

DAYMARK ENERGY ADVISORS – INDEPEDENT EXPERT CONSULTANT — SCOPE OF WORK

Export Pricing and Revenues Review

1. Review and comment on Manitoba Hydro's electricity export price forecast, including the low and high case forecasts, in the context of current MISO market conditions and factors influencing future MISO prices. Manitoba Hydro's price forecast, provided in PUB Minimum Filing Requirement (MFR) 84, is a consensus forecast comprised of third party consultant forecasts which may or may not be individually provided. Regardless, these forecasts are to be taken as a "given" and are to be assumed to be reasonable and accurate with respect to the other tasks in this Scope of Work. Notwithstanding that the third party consultant forecasts are to be accepted for the purposes of this review, if the IEC identifies significant issues or inconsistencies with the third party consultant forecasts in the course of its general review, those issues or inconsistencies are to be identified in the IEC's reports. (Additional References: PUB/MH I-52, PUB/MH I-53)
2. Review and assess for reasonableness Manitoba Hydro's forecasts of exportable surplus energy and capacity by on-peak and off-peak period, taking into account expected inflow conditions, reservoir levels, and tie line capacities for both the test years as well as the next twenty years as provided in PUB Minimum Filing Requirement 42. (Additional Reference: PUB/MH I-49)

In Board Order 9/22, the Board stated: *"While Manitoba Hydro indicated the 40 years of data improve the quality of the data for its modeling purposes, the Board notes that the average Net Extraprovincial Revenue, and therefore Net Income, is \$19 million less using the 40-year average compared to the 108-year average. The Board further notes that the median (or P50) result of the 40 years of data is \$36 million less than the median result using 108 years of data. The Board finds that this issue should be further explored, including comparisons with other jurisdictions and industry best practices, in the 2022/23 General Rate Application when the 2021/22 interim rates are reviewed."* The IEC is to review Manitoba Hydro's

change to the use of a 40-year flow record from the previously used 100+ flow record for short-term water flow forecasting. The IEC is to determine whether the change to the use of the 40-year flow record is an improvement to Manitoba Hydro's forecasts of net export revenues. (Additional Reference: Appendix 5.4 Section 5, PUB/MH I-59)

3. Assess and comment on any other changes made by Manitoba Hydro to its hydrology forecasting methods and tools since the 2017/18 & 2018/19 General Rate Application.
4. Review Manitoba Hydro's forecasts for export revenues and fuel & power purchases for the next twenty years as provided in PUB Minimum Filing Requirement 42 and assess whether the forecasts of net extraprovincial revenues are reasonable. Confirm whether Manitoba Hydro has included uncontracted capacity and long-term firm sales revenue in its forecasts and whether such assumptions are supported. (Additional Reference: PUB/MH I-45, PUB/MH I-46)
5. Review the forecast export revenues for each export contract provided as part of PUB Minimum Filing Requirements 85 and 86 and confirm whether these forecast revenues are reasonable and are underpinned by the export contracts.
6. Review PUB Minimum Filing Requirement 28 and confirm whether the scenarios and calculated revenues from the Keeyask generating station are reasonable. If Daymark concludes that the scenarios are not reasonable, provide Daymark's assessment of reasonable scenarios.
7. Assess the reasonableness of Manitoba Hydro's assumption that a minimum level of seasonal diversity contracts will no longer be available following the expiration of its existing seasonal diversity contracts. (Additional Reference: PUB/MH I-48)
8. Provide comments on the factors influencing the MISO market and trends that are affecting market prices, including but not limited to:

- (a) state and federal policies on electricity generation and emissions;
- (b) existing generation mix;
- (c) expected new generation to be installed in the next 20 years;
- (d) forecasted generation retirements in the next 20 years;
- (e) supply and demand balance in the northern MISO region; and
- (f) factors that may affect Manitoba Hydro's ability to export energy and capacity into the MISO market.

Reservoir and System Operations During the Drought of 2021/22

9. In Board Order 9/22, the Board stated: *"The Board accepts Manitoba Hydro's account of how it managed the drought from a reservoir operation perspective. The Board will inquire further of Manitoba Hydro on this topic at the next General Rate Application to demonstrate on the public record whether Manitoba Hydro made and continues to make prudent decisions with respect to the management of its water reservoirs."* The IEC is to review Manitoba Hydro's reservoir operations, generator scheduling, and electricity imports over the period November 2020 to July 2022 to assess whether Manitoba Hydro followed its documented policies and procedures (including Appendix 5.3 Drought Management Planning document), effectively used hydrology forecasting tools, and whether these operations reasonably balanced the risks of a continuing drought and the need to ensure the reliable supply of electricity to domestic consumers with the economic operation of Manitoba Hydro's system in order to minimize the cost of the drought to ratepayers. In its assessment, the IEC is to consider whether the existing process and policies are the appropriate process and policies, and whether improvements could be made to enhance the response to future droughts. (Additional Reference: PUB/MH I-60)

10. Review and comment on whether and how the change to a 40-year flow record from the previous 100+ year flow record affected Manitoba Hydro's actions in responding to the drought, including reservoir operations, generator scheduling, and electricity imports.
11. Review and comment on the appropriateness of Manitoba Hydro's price risk management policy. Review and comment on the actions taken, or not taken, by Manitoba Hydro in 2021 and 2022 in response to the drought and whether these actions were in compliance with the price risk management policy. (Additional References: Appendix 3.2, PUB/MH I-9, PUB/MH I-18)

Report and Cross-Examination

12. Provide a report to be placed on the public record that provides the Consultant's findings, opinions, recommendations, and non-commercially sensitive supporting information.
13. Provide a non-public report to the PUB that provides commercially sensitive information and additional calculations supporting the findings.
14. Respond to written information requests on the contents of the report.
15. Respond to oral questioning from Manitoba Hydro, Intervener, and Public Utilities Board counsels during a public hearing of the general rate application.