

2 GSS/GSM Undertaking #35

London Economics to redevelop Figure 3 of its pre-filed evidence based on the appropriate available data including the data provided by Manitoba Hydro in Attachment 31 and reconsider its threshold for treating some portion of opportunity sales as attracting full embedded costs.

Response:

In its pre-filed evidence, GSS/GSM-6, LEI recommended a 66% fixed cost allocation to the export class is appropriate for cost of service purposes based on a 2.5 standard deviation threshold below the average total export levels. Due to a transcription error, the level of opportunity exports in the 2011/12 fiscal year was inputted as 3,502 GWh instead of 6,502 GWh. Making this adjustment and incorporating only data from 2005/06 to 2015/16, the analysis as presented in GSS/GSM-6 would result in a 70% fixed cost allocation to the export class.

LEI has updated Figure 3 of its pre-filed evidence below using a combination of data provided by Manitoba Hydro in 2016/17 Supplemental Filing Attachment 31 and Undertaking #5. As noted in Attachment 31 and pointed out by Board consultant Mr. Ryall "*subject to Manitoba Hydro correcting otherwise, I believe the final year of the 2015/16 is not a complete year of export sales.*"⁴ Accordingly, LEI has replaced the data for 2015/16 in Figure 3 below with the more recent data provided in Manitoba Hydro Undertaking #5, which subject to confirmation from Manitoba Hydro appears to reflect a complete year of export sales.

Figure 3. Historical exports (2000/01 to 2015/16)

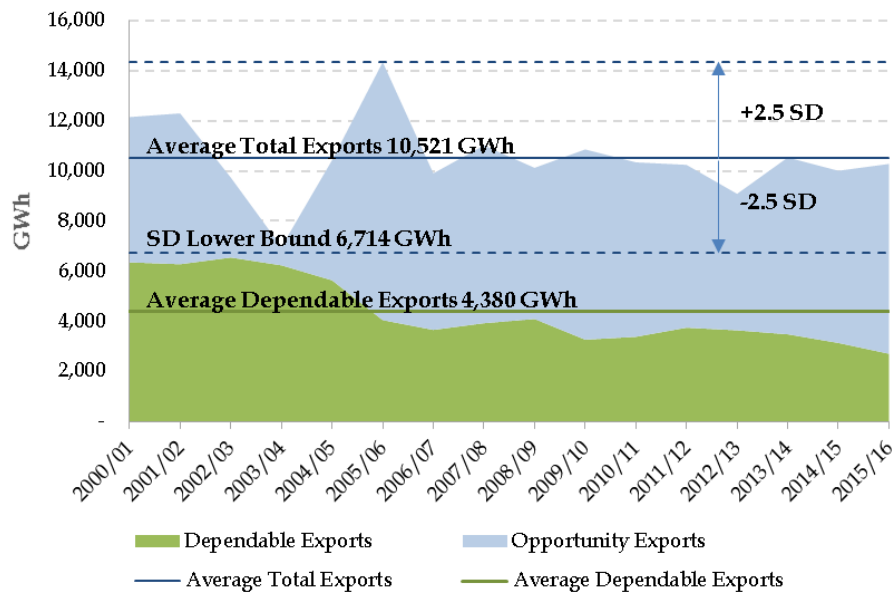
Year	Dependable exports ("GWh")	Opportunity Exports ("GWh")
2000/01	6,352	5,801
2001/02	6,277	6,022
2002/03	6,544	3,191
2003/04	6,231	735
2004/05	5,633	4,798
2005/06	4,044	10,303
2006/07	3,654	6,250
2007/08	3,921	7,099
2008/09	4,087	6,039
2009/10	3,263	7,597
2010/11	3,377	6,967
2011/12	3,742	6,502
2012/13	3,636	5,451
2013/14	3,479	7,058
2014/15	3,132	6,877
2015/16	2,701	7,580

Sources: Manitoba Hydro. *Export and Domestic Revenue MFR 4 – Attachment 31*; Manitoba Hydro. *Undertaking #5*.

⁴ Manitoba Public Utilities Board. *Re: Manitoba Hydro COSS Workshops - Page 906*. June 23, 2016.

Figure 4 depicts the 16-year historical breakdown of dependable and opportunity exports. From this data, LEI calculates the average total exports as 10,521 GWh. Using a 2.5 standard deviation ("SD"), LEI calculates the lower bound as 6,714 GWh. This 2.5 SD lower bound represents 63.8% of the average total exports over the sixteen year period. LEI believes that this 63.8% share of exports can be viewed as relatively predictable and should therefore attract full embedded costs of generation and transmission - i.e. the fixed costs as well as the variable costs. Given that 50% of exports are currently dependable, the incremental 13.8% would come from opportunity exports.

Figure 4. Historical exports by type (2000/01 to 2015/16)



Sources: Manitoba Hydro. *Export and Domestic Revenue MFR 4 - Attachment 31*; Manitoba Hydro. *Undertaking #5*.

LEI reproduced the above analysis over successive 10-year periods to examine how the result changes over time. This result lies within the range of 57%-88% observed in seven 10-year sensitivities, presented in Figure 5. LEI understands that similar data to Figure 3 is available back to 1992 as stated by Ms. Derksen, "with respect to opportunity sales, we have information going further back than 2000. We likely have data going back to 1992, just subsequent to when Limestone was built." LEI is open to analyzing such data should it become available. However, though useful, data over such an extended period may be less representative of the system which exists today. Based on the 16 years of data available to LEI presently, including a review of the 16-year average and the seven 10-year periods embedded therein, LEI believes attributing full embedded costs to 63.8% of exports is appropriate. The 63.8% share is well within the range of outcomes when average exports minus 2.5 standard deviations is calculated for rolling 10-year

periods within the 16 years of available data. Given the range, LEI believes that the 63.8% estimate is conservative.⁵

Figure 5. Examination of 10-year sensitivities

10-year period	Average exports	Average exports less 2.5 SD	Share of exports
2000/01 - 2009/10	10,784	6,179	57.3%
2001/02 - 2010/11	10,603	6,136	57.9%
2002/03 - 2011/12	10,398	6,158	59.2%
2003/04 - 2012/13	10,333	6,003	58.1%
2004/05 - 2013/14	10,690	7,390	69.1%
2005/06 - 2014/15	10,648	7,312	68.7%
2006/07 - 2015/16	10,241	8,966	87.5%
Average	10,528	6,878	65.4%

Source: Manitoba Hydro. *Export and Domestic Revenue MFR 4 – Attachment 31*; Manitoba Hydro. *Undertaking #5*.

⁵ LEI notes that the issue in question is not whether the exports are “firm” from a reliability perspective, but rather whether they are reasonably expected as a source of revenue and factored into the decision to advance generation investment.