

3

4 **PREAMBLE:**

5

6 **QUESTION:**

7 For two Plans please also provide the net income impact as a percent of retained earnings at
8 the start of the year.

9 **RESPONSE:**

10 MPA would be pleased to provide a response to this request shortly, but requires additional
11 clarification of the intent of the IR.

12

1 **CAC/MPA 1-012(d)**

2 **REFERENCE:**

3

4 **PREAMBLE:**

5

6 **QUESTION:**

7 The Report notes that Resource Plans with larger balance sheets will be better able to absorb
8 these situations (i.e., drought). Should this be considered a ratepayer “benefit”?

9 **RESPONSE:**

10 Impacts relevant to ratepayers are fundamentally concerned with domestic rates. Droughts can
11 lead to rate increases if they cause financial distress that must be alleviated through additional
12 revenues (since Manitoba Hydro cannot control export prices, but can seek higher domestic
13 rates).

14 If Manitoba Hydro has a larger balance sheet, then it would be better able to absorb shorter
15 term or less severe financial shocks, without the risk that it might be perceived as being no
16 longer financially self-supporting. A more robust corporation could simply wait for fortunes to
17 turn, rather than immediately seeking financial relief through higher rates. In this sense, a
18 larger balance sheet can be understood as a ratepayer benefit.

19

1 **CAC/MPA 1-012(d)(i)**

2 **REFERENCE:**

3

4 **PREAMBLE:**

5

6 **QUESTION:**

7 If not, why not?

8 **RESPONSE:**

9 N/A

10

1 **CAC/MPA 1-012(d)(ii)**

2 **REFERENCE:**

3

4 **PREAMBLE:**

5

6 **QUESTION:**

7 If yes, how could it be monetized and included in the overall ratepayer benefit analysis of the
8 various Plans?

9 **RESPONSE:**

10 Not all features and characteristics of each Plan can be quantified in dollar terms. Review of the
11 features and characteristics forms part of the judgement about the risks and opportunities
12 implied by each Plan.

13

1 **CAC/MPA 1-013**

2 **REFERENCE:**

3 MPA Report, page 62, (lines 1-9)

4 **PREAMBLE:**

5

6 **QUESTION:**

7 How does the larger balance sheet and, in particular, the higher level of retained earnings
8 associated with Plan 14 (relative to Plan 1) impact the determination as to the “magnitude of
9 the problem”?

10 **RESPONSE:**

11 The critical issue is the magnitude of outstanding debt on the balance sheet, not the size of the
12 retained earnings. In the event of a persistent revenue shortfall caused by prolonged drought,
13 for example, interest charges related to a large outstanding debt represent a real call on cash
14 flow. A large pool of retained earnings in this environment would be beneficial in that the
15 company balance sheet potentially could sustain a series of annual losses, but balance sheet
16 retained earnings bear little relationship to the availability of cash resources.

17

1 **CAC/MPA 1-014**

2 **REFERENCE:**

3 MPA Report, page 67 (lines 21-23)

4 **PREAMBLE:**

5

6 **QUESTION:**

7 Please outline MPA's understanding of how the WACC formula is likely to be used in the future
8 by the PUB in setting Manitoba Hydro's rates and what is the basis for this understanding.

9 **RESPONSE:**

10 In a cost of service environment like Manitoba's, a WACC formula is merely one element in the
11 calculation of customer rates, and not a particularly determinative one. In our financial
12 modeling, we assumed that the PUB would agree to requests for regulated rates based on the
13 WACC formula proposed, among other rate management features, *solely* for the purposes of
14 comparative analysis of the Resource Plans. We make no presumption about the actual future
15 reliance on Manitoba Hydro's WACC formula by the PUB, after a Resource Plan decision is
16 made. However, the WACC formula provided was useful in understanding the cash flows likely
17 to be *requested* by Manitoba Hydro in the future (whether the PUB would acquiesce to the
18 requests is a different question).

19

1 **CAC/MPA 1-015(a)**

2 **REFERENCE:**

3 MPA Report, page 69 (lines 1-12)

4 **PREAMBLE:**

5

6 **QUESTION:**

7 Does MPA agree that long-term firm contracts decrease the uncertainty Manitoba Hydro faces
8 regarding what the price it's to receive for power exports in the future?

9 **RESPONSE:**

10 Yes, firm export contracts reduce the volatility of prices received for exports, as compared to
11 spot market or other non-fixed prices.

12

1 **CAC/MPA 1-015(b)(i)**

2 **REFERENCE:**

3

4 **PREAMBLE:**

5

6 **QUESTION:**

7 If not, why not?

8 **RESPONSE:**

9 N/A

10

1 **CAC/MPA 1-015(b)(ii)**

2 **REFERENCE:**

3

4 **PREAMBLE:**

5

6 **QUESTION:**

7 If yes, please explain more fully why MPA does not view long-term firm contracts mitigating
8 market risk or exposure for Manitoba Hydro.

9 **RESPONSE:**

10 The intention of the comments in section 5.2 of our Report was to highlight the fact that the
11 export arrangements being made by Manitoba Hydro bear no relation to the costs or risks
12 associated with the specific investments being made. Instead, the contracts fundamentally
13 reflect market conditions in MISO, which are driven by natural gas and coal-fired facility
14 characteristics, not hydroelectric generation characteristics.

15 Manitoba Hydro may build one or more large, long-lived hydroelectric generation assets, which
16 are exposed to cost overrun risk, interest rate risk, and hydrological risk, among other risks. For
17 a substantial portion or all of their useful life, these assets will produce energy for export, and
18 in the early years, energy for export may in fact be the bulk of their output. The firm export
19 contracts being contemplated last only a fraction of the life of the assets, and cover only a
20 fraction of the expected export volume (since the firm export contracts by definition do not
21 apply to opportunity export volumes that will be available in “wet” but not “dry” years), and
22 the prices in those contracts do not reflect the costs of construction, interest rate risks, or
23 hydrological risks associated with the plants in question. While the contracts are usefully
24 reducing the volatility of prices associated with a fraction of expected exports for a specific
25 period of time (and hence the volatility of cash flows for that period of time), that is all those
26 contracts are doing.

1 When the firm export contracts expire, Manitoba Hydro will again be exposed to the full
2 variability of the market, and it will be a price taker for the next interval of time that could be
3 covered by a firm export contract. Over the full life of the assets that are proposed to be built,
4 Manitoba Hydro is a price taker for exports, whether those prices are volatile on a daily basis,
5 or on a 5, 10 or 15-year basis.

6