

MIPUG MFR 1

Financial Information

A copy of the Berkeley Research Group report as referred to in Manitoba Hydro's 2015 Financial Target Review Report, page 9 and Appendix B, pages 22-24 (available online: https://www.hydro.mb.ca/regulatory_affairs/pdf/electric/supplemental_filing_2015/08_attachment_6_mh_financial_target_review.pdf).

The Berkeley Research Group report has been provided as Appendix 4.3 to Tab 4 of this Application.

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Any updated Berkeley Research Group reports prepared for Manitoba Hydro for the purposes of making “use of available data of current futures and options prices to establish an appropriate range of interest rates emerging from the stochastic interest rate generator”.

The Berkeley Research Group has not prepared or issued an update to their original report for Manitoba Hydro.

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Provide the data and analysis relied upon by Manitoba Hydro of current futures and options prices to establish an appropriate range of interest rates emerging from the stochastic interest rate generator in the latest IFF (re: the Berkeley Research Group approach and methodology).

Manitoba Hydro relied on Berkeley Research Group's methodology for updating the range of interest rates emerging from the stochastic interest rate generator, which is outlined beginning on page 3 in Appendix 4.3 of Manitoba Hydro's 2017/18 & 2018/19 General Rate Application.

The daily three month Eurodollar Futures prices and implied volatility used were obtained through the Bloomberg Excel Add-in, formally known as Bloomberg API (Applications Program Interface), which enables Bloomberg data to be extracted directly to Excel. The following figure summarizes the data extracted and used in the model.

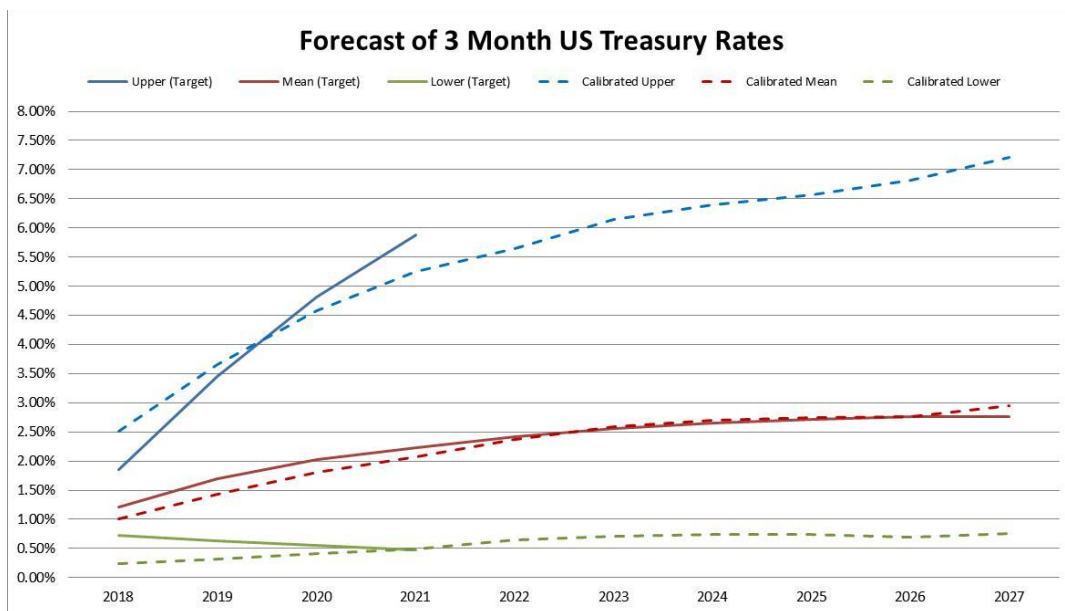
Figure 1. Prices & Implied Volatility Data

As of Dec 30, 2016

Maturity	Price	Volatility
1Q2017	98.96	22.78
2Q2017	98.80	22.90
3Q2017	98.65	25.21
4Q2017	98.48	28.37
1Q2018	98.36	31.61
2Q2018	98.24	33.81
3Q2018	98.13	35.69
4Q2018	98.00	36.40
1Q2019	97.91	37.21
2Q2019	97.83	37.79
3Q2019	97.76	38.37
4Q2019	97.68	38.23
1Q2020	97.63	39.26
2Q2020	97.57	38.70
3Q2020	97.53	38.69
4Q2020	97.47	38.58
1Q2021	97.43	39.19
2Q2021	97.38	
3Q2021	97.34	
4Q2021	97.29	
1Q2022	97.26	
2Q2022	97.22	
3Q2022	97.19	
4Q2022	97.15	
1Q2023	97.13	
2Q2023	97.10	
3Q2023	97.08	
4Q2023	97.05	
1Q2024	97.04	
2Q2024	97.02	
3Q2024	97.01	
4Q2024	96.98	
1Q2025	96.98	
2Q2025	96.97	
3Q2025	96.96	
4Q2025	96.93	

With the updated Eurodollar Futures prices and implied volatility in the model, the model was calibrated by iteratively adjusting two key model parameters (the mean reversion point for the long term rate and the volatility of the slope of the yield curve) to minimize the mean square error (the square of the difference between the means and standard deviations of the model output and the interest rate futures). The calibration produces results such that the forecast of the 3-month US T-bill rates closely matches the mean and spread of the Eurodollar forecast. The figure below summarizes the results of the calibration process. The solid lines represent the mean, upper and lower targets that are derived from the Eurodollar Futures prices and implied volatility and the dashed lines represent the mean, upper and lower bounds generated by the output of the calibrated model.

Figure 2. Forecast of 3 Month U.S. Treasury Rates



With the model calibrated, the USD interest rate time series forecasts were converted into CAD interest rate time series forecast using CAD and USD forward interest rates. More information on the conversion formula can be found on page 6 of Appendix 4.3 in the Application.

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Please provide the analysis and conclusions of all “quantitative and probabilistic risk assessment” conducted on the latest IFF, the form of the December 2015 Financial Targets Review, particularly an updated Figure 3-4, 3-5, 3-6, 4-1, 4-2, and 4-3.

Please see Tab 4 of Manitoba Hydro’s 2017/18 & 2018/19 General Rate Application for the most current version of the uncertainty analysis. Figures 4.10, 4.12, 4.13, 4.17, 4.18 and 4.20 of Tab 4 provide updates to Figures 3-4, 3-5, 3-6, 4-1, 4-2, and 4-3 from Manitoba Hydro’s December 2015 Financial Target Review, found as Appendix 4.2 of Tab 4.

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If different than Manitoba Hydro’s new Integrated Financial Forecast, provide electric operations-only IFF scenarios with the same accounting treatment as provided in response to Attachment 28 (Financial MFR 1 of the 2016/17 Interim Application (reflecting Board directives in Order 73/15 utilizing Average Service Life Depreciation and the continuation of the capitalization of \$20 million in OM&A).

The table below compares the accounting treatment reflecting Order 73/15 in MH16 and Attachment 28 from the 2016/17 Supplemental Filing:

	MH16	ATTACHMENT 28
INELIGIBLE OVERHEAD		
Ineligible Overhead Annual Provision	\$20 million	\$20 million
Ineligible Overhead Amortization Period	20 years	30 years
Ineligible Overhead Deferred Until	2022/23	Indefinite
EQUAL LIFE GROUP (ELG)/AVERAGE SERVICE LIFE (ASL)		
ELG/ASL Amortization Period	20 years	34 years (2.98%)
ELG/ASL Deferred Until	2022/23	Indefinite

Scenario 1

The financial statements provided below reflect MH16 updated for the same assumptions outlined above for Attachment 28 (“MH16 Scenario 1”), with the depreciation of the associated regulatory deferral account flowing through Net Movement. MH16 and MH16 Scenario 1 commence amortization of the regulatory deferral account midway through 2017/18.

Manitoba Hydro has observations and concerns with respect to MH16 Scenario 1 that are summarized below.

1. Without the proposed rate increases, Manitoba Hydro’s cash flow from operations is insufficient to fund its ongoing business requirements

The indefinite deferral and extended amortization periods of the depreciation and overhead impacts of IFRS reflected in MH16 Scenario 1 yield a \$1 billion growth in regulatory deferral

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accounts. This growth represents more than a doubling of the regulatory deferral account balances, with MH16 Scenario 1 having \$1.8 billion compared to MH16 having \$0.8 billion in regulatory deferral accounts by 2035/36. The \$1 billion growth in the regulatory deferral account balances result in no substantive change in Manitoba Hydro's financial ratios over the 20-year period despite higher net income and retained earnings levels. The debt to equity ratio target of 25% is still achieved in 2026/27 in both MH16 and MH16 Scenario 1 with immaterial changes to the EBITDA interest coverage and capital coverage ratios.

Notably, an improvement in net income does not necessarily equate to an improvement in cash flow which is key to sustaining and improving the financial strength of Manitoba Hydro. In fact, this scenario results in a net decrease in cash flows to the utility over the forecast as a result of additional capital taxes paid on larger asset balances in the future years of the forecast. As discussed in section 2.2 of Tab 2 of this Application, without the proposed and indicative rate increases, Manitoba Hydro is \$1.1 billion cash flow negative on its core operations for the next five years.

MH16 Scenario 1 does not change the need for the proposed and indicative rate increases, which allow a prospective level of income and cash flow that would begin restoring financial strength while also being capable of enduring drought or material negative deviations from forecast (export prices, interest rates) without requiring emergency relief from ratepayers.

2. Substantial growth in regulatory deferral accounts results in intergenerational inequity and poses a risk to rate stability for future ratepayers

MH16 Scenario 1 demonstrates that the indefinite deferral of customer cost recovery and the use of extended amortization periods (i.e. 30 years or more) to recognize the depreciation and overhead impacts of IFRS will result in \$1 billion growth in regulatory deferral accounts.

Manitoba Hydro is of the view that a \$1.8 billion regulatory deferral account balances reflect inter-generational inequity in that the burden of recovery of today's IFRS impacts is simply being pushed out to future rate payers. As previously indicated in Attachment 28 of Manitoba Hydro's 2016/17 Supplemental Filing, Manitoba Hydro's concerns are similar to those documented in the 2011 report published by the Office of The Auditor General of British Columbia titled, "*BC Hydro: The Effects of Rate-regulated Accounting*". At the time of

the report, BC Hydro's regulatory deferral account balances approximated \$2.2 billion. The concern of the BC Auditor General with respect to the extremely high regulatory deferral account balances was as follows:

p. 13 "While deferral accounts can be helpful in ensuring rate stability in the near term, over the long term significant costs deferred today may be unfairly passed on to future ratepayers who receive little or no benefit. This concept of a potential unequal matching of costs and benefits is known as intergenerational inequity."

There is also the risk that this approach of indefinite deferral and extended amortization could result in excessive regulatory account balances such that Manitoba Hydro's external auditors will become concerned over the ability of the utility to recover these amounts from ratepayers. Under such circumstances, the auditors may require the write-off of the regulatory deferral account balances to net income as the amounts no longer qualify for recognition as a regulatory deferral.

Scenario 2

Scenario 2 of Attachment 28 from the 2016/17 Supplemental Filing requested the presentation of amortization of these regulatory accounts through Other Comprehensive Income ("OCI") as opposed to net income. As documented in Attachment 28 from the 2016/17 Supplemental Filing and as discussed in Section 10.4.4 of Tab 10 of this Application, amortization of regulatory balances in OCI is not compliant with the regulatory accounting requirements of *IFRS 14 Regulatory Deferral Accounts* unless those accounts specifically relate to balances required to be recognized in OCI as required by other IFRS standards. In understanding the relationship between the authority of the regulator and the authority for the accounting of regulatory impacts, the regulator has the authority to influence the timing of when expenditures and revenues may be recognized in net income for rate setting purposes whereas the accounting standards (IFRS) have the authority over how the regulatory impacts are to be presented in the financial statements.

Given that the amortization of the deferred regulatory accounts in OCI is not compliant with IFRS, Scenario 2 has not been prepared.

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ELECTRIC OPERATIONS (MH16)
PROJECTED OPERATING STATEMENT
MH16 Scenario 1 (MIPUG MFR 5)
(In Millions of Dollars)

For the year ended March 31

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
REVENUES											
Domestic Revenue at approved rates	1 517	1 569	1 561	1 552	1 551	1 552	1 559	1 567	1 577	1 584	1 593
additional*	-	88	255	397	551	717	766	817	870	923	979
BPIII Reserve Account	(96)	(119)	9	71	71	71	71	24	-	-	-
Extraprovincial	468	454	432	455	578	696	795	818	844	707	714
Other	27	30	31	31	33	33	34	34	35	35	36
	<u>1 915</u>	<u>2 022</u>	<u>2 287</u>	<u>2 507</u>	<u>2 784</u>	<u>3 069</u>	<u>3 225</u>	<u>3 260</u>	<u>3 325</u>	<u>3 250</u>	<u>3 321</u>
EXPENSES											
Operating and Administrative	535	518	501	511	513	524	536	548	559	571	583
Finance Expense	613	574	662	721	774	829	1 049	1 072	1 057	1 033	999
Finance Income	(18)	(16)	(20)	(27)	(27)	(32)	(38)	(17)	(21)	(22)	(17)
Depreciation and Amortization	384	396	471	515	554	597	689	714	725	739	751
Water Rentals and Assessments	131	124	112	113	114	117	127	128	131	131	131
Fuel and Power Purchased	130	135	166	146	162	149	140	138	141	128	129
Capital and Other Taxes	118	132	145	154	161	165	174	174	175	175	176
Other Expenses	60	115	109	481	94	92	71	64	67	71	76
Corporate Allocation	8	8	8	8	8	8	8	8	8	8	8
	<u>1 962</u>	<u>1 987</u>	<u>2 153</u>	<u>2 623</u>	<u>2 354</u>	<u>2 449</u>	<u>2 755</u>	<u>2 829</u>	<u>2 842</u>	<u>2 833</u>	<u>2 835</u>
Net Income before Net Movement in Reg. Deferral	(47)	35	134	(116)	430	620	469	431	483	416	486
Net Movement in Regulatory Deferral	69	69	111	467	76	69	50	39	37	36	38
Net Income	<u>22</u>	<u>104</u>	<u>245</u>	<u>351</u>	<u>506</u>	<u>689</u>	<u>519</u>	<u>470</u>	<u>520</u>	<u>452</u>	<u>524</u>
Net Income Attributable to:											
Manitoba Hydro	34	112	246	349	501	681	510	459	517	451	521
Non-controlling Interest	(12)	(9)	(1)	2	5	8	9	11	3	2	3
* Additional Domestic Revenue											
Percent Increase	0.00%	7.90%	7.90%	7.90%	7.90%	7.90%	2.00%	2.00%	2.00%	2.00%	2.00%
Cumulative Percent Increase	0.00%	7.90%	16.42%	25.62%	35.55%	46.25%	49.18%	52.16%	55.21%	58.31%	61.48%
Financial Ratios											
Equity	15%	15%	14%	15%	16%	18%	19%	21%	22%	24%	26%
EBITDA Interest Coverage	1.50	1.57	1.76	1.88	2.01	2.21	2.15	2.13	2.22	2.20	2.32
Capital Coverage	1.08	1.31	1.49	1.69	2.11	2.60	2.33	2.30	2.17	2.00	2.09

Manitoba Hydro 2017/18 & 2018/19 General Rate Application
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ELECTRIC OPERATIONS (MH16)
PROJECTED OPERATING STATEMENT
MH16 Scenario 1 (MIPUG MFR 5)
(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	1 608	1 623	1 639	1 667	1 698	1 730	1 762	1 796
additional*	1 034	1 093	1 158	1 225	1 304	1 389	1 478	1 571	1 669
BPIII Reserve Account	-	-	-	-	-	-	-	-	-
Extraprovincial	708	721	733	744	745	743	739	732	654
Other	36	37	38	38	39	40	40	40	41
	<u>3 378</u>	<u>3 458</u>	<u>3 551</u>	<u>3 647</u>	<u>3 756</u>	<u>3 869</u>	<u>3 987</u>	<u>4 106</u>	<u>4 161</u>
EXPENSES									
Operating and Administrative	595	607	620	633	646	660	674	688	702
Finance Expense	989	973	938	914	871	835	791	752	712
Finance Income	(26)	(37)	(25)	(16)	(18)	(18)	(22)	(34)	(45)
Depreciation and Amortization	764	775	790	804	822	840	856	871	887
Water Rentals and Assessments	131	132	132	132	133	133	133	134	134
Fuel and Power Purchased	129	131	135	145	151	159	167	178	172
Capital and Other Taxes	176	177	179	180	181	183	184	186	192
Other Expenses	79	84	87	87	89	91	92	95	96
Corporate Allocation	8	8	5	2	2	2	2	2	2
	<u>2 846</u>	<u>2 850</u>	<u>2 861</u>	<u>2 882</u>	<u>2 878</u>	<u>2 884</u>	<u>2 878</u>	<u>2 871</u>	<u>2 852</u>
Net Income before Net Movement in Reg. Deferral	532	607	691	765	878	985	1 109	1 235	1 309
Net Movement in Regulatory Deferral	38	40	44	45	45	47	45	43	40
Net Income	<u>571</u>	<u>647</u>	<u>735</u>	<u>810</u>	<u>923</u>	<u>1 032</u>	<u>1 154</u>	<u>1 279</u>	<u>1 349</u>
Net Income Attributable to:									
Manitoba Hydro	567	643	727	801	912	1 020	1 140	1 264	1 334
Non-controlling Interest	4	5	7	9	11	12	14	15	15
* Additional Domestic Revenue Percent Increase	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Cumulative Percent Increase	64.71%	68.00%	71.36%	74.79%	78.28%	81.85%	85.49%	89.19%	92.98%
Financial Ratios									
Equity	28%	30%	33%	36%	39%	43%	47%	52%	56%
EBITDA Interest Coverage	2.40	2.53	2.68	2.81	3.06	3.30	3.61	3.98	4.32
Capital Coverage	2.14	2.19	2.35	2.35	2.51	2.63	2.78	2.70	2.75

Manitoba Hydro 2017/18 & 2018/19 General Rate Application
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**ELECTRIC OPERATIONS (MH16)
PROJECTED BALANCE SHEET
MH16 Scenario 1 (MIPUG MFR 5)
(In Millions of Dollars)**

For the year ended March 31

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
ASSETS											
Plant in Service	13 256	13 881	19 254	19 876	20 938	26 363	30 693	31 222	31 858	32 522	33 133
Accumulated Depreciation	(985)	(1 319)	(1 749)	(2 197)	(2 634)	(3 143)	(3 724)	(4 347)	(4 961)	(5 625)	(6 231)
Net Plant in Service	12 272	12 562	17 505	17 679	18 304	23 219	26 969	26 876	26 897	26 897	26 902
Construction in Progress	6 943	9 308	6 596	7 378	7 870	3 693	224	312	276	272	269
Current and Other Assets	1 721	1 909	2 275	2 451	2 239	1 916	1 726	1 920	2 073	1 803	1 984
Goodwill and Intangible Assets	270	485	725	869	1 271	1 225	1 180	1 135	1 092	1 049	1 007
Total Assets before Regulatory Deferral	21 206	24 264	27 101	28 377	29 684	30 054	30 099	30 243	30 338	30 021	30 162
Regulatory Deferral Balance	459	528	638	1 105	1 181	1 251	1 300	1 339	1 376	1 412	1 450
	21 664	24 792	27 740	29 482	30 865	31 305	31 399	31 582	31 713	31 432	31 612
LIABILITIES AND EQUITY											
Long-Term Debt	15 578	17 920	21 157	21 782	22 554	22 881	22 905	22 474	21 786	20 525	21 167
Current and Other Liabilities	3 415	3 905	3 303	4 067	4 209	3 666	3 249	3 417	3 708	4 226	3 232
Provisions	19	19	19	18	17	16	16	15	14	14	14
Deferred Revenue	444	460	486	515	537	546	556	566	577	588	599
BPIII Reserve Account	196	316	307	236	165	94	24	(0)	(0)	(0)	(0)
Retained Earnings	2 730	2 843	3 088	3 438	3 938	4 619	5 129	5 588	6 104	6 555	7 076
Accumulated Other Comprehensive Income	(761)	(714)	(665)	(616)	(600)	(562)	(522)	(521)	(520)	(520)	(520)
Total Liabilities and Equity before Regulatory Deferral	21 621	24 748	27 696	29 439	30 821	31 261	31 355	31 538	31 670	31 389	31 569
Regulatory Deferral Balance	44	44	44	44	44	44	44	44	44	44	44
	21 664	24 792	27 740	29 482	30 865	31 305	31 399	31 582	31 713	31 432	31 612
Net Debt	15 349	18 248	20 527	22 028	22 835	22 968	22 670	22 207	21 665	21 204	20 669
Total Equity	2 778	3 106	3 470	3 873	4 380	5 073	5 271	5 729	6 260	6 724	7 259
Equity Ratio	15%	15%	14%	15%	16%	18.09%	19%	21%	22%	24%	26%

Manitoba Hydro 2017/18 & 2018/19 General Rate Application
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ELECTRIC OPERATIONS (MH16)
PROJECTED BALANCE SHEET
MH16 Scenario 1 (MIPUG MFR 5)
(In Millions of Dollars)

For the year ended March 31

	2028	2029	2030	2031	2032	2033	2034	2035	2036
ASSETS									
Plant in Service	33 741	34 487	35 147	35 978	36 754	37 549	38 293	39 095	40 163
Accumulated Depreciation	(6 924)	(7 621)	(8 329)	(9 059)	(9 806)	(10 595)	(11 384)	(12 186)	(12 993)
Net Plant in Service	26 817	26 866	26 817	26 919	26 948	26 955	26 909	26 909	27 170
Construction in Progress	351	313	348	258	232	224	264	319	115
Current and Other Assets	2 442	3 056	2 166	2 184	2 313	2 550	3 348	4 180	5 217
Goodwill and Intangible Assets	967	928	890	852	814	777	740	703	667
Total Assets before Regulatory Deferral	30 576	31 162	30 221	30 214	30 307	30 505	31 261	32 112	33 169
Regulatory Deferral Balance	1 489	1 529	1 573	1 617	1 663	1 709	1 754	1 798	1 838
	32 065	32 691	31 794	31 831	31 970	32 215	33 016	33 909	35 007
LIABILITIES AND EQUITY									
Long-Term Debt	21 120	17 702	15 049	16 670	16 080	16 264	16 318	15 907	15 791
Current and Other Liabilities	3 154	6 545	7 564	5 170	4 976	4 006	3 602	3 631	3 499
Provisions	14	14	14	14	14	14	14	14	14
Deferred Revenue	610	619	629	639	649	660	671	682	694
BPIII Reserve Account	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Retained Earnings	7 643	8 286	9 014	9 814	10 727	11 747	12 887	14 151	15 485
Accumulated Other Comprehensive Income	(520)	(520)	(520)	(520)	(520)	(520)	(520)	(520)	(520)
Total Liabilities and Equity before Regulatory Deferral	32 021	32 647	31 750	31 788	31 926	32 171	32 972	33 866	34 964
Regulatory Deferral Balance	44	44	44	44	44	44	44	44	44
	32 065	32 691	31 794	31 831	31 970	32 215	33 016	33 909	35 007
Net Debt	20 087	19 439	18 692	17 895	16 972	15 941	14 771	13 537	12 231
Total Equity	7 841	8 494	9 227	10 036	10 957	11 985	13 134	14 408	15 752
Equity Ratio	28%	30%	33%	36%	39%	43%	47%	52%	56%

Manitoba Hydro 2017/18 & 2018/19 General Rate Application
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ELECTRIC OPERATIONS (MH16)
PROJECTED CASH FLOW STATEMENT
MH16 Scenario 1 (MIPUG MFR 5)
(In Millions of Dollars)

For the year ended March 31

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
OPERATING ACTIVITIES											
Cash Receipts from Customers	2 007	2 131	2 268	2 425	2 701	2 986	3 141	3 224	3 313	3 237	3 308
Cash Paid to Suppliers and Employees	(876)	(917)	(881)	(880)	(903)	(908)	(923)	(938)	(955)	(953)	(966)
Interest Paid	(569)	(529)	(628)	(695)	(737)	(797)	(1 013)	(1 042)	(1 035)	(1 017)	(974)
Interest Received	7	5	12	21	17	17	9	8	14	14	9
	<u>569</u>	<u>689</u>	<u>770</u>	<u>871</u>	<u>1 077</u>	<u>1 298</u>	<u>1 214</u>	<u>1 252</u>	<u>1 337</u>	<u>1 280</u>	<u>1 377</u>
FINANCING ACTIVITIES											
Proceeds from Long-Term Debt	2 743	3 370	3 590	1 970	1 790	790	360	(10)	(10)	(50)	790
Sinking Fund Withdrawals	146	0	0	182	303	767	173	50	330	131	224
Retirement of Long-Term Debt	(1 030)	(330)	(1 002)	(336)	(1 278)	(1 020)	(449)	(290)	(412)	(715)	(1 178)
Other	10	(10)	(10)	(11)	(11)	(11)	11	(5)	(5)	(5)	(5)
	<u>1 868</u>	<u>3 029</u>	<u>2 578</u>	<u>1 805</u>	<u>804</u>	<u>525</u>	<u>95</u>	<u>(255)</u>	<u>(97)</u>	<u>(639)</u>	<u>(169)</u>
INVESTING ACTIVITIES											
Property, Plant and Equipment, net of contributions	(2 609)	(3 553)	(3 015)	(2 351)	(1 742)	(1 352)	(880)	(700)	(704)	(732)	(756)
Sinking Fund Payment	(146)	(246)	(210)	(244)	(282)	(334)	(235)	(241)	(246)	(238)	(235)
Other	(68)	(51)	(55)	(44)	(128)	(91)	(84)	(83)	(83)	(80)	(79)
	<u>(2 822)</u>	<u>(3 850)</u>	<u>(3 280)</u>	<u>(2 639)</u>	<u>(2 152)</u>	<u>(1 777)</u>	<u>(1 199)</u>	<u>(1 024)</u>	<u>(1 033)</u>	<u>(1 050)</u>	<u>(1 070)</u>
Net Increase (Decrease) in Cash	(384)	(131)	68	37	(272)	46	110	(27)	207	(409)	138
Cash at Beginning of Year	<u>944</u>	<u>559</u>	<u>428</u>	<u>496</u>	<u>533</u>	<u>262</u>	<u>308</u>	<u>418</u>	<u>391</u>	<u>598</u>	<u>189</u>
Cash at End of Year	<u>559</u>	<u>428</u>	<u>496</u>	<u>533</u>	<u>262</u>	<u>308</u>	<u>418</u>	<u>391</u>	<u>598</u>	<u>189</u>	<u>328</u>

ELECTRIC OPERATIONS (MH16)
PROJECTED CASH FLOW STATEMENT
MH16 Scenario 1 (MIPUG MFR 5)
(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	3 365	3 444	3 538	3 633	3 741	3 855	3 973	4 092	4 147
Cash Paid to Suppliers and Employees	(978)	(993)	(1 010)	(1 033)	(1 054)	(1 075)	(1 098)	(1 123)	(1 137)
Interest Paid	(973)	(966)	(930)	(902)	(857)	(833)	(790)	(763)	(727)
Interest Received	22	40	19	10	12	20	31	51	63
	<u>1 435</u>	<u>1 526</u>	<u>1 617</u>	<u>1 708</u>	<u>1 843</u>	<u>1 967</u>	<u>2 116</u>	<u>2 257</u>	<u>2 346</u>
FINANCING ACTIVITIES									
Proceeds from Long-Term Debt	(10)	(20)	1 780	3 580	1 160	940	350	(90)	(30)
Sinking Fund Withdrawals	150	60	445	361	0	30	0	10	275
Retirement of Long-Term Debt	(150)	(50)	(3 450)	(4 386)	(1 982)	(1 763)	(750)	(340)	(265)
Other	(5)	(5)	(5)	(5)	(5)	(7)	(4)	(4)	(5)
	<u>(15)</u>	<u>(15)</u>	<u>(1 230)</u>	<u>(450)</u>	<u>(828)</u>	<u>(800)</u>	<u>(404)</u>	<u>(424)</u>	<u>(25)</u>
INVESTING ACTIVITIES									
Property, Plant and Equipment, net of contributions	(767)	(798)	(793)	(832)	(840)	(857)	(870)	(948)	(966)
Sinking Fund Payment	(232)	(233)	(240)	(215)	(201)	(202)	(201)	(204)	(208)
Other	(78)	(72)	(70)	(71)	(70)	(69)	(68)	(66)	(65)
	<u>(1 077)</u>	<u>(1 104)</u>	<u>(1 102)</u>	<u>(1 118)</u>	<u>(1 112)</u>	<u>(1 128)</u>	<u>(1 138)</u>	<u>(1 218)</u>	<u>(1 239)</u>
Net Increase (Decrease) in Cash	343	407	(715)	140	(97)	40	574	615	1 082
Cash at Beginning of Year	<u>328</u>	<u>671</u>	<u>1 078</u>	<u>363</u>	<u>503</u>	<u>406</u>	<u>446</u>	<u>1 020</u>	<u>1 634</u>
Cash at End of Year	<u>671</u>	<u>1 078</u>	<u>363</u>	<u>503</u>	<u>406</u>	<u>446</u>	<u>1 020</u>	<u>1 634</u>	<u>2 716</u>

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Please provide actual and forecast proof of revenue, showing all rates and billing determinants for actual years 2014/15 and 2015/16 and forecast years 2016/17 and 2017/18 consistent with interim rates as of August 1, 2016 and proposed 2017/18 rates [As requested in the 2015/16 GRA in MIPUG/MH-I-4].

Manitoba Hydro provides a Proof of Revenue calculation to demonstrate the expected forecast revenues to be obtained by applying the proposed rates to the forecast of billing determinants for each customer class.

Forecast Years 2016/17 and 2017/18:

Figure 1 provides the 2016/17 Proof of Revenue based on the 2015 System Load Forecast at August 1, 2015 rates and interim-approved August 1, 2016 rates. Billing determinants for each set of rates is provided on Figure 2 and Figure 3.

Figure 4 provides the 2017/18 Proof of Revenue based on the 2016 System Load Forecast (unadjusted) at August 1, 2016 interim-approved rates and August 1, 2017 proposed rates. Billing determinants for each set of rates is provided on Figure 5 and Figure 6.

Actual Years 2014/15 and 2015/16:

A revenue analysis of actual customer billings and resulting actual revenue is provided in response to this question for 2014/15 and 2015/16.

Figure 7 provides actual data for 2014/15 and 2015/16.

Annualized actual billing determinants for 2014/15 are shown on Figure 8 and Figure 9 with revenues based on one month at May 1, 2013 rates and eleven months at May 1, 2014 rates. Annualized actual billing determinants for 2015/16 are shown on Figure 10 and Figure 11 with revenue based on four months at May 1, 2014 rates and eight months at August 1, 2015 rates.

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Figure 1. Proof of Revenue 2016/17

August 1, 2015 Rates vs Interim-Approved August 1, 2016 Rates

Annualized for Year Ended March 31, 2017

-	Calculated Revenue Aug 2015 Rates	Calculated Revenue Aug 2016 Rates	Diff. in Revenue Dollars	Diff. in Revenue Percent
Basic	639,389,506	660,864,816	21,475,310	3.36%
Diesel	739,536	764,373	24,837	3.36%
Seasonal	9,443,070	9,759,523	316,453	3.35%
FRWH	1,094,068	1,130,853	36,785	3.36%
RESIDENTIAL	\$650,666,180	\$ 672,519,564	\$21,853,385	3.36%
Small Non-Demand	147,726,877	152,694,640	4,967,763	3.36%
Small Demand	156,387,102	161,649,906	5,262,803	3.37%
Seasonal	670,793	693,355	22,562	3.36%
FRWH	476,017	492,013	15,996	3.36%
GS Small	\$305,260,789	\$315,529,913	\$10,269,125	3.36%
GS Medium	\$214,984,986	\$222,227,081	\$7,242,095	3.37%
Large 750 V - 30 kV	95,274,244	98,483,740	3,209,496	3.37%
Large 30 - 100 kV	81,389,712	84,113,317	2,723,605	3.35%
Large > 100 kV	191,002,624	197,452,482	6,449,858	3.38%
GS Large	\$367,666,580	\$380,049,539	\$12,382,959	3.37%
Diesel GS & Gov.	7,342,132	7,588,827	246,695	3.36%
SEP	1,199,221	1,199,221	0	0.00%
TOTAL GS	\$896,453,708	\$926,594,581	\$30,140,873	3.36%
AREA & ROADWAY	\$24,113,225	\$24,926,983	\$813,757	3.37%
DSM	(22,201,587)	(22,949,350)	(747,763)	3.37%
Misc & Adjs.	6,802,969	7,031,600	228,631	3.36%
DOMESTIC REVENUE	\$1,555,834,495	\$1,608,123,378	\$52,288,883	3.36%

Figure 2. Billing Determinants for 2016/17 – Residential

Forecast 2016/17	Customer Months	>200 A Customer Months	Total kWh
Basic	5,764,544	59,452	7,772,681,961
Diesel	7,154	0	8,957,854
Seasonal	(avg. mthly) 20,226	0	99,475,169
FRWH	39,324	0	16,740,115

Aug 1, 2015 Rates	Basic Charge	>200 A Charge	kWh Charge
Basic	\$7.57	\$7.57	\$0.07672
Diesel	\$7.57		\$0.07672
Seasonal	(annual) \$90.84		\$0.07672
FRWH	(weighted average) \$27.82		

2016/17 Rev at Aug 2015 Rates	BC & >200 A Revenue	Energy \$	Total Calculated Revenue	Adj. Factor	Total Adjusted Revenue
Basic	\$44,087,650	\$596,320,160	\$640,407,810	0.998	\$639,389,506
Diesel	\$54,156	\$687,247	\$741,403	0.997	\$739,536
Seasonal	\$1,837,284	\$7,631,735	\$9,469,019	0.997	\$9,443,070
FRWH			\$1,094,068	1.000	\$1,094,068

Aug 1, 2016 Rates	Basic Charge	>200 A Charge	kWh Charge
Basic	\$7.82	\$7.82	\$0.07930
Diesel	\$7.82		\$0.07930
Seasonal	(annual) \$93.84		\$0.07930
FRWH	(weighted average) \$28.76		

2016/17 Rev at Aug 2016 Rates	BC & >200 A Revenue	Energy \$	Total Calculated Revenue	Adj. Factor	Total Adjusted Revenue
Basic	\$45,543,649	\$616,373,679	\$661,917,328	0.998	\$660,864,816
Diesel	\$55,944	\$710,358	\$766,302	0.997	\$764,373
Seasonal	\$1,897,961	\$7,888,381	\$9,786,342	0.997	\$9,759,523
FRWH			\$1,130,853	1.000	\$1,130,853

Figure 3. Billing Determinants for 2016/17 – General Service

Forecast 2016/17	Customer Months	3 Phase Customer Months	1 st 11000 kWh	Next 8500 kWh & ND Runoff	Balance of kWh	Total kWh	Billable Demand
Small ND	635,268	145,924	1,528,911,989	140,395,491		1,669,307,480	0
Small Demand	151,901	102,600	898,167,816	492,618,019	794,715,684	2,185,501,519	2,542,284
Small LUBD	593	593	-	-	-	3,617,300	19,341
Seasonal	(avg. mthly) 883	-	5,610,000	0	0	5,610,000	0
FRWH	4,054	-	-	-	-	5,840,000	0
Medium	25,495	-	277,414,863	209,294,764	2,908,647,912	3,395,357,539	7,747,289
Med. LUBD	198	-	-	-	-	4,851,000	38,193
Large <30	3,748	-	-	-	-	1,781,721,816	4,169,054
L<30 LUBD	36	-	-	-	-	1,055,000	7,356
Large 30-100	492	-	-	-	-	1,763,916,000	3,560,756
Large >100	144	-	-	-	-	4,574,320,000	7,821,868
L>100 LUBD	36	-	-	-	-	1,197,000	30,487
DFC Fed Govt.	576	-	-	-	-	2,073,600	0
DFC Prov. Govt.	240	-	-	-	-	480,000	0
DFC Non-Govt.	1,421	-	(1 st 2000 kWh) 1,274,195		1,879,888	3,154,083	0
SEP Med	360	-	-	-	-	30,000,000	0
SEP Large <30	48	-	-	-	-	2,600,000	0

Figure 3. Billing Determinants for 2016/17 – General Service (continued)

August 1, 2015 Rates	Basic Charge	3 Ph Charge	1 st 11000 kWh Chg	Next 8500 kWh Chg & ND Bal.	Balance of kWh Charge	Demand Charge
Small ND	\$20.51	\$8.41	\$0.08058	\$0.05594		
Small Demand	\$20.51	\$8.41	\$0.08058	\$0.05594	\$0.03692	\$9.45
Small LUBD	\$20.51	\$8.41			\$0.09146	\$2.36
Seasonal	(annual) \$246.12		\$0.08058	\$0.05594		
FRWH	(weighted average) \$117.42					
Medium	\$30.52		\$0.08058	\$0.05594	\$0.03692	\$9.45
Med. LUBD	\$30.52				\$0.09146	\$2.36
Large <30	\$0.00				\$0.03472	\$8.02
L<30 LUBD	\$0.00				\$0.08095	\$2.01
Large 30-100	\$0.00				\$0.03228	\$6.87
Large >100	\$0.00				\$0.03128	\$6.11
L>100 LUBD	\$0.00				\$0.06653	\$1.53
DFC Fed Govt.	\$20.51				\$2.5095	
DFC Prov. Govt.	\$20.51				\$2.5095	
DFC Non-Govt.	\$20.51		First 2000 kWh @ \$0.08058		\$0.41232	
SEP Med	\$50.00		\$0.03020 average energy charge & \$0.0062 dist. charge (per kWh)			
SEP Large <30	\$100.00		\$0.02918 average energy charge & \$0.0033 dist. charge (per kWh)			

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Figure 3. Billing Determinants for 2016/17 – General Service (continued)

2016/17 Rev at Aug 2015 Rates	Basic Chg Revenue.	3 Ph Chg Revenue	1 st Block Revenue	2 nd Block Rev.& ND Runoff	Run-Off Revenue	Demand Charge Revenue	Total Calculated Revenue	Adj. Factor	Book Revenue
Small ND	\$13,029,347	\$1,227,221	\$123,199,728	\$7,853,724	\$0	\$0	\$145,310,020	1.017	\$147,726,877
Small D.	\$3,115,490	\$862,866	\$72,374,363	\$27,557,052	\$29,340,903	\$24,024,586	\$157,275,260	0.992	\$155,991,936
Small LUBD	\$12,162	\$4,987	-	-	\$330,838	\$45,645	\$393,632	1.004	\$395,167
Seasonal	\$217,242	\$0	\$452,054	\$0	\$0	-	\$669,296	1.002	\$670,793
FRWH	-	-	-	-	-	-	\$476,017	1.000	\$476,017
Medium	\$778,107	-	\$22,354,090	\$11,707,949	\$107,387,281	\$73,211,881	\$215,439,308	0.995	\$214,444,357
Med. LUBD	\$6,043	-	-	-	\$443,672	\$90,135	\$539,850	1.001	\$540,629
Large <30	\$0	-	-	-	\$61,861,381	\$33,435,813	\$95,297,194	0.999	\$95,174,053
L<30 LUBD	\$0	-	-	-	\$85,402	\$14,785	\$100,187	1.000	\$100,191
Large 30-100	\$0	-	-	-	\$56,939,208	\$24,462,394	\$81,401,602	1.000	\$81,389,712
Large >100	\$0	-	-	-	\$143,084,730	\$47,791,614	\$190,876,344	1.000	\$190,876,344
L100 LUBD	\$0	-	-	-	\$79,636	\$46,644	\$126,280	1.000	\$126,280
DFC Fed Govt.	\$11,814	-	-	-	\$5,203,699	-	\$5,215,513	0.998	\$5,202,660
DFC Prov. Govt.	\$4,922	-	-	-	\$1,204,560	-	\$1,209,482	0.998	\$1,206,575
DFC Non-Govt.	\$29,145	-	\$102,675		\$775,115	-	\$906,935	1.029	\$932,897
SEP Med	\$18,000	-	\$186,000 (distribution); \$905,973 (energy)			-	\$1,109,973	1.000	\$1,109,973
SEP Large <30	\$4,800	-	\$8,580 (distribution); \$75,868 (energy)			-	\$89,248	1.000	\$89,248

Figure 3. Billing Determinants for 2016/17 – General Service (continued)

August 1, 2016 Rates	Basic Charge	3 Ph Charge	1 st 11000 kWh Chg	Next 8500 kWh Chg & ND Bal.	Balance of kWh Charge	Demand Charge
Small ND	\$21.20	\$8.69	\$0.08329	\$0.05782		
Small Demand	\$21.20	\$8.69	\$0.08329	\$0.05782	\$0.03816	\$9.77
Small LUBD	\$21.20	\$8.69			\$0.09454	\$2.44
Seasonal	(annual) \$254.40		\$0.08329	\$0.05782		
FRWH	(weighted average) \$121.36					
Medium	\$31.55		\$0.08329	\$0.05782	\$0.03816	\$9.77
Med. LUBD	\$31.55				\$0.09454	\$2.44
Large <30	\$0.00				\$0.03589	\$8.29
L<30 LUBD	\$0.00				\$0.08374	\$2.07
Large 30-100	\$0.00				\$0.03336	\$7.10
Large >100	\$0.00				\$0.03233	\$6.32
L>100 LUBD	\$0.00				\$0.06879	\$1.58
DFC Fed Govt.	\$21.20				\$2.59382	
DFC Prov. Govt.	\$21.20				\$2.59382	
DFC Non-Govt.	\$21.20		First 2000 kWh @ \$0.08329		\$0.42617	
SEP Med	\$50.00		\$0.03020 average energy charge & \$0.0062 dist. charge (per kWh)			
SEP Large <30	\$100.00		\$0.02918 average energy charge & \$0.0033 dist. charge (per kWh)			

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Figure 3. Billing Determinants for 2016/17 – General Service (continued)

2016/17 Rev at Aug 2016 Rates	Basic Chg Revenue.	3 Ph Chg Revenue	1 st Block Revenue	2 nd Block Rev.& ND Runoff	Run-Off Revenue	Demand Charge Revenue	Total Calculated Revenue	Adj. Factor	Book Revenue
Small ND	\$13,467,682	\$1,268,080	\$127,343,080	\$8,117,667	\$0	\$0	\$150,196,509	1.017	\$152,694,640
Small D.	\$3,220,301	\$891,594	\$74,808,397	\$28,483,174	\$30,326,350	\$24,838,117	\$162,567,933	0.992	\$161,241,424
Small LUBD	\$12,572	\$5,153	-	-	\$341,980	\$47,192	\$406,897	1.004	\$408,482
Seasonal	\$224,550	\$0	\$467,257	\$0	\$0	-	\$691,807	1.002	\$693,355
FRWH	-	-	-	-	-	-	\$492,013	1.000	\$492,013
Medium	\$804,367	-	\$23,105,884	\$12,101,423	\$110,994,004	\$75,691,014	\$222,696,692	0.995	\$221,668,226
Med. LUBD	\$6,247	-	-	-	\$458,614	\$93,191	\$558,052	1.001	\$558,855
Large <30	\$0	-	-	-	\$63,945,996	\$34,561,457	\$98,507,453	0.999	\$98,380,164
L<30 LUBD	\$0	-	-	-	\$88,346	\$15,226	\$103,572	1.000	\$103,576
Large 30-100	\$0	-	-	-	\$58,844,238	\$25,281,368	\$84,125,606	1.000	\$84,113,317
Large >100	\$0	-	-	-	\$147,887,766	\$49,434,206	\$197,321,972	1.000	\$197,321,972
L100 LUBD	\$0	-	-	-	\$82,342	\$48,169	\$130,511	1.000	\$130,510
DFC Fed Govt.	\$12,211	-	-	-	\$5,378,545	-	\$5,390,756	0.998	\$5,377,472
DFC Prov. Govt.	\$5,088	-	-	-	\$1,245,034	-	\$1,250,122	0.998	\$1,247,116
DFC Non-Govt.	\$30,125	-	\$106,128		\$801,152	-	\$937,405	1.029	\$964,239
SEP Med	\$18,000	-	\$186,000 (distribution); \$905,973 (energy)			-	\$1,109,973	1.000	\$1,109,973
SEP Large <30	\$4,800	-	\$8,580 (distribution); \$75,868 (energy)			-	\$89,248	1.000	\$89,248

Figure 4. Proof of Revenue 2017/18

**Interim-Approved August 1, 2016 Rates vs. Proposed August 1, 2017 Rates
Annualized for Year Ended March 31, 2018**

	Calculated Revenue Aug 2016 Rates	Calculated Revenue Prop Apr 2017 Rates	Diff. in Revenue Dollars	Diff. in Revenue Percent
Basic	660,948,098	713,139,620	52,191,523	7.9%
Diesel	748,964	808,107	59,143	7.9%
Seasonal	8,863,561	9,563,890	700,329	7.9%
FRWH	1,081,149	1,166,729	85,580	7.9%
RESIDENTIAL	\$671,641,772	\$724,678,346	\$53,036,574	7.9%
Small Non-Demand	153,306,084	165,415,134	12,109,049	7.9%
Small Demand	163,642,303	176,562,188	12,919,886	7.9%
Seasonal	685,949	740,087	54,138	7.9%
FRWH	448,802	484,255	35,453	7.9%
GS Small	\$318,083,138	\$343,201,664	\$25,118,526	7.9%
GS Medium	\$213,813,617	\$230,678,723	\$16,865,106	7.9%
Large 750 V - 30 kV	100,529,244	108,458,525	7,929,281	7.9%
Large 30 - 100 kV	78,796,698	85,026,148	6,229,450	7.9%
Large > 100 kV	195,827,773	211,285,441	15,457,668	7.9%
GS Large	\$375,153,715	\$404,770,114	\$29,616,399	7.9%
Diesel GS & Gov.	7,192,116	7,204,807	12,691	0.2%
SEP	841,877	841,877	0	0.0%
TOTAL GS	\$915,084,462	\$986,697,184	\$71,612,722	7.8%
AREA & ROADWAY	\$24,878,989	\$26,845,599	\$1,966,610	7.9%
DSM REDUCTION	(31,461,356)	(33,944,701)	(2,483,345)	7.9%
Total Misc & Adjs	7,358,620	7,947,380	588,760	8.0%
DOMESTIC REVENUE	\$1,587,502,487	\$1,712,223,808	\$124,721,321	7.9%
Outlook Adjustment	(18,409,002)	(19,862,454)	(\$1,453,452)	7.9%
ADJ DOMESTIC REVENUE	\$1,569,093,485	\$1,692,361,354	\$123,267,869	7.9%

Figure 5. Billing Determinants for 2017/18 – Residential

Forecast 2017/18	Customer Months	>200 A Customer Months	Total kWh
Basic	5,825,054	60,145	7,750,230,387
Diesel	7,170	0	8,764,725
Seasonal	(avg. mthly) 19,717	0	88,790,723
FRWH	37,248	0	15,847,594

Aug 1, 2016 Rates	Basic Charge	>200 A Charge	kWh Charge
Basic	\$7.82	\$7.82	\$0.07930
Diesel	\$7.82		\$0.07930
Seasonal	(annual) \$93.84		\$0.07930
FRWH	(weighted average) \$29.03		

2017/18 Rev at Aug 2016 Rates	BC & >200 A Revenue	Energy \$	Total Calculated Revenue	Adj. Factor	Book Revenue
Basic	\$46,022,256	\$614,593,270	\$660,615,526	1.001	\$660,948,098
Diesel	\$56,069	\$695,043	\$751,112	0.997	\$748,964
Seasonal	\$1,850,243	\$7,041,104	\$8,891,347	0.997	\$8,863,561
FRWH			\$1,081,149	1.000	\$1,081,149

Aug 1, 2017 Rates	Basic Charge	>200 A Charge	kWh Charge
Basic	\$8.44	\$8.44	\$0.08556
Diesel	\$8.44		\$0.08556
Seasonal	(annual) \$101.28		\$0.08556
FRWH	(weighted average) \$31.32		

2017/18 Rev at Aug 2017 Rates	BC & >200 A Revenue	Energy \$	Total Calculated Revenue	Adj. Factor	Book Revenue
Basic	\$49,671,080	\$663,109,712	\$712,780,792	1.001	\$713,139,620
Diesel	\$60,515	\$749,910	\$810,425	0.997	\$808,107
Seasonal	\$1,996,938	\$7,596,937	\$9,593,875	0.997	\$9,563,890
FRWH			\$1,166,729	1.000	\$1,166,729

Figure 6. Billing Determinants for 2017/18 – General Service

Forecast 2017/18	Customer Months	3 Phase Customer Months	1 st 11000 kWh	Next 8500 kWh & ND Runoff	Balance of kWh	Total kWh	Billable Demand
Small ND	636,210	147,367	1,530,958,557	140,140,141		1,671,098,698	0
Small Demand	153,845	103,516	898,115,576	494,262,104	830,598,743	2,222,976,423	2,604,365
Small LUBD	553	527	-	-	-	3,428,600	18,169
Seasonal	(avg. mthly) 909	-	5,460,000	0	0	5,460,000	0
FRWH	3,934	-	-	-	-	5,270,000	0
Medium	25,267	-	272,747,334	206,363,732	2,841,918,725	3,321,029,791	7,680,715
Med. LUBD	227	-	-	-	-	5,016,700	41,195
Large <30	3,829	-	-	-	-	1,810,083,755	4,290,897
L<30 LUBD	24	-	-	-	-	331,000	10,944
Large 30-100	480	-	-	-	-	1,652,300,000	3,352,141
Large >100	156	-	-	-	-	4,530,900,000	7,783,387
L>100 LUBD	36	-	-	-	-	1,502,000	31,296
DFC Fed Govt.	576	-	-	-	-	1,900,800	0
DFC Prov. Govt.	228	-	-	-	-	456,000	0
DFC Non-Govt.	1,445	-	(1 st 2000 kWh)	1,321,544	2,102,946	3,424,490	0
SEP Med	324	-	-	-	-	23,000,000	0
SEP Large <30	48	-	-	-	-	2,500,000	0

Figure 6. Billing Determinants for 2017/18 – General Service (continued)

August 1, 2016 Rates	Basic Charge	3 Ph Charge	1 st 11000 kWh Chg	Next 8500 kWh Chg & ND Bal.	Balance of kWh Charge	Demand Charge
Small ND	\$21.20	\$8.69	\$0.08329	\$0.05782		
Small Demand	\$21.20	\$8.69	\$0.08329	\$0.05782	\$0.03816	\$9.77
Small LUBD	\$21.20	\$8.69			\$0.09454	\$2.44
Seasonal	(annual) \$254.40		\$0.08329	\$0.05782		
FRWH	(weighted average) \$121.36					
Medium	\$31.55		\$0.08329	\$0.05782	\$0.03816	\$9.77
Med. LUBD	\$31.55				\$0.09454	\$2.44
Large <30	\$0.00				\$0.03589	\$8.29
L<30 LUBD	\$0.00				\$0.08374	\$2.07
Large 30-100	\$0.00				\$0.03336	\$7.10
Large >100	\$0.00				\$0.03233	\$6.32
L>100 LUBD	\$0.00				\$0.06879	\$1.58
DFC Fed Govt.	\$21.20				\$2.59382	
DFC Prov. Govt.	\$21.20				\$2.59382	
DFC Non-Govt.	\$21.20		First 2000 kWh @ \$0.08329		\$0.42617	
SEP Med	\$50.00		\$0.03020 average energy charge & \$0.0062 dist. charge (per kWh)			
SEP Large <30	\$100.00		\$0.02918 average energy charge & \$0.0033 dist. charge (per kWh)			

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Figure 6. Billing Determinants for 2017/18 – General Service (continued)

2017/18 Rev at Aug 2016 Rates	Basic Chg Revenue.	3 Ph Chg Revenue	1 st Block Revenue	2 nd Block Rev.& ND Runoff	Run-Off Revenue	Demand Charge Revenue	Total Calculated Revenue	Adj. Factor	Book Revenue
Small ND	\$13,487,652	\$1,280,619	\$127,513,538	\$8,102,903	\$0	\$0	\$150,384,712	1.019	\$153,306,084
Small D.	\$3,261,514	\$899,554	\$74,804,046	\$28,578,235	\$31,695,648	\$25,444,645	\$164,683,642	0.991	\$163,257,658
Small LUBD	\$11,724	\$4,580	-	-	\$324,140	\$44,333	\$384,777	1.000	\$384,644
Seasonal	\$231,165	\$0	\$454,763	\$0	\$0	-	\$685,928	1.000	\$685,949
FRWH	-	-	-	-	-	-	\$448,802	1.000	\$448,802
Medium	\$797,174	-	\$22,717,125	\$11,931,951	\$108,447,619	\$75,040,589	\$218,934,458	0.974	\$213,231,907
Med. LUBD	\$7,162	-	-	-	\$474,279	\$100,516	\$581,957	1.000	\$581,710
Large <30	\$0	-	-	-	\$64,963,906	\$35,571,540	\$100,535,446	0.999	\$100,478,860
L<30 LUBD	\$0	-	-	-	\$27,718	\$22,654	\$50,372	1.000	\$50,384
Large 30-100	\$0	-	-	-	\$55,120,728	\$23,800,198	\$78,920,926	0.998	\$78,796,698
Large >100	\$0	-	-	-	\$146,483,997	\$49,191,006	\$195,675,003	1.000	\$195,675,003
L100 LUBD	\$0	-	-	-	\$103,323	\$49,447	\$152,770	1.000	\$152,770
DFC Fed Govt.	\$12,211	-	-	-	\$4,930,333	-	\$4,942,544	1.001	\$4,945,331
DFC Prov. Govt.	\$4,834	-	-	-	\$1,182,782	-	\$1,187,616	1.000	\$1,187,581
DFC Non-Govt.	\$30,634	-	\$110,071		\$896,213	-	\$1,036,918	1.021	\$1,059,204
SEP Med	\$16,200	-	\$142,600 (distribution); \$604,252 (energy)			-	\$763,052	1.000	\$763,052
SEP Large <30	\$4,800	-	\$8,250 (distribution); \$65,775 (energy)			-	\$78,825	1.000	\$78,825

Figure 6. Billing Determinants for 2017/18 – General Service (continued)

August 1, 2017 Rates	Basic Charge	3 Ph Charge	1 st 11000 kWh Chg	Next 8500 kWh Chg & ND Bal.	Balance of kWh Charge	Demand Charge
Small ND	\$22.87	\$9.38	\$0.08987	\$0.06239		
Small Demand	\$22.87	\$9.38	\$0.08987	\$0.06239	\$0.04117	\$10.54
Small LUBD	\$22.87	\$9.38			\$0.10194	\$2.64
Seasonal	(annual) \$274.44		\$0.08987	\$0.06239		
FRWH	(weighted average) \$123.09					
Medium	\$34.04		\$0.08987	\$0.06239	\$0.04117	\$10.54
Med. LUBD	\$34.04				\$0.10194	\$2.64
Large <30	\$0.00				\$0.03873	\$8.94
L<30 LUBD	\$0.00				\$0.09027	\$2.24
Large 30-100	\$0.00				\$0.03600	\$7.66
Large >100	\$0.00				\$0.03488	\$6.82
L>100 LUBD	\$0.00				\$0.07419	\$1.71
DFC Fed Govt.	\$22.87				\$2.59382	
DFC Prov. Govt.	\$22.87				\$2.59382	
DFC Non-Govt.	\$22.87		First 2000 kWh @ \$0.08987		\$0.42617	
SEP Med	\$50.00		\$0.02627 average energy charge & \$0.0062 dist. charge (per kWh)			
SEP Large <30	\$100.00		\$0.02631 average energy charge & \$0.0033 dist. charge (per kWh)			

Figure 6. Billing Determinants for 2017/18 – General Service (continued)

2017/18 Rev at Aug 2017 Rates	Basic Chg Revenue.	3 Ph Chg Revenue	1 st Block Revenue	2 nd Block Rev.& ND Runoff	Run-Off Revenue	Demand Charge Revenue	Total Calculated Revenue	Adj. Factor	Book Revenue
Small ND	\$14,550,123	\$1,382,302	\$137,587,245	\$8,743,343	\$0	\$0	\$162,263,013	1.019	\$165,415,134
Small D.	\$3,518,435	\$970,980	\$80,713,647	\$30,837,013	\$34,195,750	\$27,450,006	\$177,685,831	0.991	\$176,147,262
Small LUBD	\$12,647	\$4,943	-	-	\$349,511	\$47,967	\$415,068	1.000	\$414,926
Seasonal	\$249,374	\$0	\$490,690	\$0	\$0	-	\$740,064	1.000	\$740,087
FRWH	-	-	-	-	-	-	\$484,255	1.000	\$484,255
Medium	\$860,089	-	\$24,511,803	\$12,875,033	\$117,001,794	\$80,954,740	\$236,203,459	0.974	\$230,051,105
Med. LUBD	\$7,727	-	-	-	\$511,402	\$108,756	\$627,885	1.000	\$627,619
Large <30	\$0	-	-	-	\$70,104,544	\$38,360,623	\$108,465,167	0.999	\$108,404,118
L<30 LUBD	\$0	-	-	-	\$29,879	\$24,514	\$54,393	1.000	\$54,407
Large 30-100	\$0	-	-	-	\$59,482,800	\$25,677,397	\$85,160,197	0.998	\$85,026,148
Large >100	\$0	-	-	-	\$158,037,792	\$53,082,700	\$211,120,492	1.000	\$211,120,492
L100 LUBD	\$0	-	-	-	\$111,433	\$53,516	\$164,949	1.000	\$164,949
DFC Fed G	\$13,173	-	-	-	\$4,930,333	-	\$4,943,506	1.001	\$4,946,294
DFC Prov. Govt.	\$5,214	-	-	-	\$1,182,782	-	\$1,187,996	1.000	\$1,187,961
DFC Non-Govt.	\$33,047	-	\$118,767		\$896,213	-	\$1,048,027	1.021	\$1,070,552
SEP Med	\$16,200	-	\$142,600 (distribution); \$604,252 (energy)			-	\$763,052	1.000	\$763,052
SEP Large <30	\$4,800	-	\$8,250 (distribution); \$65,775 (energy)			-	\$78,825	1.000	\$78,825

Figure 7. 2014/15 and 2015/16 Actual Billing Data

**2014/15 vs 2015/16 Actual Data
for 12 months ending March 31**

	Actual Revenue 2014/15	Actual Revenue 2015/16	Diff. in Revenue Dollars	Diff. in Revenue Percent
Basic	604,245,461	579,056,305	(25,189,156)	-4.2%
Diesel	701,169	666,224	(34,945)	-5.0%
Seasonal	9,226,738	7,798,940	(1,427,798)	-15.5%
FRWH	1,166,743	1,146,534	(20,209)	-1.7%
RESIDENTIAL	\$615,340,111	\$588,668,003	(\$26,672,108)	-4.3%
Small Non-Demand	143,744,270	141,228,532	(2,515,738)	-1.8%
Small Demand	143,739,101	144,791,073	1,051,972	0.7%
Seasonal	636,217	643,583	7,366	1.2%
FRWH	504,919	469,794	(35,125)	-7.0%
GS Small	\$288,624,507	\$287,132,982	(\$1,491,525)	-0.5%
GS Medium	\$194,856,894	\$194,165,782	(\$691,112)	-0.4%
Large 750 V - 30 kV	87,487,226	88,910,028	1,422,802	1.6%
Large 30 - 100 kV	63,290,889	69,780,685	6,489,796	10.3%
Large > 100 kV	175,760,814	181,088,749	5,327,935	3.0%
GS Large	\$326,538,929	\$339,779,462	\$13,240,533	4.1%
Diesel GS & Gov.	7,051,080	6,728,265	(322,815)	-4.6%
SEP	980,913	817,341	(163,572)	-16.7%
TOTAL GS	\$818,052,323	\$828,623,832	\$10,571,509	1.3%
AREA & ROADWAY	\$22,846,237	\$23,618,498	\$772,261	3.4%
DSM	0	0	0	0.0%
Misc & Adjs.	(1,609,703)	9,057,437	10,667,140	-662.7%
BPIII	(30,249,216)	(51,203,076)	(20,953,860)	69.3%
Total Misc & Adjs.	(\$31,858,919)	(\$42,145,639)	(\$10,286,720)	32.3%
DOMESTIC REVENUE	\$1,424,379,752	\$1,398,764,694	(\$25,615,058)	-1.8%

Figure 8. Billing Determinants for 2014/15 - Residential

Actual 2014/15	Customer Months	>200 A Cust Months	Total kWh
Basic	5,621,991	53,372	7,657,847,460
Diesel	6,994	0	8,855,091
Seasonal	(avg. mthly) 20,626	0	102,363,700
FRWH	43,800	0	18,544,909

May 1, 2013 Rates	Basic Charge	>200 A Charge	kWh Charge
Basic	\$7.09	\$7.09	\$0.07183
Diesel	\$7.09		\$0.07183
Seasonal	(annual) \$85.08		\$0.07183
FRWH	(weighted average) \$26.05		

May 1, 2014 Rates	Basic Charge	>200 A Charge	kWh Charge
Basic	\$7.28	\$7.28	\$0.07381
Diesel	\$7.28		\$0.07381
Seasonal	(annual) \$87.36		\$0.07381
FRWH	(weighted average) \$26.76		

2014/15 Revenue at May 2013 & 2014 Rates	BC & >200 A Revenue	Energy \$	Total Calculated Revenue	Adj. Factor	Book Revenue
Basic	\$41,226,783	\$563,962,176	\$605,188,959	0.998	\$604,245,461
Diesel	\$50,806	\$652,133	\$702,939	0.997	\$701,169
Seasonal	\$1,797,968	\$7,454,125	\$9,252,093	0.997	\$9,226,738
FRWH			\$1,166,743	1.000	\$1,166,743

Figure 9. Billing Determinants for 2014/15 – General Service

Actual Data 2014/15	Customer Months	3 Phase Customer Months	1 st 11000 kWh	Next 8500 kWh & ND Runoff	Balance of kWh	Total kWh	Billable Demand
Small ND	632,160	145,210	1,548,582,718	148,828,847		1,697,411,565	0
Small Demand	143,246	96,754	849,590,026	470,887,597	783,462,963	2,103,940,586	2,447,409
Small LUBD	559	559	-	-	-	3,392,856	18,141
Seasonal	(avg. mthly) 872	-	5,543,690	0	0	5,543,690	0
FRWH	4,480	-	-	-	-	6,461,844	0
Medium	24,380	-	265,241,003	200,006,081	2,737,420,087	3,202,667,171	7,307,622
Med. LUBD	189	-	-	-	-	4,634,400	36,488
Large <30	3,622	-	-	-	-	1,703,839,124	3,989,702
L<30 LUBD	36	-	-	-	-	1,055,311	7,358
Large30-100	485	-	-	-	-	1,432,966,785	2,866,468
Large >100	156	-	-	-	-	4,370,415,868	7,568,478
L>100 LUBD	36	-	-	-	-	1,196,832	30,482
DFC Fed Govt.	576	-	-	-	-	2,073,294	0
DFC Prov. Gov	240	-	-	-	-	479,380	0
DFC Non-Gov	1,376	-	(1 st 2000 kWh)	1,252,295	1,901,258	3,153,553	0
SEP Med	302	-	-	-	-	24,232,783	0
SEP Large <30	36	-	-	-	-	2,449,986	0

Figure 9. Billing Determinants for 2014/15 – General Service (continued)

May 1, 2013 Rates	Basic Charge	3 Ph Charge	1 st 11000 kWh Charge	Next 8500 kWh Chg & ND Bal.	Balance of kWh Charge	Demand Charge
Small ND	\$19.20	\$7.87	\$0.07545	\$0.05237		
Small Demand	\$19.20	\$7.87	\$0.07545	\$0.05237	\$0.03457	\$8.85
Small LUBD	\$19.20	\$7.87			\$0.08560	\$2.21
Seasonal	(annual) \$230.40		\$0.07545	\$0.05237		
FRWH	(weighted average) \$109.93					
Medium	\$28.57		\$0.07545	\$0.05237	\$0.03457	\$8.85
Med. LUBD	\$28.57				\$0.08560	\$2.21
Large <30	\$0.00				\$0.03250	\$7.51
L<30 LUBD	\$0.00				\$0.07580	\$1.88
Large 30-100	\$0.00				\$0.03022	\$6.43
Large >100	\$0.00				\$0.02929	\$5.72
L>100 LUBD	\$0.00				\$0.06210	\$1.46
DFC Fed Govt.	\$19.20				\$2.3495	
DFC Prov. Gov	\$19.20				\$2.3495	
DFC Non-Gov	\$19.20		First 2000 kWh @ \$0.07545		\$0.38605	
SEP Med	\$50.00		\$0.03042 average energy charge & \$0.0062 dist. charge (per kWh)			
SEP Large <30	\$100.00		\$0.02727 average energy charge & \$0.0033 dist. charge (per kWh)			

Figure 9. Billing Determinants for 2014/15 – General Service (continued)

May 1, 2014 Rates	Basic Charge	3 Ph Charge	1 st 11000 kWh Charge	Next 8500 kWh Chg & ND Bal.	Balance of kWh Charge	Demand Charge
Small ND	\$19.73	\$8.09	\$0.07752	\$0.05381		
Small Demand	\$19.73	\$8.09	\$0.07752	\$0.05381	\$0.03552	\$9.09
Small LUBD	\$19.73	\$8.09			\$0.08795	\$2.27
Seasonal	(annual) \$236.76		\$0.07752	\$0.05381		
FRWH	(weighted average) \$112.96					
Medium	\$29.36		\$0.07752	\$0.05381	\$0.03552	\$9.09
Med. LUBD	\$29.36				\$0.08795	\$2.27
Large <30	\$0.00				\$0.03339	\$7.72
L<30 LUBD	\$0.00				\$0.07788	\$1.93
Large 30-100	\$0.00				\$0.03105	\$6.61
Large >100	\$0.00				\$0.03009	\$5.88
L>100 LUBD	\$0.00				\$0.06381	\$1.50
DFC Fed Govt.	\$19.73				\$2.4141	
DFC Prov. Gov	\$19.73				\$2.4141	
DFC Non-Gov	\$19.73		First 2000 kWh @ \$0.07752		\$0.39665	
SEP Med	\$50.00		\$0.03042 average energy charge & \$0.0062 dist. charge (per kWh)			
SEP Large <30	\$100.00		\$0.02727 average energy charge & \$0.0033 dist. charge (per kWh)			

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Figure 9. Billing Determinants for 2014/15 – General Service (continued)

2014/15 Revenue at May 2013 & 2014 Rates	Basic Chg Revenue.	3 Ph Chg Revenue	1 st Block Revenue	2 nd Block Rev.& ND Runoff	Run-Off Revenue	Demand Charge Revenue	Total Calculated Revenue	Adj. Factor	Book Revenue
Small ND	\$12,447,230	\$1,171,845	\$119,782,873	\$7,990,621	\$0	\$0	\$141,392,569	1.017	\$143,744,270
Small D.	\$2,820,514	\$780,805	\$65,715,789	\$25,281,955	\$27,765,927	\$22,197,995	\$144,562,985	0.992	\$143,383,390
Small LUBD	\$11,007	\$4,511	-	-	\$297,723	\$41,090	\$354,331	1.004	\$355,711
Seasonal	\$205,993	\$0	\$428,804	\$0	\$0	-	\$634,797	1.002	\$636,217
FRWH	-	-	-	-	-	-	\$504,919	1.000	\$504,919
Medium	\$714,090	-	\$20,516,392	\$10,738,326	\$97,014,168	\$66,280,128	\$195,263,104	0.995	\$194,361,332
Med. LUBD	\$5,536	-	-	-	\$406,669	\$82,644	\$494,849	1.001	\$495,562
Large <30	\$0	-	-	-	\$56,772,386	\$30,732,742	\$87,505,128	0.999	\$87,391,043
L<30 LUBD	\$0	-	-	-	\$82,008	\$14,171	\$96,179	1.000	\$96,183
Lrg30-100	\$0	-	-	-	\$44,399,061	\$18,906,738	\$63,305,799	1.000	\$63,290,889
Large >100	\$0	-	-	-	\$131,216,141	\$44,403,741	\$175,619,882	1.000	\$175,639,019
L100 LUBD	\$0	-	-	-	\$76,202	\$45,632	\$121,834	1.000	\$121,795
DFC Fed G	\$11,341	-	-	-	\$4,993,943	-	\$5,005,284	0.998	\$4,992,950
DFC Prov. G	\$4,726	-	-	-	\$1,154,683	-	\$1,159,409	0.998	\$1,156,622
DFC Non-G	\$27,093	-	\$96,865		\$752,461	-	\$876,419	1.029	\$901,508
SEP Med	\$15,100	-	\$150,243 (distribution); \$737,075 (energy)		-	-	\$902,418	1.000	\$902,418
SEP Large <30	\$3,600	-	\$8,085 (distribution); \$66,810 (energy)		-	-	\$78,495	1.000	\$78,495

Figure 10. Billing Determinants for 2015/16 – Residential

Actual 2015/16	Customer Months	>200 A Cust Months	Total kWh
Basic	5,689,836	53,372	7,074,497,317
Diesel	6,996	0	8,130,054
Seasonal	(avg. mthly) 20,176	0	80,526,326
FRWH	41,449	0	17,557,315

May 1, 2014 Rates	Basic Charge	>200 A Charge	kWh Charge
Basic	\$7.28	\$7.28	\$0.07381
Diesel	\$7.28		\$0.07381
Seasonal	(annual) \$87.36		\$0.07381
FRWH	(weighted average) \$26.76		

Aug 1, 2015 Rates	Basic Charge	>200 A Charge	kWh Charge
Basic	\$7.57	\$7.57	\$0.07672
Diesel	\$7.57		\$0.07672
Seasonal	(annual) \$90.84		\$0.07672
FRWH	(weighted average) \$28.08		

2015/16 Rev at May 2014 & Aug 2015 Rates	BC & >200 A Revenue	Revenue \$	Total Calculated Revenue	Adj. Factor	Book Revenue
Basic	\$42,920,908	\$535,893,172	\$578,814,080	1.000	\$579,056,305
Diesel	\$52,283	\$615,852	\$668,135	0.997	\$666,224
Seasonal	\$1,762,575	\$6,060,814	\$7,823,389	0.997	\$7,798,940
FRWH			\$1,146,534	1.000	\$1,146,534

Figure 11. Billing Determinants for 2015/16 – General Service

Actual Data 2015/16	Customer Months	3 Phase Customer Months	1 st 11000 kWh	Next 8500 kWh & ND Runoff	Balance of kWh	Total kWh	Billable Demand
Small ND	633,827	146,815	1,478,897,010	123,532,509		1,602,429,519	0
Small Demand	145,997	98,235	847,809,512	458,547,757	736,086,379	2,042,443,648	2,392,859
Small LUBD	525	501	-	-	-	3,246,585	17,205
Seasonal	(avg. mthly) 882	-	5,395,139	0	0	5,395,139	0
FRWH	4,311	-	-	-	-	5,850,583	0
Medium	24,200	-	261,173,421	197,269,727	2,621,998,903	3,080,442,051	7,124,296
Med. LUBD	217	-	-	-	-	4,785,606	39,298
Large <30	3,625	-	-	-	-	1,675,579,125	3,972,047
L<30 LUBD	30	-	-	-	-	414,358	13,700
Large 30-100	493	-	-	-	-	1,531,895,665	3,095,473
Large >100	156	-	-	-	-	4,384,951,670	7,530,392
L>100 LUBD	36	-	-	-	-	1,502,200	31,300
DFC Fed Govt.	576	-	-	-	-	1,878,061	0
DFC Prov. Gov	228	-	-	-	-	438,673	0
DFC Non-Gov	1,401	-	(1 st 2000 kWh) 1,275,041		2,011,814	3,286,855	0
SEP Med	312	-	-	-	-	22,134,463	0
SEP Large <30	48	-	-	-	-	2,495,982	0

Figure 11. Billing Determinants for 2015/16 – General Service (continued)

May 1, 2014 Rates	Basic Charge	3 Ph Charge	1 st 11000 kWh Chg	Next 8500 kWh Chg & ND Bal.	Balance of kWh Charge	Demand Charge
Small ND	\$19.73	\$8.09	\$0.07752	\$0.05381		
Small Demand	\$19.73	\$8.09	\$0.07752	\$0.05381	\$0.03552	\$9.09
Small LUBD	\$19.73	\$8.09			\$0.08795	\$2.27
Seasonal	(annual) \$236.76		\$0.07752	\$0.05381		
FRWH	(weighted average) \$106.18					
Medium	\$29.36		\$0.07752	\$0.05381	\$0.03552	\$9.09
Med. LUBD	\$29.36				\$0.08795	\$2.27
Large <30	\$0.00				\$0.03339	\$7.72
L<30 LUBD	\$0.00				\$0.07788	\$1.93
Large 30-100	\$0.00				\$0.03105	\$6.61
Large >100	\$0.00				\$0.03009	\$5.88
L>100 LUBD	\$0.00				\$0.06381	\$1.50
DFC Fed Govt.	\$19.73				\$2.4141	
DFC Prov. Gov	\$19.73				\$2.4141	
DFC Non-Gov	\$19.73		First 2000 kWh @ \$0.07752		\$0.39665	
SEP Med	\$50.00		\$0.02627 average energy charge & \$0.0062 dist. charge (per kWh)			
SEP Large <30	\$100.00		\$0.02631 average energy charge & \$0.0033 dist. charge (per kWh)			

Figure 11. Billing Determinants for 2015/16 – General Service (continued)

August 1, 2015 Rates	Basic Charge	3 Ph Charge	1 st 11000 kWh Chg	Next 8500 kWh Chg & ND Bal.	Balance of kWh Charge	Demand Charge
Small ND	\$20.51	\$8.41	\$0.08058	\$0.05594		
Small Demand	\$20.51	\$8.41	\$0.08058	\$0.05594	\$0.03692	\$9.45
Small LUBD	\$20.51	\$8.41			\$0.09146	\$2.36
Seasonal	(annual) \$246.12		\$0.08058	\$0.05594		
FRWH	(weighted average) \$110.37					
Medium	\$30.52		\$0.08058	\$0.05594	\$0.03692	\$9.45
Med. LUBD	\$30.52				\$0.09146	\$2.36
Large <30	\$0.00				\$0.03472	\$8.02
L<30 LUBD	\$0.00				\$0.08095	\$2.01
Large 30-100	\$0.00				\$0.03228	\$6.87
Large >100	\$0.00				\$0.03128	\$6.11
L>100 LUBD	\$0.00				\$0.06653	\$1.53
DFC Fed Govt.	\$20.51				\$2.5095	
DFC Prov. Gov	\$20.51				\$2.5095	
DFC Non-Gov	\$20.51		First 2000 kWh @ \$0.08058		\$0.41232	
SEP Med	\$50.00		\$0.02627 average energy charge & \$0.0062 dist. charge (per kWh)			
SEP Large <30	\$100.00		\$0.02631 average energy charge & \$0.0033 dist. charge (per kWh)			

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Figure 11. Billing Determinants for 2015/16 – General Service (continued)

2015/16 Revenue at May 2014 & Aug 2015 Rates	Basic Chg Revenue.	3 Ph Chg Revenue	1 st Block Revenue	2 nd Block Rev.& ND Runoff	Run-Off Revenue	Demand Charge Revenue	Total Calculated Revenue	Adj. Factor	Book Revenue
Small ND	\$12,834,997	\$1,218,565	\$117,661,046	\$6,822,700	\$0	\$0	\$138,537,308	1.019	\$141,228,532
Small D.	\$2,956,439	\$815,351	\$67,451,725	\$25,325,593	\$26,830,349	\$22,325,372	\$145,704,829	0.991	\$144,443,180
Small LUBD	\$10,631	\$4,160	-	-	\$293,134	\$40,087	\$348,012	1.000	\$347,893
Seasonal	\$214,326	\$0	\$429,237	\$0	\$0	-	\$643,563	1.000	\$643,583
FRWH	-	-	-	-	-	-	\$469,794	1.000	\$469,794
Medium	\$729,146	-	\$20,778,957	\$10,895,207	\$95,571,860	\$66,469,680	\$194,444,850	0.996	\$193,635,813
Med. LUBD	\$6,538	-	-	-	\$432,092	\$91,563	\$530,193	1.000	\$529,969
Large <30	\$0	-	-	-	\$57,437,902	\$31,458,299	\$88,896,201	0.999	\$88,849,722
L<30 LUBD	\$0	-	-	-	\$33,120	\$27,172	\$60,292	1.000	\$60,306
Large 30-100	\$0	-	-	-	\$48,863,443	\$21,009,392	\$69,872,835	0.999	\$69,780,685
Large >100	\$0	-	-	-	\$135,381,860	\$45,446,512	\$180,828,372	1.001	\$180,942,610
L100 LUBD	\$0	-	-	-	\$98,574	\$47,576	\$146,150	1.000	\$146,139
DFC Fed Govt.	\$11,664	-	-	-	\$4,653,272	-	\$4,664,936	1.001	\$4,667,565
DFC Prov. Govt.	\$4,617	-	-	-	\$1,086,900	-	\$1,091,517	1.000	\$1,091,485
DFC Non-Govt.	\$28,370	-	\$101,442		\$819,010	-	\$948,822	1.021	\$969,215
SEP Med	\$15,600	-	\$137,234 (distribution); \$581,857 (energy)			-	\$734,691	1.000	\$734,690
SEP Large <30	\$4,800	-	\$8,237 (distribution); \$69,614 (energy)			-	\$82,651	1.000	\$82,651

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Load Forecast

Update MIPUG/MH-I-25a&b from 2015/16 GRA for 20 year load forecast comparison for the GSL customer classes.

Figures 1 to 3 provide forecast sales (GWh) from the 2000 to 2016 System Load Forecasts for fiscal years 2000/01 to 2035/36 inclusive for each General Service Large sub-class.

Figure 4 provides actual sales for the period 2000 to 2016. Limited Use of Billing Demand (LUBD) sales are not included in any of these figures.

Figure 5 provides the breakdown of the General Service forecast sector into its sub-classes based on the 2016 System Load Forecast.

None of the figures reported in the following tables reflect the 2016 Load Forecast adjustments discussed in Section 7.1 of Tab 7. The adjustments to the forecast were prepared on a high level basis and not incorporated into each sub-class.

Figure 1. GSL 750-30 kV (Forecast GW.h)

FIS YR	YEAR OF SYSTEM LOAD FORECAST																
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
ENDING																	
2001	1,175																
2002	1,224	1,159															
2003	1,273	1,178	1,158														
2004	1,323	1,201	1,204	1,194													
2005	1,366	1,230	1,226	1,233	1,471												
2006	1,406	1,260	1,248	1,271	1,494	1,509											
2007	1,442	1,287	1,266	1,288	1,512	1,521	1,565										
2008	1,475	1,317	1,282	1,305	1,527	1,586	1,636	1,546									
2009	1,505	1,349	1,297	1,322	1,543	1,629	1,657	1,573	1,530								
2010	1,523	1,382	1,310	1,338	1,559	1,643	1,681	1,585	1,558	1,558							
2011	1,541	1,417	1,331	1,354	1,576	1,661	1,692	1,602	1,575	1,574	1,606						
2012	1,560	1,451	1,354	1,370	1,599	1,683	1,706	1,623	1,593	1,591	1,624	1,688					
2013	1,578	1,481	1,379	1,385	1,622	1,706	1,724	1,646	1,611	1,611	1,646	1,743	1,683				
2014	1,596	1,509	1,402	1,401	1,646	1,729	1,744	1,661	1,637	1,633	1,658	1,831	1,715	1,679			
2015	1,613	1,534	1,424	1,419	1,669	1,752	1,763	1,675	1,660	1,645	1,677	1,891	1,737	1,718	1,746		
2016	1,630	1,557	1,445	1,439	1,692	1,772	1,782	1,690	1,681	1,665	1,689	1,951	1,770	1,744	1,798	1,735	
2017	1,646	1,577	1,467	1,458	1,715	1,792	1,801	1,706	1,704	1,685	1,706	2,011	1,792	1,782	1,846	1,782	1,752
2018	1,661	1,595	1,489	1,477	1,737	1,813	1,820	1,722	1,724	1,706	1,725	2,066	1,825	1,808	1,896	1,838	1,810
2019	1,675	1,611	1,511	1,496	1,758	1,834	1,840	1,743	1,743	1,729	1,746	2,116	1,847	1,847	1,951	1,875	1,869
2020	1,688	1,626	1,533	1,516	1,780	1,857	1,860	1,765	1,763	1,750	1,764	2,166	1,880	1,867	1,987	1,919	1,909
2021	1,701	1,638	1,556	1,536	1,801	1,879	1,880	1,788	1,781	1,770	1,783	2,216	1,902	1,900	2,028	1,953	1,950
2022		1,649	1,579	1,555	1,822	1,902	1,900	1,811	1,800	1,790	1,802	2,265	1,935	1,919	2,059	1,999	2,003
2023			1,603	1,575	1,842	1,925	1,920	1,833	1,819	1,811	1,822	2,315	1,957	1,952	2,101	2,035	2,040
2024				1,596	1,861	1,948	1,940	1,856	1,837	1,831	1,841	2,365	1,984	1,985	2,131	2,083	2,076
2025					1,880	1,971	1,960	1,878	1,856	1,851	1,861	2,415	2,012	2,005	2,176	2,121	2,123
2026						1,994	1,980	1,902	1,874	1,873	1,881	2,460	2,028	2,038	2,210	2,172	2,154
2027							2,000	1,925	1,892	1,894	1,902	2,505	2,055	2,058	2,254	2,213	2,189

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2028	1,950	1,911	1,916	1,923	2,550	2,072	2,091	2,289	2,255	2,236
2029		1,929	1,938	1,944	2,590	2,102	2,113	2,336	2,309	2,268
2030			1,961	1,966	2,630	2,131	2,148	2,372	2,354	2,336
2031				1,987	2,669	2,149	2,169	2,422	2,411	2,419
2032						2,178	2,199	2,459	2,480	2,488
2033							2,228	2,510	2,562	2,571
2034								2,550	2,635	2,642
2035									2,711	2,716
2036										2,803

Figure 2. GSL 30 - 100 kV (Forecast GW.h)

FIS YR	YEAR OF SYSTEM LOAD FORECAST																
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
2001	535																
2002	623	505															
2003	682	646	679														
2004	739	758	694	784													
2005	743	772	701	888	736												
2006	746	785	708	891	771	807											
2007	750	798	715	877	806	1,022	861										
2008	753	810	723	863	837	1,277	990	964									
2009	757	821	730	849	867	1,457	1,117	1,218	990								
2010	760	833	737	835	897	1,605	1,257	1,368	1,154	944							
2011	763	845	745	821	900	1,628	1,396	1,474	1,273	853	912						
2012	764	848	752	807	898	1,627	1,451	1,479	1,345	868	844	1,049					
2013	766	851	755	809	896	1,624	1,453	1,483	1,353	855	845	1,067	1,223				
2014	768	854	759	812	895	1,622	1,455	1,488	1,356	906	910	1,219	1,334	1,324			
2015	770	857	761	814	895	1,620	1,457	1,492	1,358	1,091	914	1,243	1,321	1,377	1,438		
2016	772	860	763	816	896	1,622	1,458	1,496	1,361	1,095	968	1,292	1,409	1,425	1,634	1,566	
2017	774	863	766	819	897	1,624	1,460	1,499	1,362	1,099	1,045	1,366	1,437	1,459	1,804	1,764	1,712
2018	776	866	768	821	899	1,627	1,462	1,503	1,365	1,102	1,048	1,399	1,462	1,476	2,045	1,701	1,652
2019	777	869	770	824	901	1,629	1,463	1,505	1,369	1,103	1,050	1,366	1,557	1,493	2,115	1,698	1,638
2020	779	871	773	826	903	1,631	1,464	1,507	1,372	1,107	1,055	1,414	1,474	1,514	2,332	1,693	1,651
2021	781	874	775	829	905	1,632	1,465	1,509	1,375	1,111	1,059	1,470	1,510	1,523	2,332	2,260	1,664
2022		876	778	831	907	1,634	1,467	1,511	1,379	1,116	1,063	1,478	1,518	1,540	2,344	2,254	1,664
2023			780	834	911	1,636	1,468	1,513	1,382	1,120	1,067	1,485	1,538	1,561	2,344	2,282	1,677
2024				836	914	1,638	1,469	1,515	1,386	1,124	1,072	1,493	1,538	1,561	2,356	2,282	1,690
2025					917	1,640	1,470	1,517	1,389	1,128	1,076	1,501	1,538	1,574	2,356	2,298	1,690
2026						1,641	1,471	1,519	1,392	1,132	1,081	1,508	1,550	1,574	2,368	2,300	1,703
2027							1,472	1,522	1,396	1,136	1,085	1,516	1,550	1,587	2,368	2,311	1,716

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2028	1,524	1,399	1,140	1,089	1,524	1,561	1,587	2,380	2,322	1,716
2029		1,403	1,144	1,094	1,531	1,561	1,600	2,380	2,322	1,729
2030			1,149	1,098	1,538	1,561	1,600	2,392	2,334	1,741
2031				1,103	1,545	1,573	1,613	2,392	2,334	1,741
2032						1,573	1,613	2,404	2,345	1,754
2033							1,613	2,404	2,345	1,754
2034								2,416	2,356	1,767
2035									2,367	1,780
2036										1780

Figure 3. GSL >100 kV (Forecast GW.h)

FIS YR	YEAR OF SYSTEM LOAD FORECAST																
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
2001	3,991																
2002	4,319	4,173															
2003	4,385	4,445	4,474														
2004	4,426	4,607	4,480	4,687													
2005	4,526	4,739	4,577	4,880	4,833												
2006	4,626	4,871	4,673	4,950	5,132	5,089											
2007	4,726	5,003	4,789	5,061	5,436	5,122	5,135										
2008	4,826	5,085	4,905	5,163	5,580	5,205	5,213	5,158									
2009	4,926	5,168	5,021	5,244	5,714	5,309	5,285	5,378	5,390								
2010	5,026	5,250	5,137	5,325	5,828	5,442	5,545	5,823	5,633	5,018							
2011	5,121	5,332	5,254	5,406	5,928	5,536	5,805	6,011	5,952	5,354	4,700						
2012	5,176	5,402	5,370	5,498	5,828	5,469	5,995	6,195	6,246	5,635	5,079	4,718					
2013	5,231	5,472	5,470	5,588	5,728	5,349	6,055	6,371	6,531	5,829	5,207	4,928	4,645				
2014	5,286	5,542	5,570	5,668	5,648	5,229	6,115	6,547	6,591	5,920	5,496	5,084	4,919	4,651			
2015	5,341	5,612	5,640	5,748	5,658	5,109	6,175	6,709	6,651	6,078	5,620	5,092	4,934	4,705	4,610		
2016	5,396	5,682	5,710	5,828	5,668	5,184	6,235	6,871	6,711	6,178	5,738	4,882	4,866	4,740	4,554	4,524	
2017	5,451	5,752	5,780	5,908	5,678	5,259	6,295	6,997	6,731	6,278	5,859	4,873	4,844	4,742	4,331	4,574	4,558
2018	5,506	5,822	5,850	5,988	5,738	5,334	6,355	7,123	6,831	6,338	5,919	4,934	4,934	4,733	4,449	4,642	4,531
2019	5,561	5,892	5,920	6,068	5,798	5,409	6,385	7,189	6,931	6,365	5,965	4,939	4,991	4,808	4,539	4,724	4,472
2020	5,616	5,962	5,990	6,148	5,858	5,459	6,415	7,255	7,031	6,465	6,065	5,049	5,044	4,890	4,603	4,611	4,543
2021	5,671	6,032	6,060	6,228	5,918	5,509	6,445	7,321	7,131	6,565	6,165	5,161	5,149	4,971	4,666	4,569	4,615
2022		6,102	6,130	6,308	5,978	5,559	6,475	7,387	7,231	6,665	6,265	5,261	5,251	5,072	4,750	4,649	4,687
2023			6,200	6,388	6,088	5,609	6,505	7,453	7,331	6,765	6,365	5,361	5,353	5,149	4,835	4,735	4,755
2024				6,468	6,198	5,659	6,535	7,519	7,431	6,865	6,465	5,461	5,453	5,249	4,921	4,818	4,825
2025					6,308	5,709	6,565	7,585	7,531	6,965	6,565	5,561	5,553	5,349	5,008	4,904	4,897
2026						5,759	6,595	7,651	7,631	7,065	6,665	5,661	5,653	5,449	5,097	4,990	4,969
2027							6,625	7,717	7,731	7,165	6,765	5,761	5,753	5,549	5,187	5,076	5,044

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2028	7,783	7,831	7,265	6,865	5,861	5,853	5,649	5,278	5,164	5,119
2029		7,931	7,365	6,965	5,961	5,953	5,749	5,370	5,253	5,197
2030			7,465	7,065	6,061	6,053	5,849	5,463	5,342	5,329
2031				7,165	6,161	6,153	5,949	5,557	5,433	5,464
2032						6,253	6,049	5,652	5,591	5,602
2033							6,149	5,749	5,751	5,743
2034								5,847	5,915	5,887
2035									6,083	6,034
2036										6,184

**Figure 4. General Service Large
Actual GWh 2000 – 2016**

FISC YR ENDING	LARGE 750-30	LARGE 30-100	LARGE >100
2000	1,101	492	3,473
2001	1,132	474	3,975
2002	1,130	457	4,282
2003	1,180	620	4,574
2004	1,463	735	4,615
2005	1,487	782	4,871
2006	1,531	776	5,115
2007	1,545	856	5,094
2008	1,546	905	5,154
2009	1,534	936	5,140
2010	1,545	941	4,523
2011	1,630	972	4,401
2012	1,599	1,164	4,412
2013	1,643	1,222	4,397
2014	1,687	1,283	4,222
2015	1,704	1,433	4,370
2016	1,676	1,532	4,385

Figure 5. General Service - 2016 System Load Forecast (unadjusted)

	Total GS	Small Non-Dem Demand	Small Demand	Small LUBD	Med Demand	Med LUBD	SEP Med	SEP Large <30
2017	15,162.6	1,667.6	2,162.5	3.3	3,258.8	4.9	22.2	2.5
2018	15,260.7	1,671.1	2,223.0	3.4	3,321.0	5.0	23.0	2.5
2019	15,355.4	1,674.8	2,281.9	3.5	3,366.9	5.1	23.0	2.5
2020	15,566.8	1,678.7	2,339.0	3.6	3,394.1	5.1	23.0	2.5
2021	15,790.6	1,682.2	2,394.4	3.7	3,432.6	5.2	23.0	2.5
2022	16,015.1	1,685.6	2,448.4	3.8	3,475.3	5.2	23.0	2.5
2023	16,240.0	1,688.9	2,503.7	3.9	3,523.6	5.3	23.0	2.5
2024	16,469.6	1,692.3	2,559.8	3.9	3,574.3	5.4	23.0	2.5
2025	16,700.9	1,695.6	2,616.0	4.0	3,626.7	5.5	23.0	2.5
2026	16,914.2	1,699.3	2,672.6	4.1	3,663.8	5.5	23.0	2.5
2027	17,154.0	1,702.6	2,729.7	4.2	3,720.8	5.6	23.0	2.5
2028	17,396.4	1,705.9	2,787.0	4.3	3,780.8	5.7	23.0	2.5
2029	17,643.5	1,709.2	2,844.8	4.4	3,843.2	5.8	23.0	2.5
2030	18,018.4	1,711.6	2,902.3	4.5	3,944.9	5.9	23.0	2.5
2031	18,401.5	1,713.9	2,959.2	4.6	4,050.9	6.1	23.0	2.5
2032	18,790.7	1,716.1	3,015.7	4.7	4,161.3	6.3	23.0	2.5
2033	19,188.5	1,718.2	3,072.2	4.7	4,276.2	6.5	23.0	2.5
2034	19,595.4	1,720.2	3,128.8	4.8	4,396.0	6.6	23.0	2.5
2035	20,012.6	1,722.1	3,185.8	4.9	4,521.1	6.8	23.0	2.5
2036	20,440.3	1,724.0	3,243.0	5.0	4,651.7	7.0	23.0	2.5

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Load Forecast

	Large <30 kV	Large LUBD <30kV	Large 30-100	Large >100	Large LUBD >100	Seas.	FRWH	Diesel Fed Gov	Diesel Prov Gov	Diesel Non - Gov
2017	1,752.0	0.3	1,712.4	4,557.8	1.5	5.4	5.6	1.9	0.5	3.4
2018	1,810.1	0.3	1,652.3	4,530.9	1.5	5.5	5.3	1.9	0.5	3.4
2019	1,869.4	0.3	1,638.3	4,471.9	1.5	5.5	5.0	1.9	0.5	3.4
2020	1,908.6	0.3	1,651.2	4,542.9	1.5	5.5	4.8	1.9	0.5	3.5
2021	1,950.2	0.3	1,664.1	4,614.9	1.5	5.5	4.5	1.9	0.5	3.5
2022	2,002.6	0.3	1,664.1	4,686.9	1.5	5.6	4.3	2.0	0.5	3.5
2023	2,039.6	0.3	1,677.0	4,754.9	1.5	5.6	4.1	2.0	0.5	3.6
2024	2,076.1	0.3	1,689.9	4,824.9	1.5	5.6	3.9	2.0	0.5	3.6
2025	2,123.4	0.3	1,689.9	4,896.9	1.5	5.7	3.7	2.0	0.5	3.6
2026	2,154.4	0.3	1,702.8	4,968.9	1.5	5.7	3.5	2.0	0.5	3.7
2027	2,188.8	0.3	1,715.7	5,043.9	1.5	5.7	3.3	2.0	0.5	3.7
2028	2,235.6	0.3	1,715.7	5,118.9	1.5	5.8	3.2	2.1	0.6	3.7
2029	2,268.3	0.3	1,728.6	5,196.9	1.5	5.8	3.0	2.1	0.6	3.8
2030	2,336.4	0.3	1,741.5	5,328.9	1.5	5.8	2.9	2.1	0.6	3.8
2031	2,419.0	0.3	1,741.5	5,463.9	1.5	5.8	2.7	2.1	0.6	3.8
2032	2,488.1	0.3	1,754.4	5,601.9	1.5	5.9	2.6	2.1	0.6	3.9
2033	2,571.2	0.3	1,754.4	5,742.9	1.5	5.9	2.4	2.1	0.6	3.9
2034	2,642.5	0.3	1,767.3	5,886.9	1.5	5.9	2.3	2.1	0.6	3.9
2035	2,715.6	0.3	1,780.2	6,033.9	1.5	6.0	2.2	2.1	0.6	4.0
2036	2,803.3	0.3	1,780.2	6,183.9	1.5	6.0	2.1	2.1	0.6	4.0

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Operating Expenses

Please provide definition and calculations supporting the EFT calculation and vacancy rate utilized. If different than the 2015/16 GRA (MIPUG/MH-I-6c) please explain.

The definitions and calculations supporting the EFT calculation and vacancy rate utilized for the 2017/18 & 2018/19 General Rate Application remain unchanged from those utilized at the time of the 2014/15 & 2015/16 General Rate Application.

An EFT represents the equivalent of an employee working full-time hours of 73.7 hours bi-weekly or 1,921 hours per year.

The vacancy rate is defined as the number of vacant positions as a percentage of the total positions. Vacant positions are attributable to a number of factors including employee retirements, turnover of staff both internally and externally and cost containment initiatives. As a result, these factors are not quantified individually in the vacancy rate calculation.

The actual vacancy rate for 2014/15 and 2015/16 and the forecast vacancy rate for 2016/17 are shown below. Actual vacancy rate results for 2016/17 are not yet available.

Fiscal Year	Vacancy Rate
2014/15	6.7%
2015/16	7.9%
2016/17 forecast	5.6%

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Load Forecast

Provide average hydraulic energy and net revenue supporting analysis associated with each of the 102 historical flow years consistent with MIPUG/MH-I-9 from the 2015/16 GRA.

The hydraulic energy and net revenue associated with each of the 102 historical flow years (representing historic flow years 1912/13 to 2013/14, inclusive) for the 2018/19 load year are provided in **Table 1** below. The net revenue represents the revenue minus cost. Revenues are inclusive of firm and opportunity export sales and transmission inter-connection revenues. Costs are inclusive of water rentals for Manitoba Hydro hydraulic energy generation, costs of Manitoba Hydro thermal generation, import and wind energy purchases, and transmission charges.

These forecast energies and net revenues are based on the 2016 Load Forecast, with corresponding adjustments as discussed in Tab 7, and the 2016 Adjusted Electricity Price Forecast of export and import prices, as well as all other updates in IFF16.

The net revenue, averaged over all flow cases, is given as \$161 million CDN. The year-by-year variation of net revenue with respect to this average net revenue is also provided.

The historic annual hydraulic generations are provided in **Table 2** below, for fiscal years 1992/93 through 2016/17, inclusive.

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Load Forecast

**Table 1 Hydraulic Energy and Net Revenue Variation with Flow
Fiscal Year 2018/19**

Flow Year Begin	Annual System Inflow	MH Hydraulic Energy	Net Revenue	Variation of Net Revenue from Average	Flow Year Begin	Annual System Inflow	MH Hydraulic Energy	Net Revenue	Variation of Net Revenue from Average
	(Kcfs)	(TWh/yr)	(M \$Cdn)	(M \$Cdn)		(Kcfs)	(TWh/yr)	(M \$Cdn)	(M \$Cdn)
1912	112	32.9	237	76	1963	110	31.5	200	39
1913	119	33.0	235	74	1964	113	31.2	194	33
1914	98	28.9	128	-33	1965	156	37.5	340	179
1915	105	29.7	155	-6	1966	151	36.5	311	150
1916	136	36.3	318	157	1967	115	33.0	227	66
1917	119	34.4	272	111	1968	133	33.8	257	96
1918	105	30.1	163	2	1969	148	38.3	347	186
1919	98	27.3	80	-81	1970	145	36.9	325	164
1920	103	28.5	116	-45	1971	139	36.4	314	153
1921	113	31.0	186	25	1972	126	35.0	272	111
1922	106	30.1	162	1	1973	115	31.8	203	42
1923	112	30.2	165	5	1974	163	37.1	321	160
1924	99	26.8	65	-96	1975	139	36.4	307	146
1925	120	32.0	211	50	1976	92	25.8	29	-132
1926	111	31.9	211	50	1977	99	24.1	-22	-183
1927	155	38.0	339	178	1978	122	32.8	235	74
1928	114	34.0	263	102	1979	135	34.0	246	85
1929	87	24.7	4	-157	1980	93	25.1	15	-146
1930	89	21.8	-139	-300	1981	85	21.8	-139	-300
1931	87	21.9	-134	-295	1982	115	30.2	162	1
1932	95	24.2	-18	-179	1983	110	30.2	164	3
1933	101	27.0	71	-90	1984	101	27.0	70	-91
1934	119	32.4	221	60	1985	136	34.0	258	97
1935	118	32.9	235	74	1986	124	34.3	257	96
1936	96	27.5	87	-74	1987	82	22.0	-135	-296
1937	99	25.7	33	-128	1988	72	20.1	-253	-414
1938	89	24.9	10	-151	1989	91	23.0	-71	-232
1939	79	20.8	-205	-366	1990	85	23.8	-35	-196
1940	55	19.6	-270	-431	1991	91	23.7	-38	-199
1941	92	22.6	-90	-251	1992	114	30.8	176	15
1942	101	28.0	100	-61	1993	106	30.4	164	3
1943	108	30.7	179	18	1994	101	29.7	142	-19
1944	107	30.7	173	12	1995	103	29.9	158	-3
1945	119	33.3	247	86	1996	141	35.4	284	123
1946	113	32.8	230	70	1997	151	36.9	325	165
1947	126	34.7	278	117	1998	106	30.4	152	-9
1948	113	32.7	223	62	1999	110	29.5	143	-18
1949	116	30.1	165	4	2000	126	33.7	254	93
1950	144	36.2	305	144	2001	126	33.2	221	60
1951	132	36.7	325	164	2002	104	27.9	96	-64
1952	107	32.3	217	56	2003	72	19.7	-275	-436
1953	124	33.7	256	96	2004	140	33.4	251	90
1954	143	37.7	345	184	2005	175	38.8	367	206
1955	133	35.8	291	130	2006	113	31.7	181	20
1956	119	33.6	246	85	2007	150	36.4	315	154
1957	111	31.2	190	29	2008	141	37.0	325	164
1958	96	26.5	54	-107	2009	151	36.5	309	148
1959	137	34.8	282	121	2010	162	38.9	364	203
1960	102	29.9	150	-11	2011	153	36.0	288	128
1961	75	20.3	-244	-405	2012	121	34.0	261	100
1962	119	29.2	134	-26	2013	134	36.0	296	136
Average	115	30.83	161	0					

Table 2
Historic MH Hydraulic Generation

Fiscal Year	Annual Hydraulic Generation (TWh)
1992 / 93	27.61
1993 / 94	27.20
1994 / 95	27.91
1995 / 96	29.12
1996 / 97	31.68
1997 / 98	33.76
1998 / 99	29.11
1999 / 00	29.47
2000 / 01	31.83
2001 / 02	32.15
2002 / 03	28.57
2003 / 04	18.48
2004 / 05	31.13
2005 / 06	37.22
2006 / 07	31.61
2007 / 08	34.90
2008 / 09	34.19
2009 / 10	33.82
2010 / 11	34.04
2011 / 12	33.16
2012 / 13	33.15
2013 / 14	35.26
2014 / 15	34.97
2015 / 16	34.93
2016 / 17	36.39
Average	31.67