

**REFERENCE:**

MFR 84; 2017/18 & 2018/19 GRA Exhibit DEA-1 p.47; Transcript p.5825

**PREAMBLE TO IR (IF ANY):**

In Exhibit DEA-1 from the 2017/18 & 2018/19 GRA on page 47, Daymark states: “The consulting firms provide a forecast for MISO's Minnesota Hub (MINN HUB), which is an aggregation of generation and load pricing nodes in the Minneapolis area. Since MH delivers its power at the border between Manitoba and the U.S. represented by a pricing node called MHEB or Manitoba interface, MH calculated an adjustment and applied it to account for the historical transmission congestion and marginal transmission line losses.”

In the 2017/18 & 2018/19 GRA, on page 5825 of the transcript (January 22, 2018), MH explains that there is a two to five percent (2% to 5%) difference in the prices between the Manitoba border and Minn Hub, which MMTP and GNTL were to help reduce. This was expected to increase the prices realized from export sales and reduce the prices of imports. MH further stated that these improvements had not been incorporated into MH’s export price forecasts or IFF.

MFR 84 states: “The On and Off-Peak energy congestion and losses differential is calculated based on historical analysis. [REDACTED]

3a

**QUESTION:**

- a) Please provide a table of the average difference each month between the [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]
- b) Please explain and identify any impact that the Manitoba Minnesota Transmission Project and Great Northern Transmission Line have had on the energy congestion and losses

3a

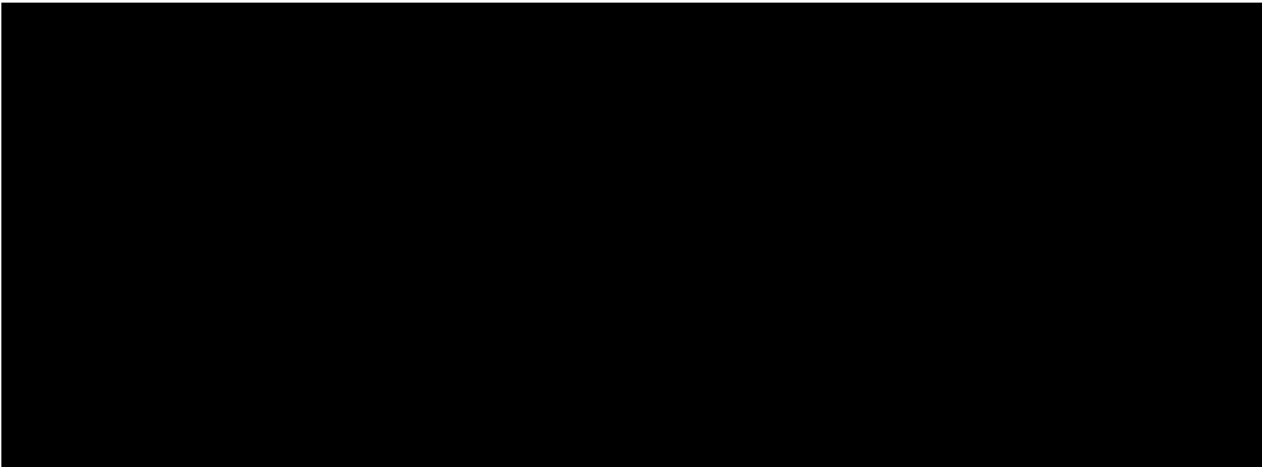
differential, and whether this has translated into lower import prices and higher export prices.

- c) Please confirm or otherwise explain whether any improved export pricing or reduced import costs from MMTP and GNTL have been incorporated into the current financial forecast.

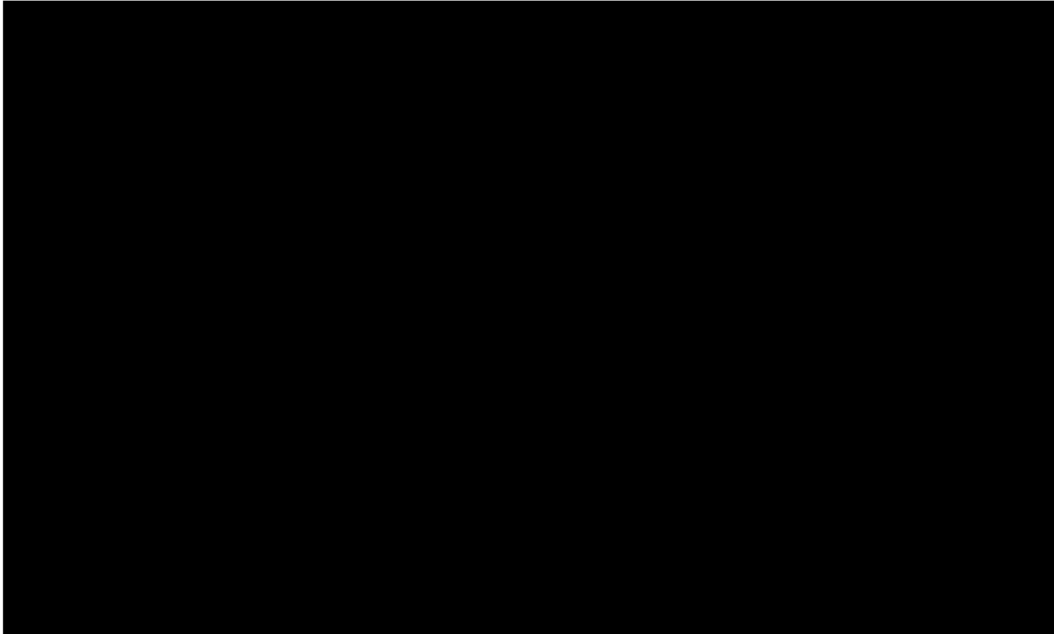
**RESPONSE:**

- a) 

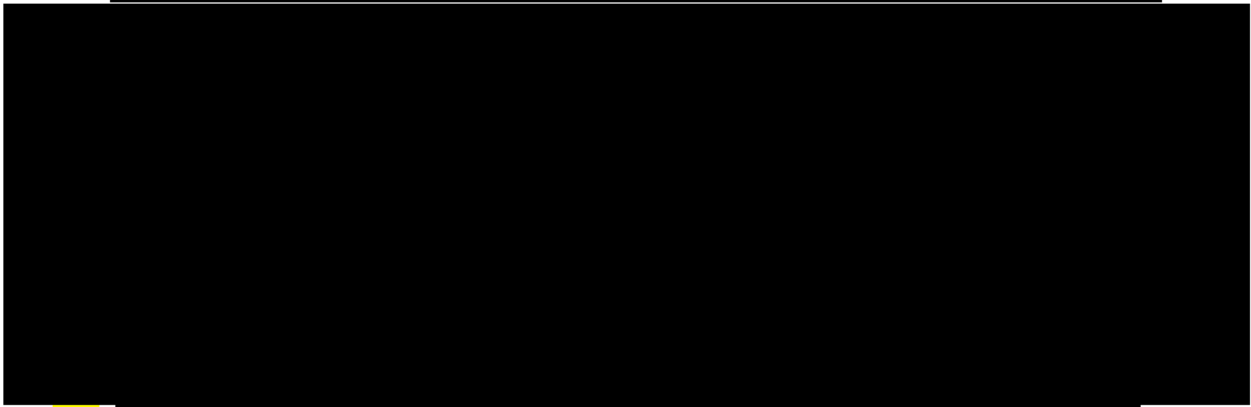
3a & 3b



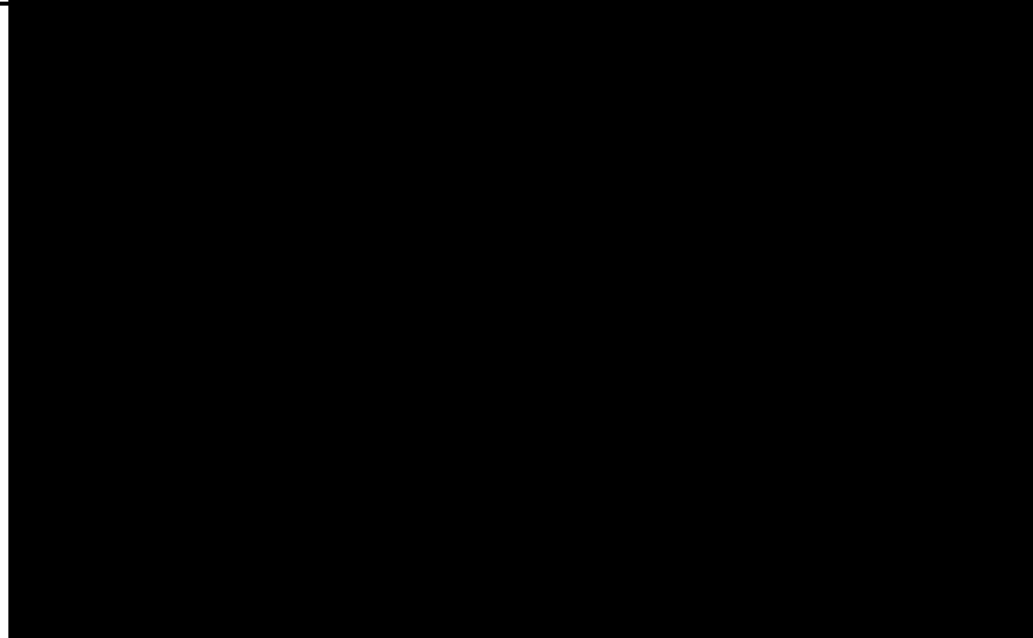
3a & 3b



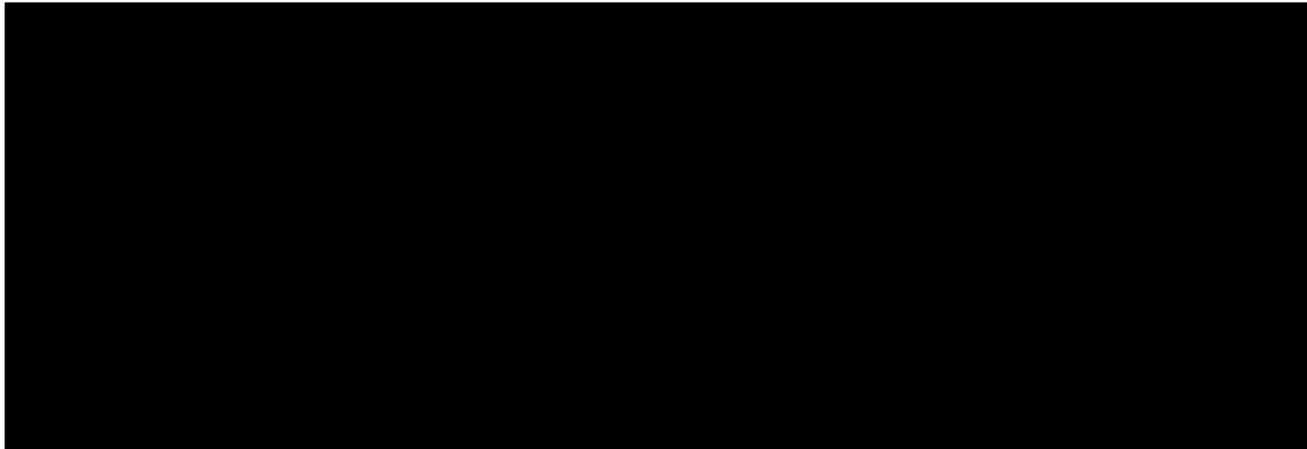
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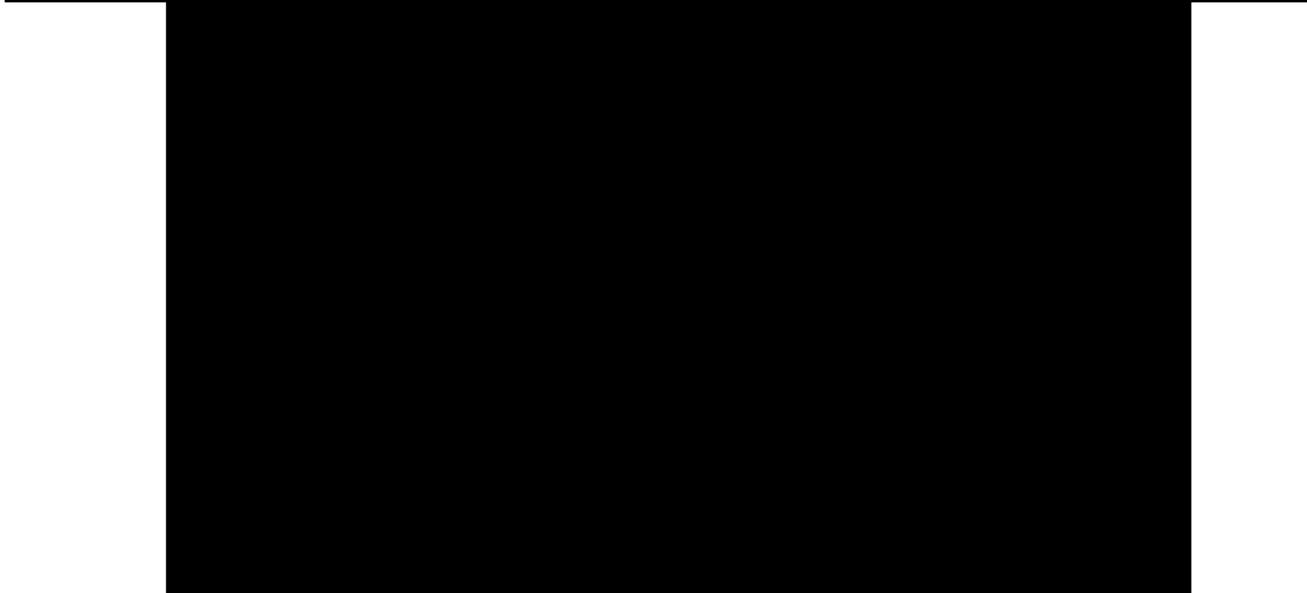
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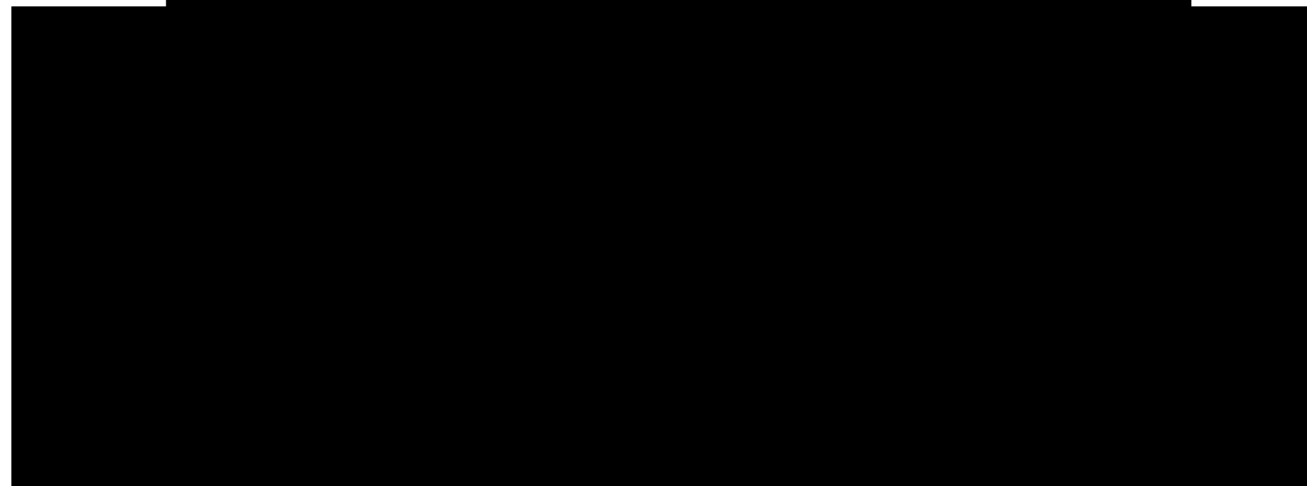
3a & 3b



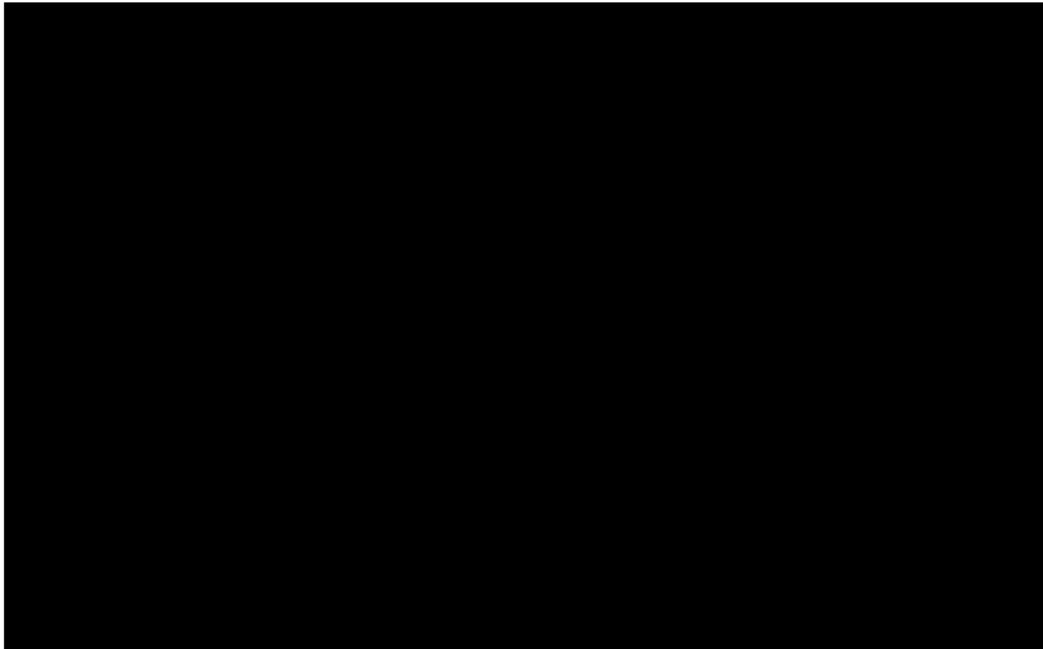
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3a & 3b

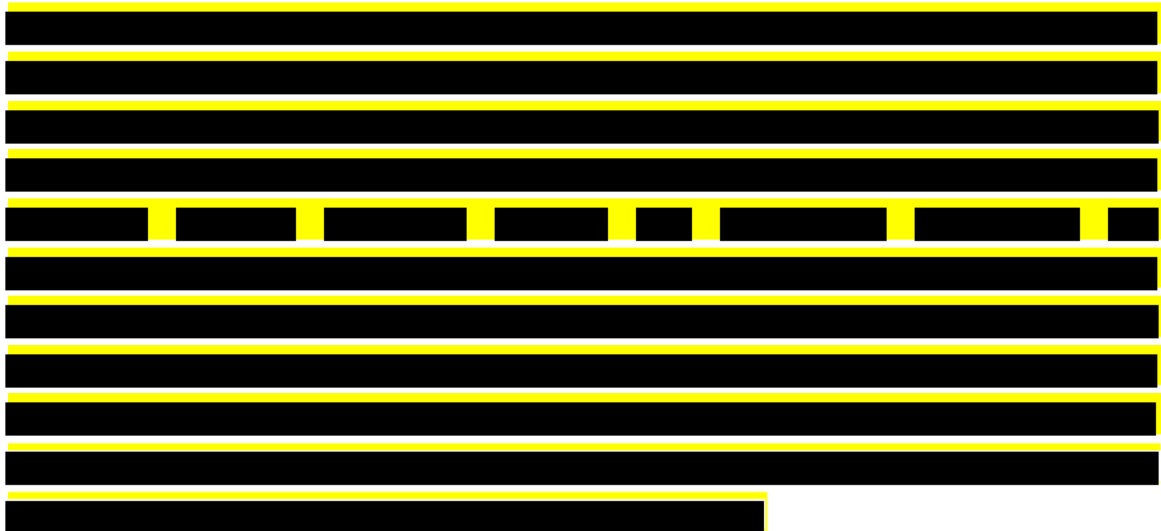


3a & 3b



3a & 3b

The Manitoba Minnesota Transmission Project (“MMTP”) and Great Northern Transmission Line (“GNTL”), when viewed in isolation, provides a larger U.S. transmission interconnection which, all other factors being equal and as discussed in the 2017/18 & 2018/19 GRA on page 5825 of the transcript, reduces losses and can reduce congestion. However, the MMTP and GNTL were built, in part, to optimize the value of the Keeyask generating station which, when viewed in isolation, tends to increase congestion and losses on the U.S. interconnection. That is, with all else being equal, adding supply in Manitoba such as Keeyask would tend to depress the MHEB price relative to Minn hub.



3a & 3b

- b) It is not possible to calculate the actual impact the MMTP and GNTL have had on energy congestion and losses differentials because these are determined by many factors as discussed in a).
  
- c) The primary financial impact of the MMTP coming into service is to provide additional import and export capability to the MISO market to allow for greater optimization of Manitoba Hydro's system (rather than improved congestion and losses). Both the increased export market access and increased import market access have been incorporated into the current financial forecast. Hence savings in import costs and increased export revenue resulting from the MMTP have been incorporated into the current financial forecast. Any change to congestion and losses have been incorporated through use of historical data as discussed in a).

**REFERENCE:**

MFR 84; PUB/MH I-45, I-46

**PREAMBLE TO IR (IF ANY):**

MFR 84 states: “Figure 1 below provides the annual consensus price forecasts for the MINN hub, the MHEB pricing node (i.e., MINN Hub adjusted for historical congestion and losses as discussed above), capacity and Henry Hub natural gas for the 2023/24 through 2043/44 period.”

In the response to PUB/MH I-45(c), MH states: “Manitoba Hydro can continue to sell capacity on a bilateral contract basis, under which the customer’s load effectively pay for the transmission service, as is the case for all existing US capacity contracts. Given the lack of MISO Seasonal Planning Resource Auction capacity price discovery there are no useful capacity price benchmarks to begin price negotiations.”

**QUESTION:**

- a) Please explain why the consensus price forecast does not provide MH with a “useful capacity price benchmark” with which to begin negotiations.
- b) Given the values in the consensus price forecast for capacity, please provide further explanation for why MH is of the view that it is unlikely to secure additional export contracts for this capacity, even if at a discount to the consensus prices.

**RESPONSE:**

- a) Please refer to Manitoba Hydro’s response to PUB/MH II-19 a) for an explanation of why new annual capacity export contract revenues are not anticipated nor included in the financial scenario.

As indicated in Manitoba Hydro’s response to PUB/MH I-45 c) the FERC approved MISO’s seasonal resource adequacy construct on August 31, 2022. The reforms included new accreditation rules primarily for thermal resources referred to as “Schedule 53

Resources”. MISO also stated they planned to extend the new accreditation rules to all resources. Since then, MISO has announced they plan on reevaluating Schedule 53 and will be refiling it with FERC by the end of 2023 for implementation in 2025-26. Variable renewable (wind and solar) accreditation continues to be under review and will be impacted by the general methodology MISO chooses to accredit all resources.

Until MISO utilities know what the new accreditation rules are for all resources (which will determine their seasonal capacity needs) assumptions about the success of bilateral negotiations for capacity between Manitoba Hydro and its counterparties are premature. As a result, it is not possible currently to estimate either the quantity or the price that might underpin any bilateral capacity revenue estimate post 2026.

Regarding potential revenues from the MISO Planning Resource Auction, this auction has never cleared on a seasonal basis and because of the additional uncertainty surrounding Schedule 53, market participants are very unsure of their supply and demand balances in each of the seasons. Even if they did know their needs, because there is no seasonal capacity clearing price history and no seasonal capacity price forecasts available, any revenue estimate would be highly speculative.

As was indicated in MFR 84, Manitoba Hydro’s consensus capacity price forecast is for annual capacity and not for seasonal capacity. How seasonal capacity price formation will occur is not yet known as seasonal (three-month) summer capacity is a different product than annual capacity (12-month).

A forecast price for a product with a 12-month obligation wouldn’t be representative of a three-month obligation. Further, dividing the annual forecast by four seasons is not reliable either as it remains to be seen how price formation will occur in the MISO Planning Resource Auction. Additionally, as noted in the Application, Appendix 4.2 Section 1.3, “As some neighbouring utilities anticipate the shift to become winter peaking, there may be less interest in future seasonal diversity arrangements, or summer capacity sales with Manitoba Hydro.”



Finally, as noted in MH's response to PUB/MH I-45 c), under the current structure Manitoba Hydro is required to purchase, in advance of the auction, Firm Point-to-Point Transmission Service from MISO for capacity it may offer into the PRA. Committing to the cost of that transmission service in advance of the auction without any idea of the seasonal clearing price makes Manitoba Hydro's participation in the PRA very risky and potentially uneconomical. Manitoba Hydro has identified this issue with MISO, but it has yet to be resolved as any change will require the agreement of the MISO Transmission Owners, which could be difficult to obtain.

- b) Please see Manitoba Hydro's response to PUB/MH II-19 a-b and the response to part a) above.

**REFERENCE:**

MFR 42 p.4,7; MFR 84; PUB/MH I-52 e)

**PREAMBLE TO IR (IF ANY):**

MFR 42 shows the average unit revenue for Total Opportunity Export Sales to USA for the period 2022/23 to 2041/42 in Canadian \$/MWh.

MFR 84 Figure 1 shows the on-peak and off-peak energy prices at MHEB hub in US \$/MWh.

PUB/MH I-52(e) plots the MH reference consensus export prices for on-peak and off-peak periods.

MFR 65 Table 6 provides MH's forecast CAN/US exchange rates.

**QUESTION:**

- a) Please confirm whether the average unit revenues for Total Opportunity Export Sales to USA on MFR 42 pages 4 and 7 are nominal or constant dollars.
- b) If the average unit revenues for Total Opportunity Export Sales to USA (which include on-peak and off-peak sales) on MFR 42 pages 4 and 7 are constant dollars, please explain why these are [REDACTED]

3b

**RESPONSE:**

Response to parts a) & b):

The average unit revenues in MFR 42 are in nominal Canadian dollars per MWh. Note that MFR 42 provides average unit revenues which are based on the average of all simulations over the range of flow conditions and will depend on factors such as load and the time periods when exports occur, and therefore are not directly comparable to annual price forecasts.