REFERENCE:

MIPUG/MH I-3c, Pages 4 – 7 of 9

PREAMBLE TO IR (IF ANY):

QUESTION:

a) Please confirm which IFF scenarios were used to generate the Figures provided (e.g., MH16, MH16 updated July, MH16 updated with Interim, etc.).
b) Please provide a version of MIPUG/MH-I-3c based on MH16 Updated with Interim inputs, including 2 rate increase scenarios (e.g., similar to MIPUG/MH-I-1a for 4.17, 4.18. 4.19 and 4.20) using both the "Previously Forecast 3.95% to 2029" scenario and the "MH16 Updated with Interim" scenario. Please also provide a table of the annual values (5th, 20th, 50th, 80th and 95th percentiles).
c) Please provide an updated MIPUG/MH-I-1 (Figures 4.10, 4.17, 4.18, 4.19, 4.20 corresponding to MH-16 Updated for Interim Rate Increases. Please also provide a table of the annual values (5th, 20th, 50th, 80th and 95th percentiles).

RATIONALE FOR QUESTION:

RESPONSE:

a) The graphs provided in MIPUG/MH-I-3c were based on MH16.

b) As indicated in MIPUG/MH I-3b, the specific probability weightings (50%/25%/25%) for reference, high and low export prices and interest rates do not materially impact the projected risk profile compared to the equal weightings used in Tab 4. Please see the response to PUB/MH II-41 for Manitoba Hydro's updated uncertainty analysis and risk profile based on MH16 Update with Interim.

c) Please refer to the response to PUB/MH II-41 for Figures 4.10, 4.17, 4.18, 4.19, and 4.20 based on MH16 Update with Interim.

REFERENCE:

MIPUG/MH I-2h & k, Page 4 & 9 of 14

PREAMBLE TO IR (IF ANY):

QUESTION:

a) For Figure 1, for each entry, please provide the corresponding dollar value level of retained earnings needed to achieve the target at the specified targeted date.
b) For the IFF16 Update with Interim equity graph (page 9 of 14 of the response to MIPUG/MH-I-2k), please provide the graph in dollar values rather than percentages. Please also provide the annual values, specifically noting the portion represented by Retained Earnings, Unamortized Customer Contributions, AOCI, and other factors.

RATIONALE FOR QUESTION:

RESPONSE:

a) The table below provides the corresponding dollar value level of the retained earnings at the target year and also the retained earnings and fiscal year when the debt equity target is achieved.

Year	Consolidated Debt Equity Target	Consolidated Retained Earnings at Target Date	Consolidated Retained Earnings when Target Achieved	Fiscal Year when Target Achieved	Forecast
1995	75:25 debt equity ratio by 2005/06	$1.17B	$1.17B	2005/06	IFF96-1
2001	Achieve 75:25 debt equity ratio by 2005/06	$1.31B	$2.00B	2011/12	IFF02-1
2002	Achieve 75:25 debt equity ratio by 2011/12	$1.26B	n.a.	n.a.	IFF03-1
2005	Achieve 75:25 debt equity ratio by 2011/12	$2.11B	$3.35B	2016/17	IFF06-3
2009	Maintain a minimum debt equity ratio of 75:25	Target date not specified	$7.05B	2025/26	IFF10
2015	Achieve and maintain a minimum equity ratio of 25%	Target date not specified	$6.17B	2031/32	IFF15

n.a. = Not available. Target not achieved within 10 year forest period. 20 year forecasts were not produced prior to 2009.

b) The historical dollar values requested from 1962 to 1998 are not readily available and it is not known whether the calculation components during that period are comparable.

The following graph and table provide the requested equity dollar values for 1999 through 2036. Note that Manitoba Hydro's financial plan is focused on achieving a 25% equity capitalization level by the end of fiscal year 2026/27 (i.e. a 10 year plan). Projections beyond that have been provided but are forecast based on a simplifying assumption of 2% rate increases as a proxy for inflation. Proposed rate increase profiles for the subsequent decade are of limited value at this stage. Future rate trajectory - starting over 10 years from now - will necessarily be a function of an enhanced understanding of both the forecast accuracy of IFF16, the future growth and capital reinvestment expectations and an updated outlook for all of the other variables that affect Manitoba Hydro's financial results.

Figure 1

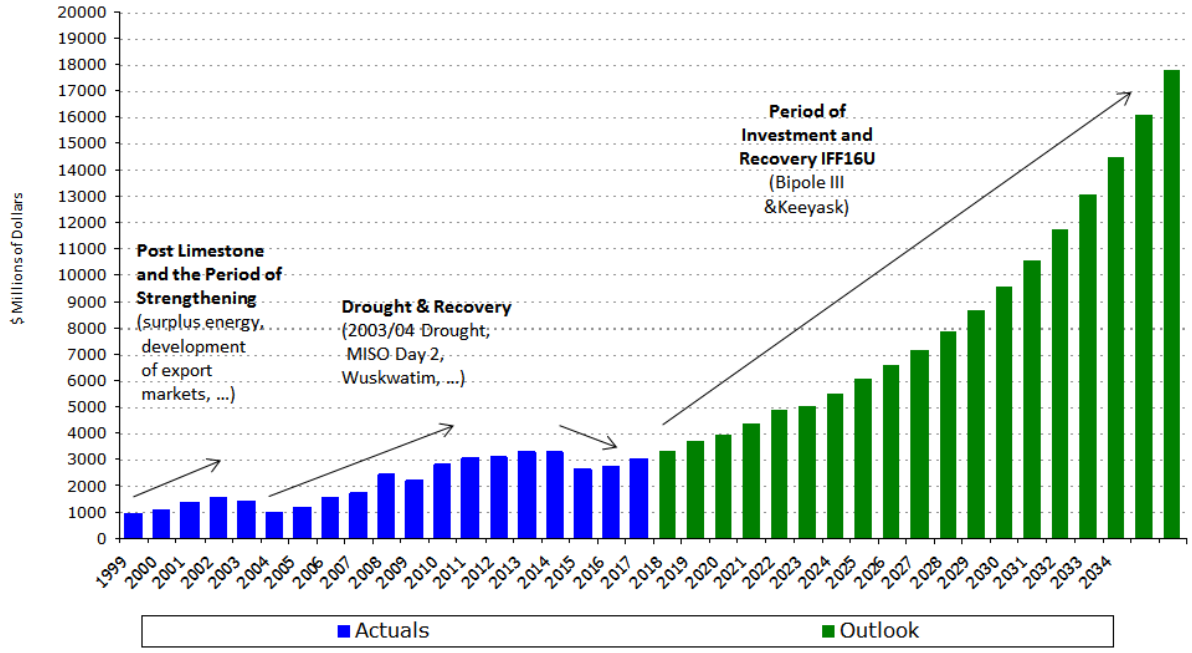


Figure 2

CONSOLIDATED EQUITY

	A	B	C	D	A+B+C+D
	Unamortized Customer Contributions	**Retained Earnings**	**AOCI**	**Non-Controlling Interest**	**Total Equity**
1999	267	666			933
2000	275	818			1 093
2001	281	1 088			1 369
2002	281	1 302			1 583
2003	264	1 170			1 434
2004	274	734			1 008
2005	296	870			1 166
2006	297	1 285			1 582
2007	298	1 407			1 705
2008	300	1 822	305		2 427
2009	296	2 076	(169)		2 203
2010	295	2 239	285		2 819
2011	295	2 389	367		3 051
2012	318	2 450	327		3 095
2013	340	2 542	299	95	3 276
2014	381	2 716	96	73	3 266
2015	457	2 779	(720)	120	2 636
2016	534	2 828	(776)	140	2 726
2017	651	2 899	(709)	170	3 011
2018	817	3 005	(699)	208	3 331
2019	844	3 230	(636)	257	3 696
2020	794	3 446	(580)	306	3 966
2021	736	3 805	(537)	346	4 350
2022	668	4 334	(497)	382	4 887
2023	600	4 780	(449)	87	5 018
2024	584	5 205	(377)	99	5 511
2025	595	5 748	(376)	102	6 069
2026	606	6 252	(375)	104	6 587
2027	618	6 844	(375)	108	7 194
2028	629	7 511	(375)	111	7 876
2029	640	8 284	(375)	107	8 656
2030	650	9 174	(375)	105	9 554
2031	661	10 180	(375)	103	10 569
2032	672	11 346	(375)	100	11 743
2033	684	12 645	(375)	99	13 052
2034	696	14 085	(375)	96	14 502
2035	708	15 683	(375)	94	16 111
2036	721	17 371	(375)	92	17 809

CONSOLIDATED DEBT

	E	F	G	H	I	J	E+F+G+H-I-J
	Long-Term Debt	**Deferred Foreign Exchange**	**Current Portion of Long-Term Debt**	**Short-Term Debt**	**Sinking Fund Assets**	**Short-Term Investments**	**Total Debt**
1999	5 883	-	-	240	1 111	57	4 955
2000	6 611	-	159	-	1 282	15	5 473
2001	6 968	(792)	496	190	1 350	(2)	5 514
2002	7 123	(809)	538	180	1 515	14	5 503
2003	6 925	(513)	343	128	948	30	5 905
2004	7 114	(166)	276	93	715	6	6 596
2005	7 048	45	156	59	562	9	6 737
2006	7 051	127	118	-	555	119	6 622
2007	6 822	149	405	148	630	1	6 893
2008	7 218		353	-	718	133	6 720
2009	7 668		519	100	666	170	7 451
2010	8 228		310	-	822	174	7 542
2011	8 617		30	-	282	70	8 295
2012	9 101		281	-	372	50	8 960
2013	9 329		656	-	352	32	9 601
2014	10 460		408	-	111	142	10 615
2015	12 303		377	-	114	494	12 072
2016	14 201		326	-	-	955	13 572
2017	16 102		336	-	-	646	15 792
2018	18 559		1 002	-	182	533	18 845
2019	21 773		349	-	400	631	21 091
2020	22 626		1 293	-	531	642	22 746
2021	23 441		1 366	-	501	690	23 617
2022	23 287		1 141	-	34	484	23 910
2023	24 142		290	-	92	670	23 669
2024	23 650		412	-	294	680	23 087
2025	22 937		715	-	210	1 007	22 435
2026	21 726		1 178	-	317	761	21 825
2027	22 178		150	-	328	865	21 135
2028	22 120		60	-	415	1 405	20 361
2029	19 683		2 440	-	593	2 032	19 497
2030	15 470		4 396	-	526	837	18 502
2031	16 300		2 173	-	224	827	17 421
2032	15 273		2 190	-	419	879	16 166
2033	15 529		908	-	581	1 082	14 774
2034	14 802		1 100	-	733	1 941	13 228
2035	14 471		265	-	911	2 223	11 601
2036	14 325		140	-	820	3 768	9 877

REFERENCE:

MIPUG/MH I-2k

PREAMBLE TO IR (IF ANY):

QUESTION:

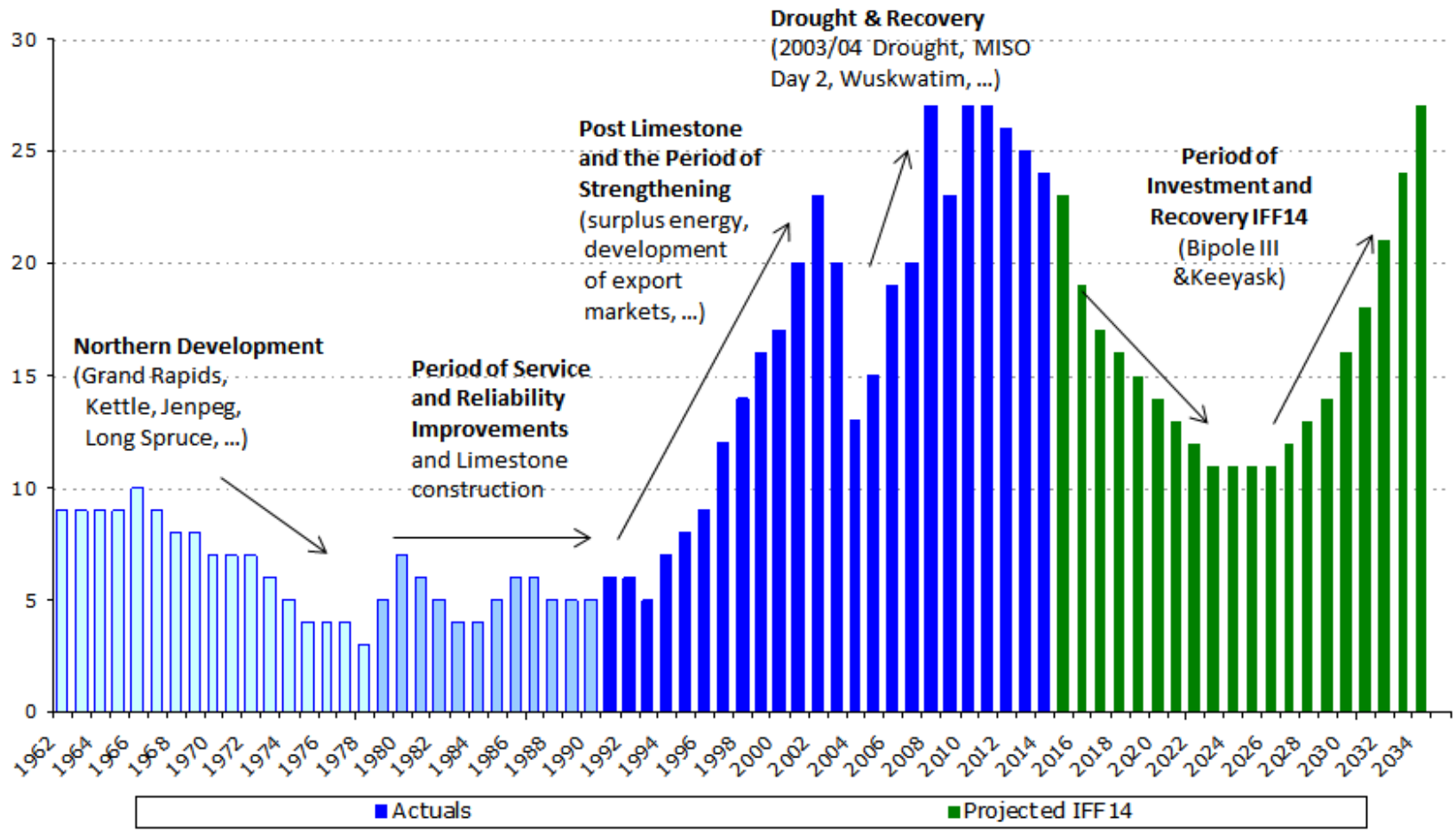
a) Please provide Figure 3-1 from Appendix 4.1 (the KPMG report) for the period 1962 to 2034 (i.e. same period as provided in MIPUG/MH I-2k).
b) For each of the figures on pages 7 of 14 to 9 of 14, as well as the original Figure 3-1 from Appendix 4.1, please provide the real average prices of domestic energy sold, by year.

RATIONALE FOR QUESTION:

RESPONSE:

a) The graph below reflects Figure 3-1 from Appendix 4.1 and has been updated to include Manitoba Hydro's equity ratio from 1962 to 2034

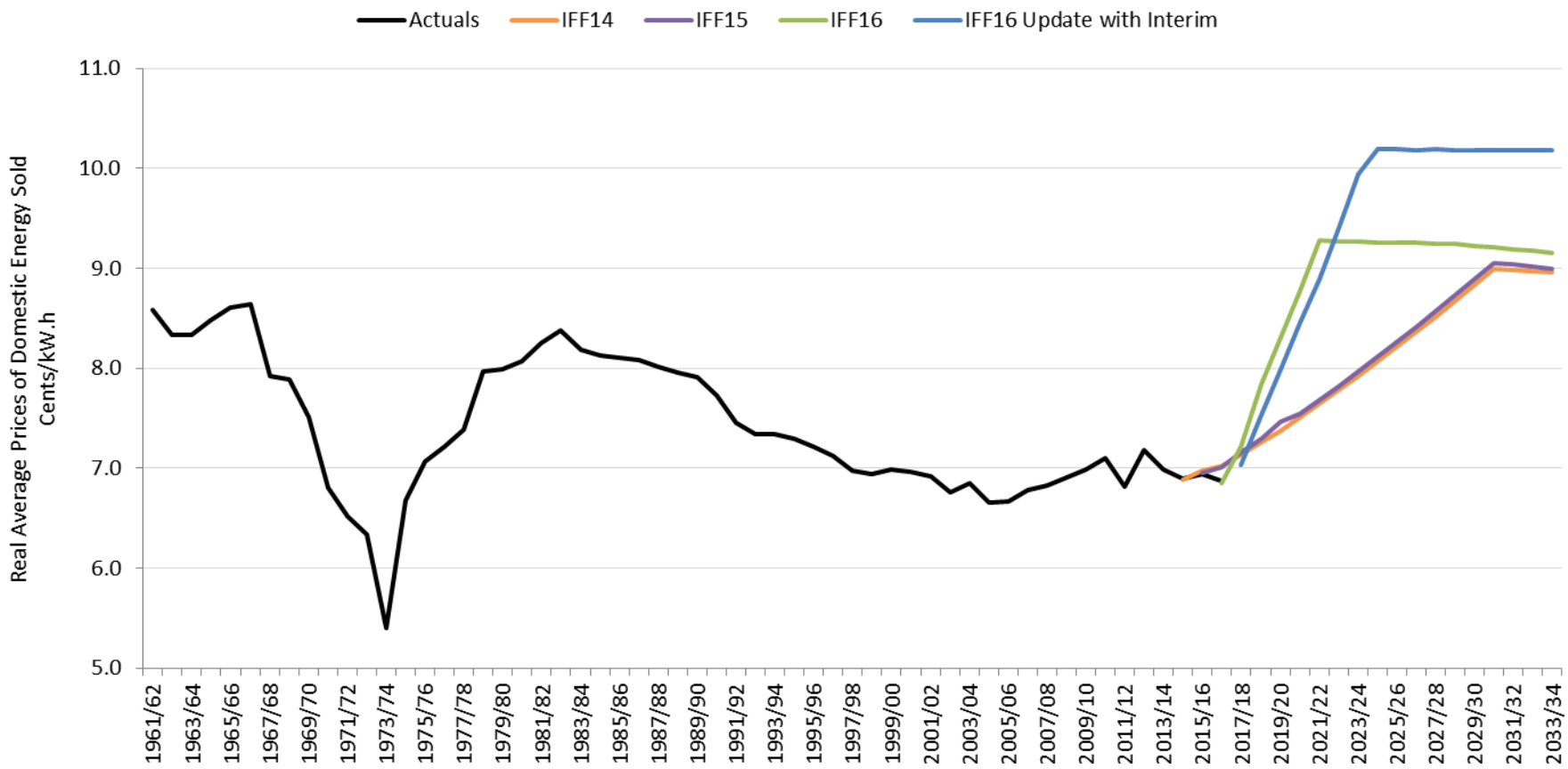
a)


Drought & Recovery
(2003/04 Drought, MISO Day 2, Wuskwatim, ...)
Post Limestone and the Period of Strengthening
(surplus energy, development of export markets, ...)
Period of Investment and Recovery IFF14
(Bipole III &Keeyask)
Northern Development
(Grand Rapids, Kettle, Jenpeg, Long Spruce, ...)
Period of Service and Reliability Improvements
and Limestone construction
30
25
20
15
10
5
0
1962 1964 1966 1968 1970 1972 1974 1976 1978 1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020 2022 2024 2026 2028 2030 2032 2034
Actuals
Projected IFF 14

b) The following table and chart provide the real average prices of domestic energy sold by year.

It can be seen from the chart that except for the period from 1975 to 1983, the latter period of the Nelson River generation development, real electricity prices have been generally declining until the early 2000's reflecting the period where Manitoba Hydro did not implement any or significant rate increases. Real electricity prices from that period until today have been relatively flat reflecting the beneficial influence of the period of lucrative export sales. The combination of the new major projects coming on-line and the current and projected lowest export prices in Manitoba Hydro's history have resulted in the first real electricity price increases since the early 80's.

Real Average Prices of Domestic Energy Sold Cents/kW.h						Adj	Nominal Average Prices of Domestic Energy Sold Cents/kW.h					
Fiscal Year	Actuals	IFF14	IFF15	IFF16	IFF16 Update with Interim	CPI	Fiscal Year	Actuals	IFF14	IFF15	IFF16	IFF16 Update with Interim
1961/62	8.6					18.7	1961/62	1.1				
1962/63	8.3					18.4	1962/63	1.1				
1963/64	8.3					18.4	1963/64	1.1				
1964/65	8.5					18.4	1964/65	1.1				
1965/66	8.6					18.1	1965/66	1.1				
1966/67	8.6					18.1	1966/67	1.1				
1967/68	7.9					19.9	1967/68	1.1				
1968/69	7.9					20.8	1968/69	1.1				
1969/70	7.5					21.2	1969/70	1.1				
1970/71	6.8					23.1	1970/71	1.1				
1971/72	6.5					23.7	1971/72	1.1				
1972/73	6.3					24.7	1972/73	1.1				
1973/74	5.4					26.3	1973/74	1.0				
1974/75	6.7					27.9	1974/75	1.3				
1975/76	7.1					31.2	1975/76	1.5				
1976/77	7.2					36.6	1976/77	1.8				
1977/78	7.4					42.2	1977/78	2.2				
1978/79	8.0					45.4	1978/79	2.5				
1979/80	8.0					49.3	1979/80	2.7				
1980/81	8.1					49.4	1980/81	2.8				
1981/82	8.2					49.5	1981/82	2.8				
1982/83	8.4					49.5	1982/83	2.9				
1983/84	8.2					53.9	1983/84	3.1				
1984/85	8.1					58.9	1984/85	3.3				
1985/86	8.1					61.8	1985/86	3.5				
1986/87	8.1					63.2	1986/87	3.5				
1987/88	8.0					70.3	1987/88	3.9				
1988/89	8.0					73.6	1988/89	4.1				
1989/90	7.9					77.6	1989/90	4.3				
1990/91	7.7					82.8	1990/91	4.4				
1991/92	7.5					89.1	1991/92	4.6				
1992/93	7.3					92.1	1992/93	4.7				
1993/94	7.3					92.1	1993/94	4.7				
1994/95	7.3					93.9	1994/95	4.8				
1995/96	7.2					95.5	1995/96	4.8				
1996/97	7.1					98.1	1996/97	4.9				
1997/98	7.0					100.3	1997/98	4.9				
1998/99	6.9					100.3	1998/99	4.8				
1999/00	7.0					100.3	1999/00	4.9				
2000/01	7.0					100.3	2000/01	4.9				
2001/02	6.9					100.2	2001/02	4.8				
2002/03	6.8					100.0	2002/03	4.7				
2003/04	6.9					100.0	2003/04	4.8				
2004/05	6.7					102.9	2004/05	4.8				
2005/06	6.7					106.4	2005/06	4.9				
2006/07	6.8					105.9	2006/07	5.0				
2007/08	6.8					107.6	2007/08	5.1				
2008/09	6.9					110.6	2008/09	5.3				
2009/10	7.0					115.0	2009/10	5.6				
2010/11	7.1					117.1	2010/11	5.8				
2011/12	6.8					121.0	2011/12	5.7				
2012/13	7.2					125.1	2012/13	6.2				
2013/14	7.0					131.2	2013/14	6.4				
2014/15	6.9	6.9				135.1	2014/15	6.5	6.5			
2015/16	6.9	7.0	7.0			138.9	2015/16	6.7	6.7	6.7		
2016/17	6.9	7.0	7.0	6.9		143.9	2016/17	6.9	7.0	7.0	6.9	
2017/18		7.1	7.2	7.2	7.0	146.8	2017/18		7.3	7.3	7.4	7.2
2018/19		7.3	7.3	7.8	7.5	149.8	2018/19		7.6	7.6	8.2	7.8
2019/20		7.4	7.5	8.3	8.0	152.9	2019/20		7.8	7.9	8.8	8.5
2020/21		7.5	7.6	8.8	8.5	156.1	2020/21		8.1	8.2	9.5	9.2
2021/22		7.6	7.7	9.3	8.9	159.3	2021/22		8.5	8.5	10.3	9.8
2022/23		7.8	7.8	9.3	9.4	162.5	2022/23		8.8	8.8	10.5	10.6
2023/24		7.9	8.0	9.3	9.9	165.8	2023/24		9.1	9.2	10.7	11.5
2024/25		8.1	8.1	9.3	10.2	169.1	2024/25		9.5	9.5	10.9	12.0
2025/26		8.2	8.3	9.3	10.2	172.5	2025/26		9.9	9.9	11.1	12.2
2026/27		8.4	8.4	9.3	10.2	176.0	2026/27		10.2	10.3	11.3	12.5
2027/28		8.5	8.6	9.2	10.2	179.5	2027/28		10.6	10.7	11.5	12.7
2028/29		8.7	8.7	9.2	10.2	183.1	2028/29		11.0	11.1	11.8	13.0
2029/30		8.8	8.9	9.2	10.2	186.8	2029/30		11.5	11.5	12.0	13.2
2030/31		9.0	9.1	9.2	10.2	190.6	2030/31		11.9	12.0	12.2	13.5
2031/32		9.0	9.0	9.2	10.2	194.4	2031/32		12.1	12.2	12.4	13.8
2032/33		9.0	9.0	9.2	10.2	198.3	2032/33		12.4	12.4	12.6	14.0
2033/34		9.0	9.0	9.2	10.2	202.3	2033/34		12.6	12.7	12.9	14.3


Actuals
IFF14
IFF15
IFF16
IFF16 Update with Interim
Real Average Prices of Domestic Energy Sold
Cents/kW.h
11.0
10.0
9.0
8.0
7.0
6.0
5.0
1961/62
1963/64
1965/66
1967/68
1969/70
1971/72
1973/74
1975/76
1977/78
1979/80
1981/82
1983/84
1985/86
1987/88
1989/90
1991/92
1993/94
1995/96
1997/98
1999/00
2001/02
2003/04
2005/06
2007/08
2009/10
2011/12
2013/14
2015/16
2017/18
2019/20
2021/22
2023/24
2025/26
2027/28
2029/30
2031/32
2033/34

REFERENCE:

MIPUG/MH I-2m&n

PREAMBLE TO IR (IF ANY):

QUESTION:

Please confirm that DBRS uses Hydro's recorded Retained Earnings as the measure of equity, and that AOCI is effectively not included as an offset.

RATIONALE FOR QUESTION:

RESPONSE:

The 'equity attributable to Manitoba Hydro' as stated in MIPUG/MH I-2n includes the accumulated other comprehensive loss (AOCL) and DBRS adjusts the measure of equity to exclude AOCL.

REFERENCE:

MIPUG/MH I-2m&n

PREAMBLE TO IR (IF ANY):

QUESTION:

MIPUG/MH-I-2m notes that KPMG (Appendix 4.1, page 61) concluded other Canadian utilities use AOCI in the calculation of equity. Please indicate if this measure of "equity" is a value used for rate setting by the respective regulators. In particular, where utilities are regulated on the basis of either a financial target (debt:equity ratio like Manitoba Hydro) or a return on equity (ROE as a component of revenue requirement, as is common among other regulated utilities) please indicate for each example available whether the equity measure includes AOCI in the total value and for each utility please provide the dollar value of AOCI versus other forms of equity identified.

RATIONALE FOR QUESTION:

RESPONSE:

The inclusion of AOCI in equity is irrelevant to Manitoba Hydro's revenue requirement and proposed rate increases in this Application. AOCI is comprised of unfunded pension obligations and unrealized foreign exchange losses – both of which are future obligations of the corporation. Whether AOCI is deducted from equity or added to debt does not change the resulting equity or debt ratio. Exclusion of AOCI completely from the ratio calculation reduces the equity or debt ratio by 1 to 3 percentage points and mathematically permits attaining the target in the same timeframe but at lower rate increases. However, artificially manipulating Manitoba Hydro's debt-to-equity ratio obfuscates the true need for 7.9% rate increases: at its peak in MH16 Update with Interim, Manitoba Hydro projects to have nearly $24 billion in net debt. While Manitoba Hydro's financial target is stated as a 25% equity ratio, the ultimate goal is the reduction of debt and associated interest payments, and consequently, the reduction of future revenue requirement. Regardless of what other utilities and their regulators are doing with AOCI in their ratio calculations, it is in Manitoba

Hydro's customers' best interests to contribute to the corporation's revenue requirement now rather than 10 years from now in order to permanently reduce debt and future interest costs which will result in lower cumulative rate increases in the long-term than what would have otherwise been required with lower early rate increases and higher debt levels.

REFERENCE:

MIPUG/MH I-5d, Page 3 of 4

PREAMBLE TO IR (IF ANY):

The noted IR response states on page 3:
"Manitoba Hydro does not support the introduction of rate structure changes on an optional basis as the revenue losses associated with the self-selection of rates make it impossible for the Corporation to fully recover the revenues required from that customer class."

QUESTION:

a) Please provide for the GSL 30-100kV and the GSL >100kV classes the amount of revenue forecast for the 2017/18 and 2018/19 years compared to revenue which would achieve 100% RCC ratios (i.e. the amount collected over 100% RCC).
b) Please confirm that Manitoba Hydro forecasts to collect revenues from the GSL 30-100kV and GSL >100kV classes that likely exceeds 100% RCC in 2017/18, and that even if an optional Time of Use program were in place, such that up to $1.5 million less revenue was collected by Hydro, total revenue collected from each class would result in RCC ratios above 100%.

RATIONALE FOR QUESTION:

RESPONSE:

a) The table below shows the difference between revenues included in PCOSS18, and the level of revenue that would be required to achieve unity for the GSL 30-100 and GSL >100 classes.

	PCOSS18 Revenue ($000)	2017/18 Revenue to Achieve Unity ($000)	Difference ($000)
GSL 30-100	69,995	61,921	8,074
GSL >100	180,458	160,646	19,812

Manitoba Hydro notes that the RCC ratios for the GSL customers are expected to decline in the future with the in-service of the Bipole III Reliability Project. While Manitoba Hydro has not prepared a 2019 Cost of Service Study and cannot provide a similar revenue calculation for 2018/19, the response to MIPUG/MH 1-23b provides useful information in that regard.

The table found in the response to MIPUG/MH I-23b indicates that once Bipole III enters service the RCC of the large industrial classes is expected to decrease significantly. The RCC for GSL 30-100kV may decline from 109.3% to 103.5% and the GSL >100kV class may experience a decline from 108.6% to 101.5%, which would result in RCC's that would be within the previously accepted ZOR of 95% to 105%.

Based on the decrease in RCCs, in 2018/19 the revenues in excess of the amount required to achieve unity may only be 1/3 to 1/6 of the amount calculated in this response for PCOSS18.

b) Assuming the implementation of optional time-of-use rates for the GSL 30-100 kV and GSL >100 kV classes resulted in a decrease in class revenues of only $1.5 million, both classes would have had RCCs above unity in a PCOSS18 that included TOU rates. However, as a result, the GSL 30-100 kV and GSL>100 kV classes would effectively be given a rate increase less than the requested 7.9%, while other classes would not be afforded similar treatment.

Manitoba Hydro notes that this $1.5 million of lost revenue still must be recovered as part of the Corporation's revenue requirement in order to keep the Corporation financially whole, and would necessarily need to be borne by other customer classes in the form of rate increases greater than 7.9% to those customer classes.

In light of the level of increases sought in this Application, Manitoba Hydro is mindful of its ability to seek additional class rate increases beyond the overall level of increases sought.

REFERENCE:

MIPUG/MH I-5g, Page 2

PREAMBLE TO IR (IF ANY):

Manitoba Hydro states on page 2:
"Given the significant shift in embedded costs away from energy and into demand, the balance between energy and demand in a TOU rate structure is also significantly shifted, a factor which must be considered in light of the desire to set prices that place more emphasis on revenue collection through on-peak hourly energy charges."

QUESTION:

a) Have the significant and material changes directed in Order 164/64 changed the manner in which Hydro calculates or measures marginal cost? If yes, please provide details of the change.
b) Please confirm that Hydro's basic economic planning approach to programs, such as DSM, which adjust load levels or usage is tied to marginal costs, not embedded costs.
c) Please explain any changes in cost/benefit tests, incentive calculations or program selection for DSM programs to adjust for the increased cost of demand resulting from changes directed in Order 164/64?

RATIONALE FOR QUESTION:

RESPONSE:

a) The manner in which Manitoba Hydro calculates marginal costs has not changed as a result of Order 164/64.

b) Marginal costs are used in the economic assessment of Manitoba Hydro's DSM programs.

c) Please see the response to part a).

REFERENCE:

MIPUG/MH I-6b

PREAMBLE TO IR (IF ANY):

QUESTION:

a) Please reconcile the change in 'Loss on Disposal of Assets' for Additions to Regulatory Deferral Accounts between MH16 and Updated MH16 for the actual year 2016/17 (from -$3.200 million to -$1.302 million).
b) Why does Manitoba Hydro not forecast "Additions of regulatory deferral accounts" for 'Loss on Disposal of Assets' beyond 2016/17?
c) Per PUB/MH-I-1a page 2 of 41, the deferred Site Restoration costs totals $30.7 million in 2016/17 which is amortized at $4.070 million in that year. Coalition/MH-I-59a indicates these amounts are amortized over 15 years. Please provide a continuity schedule and supporting calculations (including amortization rate and average remaining life used) over the 20 year forecast period for the amortization of site restoration costs proposed with annual regulatory deferral account additions and the current balance.

RATIONALE FOR QUESTION:

RESPONSE:

a) The -$3.2 million loss on disposal of assets included in MH16 (the 2016/17 Outlook) was an estimate based on the results to December 2016 plus expected costs for the remainder of the year to remove terminally retired assets. For outlook purposes, it was assumed that proceeds on removal of assets would largely offset any net loss to be reported on the assets retired, which is consistent with the approach used for forecast purposes. Manitoba Hydro records approximately $100 million in gross asset retirements annually and the majority of retirements are processed in the last quarter of the year. The -$1.3 million loss on disposal of assets reported for 2016/17 represents actual results.

b) As articulated in the response to MIPUG/MH I-6e, under ELG, it is expected that gains and losses will be minimal. Experienced losses ranging from 1.6% - 0.8% of depreciation expense since 2014/15 support that expectation. Given the expectation that net losses will continue to remain relatively small, no provision was made in the forecast for future gains or losses on disposal of assets.

c) The figures presented in the response to PUB/MH I-1a provide the net unamortized cost of the regulatory deferral accounts. Amortization of deferred site restoration costs is calculated on the original amount of cost deferred, with amortization commencing in the month following incurrence and deferral of cost. The majority of assets in this classification are amortized on a straight-line basis over 15 years, but the category includes a relatively small amount of deferred diesel losses which have been grouped with deferred site restoration costs for presentation purposes. The deferred diesel losses represent the unamortized balance of diesel site costs for diesel sites which have been decommissioned as a result of connection of the customer base to the main electrical grid. These deferred diesel losses are amortized using an average amortization rate of 1.69%. The 2016/17 opening balance for deferred site restoration costs include the following deferred diesel losses:

Deferred diesel losses *$ thousands*	**Opening Balance 2016/17**
Original amount deferred	$ 3,812
Accumulated amortization	928
Net unamortized balance	**$ 2,884**

Please refer to the following table for details with respect to the additions, retirements and depreciation expense charged with respect to deferred site restoration costs, including deferred diesel losses:

Manitoba Hydro - Electric Operations
Site Restoration Costs

	2016/17 Actual	2017/18 Forecast	2018/19 Forecast	2019/20 Forecast	2020/21 Forecast	2021/22 Forecast	2022/23 Forecast	2023/24 Forecast	2024/25 Forecast	2025/26 Forecast
Deferred Cost										
Opening Balance	$ 65,247	$ 64,330	$ 59,540	$ 60,309	$ 56,740	$ 51,973	$ 40,659	$ 34,243	$ 33,714	$ 33,040
Additions	1,361	2,794	2,703	1,408	1,317	1,133	6	-	-	-
Retirements	(2,279)	(7,583)	(1,934)	(4,977)	(6,083)	(12,447)	(6,422)	(530)	(674)	(4,061)
Closing balance	64,330	59,540	60,309	56,740	51,973	40,659	34,243	33,714	33,040	28,979
Accumulated Amortization										
Opening Balance	34,537	36,328	32,851	34,907	33,785	31,260	21,803	18,010	19,715	21,211
Amortization	4,070	4,106	3,990	3,855	3,559	2,990	2,629	2,234	2,170	1,991
Retirements	(2,279)	(7,583)	(1,934)	(4,977)	(6,083)	(12,447)	(6,422)	(530)	(674)	(4,061)
Closing Balance	36,328	32,851	34,907	33,785	31,260	21,803	18,010	19,715	21,211	19,141
Opening Net Unamortized Balance	30,710	28,001	26,689	25,402	22,955	20,713	18,856	16,233	13,999	11,828
Closing Net Unamortized Balance	**$ 28,001**	**$ 26,689**	**$ 25,402**	**$ 22,955**	**$ 20,713**	**$ 18,856**	**$ 16,233**	**$ 13,999**	**$ 11,828**	**$ 9,838**

	2026/27 Forecast	2027/28 Forecast	2028/29 Forecast	2029/30 Forecast	2030/31 Forecast	2031/32 Forecast	2032/33 Forecast	2033/34 Forecast	2034/35 Forecast	2035/36 Forecast
Deferred Cost										
Opening Balance	$ 28,979	$ 27,473	$ 24,970	$ 21,817	$ 20,236	$ 15,387	$ 11,775	$ 8,733	$ 6,347	$ 4,626
Additions	-	-	-	-	-	-	-	-	-	-
Retirements	(1,506)	(2,503)	(3,153)	(1,581)	(4,849)	(3,612)	(3,041)	(2,386)	(1,722)	(1,460)
Closing balance	27,473	24,970	21,817	20,236	15,387	11,775	8,733	6,347	4,626	3,166
Accumulated Amortization										
Opening Balance	19,141	19,462	18,683	17,043	16,797	12,993	10,273	7,848	5,895	4,468
Amortization	1,826	1,724	1,514	1,334	1,046	891	616	433	295	188
Retirements	(1,506)	(2,503)	(3,153)	(1,581)	(4,849)	(3,612)	(3,041)	(2,386)	(1,722)	(1,460)
Closing Balance	19,462	18,683	17,043	16,797	12,993	10,273	7,848	5,895	4,468	3,196
Opening Net Unamortized Balance	9,838	8,011	6,287	4,773	3,439	2,393	1,502	886	452	158
Closing Net Unamortized Balance	**$ 8,011**	**$ 6,287**	**$ 4,773**	**$ 3,439**	**$ 2,393**	**$ 1,502**	**$ 886**	**$ 452**	**$ 158**	**$ (30)**

REFERENCE:

PUB/MH I-145

PREAMBLE TO IR (IF ANY):

QUESTION:

a) Please provide a breakdown of the allocation (including directly matched revenues) of non-energy revenue ($30,183,945) to each Cost of Service function cost category.
b) Please provide a breakdown by customer class share for each non-energy revenue 'item' listed in the table provided in Hydro's response to PUB/MH I-145.
c) The response to MIPUG/MH I-11d indicates that "Building Moves" are mostly fully recovered from the party requesting the service, and that these collections are tracked as "other revenue" functionalized using the SAP Labour Allocator. Please provide a table showing the allocation of the building moves expenses to each class, and the corresponding revenue to each class associated with this cost recovery (i.e., does the COS match the revenue with the expense it is intended to cover).

RATIONALE FOR QUESTION:

RESPONSE:

a) The table below provides the breakdown of PCOSS18 Non-Energy Revenue into the cost categories used in the COS.

	Cost Category ($ million)
Offset to Operating Expense	19.5
Offset to Depreciation Expense	10.7
Total	30.2

b) The table below provides the breakdown of PCOSS18 Non-Energy Revenue by revenue source and the allocation of the revenue to customer classes in the COS.

	Amortization of Customer Contributions ($ 000)	Joint Use ($000)	Permit Inspection Fees ($000)	Operating Expense Recoveries ($000)	Goods & Services Sold to Outside Parties ($000)	Other ($000)
Residential	4,071	2,727	748	2,795	1,304	1,863
GSS Non Demand	712	478	976	530	247	353
GSS Demand	830	560	230	570	266	380
GSM	1,127	753	38	768	358	512
GSL 0-30 kV	448	256	6	350	164	234
GSL 30-100 kV	110	0	1	238	111	159
GSL >100 kV	234	0	0	620	289	413
SEP	0	0	1	0	0	0
A&RL	1,835	27	0	99	46	66
Diesel	1,333	0	0	30	14	20
Total	10,700	4,800	2,000	6,000	2,800	4,000

c) The table below provides the breakdown of the allocation of Building Move related expenses and revenues in PCOSS18, as well as the percentages allocated to each class.

	Building Moves Expense ($ 000)	Building Moves Expense (%)	Building Moves Revenue ($ 000)	Building Moves Revenue (%)
Residential	769	42	140	47
GSS Non Demand	177	10	26	9
GSS Demand	186	10	29	10
GSM	243	13	38	13
GSL 0-30 kV	114	6	18	6
GSL 30-100 kV	89	5	12	4
GSL >100 kV	229	12	31	10
SEP	0	0	0	0
Area & Roadway Lighting	27	1	5	2
Diesel	0	0	1	0
Total	1,834	100	300	100

REFERENCE:

MIPUG/MH I-13a-b

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide Chart 7 & 8 with an added line representing the interest rate used for Keeyask borrowings (actual and forecast) given the different approach as outlined in the Project Financing Agreement for interest during construction, calculated using incremental costs for KHLP assets (as detailed in Tab 4, page 19).

RATIONALE FOR QUESTION:

RESPONSE:

Charts 7 & 8 have been updated to add a line representing Keeyask actual and forecast borrowings.

As per the Project Financing Agreement, the interest rates for all of the advances are reset on the 25th Anniversary Date, thus Manitoba Hydro has assumed that this date is the 'maturity date' for all of the advances. The following assumptions were used to determine the maturity date of February 1, 2048 for all of the advances.

"Final Completion Date" means the day on which the last of the turbines comprising the Keeyask Generating Station is fully commissioned and comes into service: August 1, 2022

"Final Closing Date" means the first Business Day which is one-hundred and eighty (180) days following the Final Completion Date: February 1, 2023

25th "Anniversary Date" means each anniversary of the Final Closing Date: February 1, 2048

Chart 7

Weighted Average Term to Maturity of Market Debt (Years)
(For the Fiscal Year Ended March 31)

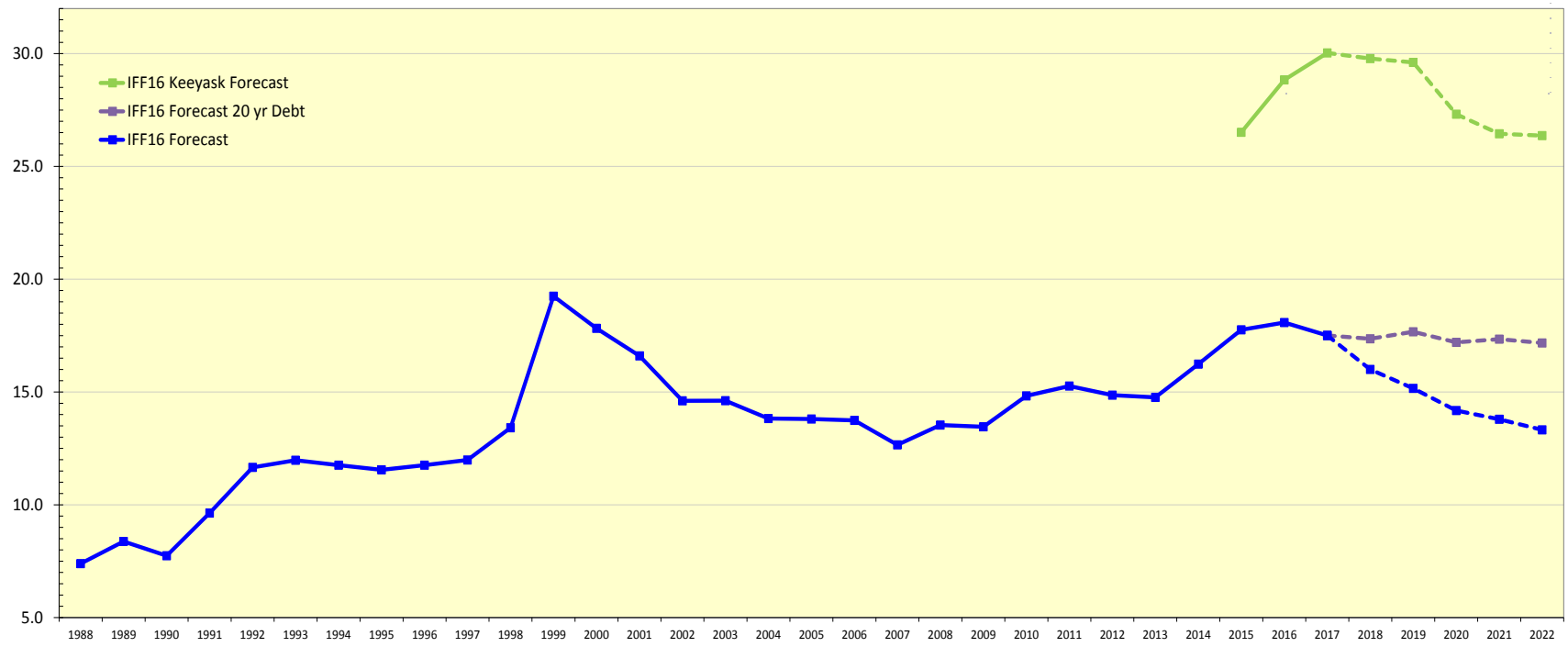
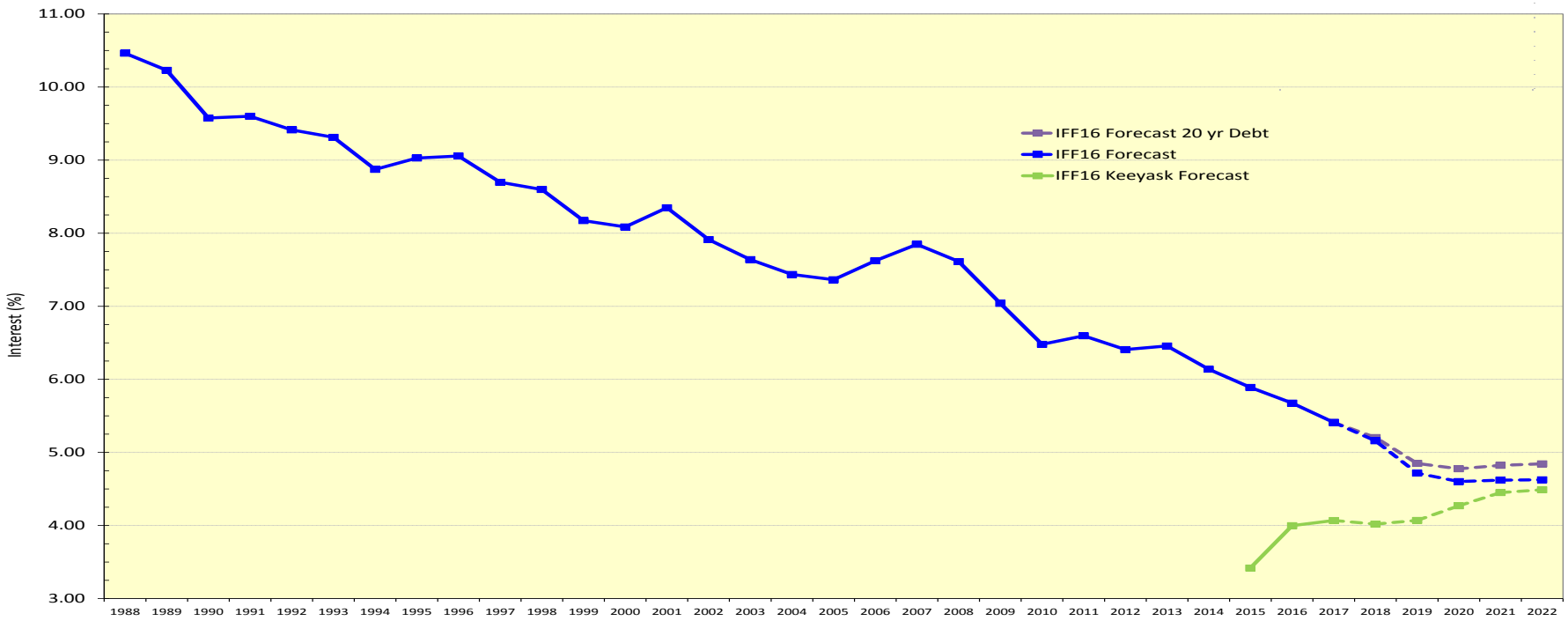


Chart 8

Weighted Average Interest Rate

For the Fiscal Year Ended March 31
(Including PGF)



REFERENCE:

COALITION/MH-I-59

PREAMBLE TO IR (IF ANY):

QUESTION:

a) Please provide the deferred overhead balance, by year, tied to Major New Generation and Transmission versus other capital projects.
b) With the majority of the deferred overhead balance tied to long-lived assets such as new generation and transmission, what is the basis for a 20 year amortization proposal, rather than the composite life of the assets to which the overhead/administration expense relates?
c) How does the rational for the amortization period of acquisition costs (a period that closely approximated the estimated remaining useful life of the assets, per page 4 of 4) accord with the truncated 20 year period proposed for capitalized administration overheads?

RATIONALE FOR QUESTION:

RESPONSE:

a) As identified in the response to PUB/MH I-1a, the deferred ineligible overhead balance is fixed at $20.2 million per year. This amount was determined as part of the Corporation's transition to IFRS and the restatement of the 2014/15 fiscal year. It represents the difference between the amount of overhead deemed ineligible for financial reporting purposes and the $36 million amount allowed by the PUB for rate setting purposes (as per Order No. 73/15). Manitoba Hydro does not have a system in place to specifically track overhead that would not be eligible for capitalization for each asset. Without a system in place to specifically track ineligible overhead for each asset constructed, Manitoba Hydro is not able to provide the deferred overhead balance for each year broken down between Major New Generation and Transmission and other capital projects.

Response to parts b) and c):

As provided in the responses to MIPUG MFR 5 and Coalition/MH I-138b, Manitoba Hydro is of the view that significant regulatory deferral account balances may result in the burden of recovery of today's IFRS impacts being pushed out to future ratepayers. In addition, extended or indefinite deferral periods can create concerns by auditors regarding the ability of the utility to recover such deferrals from its ratepayers.

At the time of the Centra Gas and Winnipeg Hydro acquisitions, the 30 year period was consistent with the selection of amortization periods for regulatory accounts. Since that time, circumstances have changed including the rising costs of construction, electricity export demand and prices as well as increasing regulatory requirements (e.g. environmental, NERC). Such changes have highlighted how vulnerable the financial health of the utility is to circumstances beyond its control. Going forward, it is conceivable that the utility will also experience rising interest rates as well as a period of reduced water flow conditions. As such, the utility is reluctant to select extended amortization periods linked to the lives of assets for regulatory deferral accounts as excessively large deferral balances pass the risk of recovery to future generations of rate payers.

REFERENCE:

Coalition/MH-I-73e, Page 5 of 18

PREAMBLE TO IR (IF ANY):

QUESTION:

Page 5 of 18 describes that Attachment 28, Scenario 1 from the 2016/17 Supplemental Filing applied a Loss on Disposal of Assets amortization of "None". Does this indicate that there was no assumption/policy for amortizing loss on disposal of assets (e.g., were these amounts expensed), or that there were no asset losses such that no amortization approval was required?

RATIONALE FOR QUESTION:

RESPONSE:

Manitoba Hydro's response on page 5 of Coalition/MH-I-73e indicates that at the time Attachment 28, Scenario 1 was prepared, there was no direction from the PUB on an amortization period for the loss on disposal of assets regulatory deferral balance and no assumption was made. Consequently, the balance in the regulatory asset remained on the balance sheet throughout the forecast period.

Conversely, MH16 Update with Interim assumes a 20-year amortization period for the loss on disposal of assets regulatory deferral balance. Prior to the adoption of IFRS, asset retirement gains and losses were recognized in accumulated depreciation and were factored into future depreciation rate changes; as such no regulatory deferral account existed.

REFERENCE:

PUB/MH-I-1a, Page 2 of 41

PREAMBLE TO IR (IF ANY):

QUESTION:

a) Please explain the DSM deferral and the continual deferral of $48.8 million throughout the planning horizon. Why does Hydro maintain the deferral rather than seeking to eliminate the provision?
b) In the event Hydro was granted PUB permission to eliminate the DSM deferral without any further actions (such as added DSM programming), please describe in detail the transactions and net effect of being relieved from the spending commitment.
c) In light of current rate and financial pressures highlighted by Hydro, why is elimination of the DSM deferral not part of the requested approvals in the current proceeding?

RATIONALE FOR QUESTION:

RESPONSE:

a) The DSM regulatory deferral account represents the difference between actual and planned spending on electric DSM programs in accordance with Order 43/13 (Directive 12). Manitoba Hydro requested that the PUB rescind the DSM deferral account in its 2014/15 and 2015/16 GRA. The request was denied in Order 73/15 and as such, Manitoba Hydro continues to maintain the deferral account to be consistent with the directives of Orders 73/15 and 59/16.

   Please see the response to Coalition/MH I-139b for an explanation as to why Manitoba Hydro has not made a proposal to clear the account in the current rate application.

b) The DSM deferral represents both a regulatory deferred asset and equivalent regulatory deferred liability on the financial statements of Manitoba Hydro. In the event that Manitoba Hydro was granted permission by the PUB to eliminate the deferral, Manitoba

Hydro would write-off the asset account against the equivalent liability account such that there would be no impact on net income or retained earnings. The write-off adjustment would be reflected in the balance sheet only.

c) Please see the response to Coalition/MH I-139b for a discussion of why Manitoba Hydro has not requested approval to eliminate the DSM regulatory deferral account.

REFERENCE:

MIPUG/MH I-6g

PREAMBLE TO IR (IF ANY):

QUESTION:

a) Please adjust MIPUG/MH-I-6g such that (i) the entire life period is shown (up to 140 years), (ii) the deferral mechanism does not end in a given arbitrary year, but the mechanism is carried on throughout the life of the investment (starting in year 1 of the model).
b) In order to test and evaluate Hydro's proposed ELG amortization approach, please provide the following:
   i. Looking to Wuskwatim assets (account 1180A-W) please provide an annual reconciliation showing, for each account by year (since the original in service date) the opening balance, the additions and disposals, and the closing balance.
   ii. For each Wuskwatim account, provide the ELG life and dispersion curve used, and the theoretical disposals that occur in each year (for each account) under the given ELG life and dispersion curve.
   iii. Please provide a Wuskwatim scenario to date for each of the following assumed ratemaking approaches. In all data assume no net salvage. Please provide three cases using actual spending and retirements to date and projections based on theoretical life to the terminal retirement date for future retirements. Apply the following methodologies starting in year 1:
      1. Hydro applies ELG without any deferral.
      2. Hydro applies ASL without any deferral.
      3. Hydro applies ASL for rate setting, and applies the deferral as proposed by Hydro (20 year amortization) but applies the deferral methodology throughout the life of the asset.

RATIONALE FOR QUESTION:

RESPONSE:

a) Please see below for a version of MIPUG/MH I-18 (Case 1) from the 2014/15 & 2015/16 Electric GRA updated for the proposed accounting treatment for the annual IFRS-compliant ELG – CGAAP ASL difference over the 140 year period. A summary of the assumptions used in the accounting for the IFRS-compliant ELG – CGAAP ASL difference is as follows:

- The difference in depreciation expense between the ELG and ASL methods is deferred in a regulatory deferral account starting in 1923.
- The annual difference in depreciation is amortized over a 20 year period.
- Amortization of the deferral balance commences in 1924 and is completed by 2083.

MIPUG/MH II-13(a)
Case 1 2015 GRA, ELG - CGAAP ASL comparison
Assumes 20 year amortization of ELG-CGAAP ASL difference (starting in 1923)

Year	Cost	ELG Annual Rate	ELG Annual Expense	CGAAP ASL Annual Rate	CGAAP ASL Annual Expense	Annual ELG - ASL Deferral	Cumulative ELG - ASL Deferral	Annual (20 yr) Amortization ELG-ASL Difference	Cumulative Amortization ELG-ASL Deferral	Unamortized Balance ELG-ASL Difference
1923	1 000.00	0.87%	8.70	0.823%	8.23	0.47	0.47	-	-	0.47
1924	999.99	0.87%	8.70	0.823%	8.23	0.47	0.94	0.02	0.02	0.92
1925	999.98	0.87%	8.70	0.823%	8.23	0.47	1.41	0.05	0.07	1.34
1926	999.97	0.87%	8.70	0.823%	8.23	0.47	1.88	0.07	0.14	1.74
1927	999.96	0.87%	8.70	0.823%	8.23	0.47	2.35	0.09	0.23	2.11
1928	999.95	0.87%	8.70	0.823%	8.23	0.47	2.82	0.12	0.35	2.47
1929	999.94	0.87%	8.70	0.823%	8.23	0.47	3.29	0.14	0.49	2.80
1930	999.93	0.87%	8.70	0.823%	8.23	0.47	3.76	0.16	0.66	3.10
1931	999.91	0.87%	8.70	0.823%	8.23	0.47	4.23	0.19	0.85	3.38
1932	999.89	0.87%	8.70	0.823%	8.23	0.47	4.70	0.21	1.06	3.64
1933	999.87	0.87%	8.70	0.823%	8.23	0.47	5.17	0.23	1.29	3.88
1934	999.85	0.87%	8.70	0.823%	8.23	0.47	5.64	0.26	1.55	4.09
1935	999.83	0.87%	8.70	0.823%	8.23	0.47	6.11	0.28	1.83	4.28
1936	999.80	0.86%	8.60	0.823%	8.23	0.37	6.48	0.31	2.14	4.34
1937	999.77	0.86%	8.60	0.823%	8.23	0.37	6.85	0.32	2.46	4.39
1938	999.74	0.86%	8.60	0.823%	8.23	0.37	7.22	0.34	2.80	4.41
1939	999.70	0.86%	8.60	0.823%	8.23	0.37	7.59	0.36	3.17	4.42
1940	999.66	0.86%	8.60	0.823%	8.23	0.37	7.96	0.38	3.55	4.41
1941	999.62	0.86%	8.60	0.823%	8.23	0.37	8.33	0.40	3.94	4.39
1942	999.57	0.86%	8.60	0.823%	8.23	0.37	8.70	0.42	4.36	4.34
1943	999.52	0.86%	8.60	0.823%	8.23	0.37	9.07	0.43	4.79	4.27
1944	999.46	0.86%	8.60	0.823%	8.23	0.37	9.44	0.43	5.22	4.21
1945	999.40	0.86%	8.59	0.823%	8.23	0.37	9.81	0.42	5.65	4.16
1946	999.33	0.86%	8.59	0.823%	8.22	0.37	10.18	0.42	6.07	4.11
1947	999.25	0.86%	8.59	0.823%	8.22	0.37	10.55	0.41	6.48	4.06
1948	999.16	0.86%	8.59	0.823%	8.22	0.37	10.92	0.41	6.89	4.02
1949	999.07	0.86%	8.59	0.823%	8.22	0.37	11.29	0.40	7.30	3.99
1950	998.97	0.86%	8.59	0.823%	8.22	0.37	11.66	0.40	7.70	3.96
1951	998.86	0.86%	8.59	0.823%	8.22	0.37	12.03	0.39	8.09	3.93
1952	998.74	0.86%	8.59	0.823%	8.22	0.37	12.40	0.39	8.48	3.91
1953	998.61	0.86%	8.59	0.823%	8.22	0.37	12.77	0.38	8.87	3.90
1954	998.47	0.86%	8.59	0.823%	8.22	0.37	13.13	0.38	9.25	3.89
1955	998.32	0.86%	8.59	0.823%	8.22	0.37	13.50	0.37	9.62	3.88
1956	998.15	0.86%	8.58	0.823%	8.21	0.37	13.87	0.37	9.99	3.88
1957	997.96	0.86%	8.58	0.823%	8.21	0.37	14.24	0.37	10.36	3.88
1958	997.76	0.86%	8.58	0.823%	8.21	0.37	14.61	0.37	10.73	3.88
1959	997.54	0.86%	8.58	0.823%	8.21	0.37	14.98	0.37	11.10	3.88

MIPUG/MH II-13(a)

Case 1 2015 GRA, ELG - CGAAP ASL comparison

Assumes 20 year amortization of ELG-CGAAP ASL difference (starting in 1923)

Year	Cost	ELG Annual Rate	ELG Annual Expense	CGAAP ASL Annual Rate	CGAAP ASL Annual Expense	Annual ELG - ASL Deferral	Cumulative ELG - ASL Deferral	Annual (20 yr) Amortization ELG-ASL Difference	Cumulative Amortization ELG-ASL Deferral	Unamortized Balance ELG-ASL Difference
1960	997.31	0.86%	8.58	0.823%	8.21	0.37	15.35	0.37	11.47	3.88
1961	997.05	0.86%	8.57	0.823%	8.21	0.37	15.72	0.37	11.84	3.88
1962	996.77	0.86%	8.57	0.823%	8.20	0.37	16.09	0.37	12.21	3.88
1963	996.47	0.86%	8.57	0.823%	8.20	0.37	16.46	0.37	12.58	3.88
1964	996.15	0.86%	8.57	0.823%	8.20	0.37	16.82	0.37	12.95	3.88
1965	995.81	0.86%	8.56	0.823%	8.20	0.37	17.19	0.37	13.32	3.87
1966	995.43	0.86%	8.56	0.823%	8.19	0.37	17.56	0.37	13.69	3.87
1967	995.03	0.85%	8.46	0.823%	8.19	0.27	17.83	0.37	14.06	3.77
1968	994.60	0.85%	8.45	0.823%	8.19	0.27	18.10	0.36	14.42	3.68
1969	994.14	0.85%	8.45	0.823%	8.18	0.27	18.37	0.36	14.78	3.59
1970	993.65	0.85%	8.45	0.823%	8.18	0.27	18.64	0.35	15.13	3.50
1971	993.11	0.85%	8.44	0.823%	8.17	0.27	18.90	0.35	15.48	3.42
1972	992.53	0.85%	8.44	0.823%	8.17	0.27	19.17	0.34	15.83	3.34
1973	991.92	0.85%	8.43	0.823%	8.16	0.27	19.44	0.34	16.17	3.27
1974	991.27	0.85%	8.43	0.823%	8.16	0.27	19.71	0.33	16.50	3.21
1975	990.57	0.85%	8.42	0.823%	8.15	0.27	19.97	0.33	16.83	3.15
1976	989.81	0.85%	8.41	0.823%	8.15	0.27	20.24	0.32	17.15	3.09
1977	989.01	0.85%	8.41	0.823%	8.14	0.27	20.51	0.32	17.47	3.04
1978	988.15	0.84%	8.30	0.823%	8.13	0.17	20.68	0.31	17.78	2.89
1979	987.24	0.84%	8.29	0.823%	8.12	0.17	20.84	0.30	18.09	2.76
1980	986.28	0.84%	8.28	0.823%	8.12	0.17	21.01	0.29	18.38	2.63
1981	985.24	0.84%	8.28	0.823%	8.11	0.17	21.18	0.28	18.66	2.52
1982	984.14	0.84%	8.27	0.823%	8.10	0.17	21.35	0.27	18.94	2.41
1983	982.97	0.84%	8.26	0.823%	8.09	0.17	21.51	0.26	19.20	2.32
1984	981.73	0.84%	8.25	0.823%	8.08	0.17	21.68	0.25	19.45	2.23
1985	980.42	0.84%	8.24	0.823%	8.07	0.17	21.85	0.24	19.69	2.15
1986	979.01	0.84%	8.22	0.823%	8.06	0.17	22.01	0.23	19.93	2.09
1987	977.52	0.84%	8.21	0.823%	8.04	0.17	22.18	0.22	20.15	2.03
1988	975.95	0.84%	8.20	0.823%	8.03	0.17	22.35	0.22	20.37	1.98
1989	974.30	0.84%	8.18	0.823%	8.02	0.17	22.51	0.21	20.58	1.93

MIPUG/MH II-13(a)
Case 1 2015 GRA, ELG - CGAAP ASL comparison
Assumes 20 year amortization of ELG-CGAAP ASL difference (starting in 1923)

Year	Cost	ELG Annual Rate	ELG Annual Expense	CGAAP ASL Annual Rate	CGAAP ASL Annual Expense	Annual ELG - ASL Deferral	Cumulative ELG - ASL Deferral	Annual (20 yr) Amortization ELG-ASL Difference	Cumulative Amortization ELG-ASL Deferral	Unamortized Balance ELG-ASL Difference
1990	972.56	0.83%	8.07	0.823%	8.00	0.07	22.58	0.21	20.79	1.79
1991	970.70	0.83%	8.06	0.823%	7.99	0.07	22.65	0.20	20.98	1.66
1992	968.74	0.83%	8.04	0.823%	7.97	0.07	22.72	0.19	21.17	1.54
1993	966.68	0.83%	8.02	0.823%	7.96	0.07	22.78	0.18	21.35	1.43
1994	964.51	0.83%	8.01	0.823%	7.94	0.07	22.85	0.17	21.52	1.34
1995	962.23	0.83%	7.99	0.823%	7.92	0.07	22.92	0.16	21.67	1.25
1996	959.80	0.83%	7.97	0.823%	7.90	0.07	22.99	0.15	21.82	1.17
1997	957.25	0.83%	7.95	0.823%	7.88	0.07	23.05	0.14	21.96	1.10
1998	954.58	0.82%	7.83	0.823%	7.86	(0.03)	23.02	0.13	22.08	0.94
1999	951.79	0.82%	7.80	0.823%	7.83	(0.03)	23.00	0.12	22.20	0.79
2000	948.87	0.82%	7.78	0.823%	7.81	(0.03)	22.97	0.11	22.31	0.66
2001	945.77	0.82%	7.76	0.823%	7.78	(0.03)	22.94	0.10	22.41	0.53
2002	942.53	0.82%	7.73	0.823%	7.76	(0.03)	22.91	0.09	22.50	0.42
2003	939.14	0.82%	7.70	0.823%	7.73	(0.03)	22.88	0.08	22.57	0.31
2004	935.60	0.81%	7.58	0.823%	7.70	(0.12)	22.76	0.07	22.64	0.12
2005	931.91	0.81%	7.55	0.823%	7.67	(0.12)	22.64	0.05	22.70	(0.06)
2006	928.01	0.81%	7.52	0.823%	7.64	(0.12)	22.52	0.04	22.74	(0.22)
2007	923.95	0.81%	7.48	0.823%	7.60	(0.12)	22.40	0.03	22.76	(0.36)
2008	919.72	0.81%	7.45	0.823%	7.57	(0.12)	22.28	0.01	22.77	(0.49)
2009	915.32	0.81%	7.41	0.823%	7.53	(0.12)	22.16	(0.00)	22.77	(0.61)
2010	910.75	0.80%	7.29	0.823%	7.50	(0.21)	21.95	(0.02)	22.75	(0.80)
2011	905.94	0.80%	7.25	0.823%	7.46	(0.21)	21.74	(0.03)	22.72	(0.98)
2012	900.95	0.80%	7.21	0.823%	7.41	(0.21)	21.53	(0.05)	22.67	(1.14)
2013	895.77	0.80%	7.17	0.823%	7.37	(0.21)	21.33	(0.06)	22.61	(1.29)
2014	890.40	0.80%	7.12	0.823%	7.33	(0.20)	21.12	(0.07)	22.54	(1.42)
2015	884.84	0.80%	7.08	0.823%	7.28	(0.20)	20.92	(0.09)	22.46	(1.53)
2016	879.02	0.79%	6.94	0.823%	7.23	(0.29)	20.63	(0.10)	22.36	(1.73)
2017	873.00	0.79%	6.90	0.823%	7.18	(0.29)	20.34	(0.12)	22.24	(1.90)
2018	866.77	0.79%	6.85	0.823%	7.13	(0.29)	20.06	(0.14)	22.10	(2.05)
2019	860.34	0.79%	6.80	0.823%	7.08	(0.28)	19.77	(0.15)	21.95	(2.18)

MIPUG/MH II-13(a)
Case 1 2015 GRA, ELG - CGAAP ASL comparison
Assumes 20 year amortization of ELG-CGAAP ASL difference (starting in 1923)

Year	Cost	ELG Annual Rate	ELG Annual Expense	CGAAP ASL Annual Rate	CGAAP ASL Annual Expense	Annual ELG - ASL Deferral	Cumulative ELG - ASL Deferral	Annual (20 yr) Amortization ELG-ASL Difference	Cumulative Amortization ELG-ASL Deferral	Unamortized Balance ELG-ASL Difference
2020	853.70	0.79%	6.74	0.823%	7.03	(0.28)	19.49	(0.16)	21.79	(2.30)
2021	846.78	0.78%	6.60	0.823%	6.97	(0.36)	19.13	(0.17)	21.62	(2.49)
2022	839.65	0.78%	6.55	0.823%	6.91	(0.36)	18.77	(0.19)	21.43	(2.66)
2023	832.30	0.78%	6.49	0.823%	6.85	(0.36)	18.41	(0.21)	21.22	(2.81)
2024	824.73	0.78%	6.43	0.823%	6.79	(0.35)	18.05	(0.22)	21.00	(2.94)
2025	816.95	0.78%	6.37	0.823%	6.72	(0.35)	17.70	(0.24)	20.76	(3.06)
2026	808.88	0.77%	6.23	0.823%	6.66	(0.43)	17.27	(0.25)	20.52	(3.24)
2027	800.58	0.77%	6.16	0.823%	6.59	(0.42)	16.85	(0.26)	20.25	(3.40)
2028	792.05	0.77%	6.10	0.823%	6.52	(0.42)	16.43	(0.28)	19.98	(3.55)
2029	783.28	0.77%	6.03	0.823%	6.45	(0.42)	16.01	(0.29)	19.68	(3.67)
2030	774.26	0.77%	5.96	0.823%	6.37	(0.41)	15.60	(0.31)	19.38	(3.77)
2031	764.88	0.77%	5.89	0.823%	6.29	(0.41)	15.20	(0.32)	19.06	(3.86)
2032	755.20	0.76%	5.74	0.823%	6.22	(0.48)	14.72	(0.33)	18.73	(4.01)
2033	745.20	0.76%	5.66	0.823%	6.13	(0.47)	14.25	(0.34)	18.39	(4.14)
2034	734.87	0.76%	5.59	0.823%	6.05	(0.46)	13.79	(0.35)	18.04	(4.25)
2035	724.19	0.76%	5.50	0.823%	5.96	(0.46)	13.33	(0.37)	17.67	(4.34)
2036	713.01	0.76%	5.42	0.823%	5.87	(0.45)	12.88	(0.38)	17.29	(4.41)
2037	701.44	0.75%	5.26	0.823%	5.77	(0.51)	12.37	(0.39)	16.90	(4.53)
2038	689.46	0.75%	5.17	0.823%	5.67	(0.50)	11.87	(0.40)	16.50	(4.64)
2039	677.06	0.75%	5.08	0.823%	5.57	(0.49)	11.37	(0.41)	16.10	(4.72)
2040	664.24	0.75%	4.98	0.823%	5.47	(0.48)	10.89	(0.42)	15.68	(4.79)
2041	650.85	0.75%	4.88	0.823%	5.36	(0.48)	10.41	(0.43)	15.25	(4.83)
2042	637.04	0.74%	4.71	0.823%	5.24	(0.53)	9.89	(0.44)	14.81	(4.92)
2043	622.81	0.74%	4.61	0.823%	5.13	(0.52)	9.37	(0.44)	14.37	(5.00)
2044	608.18	0.74%	4.50	0.823%	5.01	(0.50)	8.86	(0.45)	13.91	(5.05)
2045	593.15	0.74%	4.39	0.823%	4.88	(0.49)	8.37	(0.46)	13.45	(5.08)
2046	577.63	0.73%	4.22	0.823%	4.75	(0.54)	7.83	(0.47)	12.99	(5.15)
2047	561.77	0.73%	4.10	0.823%	4.62	(0.52)	7.31	(0.47)	12.52	(5.20)
2048	545.59	0.73%	3.98	0.823%	4.49	(0.51)	6.80	(0.48)	12.04	(5.23)
2049	529.13	0.73%	3.86	0.823%	4.35	(0.49)	6.31	(0.48)	11.56	(5.25)

MIPUG/MH II-13(a)
Case 1 2015 GRA, ELG - CGAAP ASL comparison
Assumes 20 year amortization of ELG-CGAAP ASL difference (starting in 1923)

Year	Cost	ELG Annual Rate	ELG Annual Expense	CGAAP ASL Annual Rate	CGAAP ASL Annual Expense	Annual ELG - ASL Deferral	Cumulative ELG - ASL Deferral	Annual (20 yr) Amortization ELG-ASL Difference	Cumulative Amortization ELG-ASL Deferral	Unamortized Balance ELG-ASL Difference
2050	512.40	0.73%	3.74	0.823%	4.22	(0.48)	5.84	(0.49)	11.07	(5.24)
2051	495.39	0.73%	3.62	0.823%	4.08	(0.46)	5.38	(0.49)	10.58	(5.21)
2052	478.22	0.72%	3.44	0.823%	3.94	(0.49)	4.88	(0.49)	10.09	(5.21)
2053	460.92	0.72%	3.32	0.823%	3.79	(0.47)	4.41	(0.49)	9.60	(5.19)
2054	443.53	0.72%	3.19	0.823%	3.65	(0.46)	3.95	(0.49)	9.11	(5.16)
2055	426.08	0.72%	3.07	0.823%	3.51	(0.44)	3.51	(0.49)	8.62	(5.10)
2056	408.63	0.72%	2.94	0.823%	3.36	(0.42)	3.09	(0.49)	8.13	(5.03)
2057	391.24	0.72%	2.82	0.823%	3.22	(0.40)	2.69	(0.49)	7.64	(4.95)
2058	373.94	0.71%	2.65	0.823%	3.08	(0.42)	2.27	(0.48)	7.15	(4.89)
2059	356.76	0.71%	2.53	0.823%	2.94	(0.40)	1.86	(0.48)	6.67	(4.81)
2060	339.74	0.71%	2.41	0.823%	2.80	(0.38)	1.48	(0.48)	6.20	(4.72)
2061	323.00	0.71%	2.29	0.823%	2.66	(0.36)	1.11	(0.47)	5.73	(4.61)
2062	306.52	0.71%	2.18	0.823%	2.52	(0.35)	0.77	(0.47)	5.26	(4.49)
2063	289.87	0.71%	1.25	0.823%	2.02	(0.77)	0.00	(0.46)	4.81	(4.81)
2064						-	0.00	(0.47)	4.34	(4.34)
2065						-	0.00	(0.44)	3.89	(3.89)
2066						-	0.00	(0.42)	3.48	(3.47)
2067						-	0.00	(0.39)	3.08	(3.08)
2068						-	0.00	(0.37)	2.72	(2.72)
2069						-	0.00	(0.34)	2.38	(2.38)
2070						-	0.00	(0.32)	2.06	(2.06)
2071						-	0.00	(0.29)	1.77	(1.77)
2072						-	0.00	(0.27)	1.50	(1.50)
2073						-	0.00	(0.24)	1.26	(1.26)
2074						-	0.00	(0.22)	1.04	(1.04)
2075						-	0.00	(0.20)	0.84	(0.84)
2076						-	0.00	(0.18)	0.66	(0.66)
2077						-	0.00	(0.15)	0.51	(0.51)
2078						-	0.00	(0.13)	0.37	(0.37)
2079						-	0.00	(0.11)	0.26	(0.26)
2080						-	0.00	(0.09)	0.17	(0.17)
2081						-	0.00	(0.07)	0.09	(0.09)
2082						-	0.00	(0.06)	0.04	(0.04)
2083						-	0.00	(0.04)	0.00	(0.00)
Total			**1 000.00**		**1 000.00**	**0.00**		**0.00**		

b) As discussed in the response to MIPUG/MH II-15a and b, the scope of the current rate application as outlined Order 70/17 is limited to a review of the recovery of the financial difference captured in the ELG-ASL regulatory deferral account. .

Manitoba Hydro interprets that sections (i), (ii), and (iii) of this question are intended to compare the use of the ELG method to the CGAAP ASL method for determining depreciation for rate setting purposes. Given that the nature of these questions are out of scope for this application, Manitoba Hydro respectfully declines to respond to this Information Request. Notably, a decision with respect to the use of the ELG or ASL method of depreciation for rate setting purposes is to be addressed at a future proceeding.

REFERENCE:

MIPUG/MH I-6h

PREAMBLE TO IR (IF ANY):

QUESTION:

a) Please explain the situation that would give rise to a "gain" on disposal. Would this imply an asset that lives longer than the expected life? Would this mean an asset that has a negative net book value? Does IFRS permit the overamortization of assets such that accumulated amortization on the asset exceeds the gross book value at retirement?
b) Does Hydro forecast any gains on retirement in the IFF16 horizon or recently occurred since switch to IFRS effective April 1, 2015? If so, please provide full details of the situation associated with the asset?

RATIONALE FOR QUESTION:

RESPONSE:

a) As described in the response to MIPUG/MH I-6e, for rate-setting purposes, Manitoba Hydro is continuing to defer gains and losses on the disposition of assets, consistent with the direction provided by the PUB in Order 73/15.

   For IFRS compliant financial reporting purposes, Manitoba Hydro uses the ELG method of group depreciation, in which depreciation is accumulated collectively for the pool of assets which make up each depreciable component. To determine the net gain or loss to report for a fiscal year, actual retirements are compared with expected retirements for each vintage year within each depreciable component, where the expected retirements are determined based on the IOWA curve and expected life for the component. Gains are recorded for vintage years in which fewer assets were retired than expected, and losses are recorded for vintage years in which more assets were retired than expected. The collective gains and losses resulting from this calculation are netted with any

proceeds received on the disposition of assets as well as the costs to remove the assets, to yield the total net gain or loss.

In situations where the entire pool of assets which make up a depreciable component has become fully depreciated, and accumulated depreciation for the pool of assets equals cost, depreciation for the entire component is stopped to prevent the component as a whole from becoming over-depreciated. This may occur near the end of life of a component. Manitoba Hydro's electric operation does not have any components in a fully depreciated state.

b) Please see the responses to MIPUG/MH II-7b and MIPUG/MH I-6e for an explanation as to why Manitoba Hydro does not forecast any gains or losses on retirement of assets.

REFERENCE:

MIPUG/MH I-6k

PREAMBLE TO IR (IF ANY):

QUESTION:

a) Is it Hydro's contention that the Board must ultimately accept the net effects of the higher cost ELG procedure for ratemaking (as compared to the application of the longstanding ASL procedure) due to the accounting standards imposed on Hydro, regardless as to the Board's own views on the durability and appropriateness of the longstanding ASL approach?
b) Does Hydro consider that the only decision available to the Board is how long to avoid the change to ELG, and how many years to amortize impacts from the years where the Board did not yet recognize ELG in rates (from IFRS implementation to 2023, or some other date)?

RATIONALE FOR QUESTION:

RESPONSE:

Response to parts a) and b):

It is not Manitoba Hydro's contention that the PUB must ultimately accept the ELG procedure for determining depreciation expense for ratemaking purposes. As indicated in the response to MIPUG/MH I-6i, Manitoba Hydro is continuing to use the CGAAP ASL method for rate-setting purposes until further direction is provided by the PUB at a future proceeding.

REFERENCE:

MIPUG/MH I-7e/f

PREAMBLE TO IR (IF ANY):

QUESTION:

a) Please confirm that MIPUG/MH I-7e shows all of the differences that exist comparing PUB MFR 73 and MIPUG MFR 5. If not, please provide a comprehensive list.
b) Please provide the scenario set out in MIPUG/MH I-7f as requested, except with no amortization of the ELG/ASL difference. Should Manitoba Hydro feel the scenario is not, in its view, meaningful, this can be noted this in the response, while still providing the requested calculations.

RATIONALE FOR QUESTION:

RESPONSE:

a) Confirmed, other than the annual rate increases in PUB MFR 73 were altered to those requested by the PUB.

b) As outlined in Manitoba Hydro's response to MIPUG/MH I-7f and MIPUG MFR 5 (page 3), amortization of regulatory deferral accounts in Other Comprehensive Income is not compliant with IFRS and as a result, the scenario requested has not been provided in this response. However, Manitoba Hydro has provided in the response to PUB/MH I-1d a scenario that charges the difference in depreciation expense between the ELG and CGAAP ASL methods to a regulatory deferral account, but does not amortize the difference. This scenario would have the equivalent impact to net income as the scenario requested in part (b).

REFERENCE:

MIPUG/MH-I-8b, Page 4 of 7

PREAMBLE TO IR (IF ANY):

QUESTION:

a) Would Manitoba Hydro agree that the purpose of its financial structure and regulatory framework (now and into the future) is not to "earn a return on its capital employed"?
b) Would Manitoba Hydro agree that the purpose of its financial structure and regulatory framework (now and into the future) is not to "attract long-term capital" at least in the form of share offerings, equity or market capitalization?

RATIONALE FOR QUESTION:

RESPONSE:

Response to parts a) and b):

Manitoba Hydro's purpose, financial requirements and regulatory framework are set out in legislation. Manitoba Hydro declines to provide its legal opinion with respect to the meaning and intent of the relevant legislative provisions.

REFERENCE:

MIPUG/MH-I-8b, Page 4 of 7

PREAMBLE TO IR (IF ANY):

QUESTION:

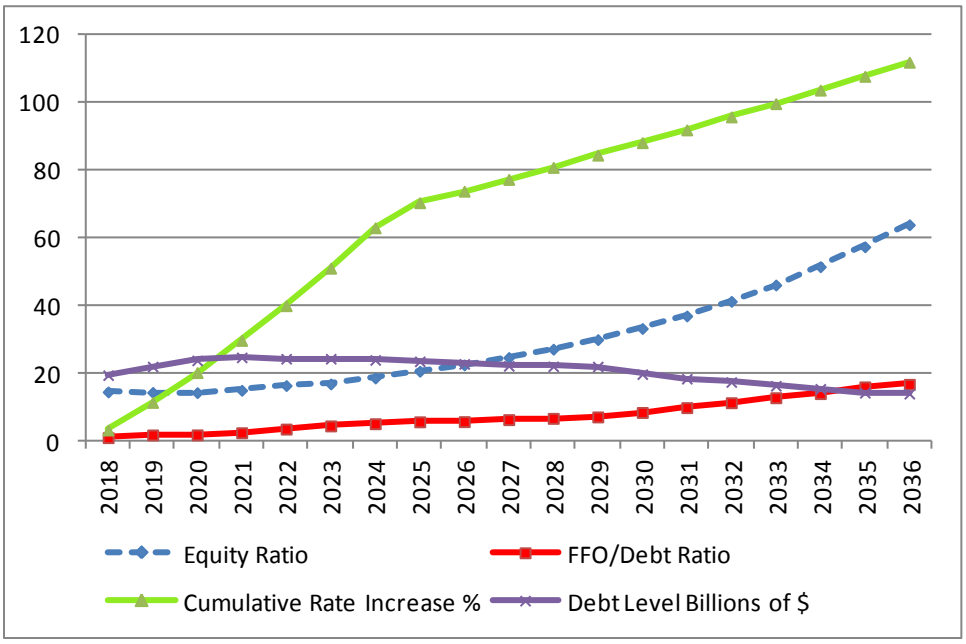
Per page 3 of 7, Focusing on FFO/Debt (and also Debt/EBITDA as needed) please provide Hydro's expectation in regards to future evolution of these values under MH16 Update for Interim and under PUB/MH I-1f (update with rate increases equal to IFF15) for each future year. Please also provide Hydro's calculation of each of the other values shown in Table 18 (page 3 of 7) for each future year under MH16 Update for Interim and PUB/MH I-1f.

RATIONALE FOR QUESTION:

RESPONSE:

It is Manitoba Hydro's understanding that the key credit metric used in S&P's determination of Manitoba Hydro as 'highly leveraged' is the FFO/Debt ratio. If Manitoba Hydro were to set a target for the FFO/Debt ratio with the goal of being considered self-supporting by S&P, the minimum target would be '9' as this is the threshold between 'highly leveraged' and 'aggressive' under medial volatility according to S&P.

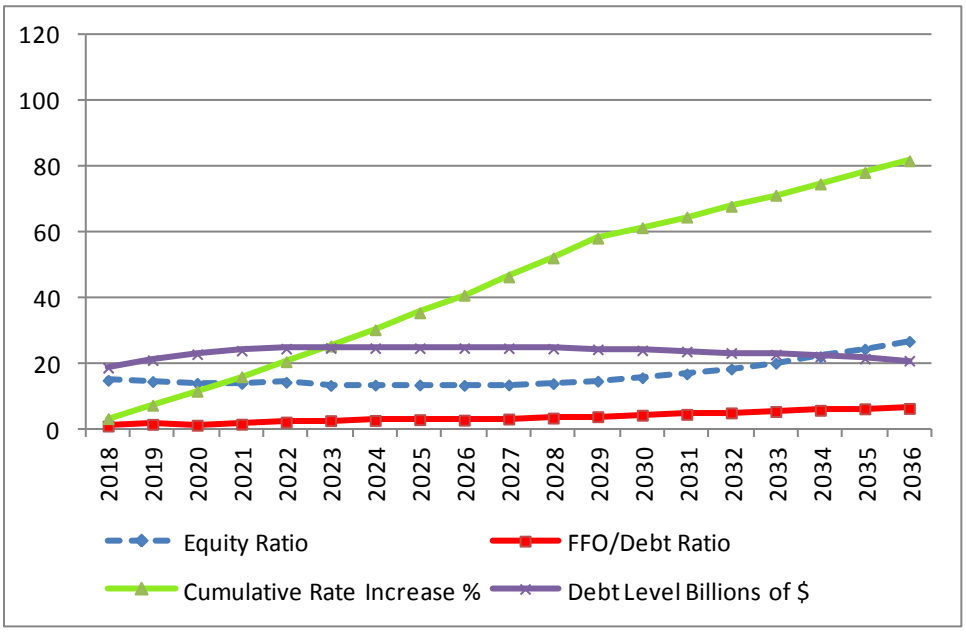
With respect to MH16 Update for Interim, based on the FFO/Debt ratio, Manitoba Hydro understands that it would be well over a decade away from not being considered highly leveraged by S&P. Manitoba Hydro is forecast to achieve a ratio that exceeds '9' in 2031. When the equity target of 25% is forecast to be reached in 2027, the FFO/Debt ratio is only 6.4. As such, Manitoba Hydro may not be considered investment grade by S&P despite the corporation's restored financial strength. The FFO/Debt ratio as seen in the following graph grows to 16.9 by 2036. It is not Manitoba Hydro's expectation to achieve such a ratio. As noted in MIPUG/MH II-2, Manitoba Hydro's financial plan is focused on restoring financial strength over 10 years. Forecasts beyond 2026/27 have been developing using a simplifying assumption of a 2% annual increase in rates as a proxy for inflation.



As indicated in PUB/MH II-21a, Manitoba Hydro's current focus is on the nearer term to recover the financial stability of the corporation within a 10 year timeframe. Given the greater forecast uncertainty, significantly less emphasis has been placed on the longer term forecast results at this time. As Manitoba Hydro progresses towards attaining its financial targets, the corporation will give consideration towards its future targets, financial plan and customer rate strategy based on the business outlook of the day. Adjusting future customer rates downward after 2027 will have the effect of:

- lowering the equity ratio as compared to MH16 Update for Interim, as less net income will be earned,
- increasing debt levels, as less cash will be available for debt repayment upon maturity and
- lowering the FFO/Debt ratio, as both the decrease in funds from operations and the increase in debt levels will drive the ratio down.

With respect to PUB/MH I-1f, Manitoba Hydro understands that it would be considered to be highly leveraged by S&P with respect to this ratio throughout the forecast period. The equity target of 25% is forecast to be reached in 2035, at which point, the FFO/ Debt ratio is 6.4. The FFO/Debt ratio, as seen in the following graph grows to 6.5 by 2036.



S&P last provided a Manitoba Hydro rating report in 2013. At that time, the ratio calculations included in the report were provided to Manitoba Hydro to review for accuracy. The calculation methodology provided in 2013 has been rolled forward to calculate the requested ratios from Table 18 for the forecast using both MH16 Update with Interim and PUB/MH I-1f. The following tables provide the requested ratio calculations.

MH16 Update with Interim

FFO/debt (%)

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Revenues	2,430	2,696	2,835	3,126	3,427	3,684	3,832	3,957	3,901	3,993	4,075	4,181	4,293	4,405	4,522	4,645	4,767	4,901	4,951
Cost of gas sold	(228)	(228)	(228)	(228)	(228)	(227)	(226)	(225)	(225)	(224)	(223)	(223)	(222)	(222)	(222)	(222)	(222)	(222)	(222)
Water rentals and assessments	(130)	(120)	(110)	(113)	(117)	(127)	(128)	(131)	(131)	(131)	(132)	(132)	(132)	(133)	(133)	(133)	(134)	(134)	(134)
Fuel and power purchased	(123)	(140)	(158)	(165)	(155)	(140)	(135)	(138)	(127)	(129)	(130)	(134)	(138)	(147)	(129)	(128)	(134)	(143)	(133)
Operating and administrative	(591)	(573)	(584)	(587)	(598)	(612)	(625)	(638)	(651)	(665)	(679)	(693)	(708)	(722)	(737)	(753)	(768)	(784)	(801)
Capital and other taxes	(149)	(162)	(172)	(179)	(184)	(193)	(194)	(195)	(195)	(196)	(198)	(199)	(200)	(201)	(203)	(204)	(206)	(208)	(215)
EBITDA	**1,209**	**1,474**	**1,583**	**1,854**	**2,144**	**2,385**	**2,524**	**2,630**	**2,572**	**2,648**	**2,713**	**2,801**	**2,894**	**2,980**	**3,099**	**3,204**	**3,303**	**3,410**	**3,446**
Pension adjustments:																			
Interest on obligation	68	70	72	73	74	76	77	79	81	82	84	86	87	89	91	93	94	96	98
Expected return on plan assets	(43)	(44)	(45)	(46)	(47)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Adjusted EBITDA	**1,234**	**1,500**	**1,610**	**1,882**	**2,172**	**2,413**	**2,554**	**2,659**	**2,602**	**2,679**	**2,745**	**2,833**	**2,926**	**3,013**	**3,133**	**3,239**	**3,338**	**3,446**	**3,483**
Finance expense	625	716	785	859	925	1,158	1,185	1,169	1,138	1,103	1,085	1,068	1,041	954	896	847	789	724	668
Capitalized interest	360	320	319	333	291	55	20	19	18	20	20	24	22	23	19	18	19	22	24
Pension adjustments:																			
Interest on obligation	68	70	72	73	74	76	77	79	81	82	84	86	87	89	91	93	94	96	98
Imputed return on plan assets	(46)	(44)	(44)	(44)	(44)	(44)	(44)	(44)	(44)	(44)	(45)	(45)	(45)	(45)	(46)	(46)	(46)	(47)	(47)
Adjusted interest expense	**1,007**	**1,063**	**1,131**	**1,221**	**1,246**	**1,246**	**1,238**	**1,222**	**1,193**	**1,161**	**1,145**	**1,133**	**1,105**	**1,021**	**960**	**912**	**856**	**795**	**743**
Adjusted EBITDA	1,234	1,500	1,610	1,882	2,172	2,413	2,554	2,659	2,602	2,679	2,745	2,833	2,926	3,013	3,133	3,239	3,338	3,446	3,483
Adjusted interest expense	(1,007)	(1,063)	(1,131)	(1,221)	(1,246)	(1,246)	(1,238)	(1,222)	(1,193)	(1,161)	(1,145)	(1,133)	(1,105)	(1,021)	(960)	(912)	(856)	(795)	(743)
Adjusted FFO	**227**	**437**	**479**	**661**	**926**	**1,167**	**1,316**	**1,437**	**1,409**	**1,518**	**1,600**	**1,700**	**1,821**	**1,992**	**2,172**	**2,327**	**2,482**	**2,651**	**2,740**
Long-term debt	18,559	21,773	22,626	23,441	23,287	24,142	23,650	22,937	21,726	22,178	22,120	19,683	15,470	16,300	15,273	15,529	14,802	14,471	14,325
Current portion	1,002	349	1,293	1,366	1,141	290	412	715	1,178	150	60	2,440	4,396	2,173	2,190	908	1,100	265	140
Net Pension and post-retirement deficit	678	726	775	826	877	929	983	1,037	1,093	1,149	1,207	1,266	1,326	1,387	1,450	1,513	1,578	1,645	1,712
Accrued interest	125	124	133	133	127	135	132	129	120	117	116	115	107	96	92	89	89	77	72
Adjusted debt	**20,363**	**22,972**	**24,827**	**25,766**	**25,431**	**25,495**	**25,176**	**24,817**	**24,116**	**23,594**	**23,503**	**23,504**	**21,298**	**19,956**	**19,005**	**18,040**	**17,570**	**16,458**	**16,249**
Adjusted FFO	227	437	479	661	926	1,167	1,316	1,437	1,409	1,518	1,600	1,700	1,821	1,992	2,172	2,327	2,482	2,651	2,740
Adjusted debt	20,363	22,972	24,827	25,766	25,431	25,495	25,176	24,817	24,116	23,594	23,503	23,504	21,298	19,956	19,005	18,040	17,570	16,458	16,249
FFO/debt (%)	**1.1%**	**1.9%**	**1.9%**	**2.6%**	**3.6%**	**4.6%**	**5.2%**	**5.8%**	**5.8%**	**6.4%**	**6.8%**	**7.2%**	**8.6%**	**10.0%**	**11.4%**	**12.9%**	**14.1%**	**16.1%**	**16.9%**

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FFO/debt (%)

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Revenues	2,430	2,634	2,700	2,914	3,127	3,288	3,328	3,415	3,384	3,503	3,616	3,757	3,856	3,954	4,055	4,161	4,265	4,381	4,412
Cost of gas sold	(228)	(228)	(228)	(228)	(228)	(227)	(226)	(225)	(225)	(224)	(223)	(223)	(222)	(222)	(222)	(222)	(222)	(222)	(222)
Water rentals and assessments	(130)	(120)	(110)	(113)	(117)	(127)	(128)	(131)	(131)	(131)	(132)	(132)	(132)	(133)	(133)	(133)	(134)	(134)	(134)
Fuel and power purchased	(123)	(140)	(158)	(165)	(155)	(140)	(135)	(138)	(127)	(129)	(130)	(134)	(138)	(147)	(129)	(128)	(134)	(143)	(133)
Operating and administrative	(591)	(573)	(584)	(587)	(598)	(612)	(625)	(638)	(651)	(665)	(679)	(693)	(708)	(722)	(737)	(753)	(768)	(784)	(801)
Capital and other taxes	(149)	(162)	(172)	(179)	(184)	(193)	(194)	(196)	(197)	(198)	(200)	(201)	(203)	(204)	(206)	(208)	(210)	(212)	(219)
EBITDA	**1,209**	**1,412**	**1,449**	**1,643**	**1,844**	**1,988**	**2,020**	**2,086**	**2,053**	**2,157**	**2,253**	**2,375**	**2,454**	**2,526**	**2,628**	**2,717**	**2,797**	**2,885**	**2,903**
Pension adjustments:																			
Interest on obligation	68	70	72	73	74	76	77	79	81	82	84	86	87	89	91	93	94	96	98
Expected return on plan assets	(43)	(44)	(45)	(46)	(47)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(55)	(56)	(57)	(58)	(59)	(60)	(61)
Adjusted EBITDA	**1,234**	**1,438**	**1,475**	**1,670**	**1,872**	**2,017**	**2,049**	**2,116**	**2,084**	**2,188**	**2,284**	**2,407**	**2,487**	**2,560**	**2,662**	**2,751**	**2,832**	**2,922**	**2,939**
Finance expense	625	717	789	871	948	1,200	1,247	1,249	1,247	1,262	1,267	1,261	1,247	1,261	1,246	1,244	1,230	1,204	1,174
Capitalized interest	360	320	319	333	291	55	20	19	18	20	20	24	22	23	19	18	19	22	24
Pension adjustments:																			
Interest on obligation	68	70	72	73	74	76	77	79	81	82	84	86	87	89	91	93	94	96	98
Imputed return on plan assets	(46)	(44)	(44)	(44)	(44)	(44)	(44)	(44)	(44)	(44)	(45)	(45)	(45)	(45)	(46)	(46)	(46)	(47)	(47)
Adjusted interest expense	**1,007**	**1,063**	**1,136**	**1,233**	**1,269**	**1,288**	**1,300**	**1,303**	**1,302**	**1,319**	**1,326**	**1,326**	**1,311**	**1,328**	**1,311**	**1,309**	**1,297**	**1,276**	**1,250**
Adjusted EBITDA	1,234	1,438	1,475	1,670	1,872	2,017	2,049	2,116	2,084	2,188	2,284	2,407	2,487	2,560	2,662	2,751	2,832	2,922	2,939
Adjusted interest expense	(1,007)	(1,063)	(1,136)	(1,233)	(1,269)	(1,288)	(1,300)	(1,303)	(1,302)	(1,319)	(1,326)	(1,326)	(1,311)	(1,328)	(1,311)	(1,309)	(1,297)	(1,276)	(1,250)
Adjusted FFO	**227**	**375**	**340**	**437**	**603**	**729**	**749**	**813**	**782**	**868**	**958**	**1,081**	**1,175**	**1,232**	**1,352**	**1,442**	**1,535**	**1,646**	**1,690**
Long-term debt	18,559	21,773	22,826	23,841	23,887	25,135	25,024	24,711	24,500	25,352	25,694	23,457	20,844	22,474	22,448	23,315	22,802	23,471	23,725
Current portion	1,002	349	1,293	1,366	1,141	290	412	715	1,178	150	60	2,440	4,396	2,373	2,390	1,096	1,487	665	540
Net Pension and post-retirement deficit	678	726	775	826	877	929	983	1,037	1,093	1,149	1,207	1,266	1,326	1,387	1,450	1,513	1,578	1,645	1,712
Accrued interest	125	125	134	137	136	148	150	150	145	146	152	155	147	144	143	141	139	136	130
Adjusted debt	**20,363**	**22,973**	**25,029**	**26,170**	**26,041**	**26,502**	**26,568**	**26,613**	**26,915**	**26,798**	**27,113**	**27,318**	**26,713**	**26,379**	**26,431**	**26,066**	**26,006**	**25,917**	**26,107**
Adjusted FFO	227	375	340	437	603	729	749	813	782	868	958	1,081	1,175	1,232	1,352	1,442	1,535	1,646	1,690
Adjusted debt	20,363	22,973	25,029	26,170	26,041	26,502	26,568	26,613	26,915	26,798	27,113	27,318	26,713	26,379	26,431	26,066	26,006	25,917	26,107
FFO/debt (%)	**1.1%**	**1.6%**	**1.4%**	**1.7%**	**2.3%**	**2.7%**	**2.8%**	**3.1%**	**2.9%**	**3.2%**	**3.5%**	**4.0%**	**4.4%**	**4.7%**	**5.1%**	**5.5%**	**5.9%**	**6.4%**	**6.5%**

MH16 Update with Interim

Debt/EBITDA (x)

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Adjusted debt	20,363	22,972	24,827	25,766	25,431	25,495	25,176	24,817	24,116	23,594	23,503	23,504	21,298	19,956	19,005	18,040	17,570	16,458	16,249
Adjusted EBITDA	1,234	1,500	1,610	1,882	2,172	2,413	2,554	2,659	2,602	2,679	2,745	2,833	2,926	3,013	3,133	3,239	3,338	3,446	3,483
Debt/EBITDA (x)	**16.5**	**15.3**	**15.4**	**13.7**	**11.7**	**10.6**	**9.9**	**9.3**	**9.3**	**8.8**	**8.6**	**8.3**	**7.3**	**6.6**	**6.1**	**5.6**	**5.3**	**4.8**	**4.7**

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Debt/EBITDA (x)

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Adjusted debt	20,363	22,973	25,029	26,170	26,041	26,502	26,568	26,613	26,915	26,798	27,113	27,318	26,713	26,379	26,431	26,066	26,006	25,917	26,107
Adjusted EBITDA	1,234	1,438	1,475	1,670	1,872	2,017	2,049	2,116	2,084	2,188	2,284	2,407	2,487	2,560	2,662	2,751	2,832	2,922	2,939
Debt/EBITDA (x)	**16.5**	**16.0**	**17.0**	**15.7**	**13.9**	**13.1**	**13.0**	**12.6**	**12.9**	**12.2**	**11.9**	**11.4**	**10.7**	**10.3**	**9.9**	**9.5**	**9.2**	**8.9**	**8.9**

MH16 Update with Interim

FFO/cash interest (x)

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Adjusted FFO	227	437	479	661	926	1,167	1,316	1,437	1,409	1,518	1,600	1,700	1,821	1,992	2,172	2,327	2,482	2,651	2,740
Adjusted interest expense	1,007	1,063	1,131	1,221	1,246	1,246	1,238	1,222	1,193	1,161	1,145	1,133	1,105	1,021	960	912	856	795	743
Adjusted FFO (2)	**1,234**	**1,500**	**1,610**	**1,882**	**2,172**	**2,413**	**2,554**	**2,659**	**2,602**	**2,679**	**2,745**	**2,833**	**2,926**	**3,013**	**3,133**	**3,239**	**3,338**	**3,446**	**3,483**
Interest paid	549	655	720	783	857	1,087	1,137	1,125	1,098	1,064	1,046	1,042	1,025	937	867	826	773	728	666
Capitalized interest	360	320	319	333	291	55	20	19	18	20	20	24	22	23	19	18	19	22	24
Cash interest	**909**	**975**	**1,039**	**1,117**	**1,147**	**1,142**	**1,156**	**1,144**	**1,116**	**1,084**	**1,067**	**1,066**	**1,047**	**960**	**886**	**845**	**792**	**750**	**690**
Adjusted FFO (2)	1,234	1,500	1,610	1,882	2,172	2,413	2,554	2,659	2,602	2,679	2,745	2,833	2,926	3,013	3,133	3,239	3,338	3,446	3,483
Cash interest	909	975	1,039	1,117	1,147	1,142	1,156	1,144	1,116	1,084	1,067	1,066	1,047	960	886	845	792	750	690
FFO/cash interest (x)	**1.4**	**1.5**	**1.5**	**1.7**	**1.9**	**2.1**	**2.2**	**2.3**	**2.3**	**2.5**	**2.6**	**2.7**	**2.8**	**3.1**	**3.5**	**3.8**	**4.2**	**4.6**	**5.1**

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FFO/cash interest (x)

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Adjusted FFO	227	375	340	437	603	729	749	813	782	868	958	1,081	1,175	1,232	1,352	1,442	1,535	1,646	1,690
Adjusted interest expense	1,007	1,063	1,136	1,233	1,269	1,288	1,300	1,303	1,302	1,319	1,326	1,326	1,311	1,328	1,311	1,309	1,297	1,276	1,250
Adjusted FFO (2)	**1,234**	**1,438**	**1,475**	**1,670**	**1,872**	**2,017**	**2,049**	**2,116**	**2,084**	**2,188**	**2,284**	**2,407**	**2,487**	**2,560**	**2,662**	**2,751**	**2,832**	**2,922**	**2,939**
Interest paid	549	655	724	792	875	1,125	1,194	1,203	1,204	1,218	1,223	1,234	1,232	1,234	1,214	1,226	1,213	1,199	1,178
Capitalized interest	360	320	319	333	291	55	20	19	18	20	20	24	22	23	19	18	19	22	24
Cash interest	**909**	**975**	**1,043**	**1,125**	**1,166**	**1,180**	**1,214**	**1,221**	**1,222**	**1,238**	**1,243**	**1,258**	**1,255**	**1,257**	**1,234**	**1,244**	**1,232**	**1,220**	**1,202**
Adjusted FFO (2)	1,234	1,438	1,475	1,670	1,872	2,017	2,049	2,116	2,084	2,188	2,284	2,407	2,487	2,560	2,662	2,751	2,832	2,922	2,939
Cash interest	909	975	1,043	1,125	1,166	1,180	1,214	1,221	1,222	1,238	1,243	1,258	1,255	1,257	1,234	1,244	1,232	1,220	1,202
FFO/cash interest (x)	**1.4**	**1.5**	**1.4**	**1.5**	**1.6**	**1.7**	**1.7**	**1.7**	**1.7**	**1.8**	**1.8**	**1.9**	**2.0**	**2.0**	**2.2**	**2.2**	**2.3**	**2.4**	**2.4**

MH16 Update with Interim

EBITDA/interest (x)

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Adjusted EBITDA	1,234	1,500	1,610	1,882	2,172	2,413	2,554	2,659	2,602	2,679	2,745	2,833	2,926	3,013	3,133	3,239	3,338	3,446	3,483
Adjusted interest expense	1,007	1,063	1,131	1,221	1,246	1,246	1,238	1,222	1,193	1,161	1,145	1,133	1,105	1,021	960	912	856	795	743
EBITDA/interest (x)	**1.2**	**1.4**	**1.4**	**1.5**	**1.7**	**1.9**	**2.1**	**2.2**	**2.2**	**2.3**	**2.4**	**2.5**	**2.6**	**3.0**	**3.3**	**3.6**	**3.9**	**4.3**	**4.7**

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EBITDA/interest (x)

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Adjusted EBITDA	1,234	1,438	1,475	1,670	1,872	2,017	2,049	2,116	2,084	2,188	2,284	2,407	2,487	2,560	2,662	2,751	2,832	2,922	2,939
Adjusted interest expense	1,007	1,063	1,136	1,233	1,269	1,288	1,300	1,303	1,302	1,319	1,326	1,326	1,311	1,328	1,311	1,309	1,297	1,276	1,250
EBITDA/interest (x)	**1.2**	**1.4**	**1.3**	**1.4**	**1.5**	**1.6**	**1.6**	**1.6**	**1.6**	**1.7**	**1.7**	**1.8**	**1.9**	**1.9**	**2.0**	**2.1**	**2.2**	**2.3**	**2.4**

MH16 Update with Interim

CFO/debt (%)

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Cash flow from operations	774	839	813	1,027	1,237	1,242	1,361	1,512	1,484	1,589	1,683	1,800	1,921	2,052	2,237	2,390	2,555	2,722	2,838
Capitalized interest	(360)	(320)	(319)	(333)	(291)	(55)	(20)	(19)	(18)	(20)	(20)	(24)	(22)	(23)	(19)	(18)	(19)	(22)	(24)
Pension adjustments:																			
Current service cost	(62)	(64)	(65)	(66)	(67)	(69)	(70)	(72)	(73)	(74)	(76)	(77)	(79)	(81)	(82)	(84)	(85)	(87)	(89)
Interest on obligation	(68)	(70)	(72)	(73)	(74)	(76)	(77)	(79)	(81)	(82)	(84)	(86)	(87)	(89)	(91)	(93)	(94)	(96)	(98)
Imputed return on plan assets	46	44	44	44	44	44	44	44	44	44	45	45	45	45	46	46	46	47	47
Total employer contributions	41	42	43	44	45	46	47	47	48	49	50	51	52	53	55	56	57	58	59
Adjusted cash flow from operations	**372**	**471**	**445**	**642**	**893**	**1,131**	**1,284**	**1,434**	**1,405**	**1,506**	**1,598**	**1,709**	**1,830**	**1,958**	**2,144**	**2,297**	**2,459**	**2,621**	**2,733**
Adjusted cash flow from operations	372	471	445	642	893	1,131	1,284	1,434	1,405	1,506	1,598	1,709	1,830	1,958	2,144	2,297	2,459	2,621	2,733
Adjusted debt	20,363	22,972	24,827	25,766	25,431	25,495	25,176	24,817	24,116	23,594	23,503	23,504	21,298	19,956	19,005	18,040	17,570	16,458	16,249
CFO/debt (%)	**1.8%**	**2.1%**	**1.8%**	**2.5%**	**3.5%**	**4.4%**	**5.1%**	**5.8%**	**5.8%**	**6.4%**	**6.8%**	**7.3%**	**8.6%**	**9.8%**	**11.3%**	**12.7%**	**14.0%**	**15.9%**	**16.8%**

PUB/MH I-1f

CFO/debt (%)

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Cash flow from operations	774	775	675	807	918	806	815	900	866	958	1,055	1,178	1,258	1,317	1,436	1,523	1,621	1,736	1,776
Capitalized interest	(360)	(320)	(319)	(333)	(291)	(55)	(20)	(19)	(18)	(20)	(20)	(24)	(22)	(23)	(19)	(18)	(19)	(22)	(24)
Pension adjustments:																			
Current service cost	(62)	(64)	(65)	(66)	(67)	(69)	(70)	(72)	(73)	(74)	(76)	(77)	(79)	(81)	(82)	(84)	(85)	(87)	(89)
Interest on obligation	(68)	(70)	(72)	(73)	(74)	(76)	(77)	(79)	(81)	(82)	(84)	(86)	(87)	(89)	(91)	(93)	(94)	(96)	(98)
Imputed return on plan assets	46	44	44	44	44	44	44	44	44	44	45	45	45	45	46	46	46	47	47
Total employer contributions	41	42	43	44	45	46	47	47	48	49	50	51	52	53	55	56	57	58	59
Adjusted cash flow from operations	**372**	**408**	**307**	**422**	**574**	**695**	**738**	**822**	**787**	**875**	**970**	**1,087**	**1,167**	**1,223**	**1,344**	**1,430**	**1,525**	**1,635**	**1,671**
Adjusted cash flow from operations	372	408	307	422	574	695	738	822	787	875	970	1,087	1,167	1,223	1,344	1,430	1,525	1,635	1,671
Adjusted debt	20,363	22,973	25,029	26,170	26,041	26,502	26,568	26,613	26,915	26,798	27,113	27,318	26,713	26,379	26,431	26,066	26,006	25,917	26,107
CFO/debt (%)	**1.8%**	**1.8%**	**1.2%**	**1.6%**	**2.2%**	**2.6%**	**2.8%**	**3.1%**	**2.9%**	**3.3%**	**3.6%**	**4.0%**	**4.4%**	**4.6%**	**5.1%**	**5.5%**	**5.9%**	**6.3%**	**6.4%**

MH16 Update with Interim

FOCF/debt (%)

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Capital expenditures	3,707	3,050	2,436	1,808	1,416	947	747	757	785	810	820	854	846	889	899	917	931	1,018	1,037
Capitalized interest	(360)	(320)	(319)	(333)	(291)	(55)	(20)	(19)	(18)	(20)	(20)	(24)	(22)	(23)	(19)	(18)	(19)	(22)	(24)
Adjusted capital expenditures	**3,347**	**2,730**	**2,117**	**1,475**	**1,125**	**892**	**727**	**738**	**767**	**790**	**800**	**830**	**824**	**866**	**880**	**898**	**912**	**996**	**1,013**
Adjusted cash flow from operations	372	471	445	642	893	1,131	1,284	1,434	1,405	1,506	1,598	1,709	1,830	1,958	2,144	2,297	2,459	2,621	2,733
Adjusted capital expenditures	(3,347)	(2,730)	(2,117)	(1,475)	(1,125)	(892)	(727)	(738)	(767)	(790)	(800)	(830)	(824)	(866)	(880)	(898)	(912)	(996)	(1,013)
Adjusted free operating cash flow	**(2,975)**	**(2,259)**	**(1,672)**	**(832)**	**(232)**	**239**	**556**	**696**	**638**	**716**	**798**	**879**	**1,007**	**1,092**	**1,265**	**1,399**	**1,547**	**1,625**	**1,720**
Adjusted free operating cash flow	(2,975)	(2,259)	(1,672)	(832)	(232)	239	556	696	638	716	798	879	1,007	1,092	1,265	1,399	1,547	1,625	1,720
Adjusted debt	20,363	22,972	24,827	25,766	25,431	25,495	25,176	24,817	24,116	23,594	23,503	23,504	21,298	19,956	19,005	18,040	17,570	16,458	16,249
FOCF/debt (%)	**-14.6%**	**-9.8%**	**-6.7%**	**-3.2%**	**-0.9%**	**0.9%**	**2.2%**	**2.8%**	**2.6%**	**3.0%**	**3.4%**	**3.7%**	**4.7%**	**5.5%**	**6.7%**	**7.8%**	**8.8%**	**9.9%**	**10.6%**

PUB/MH I-1f

FOCF/debt (%)

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Capital expenditures	3,707	3,050	2,436	1,807	1,415	947	767	777	805	830	840	874	866	909	919	937	951	1,038	1,057
Capitalized interest	(360)	(320)	(319)	(333)	(291)	(55)	(20)	(19)	(18)	(20)	(20)	(24)	(22)	(23)	(19)	(18)	(19)	(22)	(24)
Adjusted capital expenditures	**3,347**	**2,730**	**2,117**	**1,474**	**1,125**	**892**	**747**	**758**	**787**	**810**	**820**	**850**	**844**	**886**	**900**	**918**	**932**	**1,016**	**1,033**
Adjusted cash flow from operations	372	408	307	422	574	695	738	822	787	875	970	1,087	1,167	1,223	1,344	1,430	1,525	1,635	1,671
Adjusted capital expenditures	(3,347)	(2,730)	(2,117)	(1,474)	(1,125)	(892)	(747)	(758)	(787)	(810)	(820)	(850)	(844)	(886)	(900)	(918)	(932)	(1,016)	(1,033)
Adjusted free operating cash flow	**(2,975)**	**(2,322)**	**(1,810)**	**(1,052)**	**(551)**	**(197)**	**(9)**	**64**	**1**	**66**	**150**	**237**	**323**	**337**	**444**	**512**	**593**	**619**	**638**
Adjusted free operating cash flow	(2,975)	(2,322)	(1,810)	(1,052)	(551)	(197)	(9)	64	1	66	150	237	323	337	444	512	593	619	638
Adjusted debt	20,363	22,973	25,029	26,170	26,041	26,502	26,568	26,613	26,915	26,798	27,113	27,318	26,713	26,379	26,431	26,066	26,006	25,917	26,107
FOCF/debt (%)	**-14.6%**	**-10.1%**	**-7.2%**	**-4.0%**	**-2.1%**	**-0.7%**	**0.0%**	**0.2%**	**0.0%**	**0.2%**	**0.6%**	**0.9%**	**1.2%**	**1.3%**	**1.7%**	**2.0%**	**2.3%**	**2.4%**	**2.4%**

MH16 Update with Interim

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
DCF/debt (%)	**-14.6%**	**-9.8%**	**-6.7%**	**-3.2%**	**-0.9%**	**0.9%**	**2.2%**	**2.8%**	**2.6%**	**3.0%**	**3.4%**	**3.7%**	**4.7%**	**5.5%**	**6.7%**	**7.8%**	**8.8%**	**9.9%**	**10.6%**

(same as FOCF/debt (%) but adjusts for dividends)

PUB/MH I-1f

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
DCF/debt (%)	**-14.6%**	**-10.1%**	**-7.2%**	**-4.0%**	**-2.1%**	**-0.7%**	**0.0%**	**0.2%**	**0.0%**	**0.2%**	**0.6%**	**0.9%**	**1.2%**	**1.3%**	**1.7%**	**2.0%**	**2.3%**	**2.4%**	**2.4%**

(same as FOCF/debt (%) but adjusts for dividends)

REFERENCE:

MIPUG/MH-I-8b, Page 4 of 7

PREAMBLE TO IR (IF ANY):

QUESTION:

Is it Hydro's objective to be viewed as self-supporting by S&P under the current criteria? If so, what is Hydro's target date for such recognition?

RATIONALE FOR QUESTION:

RESPONSE:

No. It is not Manitoba Hydro's objective to be viewed as self-supporting under the S&P criteria.

Manitoba Hydro's near term objective is to be able to meet all of its financial obligations including debt service and capital reinvestment out of the revenues of the Corporation. This is the definition of "self-supporting" that the Corporation endorses. Manitoba Hydro's 10 year objective is to meet its target of 25% equity such that Manitoba Hydro's overall debt is kept at levels that promote both rate stability and long-run lower rates for its customers as compared to plans which defer addressing the Corporation's current financial condition.

fREFERENCE:

PUB/MH-I-139c and MIPUG/MH-I-23b

PREAMBLE TO IR (IF ANY):

QUESTION:

a) Please update the table in the response to MIPUG/MH-I-23b assuming the Bipole III deferral account is a direct offset to the costs of Bipole III, rather than a revenue applied equally to the classes.
b) Please confirm MIPUG/MH-I-23b includes the cost impacts of major new generation and transmission (e.g., Bipole III) but does not include the cost impacts of significant ongoing capital spending on distribution assets (nor are distribution cost changes directly functionalized to the distribution function in the values shown).

RATIONALE FOR QUESTION:

RESPONSE:

a) The following table shows the additional annual differentiation in class rate changes required to achieve a Revenue Cost Coverage ratio of unity in five years, after including the estimated impacts of Bipole III. The funding provided by amortization of the Bipole III Reserve Account has been used to directly offset the costs of Bipole III in this scenario.

	Estimated 2020 RCC with BPIII In Service	Annual Differentiation 5 Years
Residential	96.4%	0.88%
GSS Non Demand	114.9%	-3.23%
GSS Demand	101.2%	-0.28%
GSM	97.5%	0.62%

	Estimated 2020 RCC with BPIII In Service	Annual Differentiation 5 Years
GSL 0-30 kV	96.9%	0.80%
GSL 30-100 kV	104.5%	-1.11%
GSL >100 kV	102.6%	-0.67%
Area & Roadway Lighting	115.3%	-2.96%

b) Manitoba Hydro's responses to both MIPUG/MH I-23b and MIPUG/MH II-18a incorporate the incremental revenue requirement that can be specifically associated with major new generation and transmission projects. The balance of the forecast revenue requirement increases, including carrying costs related to ongoing capital spending on all assets, has been allocated proportionally between all functions including Distribution Plant. None of this residual revenue requirement has been specifically associated with distribution capital projects.

REFERENCE:

MIPUG/MH-I-13a

PREAMBLE TO IR (IF ANY):

QUESTION:

a) What caused the large 1999 term to maturity jump, from approximately 13 years to over 19 years?
b) Outside of the large borrowing program, please indicate the reasons and provide any studies in support of Hydro's decision to increase its Weighted Average Term to Maturity (WATM) starting in 2013. For example, did Hydro update the earlier National Bank Financial report (Appendix 13.3 to the 2010 GRA) or have other external reviews conducted of optimum borrowing strategy? If so, please provide any such report(s).
c) How does Hydro consider the reversion back to the traditional 12-14 year range for WATM to be a new strategy that is somehow dependent on rate increases and cost savings, if this same WATM has been the norm for most of the period since the early 1990s?

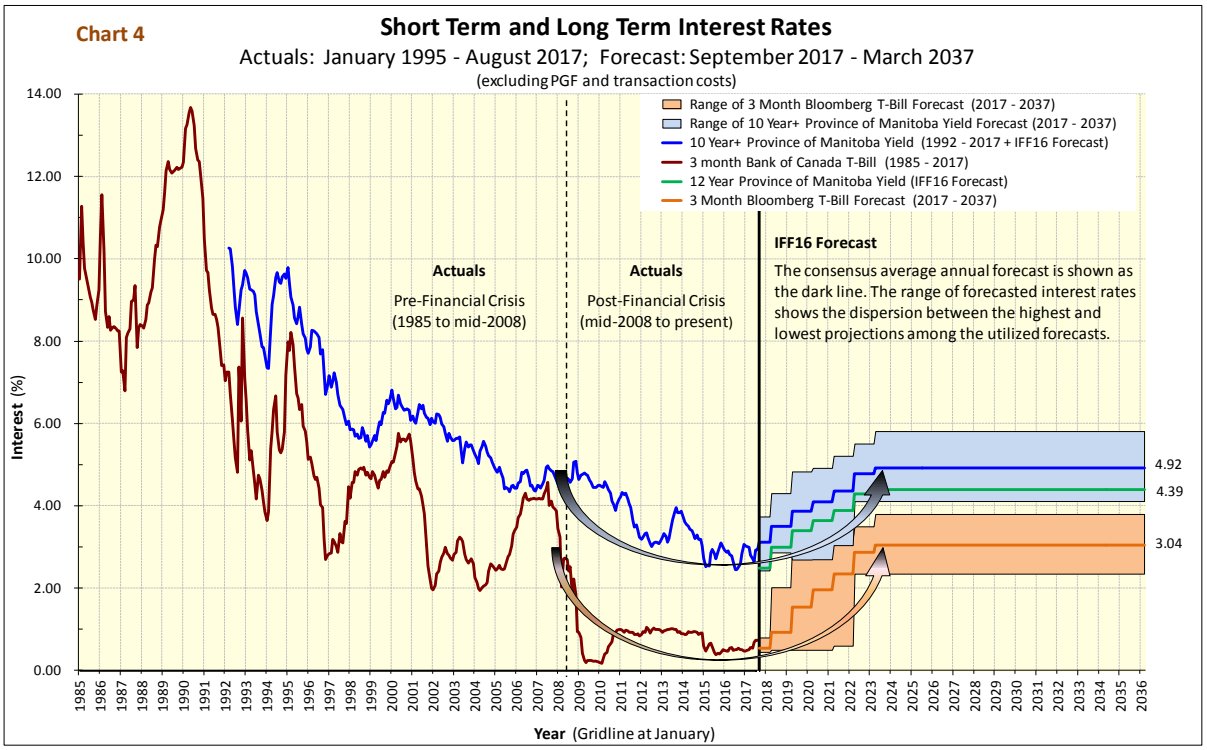
RATIONALE FOR QUESTION:

RESPONSE:

a) With respect to debt management strategies, understanding the interest rate environment which existed at the time is crucial in understanding the rationale for the strategies. To provide context, Manitoba Hydro will provide a brief history throughout the response.

   In 1990–91 sustained high inflation had contributed to a severe recession in Canada. In February 1991 inflation-reduction targets were adopted by the Bank of Canada and were successfully implemented. In the early 1990s large budget deficits, both at federal and provincial levels were causing a major economic problem. Public debt was accumulating at an unsustainable rate because of these deficits. Investors were nervous

about holding Canadian government bonds and as a result, significant risk premiums were built into interest rates. The following historical interest rate chart shows the history of the Province of Manitoba 10 year + borrowing rate as well as the 3 month Bank of Canada T-Bill rate.



Due to the high interest rate environment during the construction of Limestone, the debt issuance completed to fund the capital expenditures was done at shorter terms to maturity in order to keep borrowing costs down. After February 1991, when the inflation-reduction targets were successfully implemented and interest rates came down, Manitoba Hydro extended its WATM and still managed to reduce its weighted average interest rate (WAIR).

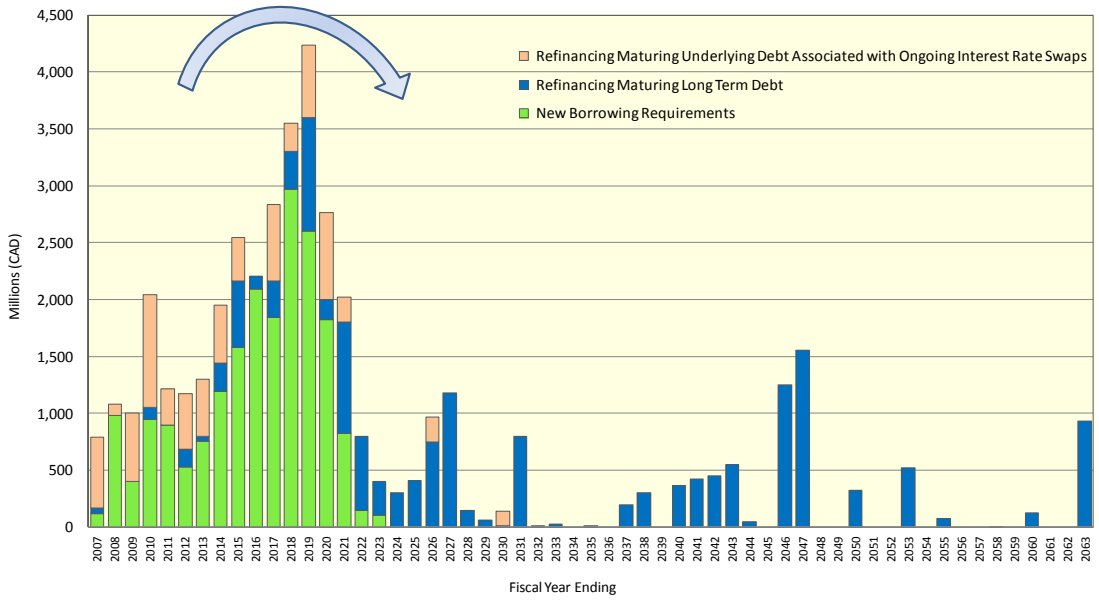
In the mid-1990s federal and provincial governments responded effectively to the need to cut fiscal deficits and slow down the accumulation of public sector debt. The reduction in deficits and the ensuing move to surpluses, together with the declining government debt levels, have helped to eliminate the risk premiums in interest rates

that were so costly in the early 1990s. As evidenced on the historical interest rate chart, the 10 year+ rate dropped from nearly 10% in 1995 to around 5.5% in 1999.

Forward interest rate swaps were used for the first time by Manitoba Hydro during the 1998/99 fiscal year with a goal of restructuring and reducing the cost of debt. The product allowed the Corporation to take advantage of what was then considered to be a low interest rate environment with a flat yield curve by locking in 30 year fixed rate financing on upcoming debt maturities in the existing debt portfolio. Manitoba Hydro executed eight forward interest rate swaps on $2.3 billion par value US and Canadian debt during the 1998/99 fiscal year. These swap agreements reduced the cost of long term debt from 8.90% (March 1998) to 8.39% (March 1999) (note the WAIR includes short term debt) and extended the WATM of the debt portfolio from 13.4 years (March 1998) to 19.2 years (March 1999).

b) The following chart from the Debt Management Strategy shows the actual long term debt financing activities that were undertaken from April 1, 2007 to March 31, 2017. The chart also depicts the existing long term debt maturities as at March 31, 2017 along with the forecasted new borrowing requirements.

Chart 12 **Manitoba Hydro Consolidated Borrowing Requirements & Maturity Schedule**
Phase 1 (2007 - 2015): Financial Crisis Response and Leapfrogging



Note 1: Actual financings and debt maturities as at March 31, 2017 with forecasted new borrowings thereafter.
Note 2: Manitoba Hydro will consider the availability of sinking fund withdrawals to reduce the required refinancing of maturing debt.

In preparation for the upcoming period of extensive capital investment, during Phase 1 Manitoba Hydro favoured long term fixed rate financings with maturities of 10 years and longer in order to mitigate the refinancing risk of debt maturities coinciding with the large financing program for new capital investment. This strategy was consistent throughout Phase 1 post-financial crisis with the WATM of new debt issuance each year being in the range of 17 to 28 years. This excludes refinancing of maturing underlying floating rate debt issues that were linked with previously executed interest rate swaps, as Manitoba Hydro includes the later of the debt or swap maturity date in the WATM. The swap usually has the later maturity date, so these financings do not impact the WATM. What did change throughout this phase was the volume of borrowing. For fiscal periods 2010-2013, average yearly borrowing for new debt was approximately $845 million per year. For the fiscal periods 2014 - 2017, average yearly borrowing for new debt was nearly $2 billion per year. The significant borrowing for the latter period increased the debt portfolio by nearly 65% from 2013 levels and drove the WATM of the portfolio up as well.

c) As noted in MIPUG/MH I-19a-b, PUB/MH I-28c, and page 8 of Tab 2, Manitoba Hydro's debt management strategy (inclusive of a target WATM) at any point in time will be a function of its then current corporate circumstances, income levels, outlook and the prevailing interest rate environment (e.g. shape of yield curve). Manitoba Hydro is in the midst of an unprecedented capital investment program that is almost entirely debt financed and that will virtually triple its total assets between 2007 and 2021. As noted in PUB/MH I-28c previous financial plans such as IFF14 and IFF15 featured either minimal or negative net income and cash flow both during the construction period and in the several years following completion of the capital program. As such, a prudent decision was undertaken to extend the WATM on new debt to approximately 20 years in order to reduce refinancing risk while Manitoba Hydro was forecast to be in a continued weakened financial state.

Comparing the Corporation's current target WATM to past levels is, at best, irrelevant given there is almost no relationship between the Corporation's current borrowing needs, refinancing needs, current income levels and debt levels with any precedent for Manitoba Hydro and while interest rates sit at levels not seen in over 80 years.

For illustration, Manitoba Hydro notes that from 1993/94 to 2010/11, Manitoba Hydro averaged consolidated net income of $171 million (excluding the 2003/04 drought) with average revenue of $1.6 billion and average year end long term debt of $6.5 billion. In contrast, since 2012, Manitoba Hydro has had average net income of $87 million on average revenue of $2.2 billion and with average year-end net debt of $12 billion. For the last two fiscal years (2015/16 and 2016/17) and, notwithstanding superb water conditions, generationally low interest rates and no negative impact to net income from the in-flight capital projects, Manitoba Hydro produced a consolidated net income that averaged $55 million on $2.3 billion of average revenue and with $15.1 billion of average long term debt at year end. In other words, the WATM that was the "norm for most of the period since the early 1990s" was in place at a time when Manitoba Hydro's net income was, in proportion to its debt, almost 6 times greater than from 2012 to 2017 and 7.3x greater than over the last two years. As compared to revenue, since 2012 the Corporation's profitability, as a percentage of revenue, has been 62% lower than during this same period where the 12-14 year WATM was the "norm" and, for the last two years in spite of excellent conditions, on a relative basis profitability is down 77% from the referenced "norm" years. A debt management strategy and WATM appropriate for these "norm" years is clearly going to be different from what Manitoba Hydro's outlook has been of late for the diminished profitability of its ongoing operations and the significant increase in its financial leverage.

Manitoba Hydro has already made very clear the linkage between rate increases, cost reduction, increased cash flow, a shortening of the WATM and debt retirement. As has been repeatedly noted in PUB/MH I-28a-c, page 12 and 20 of Manitoba Hydro's June 20, 2017 Written Submission on Interim Rates for August 1, 2017, page 8 of Tab 2, page 9-10 of Tab 3 and page 17 of Appendix 3.5, the strategy to shorten WATM is driven by the expectation of higher cash flows in the early years of the Corporation's financial plan as compared to prior financial plans such as IFF14 and IFF15. Those higher cash flows can be used to reduce new borrowings during its capital phase and retire debt in the 2023-27 timeframe. In order to cost effectively retire debt, Manitoba Hydro must issue bond maturities that coincide with expected cash flows. By creating a use for its cash flow (i.e. deleveraging), Manitoba Hydro is also able to capture a significant interest cost

savings by taking advantage of lower rates for shorter maturity debt. This savings was estimated at $500 million over the next 10 years under IFF16.

To achieve this, Manitoba Hydro must issue proportionally more of shorter term debt (i.e. three, five and 10 year maturities) than if it were targeting a 20 year WATM on new debt. Without the expectation of cash flow stemming from higher rates, lower operating costs and lower financing costs, issuing more shorter term debt would significantly increase the relative level of refinancing risk. Manitoba Hydro has been consistent throughout its application that without an expectation of cash flow, it would need to reconsider the prudence of shortening its WATM and elevating its refinancing risk for the sole purpose of short term interest savings.

REFERENCE:

MIPUG/MH-I-20e/f

PREAMBLE TO IR (IF ANY):

QUESTION:

a) With specific reference to the 2 noted IRs (MIPUG/MH-I-20e & f; or equivalent comparative scenarios) please indicate how the strategy of shortening the average term to maturity of new debt issuances is "dependent on achieving the revenues (i.e., rate increases)" set out in the Application (Tab 3 page 10). Show how a lower rate increase pathway is inconsistent with lowering the WATM.
b) Would debt repayment or refinancing not be possible with a different rate increase scenario than set out in the Application, if the 12 year weighted average term to maturity were adopted? Please provide specific reference to values in the noted IR response indicating how this approach is not possible or advisable.
c) Please confirm that the vast majority of the borrowings included in the columns "Potential 2018 - 2020 Terming" (at page 6 of 10 and 8 of 10) remain as a refinancing requirement regardless as to the rate increase scenario adopted.
d) With reference to MIPUG/MH-I-20h, please indicate how this scenario of 20 year average term for new debt becomes required in the event the PUB does not grant Hydro the increases at the level requested.

RATIONALE FOR QUESTION:

RESPONSE:

Response to parts a) and b)

Please see the response to PUB/MH II-17a and b.

c) While the "Potential 2018 - 2020 Terming" results in refinancing requirements under both scenarios, the refinancing resulting from this potential terming can be executed

such that maturity dates for this debt will align with years in which Manitoba Hydro expects to have cash available to retire the debt. The compounding effect of higher rate increases in MH16 Update with Interim (MIPUG/MH-I-20e) results in additional cash that can be made available for debt retirement. As indicated in PUB/MH II-17b, in the ten year period from 2023-2032, Manitoba Hydro has an additional $6.1 billion of cash available for debt retirement in MH16 Update with Interim as compared to MH16 with MH15 level rate increases.

d) The risk/reward tradeoff of the 12 year WATM strategy will need to be revisited in the event the PUB does not approve the level of rate increases requested by Manitoba Hydro. The proposed rate increases are the source of the majority of the increased cash flow Manitoba Hydro is proposing to use to reduce debt levels to less risky and more prudent levels. However, as indicated in PUB/MH II-17a and b, without the expectation of cash available for debt retirement as proposed in MH16 Update with Interim, a 12 year WATM terming strategy increases near term refinancing risk and could unduly pressure the Corporation's risk profile should other forecast risks also materialize. The Corporation would have to consider revising its debt management strategy to increase the WATM of new debt issuance (to somewhere between 12 and 20 years) in order to keep the balance of risks at a manageable level.

REFERENCE:

MIPUG/MH-I-11a-f

PREAMBLE TO IR (IF ANY):

QUESTION:

With specific reference to "Contact Centre - Outages" and "Marketing R&D" Hydro indicates that all classes uses these services, but does not provide information on relative use or importance. Please indicate why these costs are not allocated on the basis of customer counts more similar to billings.

RATIONALE FOR QUESTION:

RESPONSE:

"Marketing R&D" includes costs related to creating marketing plans, customer surveys, maintaining customer coding databases, and enhancing business development in the province. While these costs are notionally classified as Customer-related in the PCOSS, unlike customer billing costs, these costs do not vary with changes in customer count. The allocation methodology used in PCOSS18 is consistent with the approach recommended in the NARUC[1] manual (emphasis added).

> *Sales Expenses (Accounts 911 - 917)*
> *These accounts include the costs of exhibitions, displays, and advertising designed to promote utility service. These costs could be classified as customer-related, since the goal of demonstrations and advertising is to influence customers. Allocation of these costs, however, should be based upon some general allocation scheme, not numbers of customers. Although these costs are incurred to influence the usage decisions of customers, they cannot properly be said to vary with the number of customers. These costs should be either directly assigned to each customer class when data are available, or allocated based upon the overall revenue responsibility of each class.*

[1] *Electric Utility Cost Allocation Manual,* (NARUC, 1992), 103-104

Similarly the Contact Centre costs for outage calls does not bear the same direct relationship with customer count that exists between customer count and the number of bills issued. Since these costs are not expected to vary with changes in customer count, Manitoba Hydro has used class revenues as a general allocation mechanism for the costs.