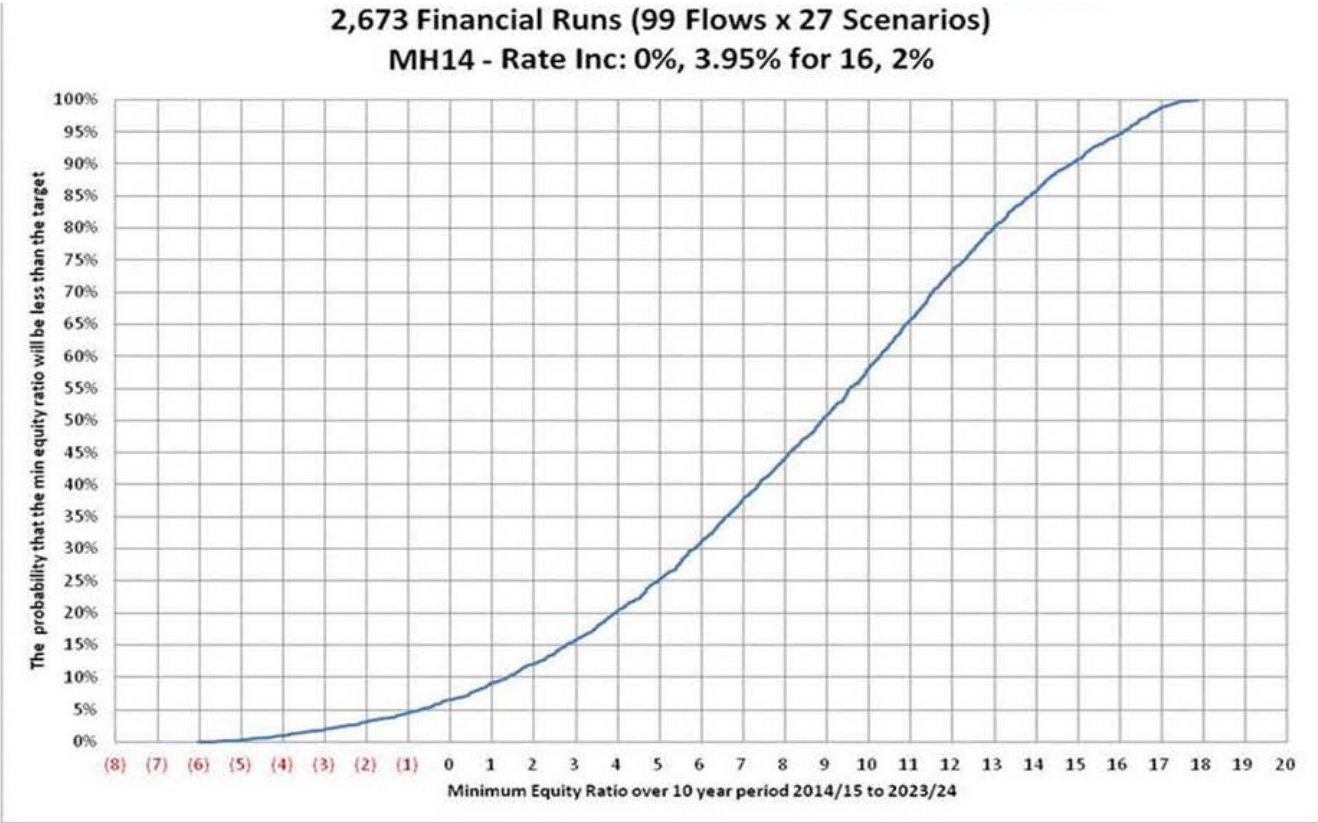
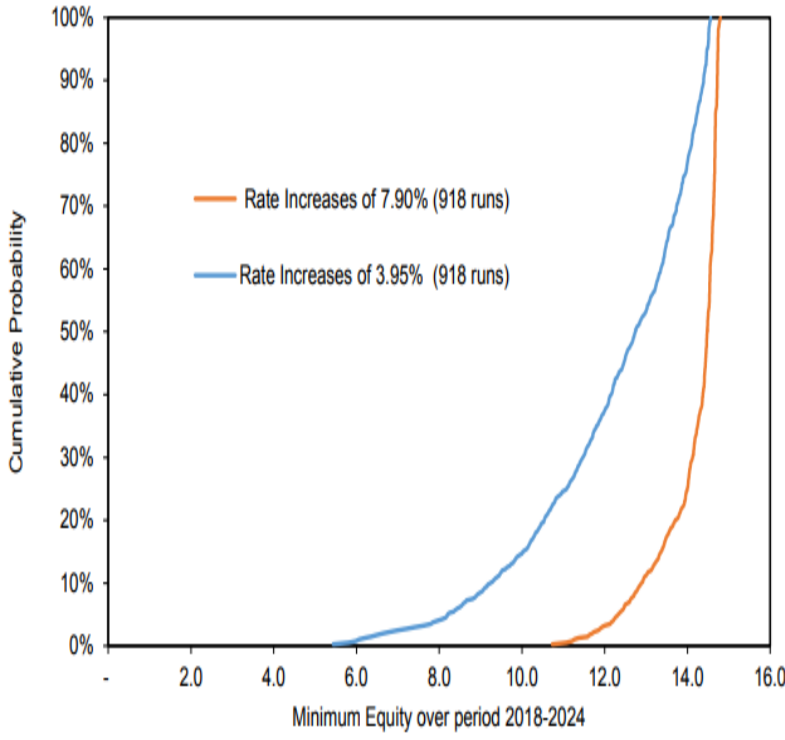


MIPUG Reference Materials for Bowman, Osler, Forrest, Jan 24, 2018

- 1) Uncertainty graphs from KPMG reports (Appendices 4.1 and 4.5)
- 2) Revenue Cost comparison (corrected) from MIPUG-13
- 3) PUB/MH-I-21 Government Charges
- 4) Exhibit MH-93. IFF Scenarios

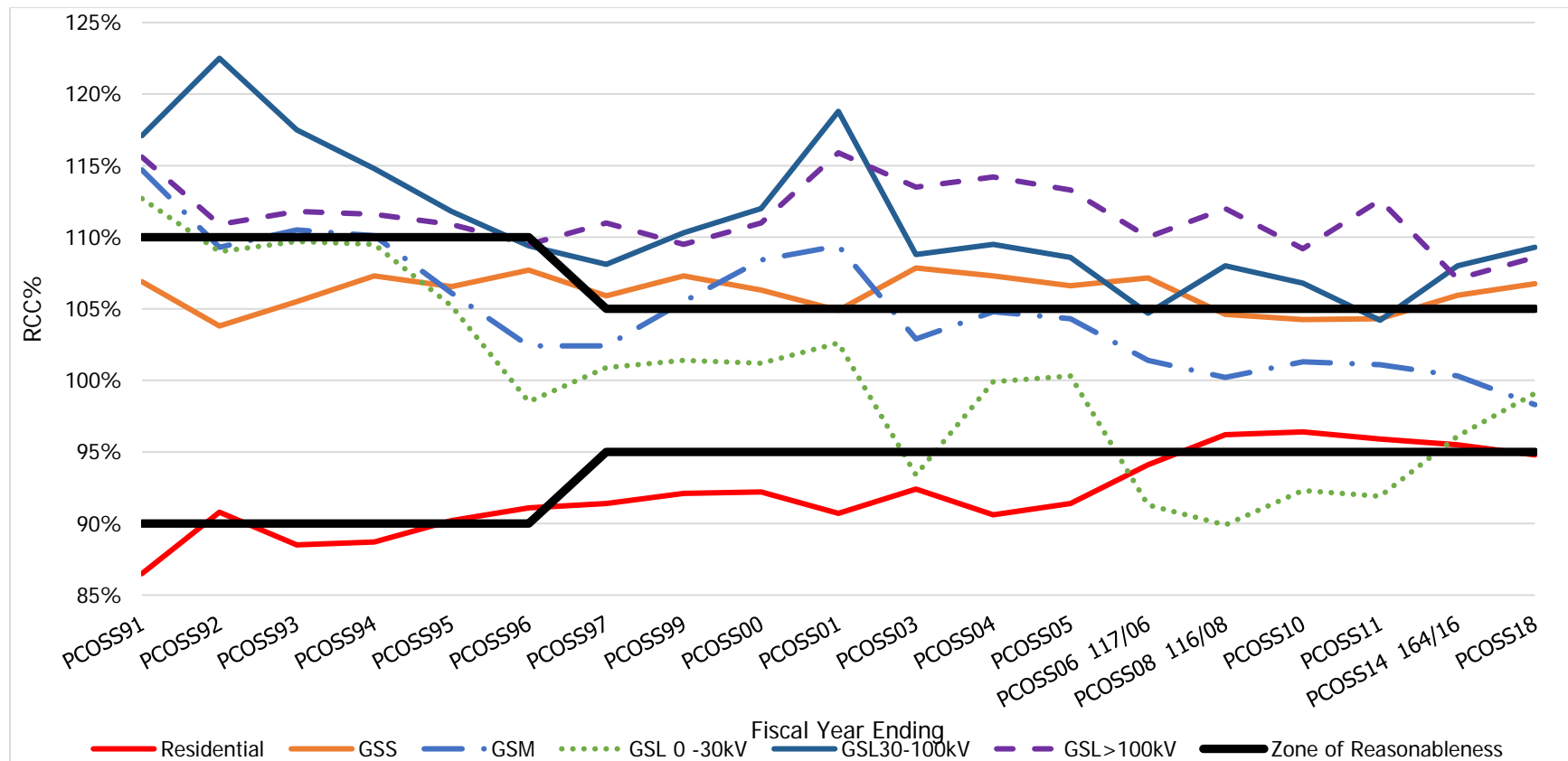
Uncertainty Perspective Minimum Equity Ratios over the Period to 2024 – MH14 compared to MH16 (with 3.95% and 7.9% rate increases) [Appendix 4.1, page 116 & Appendix 4.5, page 75]



Approximate Minimum Equity Ratio Reached Over the Interval to 2024 (%)	P01	P25	P50	P75	P99
MH14	- 6	5	9	12	18
MH16 with 3.95%	5	11	12	13	14
MH16 with 7.9%	11	14	14	14	14

Revenue to Cost Comparison Ratios

(MIPUG-13, pg. 7-13 - corrected)



**REFERENCE:**

MFR 45 and 46

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

Quantify all payments to Government included in the forecast, by year, for Keeyask (by component) and for Bipole III (by component) and also as a percentage of MH's gross revenues.

RATIONALE FOR QUESTION:**RESPONSE:**

The following tables quantify payments to the Government for the Keeyask and Bipole III projects. Please note the following assumptions:

- Water rental payments have been assigned based on the forecasted supply for the Keeyask Generating Station. No such payment is applicable to Bipole III.
- Manitoba Hydro issues debt based on the consolidated cash requirements of the Corporation and does not assign specific debt issues on a project-by-project basis. As such, the Provincial Guarantee Fee (PGF) attributable to a specific project is estimated for the purposes of this analysis by applying the 1% PGF to construction work in progress until the asset is in-service and the net book value (projected in-service cost net of accumulated depreciation) thereafter.
- Capital taxes are estimated by applying a fixed 0.5% capital tax rate to construction work in progress until the asset is in-service and the net book value thereafter. Similar to finance expense, the use of net book value as a proxy for paid up capital to estimate capital taxes may result in implied impacts to customers for each project that are not representative.



Manitoba Hydro 2017/18 & 2018/19 General Rate Application
PUB/MH I-21

KEEYASK PROJECT - PAYMENTS MADE TO PROVINCE OF MANITOBA
MILLIONS OF DOLLARS

FISCAL YR ENDING	WATER RENTALS	PGF	CAPITAL TAX	TOTAL PMTS TO GOVT	TOTAL ELECTRIC DOMESTIC REVENUE	GOVT PMTS AS A % OF TOTAL DOMESTIC REVENUE
2017	-	33	16	49	1 419	3.5%
2018	-	44	22	65	1 464	4.5%
2019	-	56	28	85	1 746	4.8%
2020	-	68	34	101	1 946	5.2%
2021	-	76	38	114	2 075	5.5%
2022	4	83	42	129	2 243	5.7%
2023	14	85	43	142	2 410	5.9%
2024	15	85	42	142	2 541	5.6%
2025	18	84	42	143	2 647	5.4%
2026	18	82	41	141	2 724	5.2%
2027	18	81	41	139	2 807	5.0%
2028	18	80	40	138	2 893	4.8%
2029	18	79	39	136	2 979	4.6%
2030	18	77	39	134	3 069	4.4%
2031	18	76	38	133	3 163	4.2%
2032	18	75	38	131	3 277	4.0%
2033	19	74	37	129	3 397	3.8%
2034	19	73	36	128	3 521	3.6%
2035	19	71	36	126	3 651	3.5%
2036	19	70	35	124	3 785	3.3%



BIPOLE III PROJECT - PAYMENTS MADE TO PROVINCE OF MANITOBA
MILLIONS OF DOLLARS

FISCAL YR ENDING	PGF	CAPITAL TAX	TOTAL PMTS TO GOVT	TOTAL	GOVT PMTS AS A
				ELECTRIC DOMESTIC REVENUE	% OF TOTAL DOMESTIC REVENUE
2017	32	16	48	1 419	3.4%
2018	43	22	65	1 464	4.4%
2019	49	25	74	1 746	4.2%
2020	49	25	74	1 946	3.8%
2021	49	24	73	2 075	3.5%
2022	48	24	73	2 243	3.2%
2023	48	24	72	2 410	3.0%
2024	47	24	71	2 541	2.8%
2025	46	23	69	2 647	2.6%
2026	45	23	68	2 724	2.5%
2027	44	22	66	2 807	2.3%
2028	43	21	64	2 893	2.2%
2029	42	21	63	2 979	2.1%
2030	41	20	61	3 069	2.0%
2031	40	20	60	3 163	1.9%
2032	39	19	58	3 277	1.8%
2033	38	19	56	3 397	1.7%
2034	37	18	55	3 521	1.6%
2035	35	18	53	3 651	1.5%
2036	34	17	52	3 785	1.4%



2017/18 & 2018/19 ELECTRIC GENERAL RATE APPLICATION

Follow-Up Questions to Manitoba Hydro Undertaking Nos. 7 & 8 from Counsel for MIPUG (email dated December 21, 2017)

On December 21, 2017, MIPUG requested the following:

1. Please provide the data values, by year, used to generate Undertaking 8.

2. Add a line (scenario) to Undertaking 8 (the 1990 base scenario) that is based on an IFF as follows (please provide the underlying IFF 6 page financial forecast scenario as well):
 - a) IFF16 Update with Interim assumptions, except where noted.
 - b) 12 year WATM
 - c) Overhead accruals at \$20M continue throughout, amortized at 30 year rate (consistent with PUB/MH-I-1(e))
 - d) Depreciation at ASL throughout, no amortization of difference with ELG.
 - e) Rate increases as necessary consistent with the approach in Coalition-MH-II-19 (i.e., equal annual increases to target 75:25 by 2035/36)
 - f) Make sure the graph goes out to 2035/36.
 - g) Please also provide the summary data for this scenario as per Undertaking #9 page 2 (i.e., max net debt, etc.)

Response:

Notwithstanding the concerns outlined below, Manitoba Hydro is providing the data values included in Undertaking No. 8 and the projected financial statements, including data values, reflecting the December 21, 2017 MIPUG Scenario.

As noted in the responses to PUB/MH II-21 and PUB/MH II-28, Manitoba Hydro's financial plan reflects a goal to return to its target 25% equity to capitalization ratio in 10 years and believes limited value should be ascribed to forecasts a decade or more in the future. The potential for volatility in key assumptions, many of which are beyond Manitoba Hydro's ability to control, reduces the second half of a 20 year forecast to little more than a hypothetical modeling exercise.

Manitoba Hydro maintains all the same concerns outlined in PUB/MHI-1d) and e) related to items c) and d) of MIPUG's request. Furthermore, the 12 Year WATM in Manitoba Hydro's debt management strategy is justifiable only if there is a reasonable expectation of sufficient cash flow to retire the repositioned debt. The sufficient cash flow stems from the path of higher rate increases in MH16 Update with Interim and not from the rate path included in the scenario requested by MIPUG and presented below.



The table below outlines the accounting treatment in MH16 Update with Interim, and the assumptions in part c) and d), of the MIPUG scenario.

	MH16 Update with Interim	MIPUG Scenario Dec 21/17
Ineligible Overhead		
Ineligible Overhead Annual Provision	\$20 million	\$20 million
Ineligible Overhead Amortization Period	20 years	30 years
Ineligible Overhead Deferral Until	2022/23	Indefinite
Equal Life Group (ELG)/Average Service Life (ASL)		
ELG/ASL Amortization Period	20 years	None
ELG/ASL Deferred Until	2022/23	Indefinite



ELECTRIC OPERATIONS
PROJECTED OPERATING STATEMENT
MIPUG Scenario December 21, 2017
(In Millions of Dollars)

For the year ended March 31

	ACTUAL										
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
REVENUES											
Domestic Revenue											
at approved rates	1 515	1 578	1 565	1 551	1 537	1 544	1 542	1 542	1 553	1 567	1 583
additional*	-	37	110	168	228	292	357	425	498	577	660
BPIII Reserve Account	(96)	(151)	3	79	79	79	79	26	-	-	-
Extraprovincial	460	514	469	420	567	693	779	788	805	667	671
Other	28	30	31	31	33	33	34	34	35	35	36
	<u>1 907</u>	<u>2 008</u>	<u>2 178</u>	<u>2 251</u>	<u>2 443</u>	<u>2 642</u>	<u>2 791</u>	<u>2 816</u>	<u>2 891</u>	<u>2 845</u>	<u>2 949</u>
EXPENSES											
Operating and Administrative	536	518	501	511	513	524	536	548	559	571	583
Finance Expense	608	587	677	749	831	907	1 159	1 205	1 213	1 211	1 226
Finance Income	(17)	(17)	(21)	(28)	(35)	(33)	(37)	(13)	(12)	(13)	(14)
Depreciation and Amortization	375	396	471	515	555	597	689	714	726	739	752
Water Rentals and Assessments	131	130	120	110	113	117	127	128	131	131	131
Fuel and Power Purchased	132	124	140	158	165	156	140	135	138	127	129
Capital and Other Taxes	119	132	145	154	161	166	174	175	176	177	177
Other Expenses	60	116	109	481	94	92	71	64	67	71	76
Corporate Allocation	8	8	8	8	8	8	8	8	8	8	8
	<u>1 952</u>	<u>1 995</u>	<u>2 150</u>	<u>2 660</u>	<u>2 406</u>	<u>2 533</u>	<u>2 869</u>	<u>2 965</u>	<u>3 006</u>	<u>3 022</u>	<u>3 069</u>
Net Income before Net Movement in Reg. Deferral	(46)	13	27	(409)	38	109	(78)	(149)	(115)	(177)	(120)
Net Movement in Regulatory Deferral	66	72	115	473	82	78	59	50	50	51	55
Non-recurring Gain	20	-	-	-	-	-	-	-	-	-	-
Net Income	<u>41</u>	<u>85</u>	<u>142</u>	<u>64</u>	<u>120</u>	<u>187</u>	<u>(19)</u>	<u>(99)</u>	<u>(66)</u>	<u>(126)</u>	<u>(65)</u>
Net Income Attributable to:											
Manitoba Hydro before Non-recurring Item	33	94	143	61	115	178	(29)	(111)	(69)	(128)	(68)
Non-recurring Gain	20	-	-	-	-	-	-	-	-	-	-
Manitoba Hydro	<u>53</u>	<u>94</u>	<u>143</u>	<u>61</u>	<u>115</u>	<u>178</u>	<u>(29)</u>	<u>(111)</u>	<u>(69)</u>	<u>(128)</u>	<u>(68)</u>
Non-controlling Interest	(12)	(8)	(1)	2	5	9	10	11	3	2	3
	<u>41</u>	<u>85</u>	<u>142</u>	<u>64</u>	<u>120</u>	<u>187</u>	<u>(19)</u>	<u>(99)</u>	<u>(66)</u>	<u>(126)</u>	<u>(65)</u>
* Additional Domestic Revenue											
Percent Increase		3.36%	3.57%	3.57%	3.57%	3.57%	3.57%	3.57%	3.57%	3.57%	3.57%
Cumulative Percent Increase		3.36%	7.05%	10.87%	14.82%	18.92%	23.16%	27.56%	32.11%	36.82%	41.70%
Financial Ratios											
Equity	16%	15%	14%	14%	13%	14%	13%	13%	12%	12%	12%
EBITDA Interest Coverage	1.51	1.54	1.64	1.58	1.62	1.69	1.58	1.52	1.57	1.53	1.58
Capital Coverage	1.53	1.40	1.35	1.18	1.41	1.64	1.33	1.27	1.24	1.12	1.20



ELECTRIC OPERATIONS
PROJECTED OPERATING STATEMENT
MIPUG Scenario December 21, 2017
(In Millions of Dollars)

For the year ended March 31

	2028	2029	2030	2031	2032	2033	2034	2035	2036
REVENUES									
Domestic Revenue at approved rates	1 599	1 614	1 630	1 647	1 673	1 701	1 729	1 757	1 786
additional*	747	839	936	1 038	1 152	1 273	1 401	1 538	1 682
BPIII Reserve Account	-	-	-	-	-	-	-	-	-
Extraprovincial	662	677	697	709	705	701	696	694	602
Other	36	37	38	38	39	40	40	40	41
	<u>3 045</u>	<u>3 167</u>	<u>3 301</u>	<u>3 433</u>	<u>3 569</u>	<u>3 714</u>	<u>3 866</u>	<u>4 029</u>	<u>4 111</u>
EXPENSES									
Operating and Administrative	595	607	620	633	646	660	674	688	702
Finance Expense	1 239	1 242	1 234	1 255	1 242	1 240	1 228	1 195	1 161
Finance Income	(16)	(21)	(19)	(15)	(16)	(17)	(22)	(23)	(25)
Depreciation and Amortization	765	776	790	805	822	840	857	872	888
Water Rentals and Assessments	132	132	132	133	133	133	134	134	134
Fuel and Power Purchased	131	134	138	147	129	128	134	143	133
Capital and Other Taxes	179	180	181	183	184	186	188	189	196
Other Expenses	79	84	87	87	89	91	92	95	96
Corporate Allocation	8	8	5	3	3	3	3	3	3
	<u>3 111</u>	<u>3 142</u>	<u>3 170</u>	<u>3 231</u>	<u>3 232</u>	<u>3 265</u>	<u>3 286</u>	<u>3 296</u>	<u>3 288</u>
Net Income before Net Movement in Reg. Deferral	(66)	25	131	202	337	449	580	733	823
Net Movement in Regulatory Deferral	57	61	67	69	72	75	76	76	75
Non-recurring Gain	-	-	-	-	-	-	-	-	-
Net Income	<u>(9)</u>	<u>86</u>	<u>197</u>	<u>271</u>	<u>409</u>	<u>525</u>	<u>655</u>	<u>809</u>	<u>899</u>
Net Income Attributable to:									
Manitoba Hydro before Non-recurring Item	(13)	81	190	261	398	512	641	793	883
Non-recurring Gain	-	-	-	-	-	-	-	-	-
Manitoba Hydro	<u>(13)</u>	<u>81</u>	<u>190</u>	<u>261</u>	<u>398</u>	<u>512</u>	<u>641</u>	<u>793</u>	<u>883</u>
Non-controlling Interest	4	5	8	10	11	13	14	15	16
	<u>(9)</u>	<u>86</u>	<u>197</u>	<u>271</u>	<u>409</u>	<u>525</u>	<u>655</u>	<u>809</u>	<u>899</u>
* Additional Domestic Revenue									
Percent Increase	3.57%	3.57%	3.57%	3.57%	3.57%	3.57%	3.57%	3.57%	3.57%
Cumulative Percent Increase	46.76%	52.00%	57.42%	63.04%	68.85%	74.88%	81.12%	87.58%	94.27%
Financial Ratios									
Equity	12%	12%	13%	14%	15%	17%	19%	22%	25%
EBITDA Interest Coverage	1.63	1.72	1.82	1.87	2.01	2.11	2.25	2.42	2.56
Capital Coverage	1.29	1.39	1.57	1.61	1.81	1.95	2.12	2.12	2.21



**ELECTRIC OPERATIONS
PROJECTED BALANCE SHEET
MIPUG Scenario December 21, 2017
(In Millions of Dollars)**

For the year ended March 31

	ACTUAL										
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
ASSETS											
Plant in Service	13 065	13 679	19 062	19 684	20 747	26 168	30 504	31 034	31 670	32 334	32 945
Accumulated Depreciation	(972)	(1 301)	(1 731)	(2 178)	(2 616)	(3 125)	(3 705)	(4 328)	(4 942)	(5 607)	(6 212)
Net Plant in Service	12 093	12 378	17 332	17 506	18 131	23 043	26 799	26 706	26 727	26 727	26 732
Construction in Progress	7 079	9 471	6 745	7 522	8 012	3 836	367	454	418	414	411
Current and Other Assets	1 773	1 915	2 199	2 477	2 505	1 928	1 682	1 681	1 628	1 770	1 744
Goodwill and Intangible Assets	327	541	782	926	1 348	1 302	1 256	1 211	1 167	1 123	1 081
Total Assets before Regulatory Deferral	21 272	24 305	27 057	28 431	29 997	30 109	30 103	30 051	29 940	30 035	29 969
Regulatory Deferral Balance	462	534	649	1 121	1 204	1 281	1 340	1 390	1 440	1 491	1 546
	21 733	24 839	27 706	29 552	31 200	31 390	31 443	31 442	31 380	31 526	31 515
LIABILITIES AND EQUITY											
Long-Term Debt	15 725	18 141	21 376	22 389	23 394	23 650	24 862	24 735	24 447	24 186	25 228
Current and Other Liabilities	3 204	3 643	3 047	3 816	4 359	4 147	3 027	3 184	3 468	3 993	2 998
Provisions	70	50	49	48	46	45	43	42	41	40	39
Deferred Revenue	450	465	491	520	542	551	561	571	582	593	603
BPIII Reserve Account	196	347	344	265	185	106	26	(0)	(0)	(0)	(0)
Retained Earnings	2 749	2 842	2 986	3 047	3 162	3 340	3 311	3 200	3 132	3 003	2 935
Accumulated Other Comprehensive Income	(709)	(699)	(636)	(580)	(537)	(497)	(437)	(339)	(338)	(337)	(337)
Total Liabilities and Equity before Regulatory Deferral	21 684	24 790	27 657	29 504	31 152	31 341	31 395	31 393	31 331	31 477	31 466
Regulatory Deferral Balance	49	49	49	49	49	49	49	49	49	49	49
	21 733	24 839	27 706	29 552	31 200	31 390	31 443	31 442	31 380	31 526	31 515
Net Debt	15 427	18 473	20 813	22 628	23 759	24 424	24 666	24 702	24 765	24 891	24 963
Total Equity	2 856	3 163	3 443	3 558	3 698	3 881	3 549	3 532	3 478	3 363	3 309
Equity Ratio	16%	15%	14%	14%	13%	14%	13%	13%	12%	12%	12%



**ELECTRIC OPERATIONS
PROJECTED BALANCE SHEET
MIPUG Scenario December 21, 2017
(In Millions of Dollars)**

For the year ended March 31

	2028	2029	2030	2031	2032	2033	2034	2035	2036
ASSETS									
Plant in Service	33 553	34 299	34 958	35 790	36 566	37 361	38 104	38 907	39 975
Accumulated Depreciation	(6 906)	(7 603)	(8 311)	(9 040)	(9 788)	(10 577)	(11 366)	(12 168)	(12 975)
Net Plant in Service	26 647	26 696	26 647	26 749	26 778	26 785	26 739	26 739	26 999
Construction in Progress	493	454	490	400	374	366	406	461	257
Current and Other Assets	2 012	2 450	2 194	2 054	2 443	2 521	3 066	3 434	4 183
Goodwill and Intangible Assets	1 040	1 001	962	924	885	848	810	773	736
Total Assets before Regulatory Deferral	30 192	30 601	30 294	30 127	30 480	30 519	31 020	31 407	32 175
Regulatory Deferral Balance	1 603	1 664	1 731	1 800	1 871	1 947	2 022	2 098	2 174
	31 795	32 265	32 025	31 927	32 351	32 465	33 043	33 505	34 349
LIABILITIES AND EQUITY									
Long-Term Debt	25 560	23 583	21 090	22 750	22 713	23 363	23 080	23 459	23 543
Current and Other Liabilities	2 949	5 307	7 361	5 332	5 386	4 329	4 539	3 819	3 685
Provisions	38	37	36	35	34	33	32	31	30
Deferred Revenue	615	624	634	644	654	665	676	687	699
BPIII Reserve Account	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Retained Earnings	2 922	3 002	3 192	3 453	3 851	4 363	5 004	5 798	6 680
Accumulated Other Comprehensive Income	(337)	(337)	(337)	(337)	(337)	(337)	(337)	(337)	(337)
Total Liabilities and Equity before Regulatory Deferral	31 747	32 216	31 976	31 878	32 302	32 417	32 994	33 456	34 300
Regulatory Deferral Balance	49	49	49	49	49	49	49	49	49
	31 795	32 265	32 025	31 927	32 351	32 465	33 043	33 505	34 349
Net Debt	24 971	24 899	24 713	24 476	24 091	23 592	22 950	22 221	21 403
Total Equity	3 310	3 396	3 594	3 863	4 269	4 789	5 439	6 242	7 134
Equity Ratio	12%	12%	13%	14%	15%	17%	19%	22%	25%



**ELECTRIC OPERATIONS
PROJECTED CASH FLOW STATEMENT
MIPUG Scenario December 21, 2017
(In Millions of Dollars)**

For the year ended March 31

	ACTUAL										
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
OPERATING ACTIVITIES											
Cash Receipts from Customers	1 901	2 152	2 164	2 160	2 352	2 550	2 699	2 777	2 878	2 833	2 936
Cash Paid to Suppliers and Employees	(555)	(892)	(843)	(870)	(885)	(894)	(904)	(916)	(934)	(934)	(948)
Interest Paid	(553)	(531)	(635)	(704)	(774)	(857)	(1 106)	(1 176)	(1 187)	(1 188)	(1 202)
Interest Received	17	5	11	22	26	19	6	4	6	5	7
	<u>810</u>	<u>734</u>	<u>697</u>	<u>608</u>	<u>718</u>	<u>817</u>	<u>695</u>	<u>690</u>	<u>763</u>	<u>715</u>	<u>792</u>
FINANCING ACTIVITIES											
Proceeds from Long-Term Debt	2 166	3 468	3 600	2 360	2 390	1 390	1 560	390	390	950	1 190
Sinking Fund Withdrawals	146	0	0	120	318	813	182	54	350	155	253
Sinking Fund Payment	(146)	(182)	(222)	(260)	(296)	(353)	(248)	(261)	(270)	(266)	(273)
Retirement of Long-Term Debt	(320)	(407)	(1 002)	(349)	(1 293)	(1 366)	(1 141)	(290)	(412)	(715)	(1 178)
Other	(5)	(10)	(10)	(11)	(11)	(11)	11	(5)	(5)	(5)	(5)
	<u>1 841</u>	<u>2 869</u>	<u>2 366</u>	<u>1 861</u>	<u>1 108</u>	<u>473</u>	<u>364</u>	<u>(111)</u>	<u>53</u>	<u>119</u>	<u>(13)</u>
INVESTING ACTIVITIES											
Property, Plant and Equipment, net of contributions	(2 925)	(3 659)	(3 002)	(2 391)	(1 760)	(1 368)	(898)	(720)	(724)	(752)	(776)
Other	(35)	(89)	(57)	(46)	(89)	(109)	(99)	(96)	(96)	(82)	(81)
	<u>(2 960)</u>	<u>(3 748)</u>	<u>(3 059)</u>	<u>(2 437)</u>	<u>(1 850)</u>	<u>(1 477)</u>	<u>(997)</u>	<u>(816)</u>	<u>(820)</u>	<u>(834)</u>	<u>(858)</u>
Net Increase (Decrease) in Cash	(309)	(146)	4	31	(23)	(187)	62	(237)	(3)	(0)	(78)
Cash at Beginning of Year	943	634	488	492	523	500	313	375	138	135	134
Cash at End of Year	634	488	492	523	500	313	375	138	135	134	56



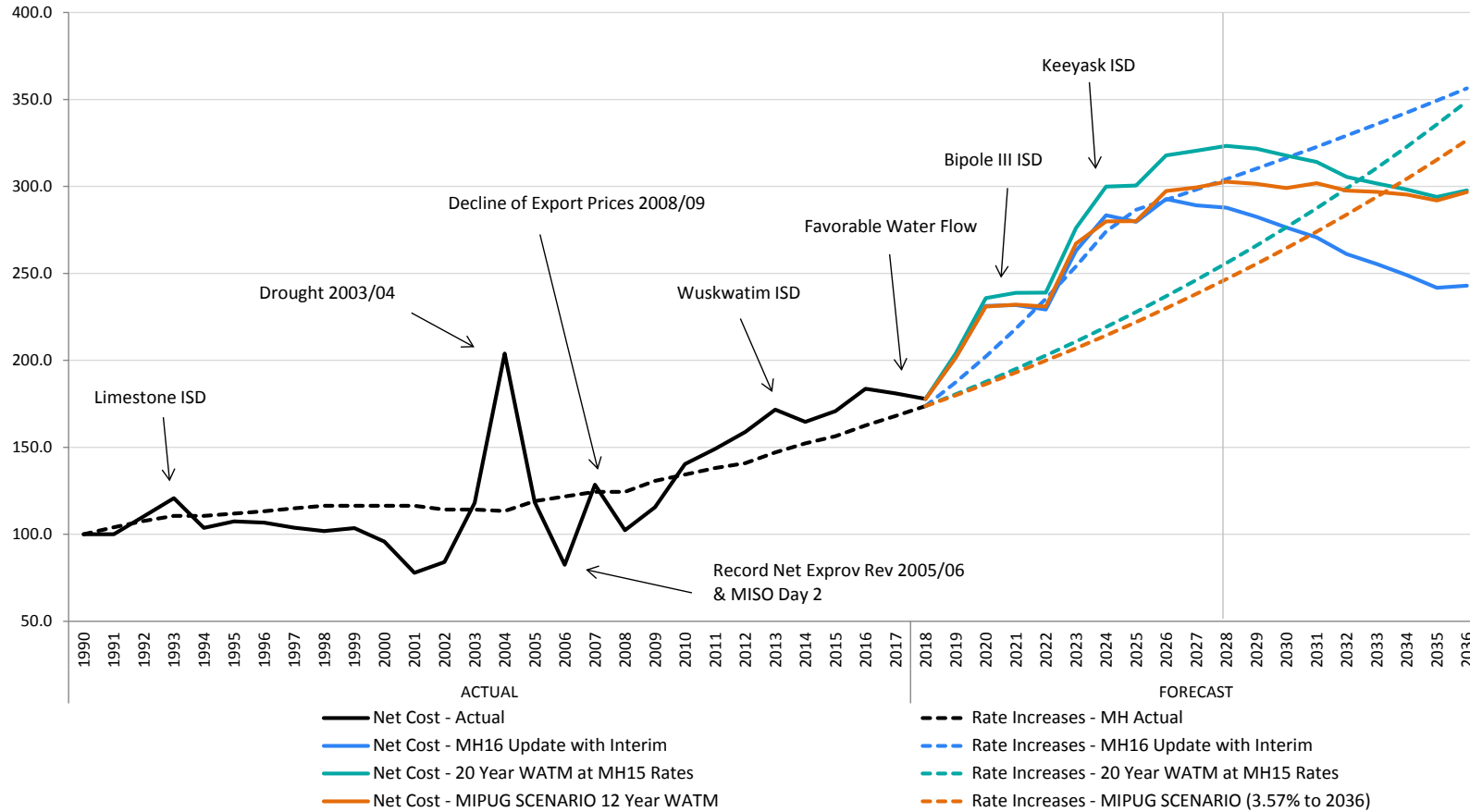
ELECTRIC OPERATIONS
PROJECTED CASH FLOW STATEMENT
MIPUG Scenario December 21, 2017
(In Millions of Dollars)

For the year ended March 31

	2028	2029	2030	2031	2032	2033	2034	2035	2036
OPERATING ACTIVITIES									
Cash Receipts from Customers	3 032	3 154	3 287	3 419	3 555	3 700	3 851	4 014	4 097
Cash Paid to Suppliers and Employees	(963)	(979)	(996)	(1 019)	(1 015)	(1 028)	(1 049)	(1 073)	(1 083)
Interest Paid	(1 216)	(1 232)	(1 239)	(1 246)	(1 226)	(1 237)	(1 224)	(1 210)	(1 175)
Interest Received	14	28	27	15	12	23	30	41	41
	867	972	1 079	1 169	1 326	1 458	1 609	1 773	1 880
FINANCING ACTIVITIES									
Proceeds from Long-Term Debt	390	390	1 970	3 990	2 350	1 940	1 160	1 100	570
Sinking Fund Withdrawals	150	60	510	540	0	230	51	10	463
Sinking Fund Payment	(274)	(282)	(291)	(278)	(266)	(276)	(274)	(282)	(289)
Retirement of Long-Term Debt	(150)	(60)	(2 440)	(4 396)	(2 373)	(2 390)	(1 284)	(1 487)	(665)
Other	(5)	(5)	(5)	(5)	(5)	(7)	(4)	(4)	(5)
	111	103	(256)	(149)	(294)	(503)	(351)	(663)	74
INVESTING ACTIVITIES									
Property, Plant and Equipment, net of contributions	(787)	(818)	(813)	(852)	(860)	(877)	(890)	(968)	(986)
Other	(80)	(74)	(72)	(73)	(72)	(71)	(70)	(68)	(67)
	(867)	(893)	(884)	(925)	(933)	(948)	(960)	(1 036)	(1 053)
Net Increase (Decrease) in Cash	111	182	(62)	96	99	7	298	75	901
Cash at Beginning of Year	56	167	348	287	383	482	489	787	862
Cash at End of Year	167	348	287	383	482	489	787	862	1 763



MH16 Update with Interim Rate Increases and Net Cost/ Domestic Load





MH16 Update with Interim														
Fiscal Year*	Rate Increase	Rate Increase Index	Total Expenses**	Winnipeg			Other Revenue***	Non-Controlling Interest	Net Movement	Net Cost	Domestic Load (GWh)	Net Cost/MWh	Net Cost/MWh Yr over Yr Increase	Net Cost Index
				Hydro Revenue	Extra-Provincial									
Millions of Dollars														
A B C D E F G H I=C-D-E-F-G-H J K=I/J*1000 L M														
Actual	1990		100	\$ 635	\$ 47	\$ 60	\$ 2	\$ -	\$ -	\$ 525	15 337	34		100
	1991	4.00%	104	650	50	67	4	-	-	529	15 447	34	0.1%	100
	1992	3.50%	108	735	54	97	3	-	-	582	15 397	38	10.2%	110
	1993	2.70%	111	843	53	143	3	-	-	644	15 577	41	9.5%	121
	1994	0.00%	111	851	53	232	3	-	-	564	15 870	36	-14.1%	104
	1995	1.20%	112	885	54	253	4	-	-	574	15 600	37	3.6%	107
	1996	1.20%	113	915	56	245	4	-	-	609	16 654	37	-0.7%	107
	1997	1.50%	115	922	50	268	5	-	-	599	16 851	36	-2.8%	104
	1998	1.30%	116	931	46	297	5	-	-	582	16 681	35	-1.8%	102
	1999	0.00%	116	982	48	326	7	-	-	600	16 929	35	1.6%	104
	2000	0.00%	116	976	42	376	11	-	-	547	16 696	33	-7.51%	96
	2001	0.00%	116	1 002	46	480	7	-	-	469	17 590	27	-18.7%	78
	2002	-1.92%	114	1 158	47	588	11	-	-	512	17 805	29	7.9%	84
	2003	0.00%	114	1 277	20	463	15	-	-	779	19 246	40	40.7%	118
	2004	-0.72%	113	1 715	-	351	18	-	-	1 346	19 280	70	72.6%	204
	2005	5.00%	119	1 370	-	554	15	-	-	801	19 735	41	-41.9%	119
	2006	2.25%	122	1 408	-	827	18	-	-	563	19 935	28	-30.4%	83
	2007	2.25%	124	1 511	-	592	16	-	-	902	20 510	44	55.7%	128
	2008	0.00%	124	1 370	-	625	8	-	-	738	21 061	35	-20.4%	102
	2009	5.00%	131	1 478	-	623	16	-	-	839	21 210	40	12.9%	116
	2010	2.84%	134	1 418	-	427	6	-	-	985	20 486	48	21.6%	140
	2011	2.80%	138	1 466	-	398	6	-	-	1 062	20 786	51	6.2%	149
	2012	2.00%	141	1 498	-	363	6	-	-	1 130	20 771	54	6.5%	159
	2013	4.40%	147	1 659	-	353	30	13	-	1 263	21 477	59	8.1%	172
	2014	3.50%	152	1 742	-	439	22	22	-	1 259	22 338	56	-4.1%	165
	2015	2.75%	156	1 779	-	384	30	11	41	1 313	22 458	58	3.7%	171
	2016	3.95%	163	1 892	-	415	31	10	74	1 362	21 654	63	7.5%	184
	2017	3.36%	168	1 952	-	460	48	12	66	1 365	22 025	62	-1.4%	181
Forecast	2018	3.36%	174	1 995	-	514	30	8	72	1 371	22 510	61	-1.8%	178
	2019	7.90%	187	2 150	-	469	31	1	114	1 535	22 224	69	13.4%	202
	2020	7.90%	202	2 655	-	420	31	(2)	464	1 741	21 977	79	14.7%	231
	2021	7.90%	218	2 392	-	567	33	(5)	71	1 726	21 750	79	0.2%	232
	2022	7.90%	235	2 507	-	693	33	(9)	64	1 725	21 971	79	-1.1%	229
	2023	7.90%	254	2 822	-	779	34	(10)	43	1 977	21 940	90	14.8%	263
	2024	7.90%	274	2 893	-	788	34	(11)	(48)	2 130	21 947	97	7.7%	283
	2025	4.54%	287	2 904	-	805	35	(3)	(50)	2 117	22 103	96	-1.3%	280
	2026	2.00%	292	2 887	-	667	35	(2)	(49)	2 236	22 303	100	4.6%	293
	2027	2.00%	298	2 889	-	671	36	(3)	(45)	2 231	22 531	99	-1.2%	289
	2028	2.00%	304	2 894	-	662	36	(4)	(44)	2 243	22 758	99	-0.5%	288
	2029	2.00%	310	2 892	-	677	37	(5)	(40)	2 223	22 976	97	-1.8%	283
	2030	2.00%	316	2 888	-	697	38	(8)	(35)	2 196	23 204	95	-2.2%	276
	2031	2.00%	323	2 878	-	709	38	(10)	(33)	2 173	23 443	93	-2.1%	271
	2032	2.00%	329	2 833	-	705	39	(11)	(31)	2 130	23 819	89	-3.5%	261
	2033	2.00%	336	2 818	-	701	40	(13)	(28)	2 118	24 216	87	-2.2%	255
	2034	2.00%	342	2 792	-	696	40	(14)	(28)	2 099	24 614	85	-2.5%	249
	2035	2.00%	349	2 762	-	694	40	(15)	(28)	2 071	25 024	83	-2.9%	242
	2036	2.00%	356	2 714	-	602	41	(16)	(30)	2 117	25 442	83	0.5%	243

* CGAAP 2000-2014, IFRS 2015-2027

** Includes Water Rentals & Assessments and Fuel and Power Purchased

***2017 includes \$20 million non-recurring gain



MH16 Update with Interim with 20 Year WATM and MH15 Rates														
Fiscal Year*	Rate Increase	Rate Increase Index	Winnipeg				Non-Controlling Interest	Net Movement	Net Cost	Domestic Load (GWh)	Net Cost/MWh	Net Cost/MWh Yr over Yr Increase	Net Cost Index	
			Total Expenses**	Hydro Revenue	Extra-Provincial	Other Revenue***								
Millions of Dollars														
A	B	C	D	E	F	G	H	I=C-D-E-F-G-H	J	K=I/J*1000	L	M		
Actual 1990		100	\$ 635	\$ 47	\$ 60	\$ 2	\$ -	\$ -	\$ 525	15 337	34		100	
1991	4.00%	104	650	50	67	4	-	-	529	15 447	34	0.1%	100	
1992	3.50%	108	735	54	97	3	-	-	582	15 397	38	10.2%	110	
1993	2.70%	111	843	53	143	3	-	-	644	15 577	41	9.5%	121	
1994	0.00%	111	851	53	232	3	-	-	564	15 870	36	-14.1%	104	
1995	1.20%	112	885	54	253	4	-	-	574	15 600	37	3.6%	107	
1996	1.20%	113	915	56	245	4	-	-	609	16 654	37	-0.7%	107	
1997	1.50%	115	922	50	268	5	-	-	599	16 851	36	-2.8%	104	
1998	1.30%	116	931	46	297	5	-	-	582	16 681	35	-1.8%	102	
1999	0.00%	116	982	48	326	7	-	-	600	16 929	35	1.6%	104	
2000	0.00%	116	976	42	376	11	-	-	547	16 696	33	-7.51%	96	
2001	0.00%	116	1 002	46	480	7	-	-	469	17 590	27	-18.7%	78	
2002	-1.92%	114	1 158	47	588	11	-	-	512	17 805	29	7.9%	84	
2003	0.00%	114	1 277	20	463	15	-	-	779	19 246	40	40.7%	118	
2004	-0.72%	113	1 715	-	351	18	-	-	1 346	19 280	70	72.6%	204	
2005	5.00%	119	1 370	-	554	15	-	-	801	19 735	41	-41.9%	119	
2006	2.25%	122	1 408	-	827	18	-	-	563	19 935	28	-30.4%	83	
2007	2.25%	124	1 511	-	592	16	-	-	902	20 510	44	55.7%	128	
2008	0.00%	124	1 370	-	625	8	-	-	738	21 061	35	-20.4%	102	
2009	5.00%	131	1 478	-	623	16	-	-	839	21 210	40	12.9%	116	
2010	2.84%	134	1 418	-	427	6	-	-	985	20 486	48	21.6%	140	
2011	2.80%	138	1 466	-	398	6	-	-	1 062	20 786	51	6.2%	149	
2012	2.00%	141	1 498	-	363	6	-	-	1 130	20 771	54	6.5%	159	
2013	4.40%	147	1 659	-	353	30	13	-	1 263	21 477	59	8.1%	172	
2014	3.50%	152	1 742	-	439	22	22	-	1 259	22 338	56	-4.1%	165	
2015	2.75%	156	1 779	-	384	30	11	41	1 313	22 458	58	3.7%	171	
2016	3.95%	163	1 892	-	415	31	10	74	1 362	21 654	63	7.5%	184	
2017	3.36%	168	1 952	-	460	48	12	66	1 365	22 025	62	-1.4%	181	
Forecast 2018	3.36%	174	1 998	-	514	30	8	72	1 374	22 510	61	-1.8%	178	
2019	3.95%	181	2 171	-	469	31	1	114	1 556	22 224	70	14.7%	204	
2020	3.95%	188	2 692	-	420	31	(2)	464	1 778	21 977	81	15.6%	236	
2021	3.95%	195	2 449	-	567	33	(5)	71	1 783	21 750	82	1.3%	239	
2022	3.95%	203	2 584	-	693	33	(9)	64	1 802	21 971	82	0.0%	239	
2023	3.95%	211	2 925	-	779	34	(10)	43	2 080	21 940	95	15.6%	276	
2024	3.95%	219	3 022	-	788	34	(11)	(48)	2 259	21 947	103	8.6%	300	
2025	3.95%	228	3 067	-	805	35	(3)	(50)	2 280	22 103	103	0.2%	301	
2026	3.95%	237	3 085	-	667	35	(2)	(49)	2 433	22 303	109	5.8%	318	
2027	3.95%	246	3 136	-	671	36	(3)	(45)	2 478	22 531	110	0.8%	320	
2028	3.95%	256	3 176	-	662	36	(4)	(44)	2 525	22 758	111	0.9%	323	
2029	3.95%	266	3 206	-	677	37	(6)	(40)	2 537	22 976	110	-0.5%	322	
2030	3.95%	277	3 223	-	697	38	(8)	(35)	2 531	23 204	109	-1.2%	318	
2031	3.95%	287	3 232	-	709	38	(10)	(33)	2 527	23 443	108	-1.1%	314	
2032	3.95%	299	3 199	-	705	39	(11)	(31)	2 497	23 819	105	-2.8%	305	
2033	3.95%	311	3 207	-	701	40	(13)	(28)	2 507	24 216	104	-1.2%	302	
2034	3.95%	323	3 213	-	696	40	(14)	(28)	2 519	24 614	102	-1.1%	298	
2035	3.95%	336	3 214	-	694	40	(16)	(28)	2 524	25 024	101	-1.4%	294	
2036	3.95%	349	3 197	-	602	41	(16)	(30)	2 600	25 442	102	1.3%	298	

* CGAAP 2000-2014, IFRS 2015-2027

** Includes Water Rentals & Assessments and Fuel and Power Purchased

***2017 includes \$20 million non-recurring gain



MIPUG DECEMBER 21, 2017 SCENARIO														
Fiscal Year*	Rate Increase	Rate Increase Index	Winnipeg				Non-Controlling Interest	Net Movement	Net Cost	Domestic Load (GWh)	Net Cost/MWh	Net Cost/MWh		Net Cost Index
			Total Expenses**	Hydro Revenue	Extra-Provincial	Other Revenue***						Yr over Yr Increase	Net Cost Index	
Millions of Dollars														
A	B	C	D	E	F	G	H	I=C-D-E-F-G-H	J	K=I/J*1000	L	M		
Actual 1990	0	100	\$ 635	\$ 47	\$ 60	\$ 2	\$ -	\$ -	\$ 525	15 337	34	0.0%	100	
1991	4.00%	104	650	50	67	4	-	-	529	15 447	34	0.1%	100	
1992	3.50%	108	735	54	97	3	-	-	582	15 397	38	10.2%	110	
1993	2.70%	111	843	53	143	3	-	-	644	15 577	41	9.5%	121	
1994	0.00%	111	851	53	232	3	-	-	564	15 870	36	-14.1%	104	
1995	1.20%	112	885	54	253	4	-	-	574	15 600	37	3.6%	107	
1996	1.20%	113	915	56	245	4	-	-	609	16 654	37	-0.7%	107	
1997	1.50%	115	922	50	268	5	-	-	599	16 851	36	-2.8%	104	
1998	1.30%	116	931	46	297	5	-	-	582	16 681	35	-1.8%	102	
1999	0.00%	116	982	48	326	7	-	-	600	16 929	35	1.6%	104	
2000	0.00%	116	976	42	376	11	-	-	547	16 696	33	-7.51%	96	
2001	0.00%	116	1 002	46	480	7	-	-	469	17 590	27	-18.7%	78	
2002	-1.92%	114	1 158	47	588	11	-	-	512	17 805	29	7.9%	84	
2003	0.00%	114	1 277	20	463	15	-	-	779	19 246	40	40.7%	118	
2004	-0.72%	113	1 715	-	351	18	-	-	1 346	19 280	70	72.6%	204	
2005	5.00%	119	1 370	-	554	15	-	-	801	19 735	41	-41.9%	119	
2006	2.25%	122	1 408	-	827	18	-	-	563	19 935	28	-30.4%	83	
2007	2.25%	124	1 511	-	592	16	-	-	902	20 510	44	55.7%	128	
2008	0.00%	124	1 370	-	625	8	-	-	738	21 061	35	-20.4%	102	
2009	5.00%	131	1 478	-	623	16	-	-	839	21 210	40	12.9%	116	
2010	2.84%	134	1 418	-	427	6	-	-	985	20 486	48	21.6%	140	
2011	2.80%	138	1 466	-	398	6	-	-	1 062	20 786	51	6.2%	149	
2012	2.00%	141	1 498	-	363	6	-	-	1 130	20 771	54	6.5%	159	
2013	4.40%	147	1 659	-	353	30	13	-	1 263	21 477	59	8.1%	172	
2014	3.50%	152	1 742	-	439	22	22	-	1 259	22 338	56	-4.1%	165	
2015	2.75%	156	1 779	-	384	30	11	41	1 313	22 458	58	3.7%	171	
2016	3.95%	163	1 892	-	415	31	10	74	1 362	21 654	63	7.5%	184	
2017	3.36%	168	1 952	-	460	48	12	66	1 365	22 025	62	-1.4%	181	
Forecast 2018	3.36%	174	1 995	-	514	30	8	72	1 370	22 510	61	-1.8%	178	
2019	3.57%	180	2 150	-	469	31	1	115	1 534	22 224	69	13.4%	202	
2020	3.57%	186	2 660	-	420	31	(2)	473	1 738	21 977	79	14.5%	231	
2021	3.57%	193	2 406	-	567	33	(5)	82	1 729	21 750	79	0.5%	232	
2022	3.57%	200	2 533	-	693	33	(9)	78	1 738	21 971	79	-0.5%	231	
2023	3.57%	207	2 869	-	779	34	(10)	59	2 007	21 940	91	15.7%	267	
2024	3.57%	214	2 965	-	788	34	(11)	50	2 104	21 947	96	4.8%	280	
2025	3.57%	222	3 006	-	805	35	(3)	50	2 120	22 103	96	0.0%	280	
2026	3.57%	230	3 022	-	667	35	(2)	51	2 271	22 303	102	6.2%	297	
2027	3.57%	238	3 069	-	671	36	(3)	55	2 311	22 531	103	0.7%	299	
2028	3.57%	247	3 111	-	662	36	(4)	57	2 359	22 758	104	1.1%	303	
2029	3.57%	255	3 142	-	677	37	(5)	61	2 373	22 976	103	-0.4%	302	
2030	3.57%	265	3 170	-	697	38	(8)	67	2 376	23 204	102	-0.8%	299	
2031	3.57%	274	3 231	-	709	38	(10)	69	2 424	23 443	103	0.9%	302	
2032	3.57%	284	3 232	-	705	39	(11)	72	2 427	23 819	102	-1.4%	298	
2033	3.57%	294	3 265	-	701	40	(13)	75	2 462	24 216	102	-0.2%	297	
2034	3.57%	304	3 286	-	696	40	(14)	76	2 489	24 614	101	-0.5%	295	
2035	3.57%	315	3 296	-	694	40	(15)	76	2 501	25 024	100	-1.2%	292	
2036	3.57%	327	3 288	-	602	41	(16)	75	2 585	25 442	102	1.7%	297	

* CGAAP 2000-2014, IFRS 2015-2027

** Includes Water Rentals & Assessments and Fuel and Power Purchased

***2017 includes \$20 million non-recurring gain

To note, in Appendix 1.6 in Manitoba Hydro's Rebuttal Evidence, 3.95% rate increases to 2035/36 results in a 27% equity ratio in that year. Targeting a 25% equity ratio in 2035/36 would yield even annual rate increases of 3.88%. The table below breaks down the impacts of MIPUG's accounting and debt terming assumptions to arrive at 3.57%.

Assumption	Scenario	Even Annual Rate Impact from 2018/19 - 2035/36	Even Annual Rate Increase from 2018/19 - 2035/36
Targeting 25% Equity in 2035/36	MH16 Update with Interim with 20 Year Debt		3.88%
MIPUG's Accounting Changes	MH16 Update with Interim with 20 Year Debt and MIPUG Scenario Ineligible Overhead and ELG/ASL Assumptions	- (0.16%)	3.72%
Debt Terming	MH16 Update with Interim with 12 Year Debt and MIPUG Scenario Ineligible Overhead and ELG/ASL Assumptions	- (0.15%)	3.57%



As requested, the summary data for the December 21, 2017 MIPUG Scenario has been added to the table shown on page 2 of Undertaking #9. The updated table is provided below.

	Long Term Rate Increase	25% Equity Ratio	Maximum Long-Term Debt	Minimum Equity	Negative Net Income	Retained Earnings at 2033/34	Maximum Net Debt
NFAT Plan 5 - High Keeyask Level 2 DSM	3.95% in 2014/15; 3.99% 2015/16 to 2031/32	2031/32	\$22.490 B in 2023/24	8% in 2021/22 - 2023/24	Total of \$638 M in 8 years during 2015/16 - 2022/23	\$6.659 B	\$21.606 B in 2022/23
MH14	3.95% 2015/16 to 2030/31	2033/34	\$24.476 B in 2028/29	10% in 2022/23 - 2026/27	Total of \$977 M in 8 years during 2018/19 - 2025/26	\$5.557 B	\$23.227 B in 2024/25
MH15	3.95% 2016/17 to 2028/29	2031/32	\$23.495 B in 2026/27	12% in 2021/22 - 2023/24	Total of \$58 M in 3 years during 2018/19 - 2022/23	\$7.402 B	\$22.589 B in 2021/22
Coalition/MH II-19 (Based on MH16 Update with Interim)	3.36% in 2017/18; 4.14% 2018/19 to 2033/34	2033/34	\$24.972 B in 2027/28	12% in 2025/26 - 2026/27	Total of \$347 M in 4 years during 2023/24 - 2026/27	\$6.385 B	\$24.506 B in 2022/23
Coalition/MH II-19 20 Year WATM (Based on MH16 Update with Interim)	3.36% in 2017/18; 4.34% 2018/19 to 2033/34	2033/34	\$25.315 B in 2028/29	11% in 2025/26 - 2026/27	Total of \$507 M in 5 years during 2022/23 - 2026/27	\$6.377 B	\$24.692 B in 2025/26
MIPUG Scenario December 21, 2017	3.36% in 2017/18; 3.57% 2018/19 to 2035/36	2035/36	\$25.560 B in 2027/28	12% in 2024/25 - 2028/29	Total of \$418 M in 6 years during 2022/23 - 2026/27	\$5.004 B	\$24.971 B in 2027/28