

**Manitoba Hydro 2016/17 & 2017/18 General Rate Application
COALITION-MIPUG-1**

Section:		Page No.:	6-18 (lines 13-15) 26-28
Topic:	DSM		
Subtopic:	Environmental Benefits		
Issue:	Testimony of P. Bowman Testimony of P. Chernick		

PREAMBLE TO IR (IF ANY):

Mr. Bowman's testimony states:

"Near-term Environmental Benefits: Changes in the US and Saskatchewan utility supply mix now suggest that there is a much lower likelihood that exported power from Manitoba would serve to offset coal generation, which is the highest environmental value for exported power."

QUESTION:

- a) Does Mr. Bowman agree with Mr. Chernick's assessment of the US (MISO) and Saskatchewan supply mix that would be at the margin and displaced by Manitoba Hydro exports?
- b) If not, please explain why.

RESPONSE:

(a) and (b)

Please see GAC-MIPUG-3.

Mr. Bowman agrees with Mr. Chernick's evidence in that exported hydro power will serve to offset generation in those other jurisdictions, and that generation will in large part be fossil fuel generation. The issue is the coal/gas mix in that avoided generation. Mr. Bowman's assessment is that Mr. Chernick has over weighted the degree to which he assumes coal will be displaced.

For example, at his page Mr. Chernick uses the example of a 300 MW sale from Manitoba Hydro at a 70% capacity factor (calculated to total 1850 GW.h). First, this is a capacity factor calculated over the 8760 hours of a year. In practice, it is Mr. Bowman's understanding that Hydro exports dependable energy (the type that can displace capital costs, as is being described in this question) primarily on a basis that is much lower than 70% (e.g., 5x16) so the energy

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associated with a 300 MW sale will be lower than quoted by Mr. Chernick. Second, Mr. Chernick references that generation above the avoided capital investment would be “primarily coal”. As reviewed in GAC/MIPUG-3, MISO’s market administrator indicates that increasingly gas is the marginal fuel and coal is declining as the marginal fuel.

To a certain degree, however, the precise outcome is unknowable, as it is dependent on an accurate assessment of what will happen in the US market generation dispatch with Hydro’s power versus without Hydro’s power, both of which are highly speculative. What is known is that when Hydro can export power, it is likely that it is providing an environmental benefit from displacing fossil fuels, and that as coal becomes a decreasing component of the energy supply mix (as is happening relatively rapidly, even under the current regime), Hydro’s exports will less and less often be displacing coal.

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Section:	Background Paper B: NFAT Update	Page No.:	Page B-7
Topic:			
Subtopic:	DSM		
Issue:	Supplementary Background Paper B		

PREAMBLE TO IR (IF ANY):

Background Paper B:

“The long-term projected costs of DSM are higher in IFF16 than in the NFAT, which contributes to overall system costs.”

QUESTION:

- a) Please provide a schedule comparing the DSM costs in IFF16 with those in the NFAT and confirm which NFAT “Plan” the reference is making a comparison to.

RESPONSE:

(a)

DSM costs in IFF16 compared to the NFAT ‘Plan’ are provided in response to COALITION/MH I-48d, reproduced in the table below for the appropriate plans.

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Forecast DSM Spending (\$ Millions)

Year Ending	2016 DSM Plan (Updated)	2016 DSM Plan	NFAT "Level 2" DSM (based on 2014-17 DSM Plan)
2018	56.8	81.6	85.1
2019	101.1	101.1	94.9
2020	96.1	96.1	79.5
2021	90.7	90.7	73.8
2022	88.9	88.9	62.2
2023	68.6	68.6	51.3
2024	62.4	62.4	51.0
2025	64.4	64.4	48.9
2026	68.6	68.6	49.7
2027	72.8	72.8	48.6
2028	76.8	76.8	48.6
2029	81.0	81.0	49.7
Total	928.2	953.0	743.3

The referenced statement isn't referring to a specific NFAT Development Plan, but is comparing the DSM spending incorporated into all NFAT Plans for the 'Level 2 DSM' scenario compared to the amount incorporated in IFF16 and IFF16 Update from the 2016 DSM Plan (and DSM Plan Updated).

Note that the specific year-by-year spending on DSM Level 2 as used at the NFAT does not appear to be available, but the evidence was that this plan very closely paralleled the 2014-2017 plan as shown in COALITION/MH I-48d.

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Section:		Page No.:	Table A-2, Page A-15 Page C-5
Topic:	Uncertainty Analysis and Key Variable Sensitivity Risk Register Impacts		
Subtopic:			
Issue:	Supplementary Background Paper A Supplementary Background Paper C		

PREAMBLE TO IR (IF ANY):

QUESTION:

- a) Please explain how the results of Hydro’s Uncertainty Analysis (e.g., retained earnings at page C-5 of Background Paper C) relate to the Key Variable Sensitivity Risk Register Impacts (Table A-2 of Background Paper A) if both are meant to be tracking similar variables.

RESPONSE:

The risk register is a product Hydro has produced for many years, which provides quantitative impacts to retained earnings for individual situations. It is informative as to the relative strength of Hydro’s financial position, but is far from determinative as to necessary reserve levels or the appropriate level of rates. Nonetheless, a model of this type was used to set Hydro’s very early Minimum Retained Earnings Target (see PUB/MIPUG-14) as the best available tool at that time. The tool did not determine rates, but helped guide the directional nature of the retained earnings, within the bounds of stable rate transitions and avoiding rate shock. The benefits of the risk register is that single variable scenarios can be isolated, and also each scenario considered in detail as to all interactions, since the full IFF-style financial forecast can be generated.

The uncertainty analysis is a more advanced product that blends the three largest impacts for Hydro, with the 5th percentile showing a highly unfavourable case for all three impacts combined and the 95th percentile showing a highly favourable case. The benefit of the uncertainty analysis is set out at Background Paper C.

As a tool for rate setting the uncertainty analysis is more useful than the risk register, though it is still not comprehensive tool. The potential role as a rate setting tool is discussed in the response to MH/MIPUG(Bowman)-10.