Volume 5 - Board Counsel's Book of Documents **Exhibit#_____**
Manitoba Hydro 2014/15 and 2015/16 GRA

Tab #	Description	Reference
Load Forecast		
1	Domestic Load (Growth Rate)	Tab 7, p. 2 of 7., Figure 7.1 2014 Electric Load Forecast Appendix 7.1, Table 30 Appendix 7.1, Table 5 NFAT Review PUB/MH II-365 (a) PUB/MH I-57 (a)
2	Domestic Load (Growth Rate)	Appendix 7.1, Table 30 Appendix 7.1, Table 32 Appendix 7.1, Table 5 Appendix 7.1, Table 14
3	DSM Impacts	PUB/MH I-58, Attachment 1, p. 9 of 24 PUB Advisor Chart – Load Forecast after DSM NFAT vs GRA PUB/MH I-55 PUB Advisor Charts – DSM Savings Comparison Appendix 4.1 pp. 3 and 6 Appendix 8.1 (excerpt) PUB Advisor Chart – DSM Spending Comparison NFAT Exhibit #202 PUB Advisor Chart – DSM as a %age of General Consumer Sales PUB/MH I-59 (a) & (b)
4	Residential Population/ Customer Growth	Coalition/MH I-12 (b) PUB/MH II-78 (a), Table 14 Appendix 7.1 Revised MMF/MH I-40 (a-j)
5	Fuel Switching Electric Space & Water Heating Electric and Natural Gas Bill Impacts	PUB/MH II-58 (d) PUB/MH II-58 (a) & (b)
6	General Large Service forecasts accuracy	MIPUG/MH I-25 (a)(i/ii) PUB/MH II-76 (a-d)

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Tab #	Description	Reference
7	Top Consumers	Appendix 7.1, Table 5 NFAT Review PUB/MH II-366 (b) & (c)
8	Industry Growth Industry Load Growth	NFAT PUB/MH II-365 Appendix 7.1, Table 5 PUB/MH II-34
9	New Pipeline Load	PUB/MH I-57 (a) & (b) NFAT Review MH Exhibit #89 Ed Wojczynski Mar 5/14 Future changes in Keeyask ISD NFAT Review MH's Final Argument, p. 54 of 297 The Globe and Mail, Apr 2/15 article "TransCanada delays Energy East, won't build Quebec oil terminal"
10	Load Sensitivities Potential changes in load from very large industry customers	Appendix 7.1, pp. 50 to 55 Appendix 7.1, Table 14 % Electric space and water heating Appendix 7.1, p. 54
Demand Side Management		
11	Recommendations	Needs For and Alternatives To (NFAT) - pp. 251-252
12	Financial Targets	PUB/MH I-18 (f) COALITION/MH I-19 (g) Order 43-13 excerpts, pp. 5, 44&45 MMF/MH I-39 (a-c) COALITION/MH I-72 COALITION/MH I-23

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Tab #	Description	Reference
13	DSM Savings DSM Targets	Appendix 8.1 - Power Smart Plan -Excerpts CEF14 excerpt Appendix 8.1 – Power Smart Plan – Additional Excerpts 2015/16 Power Smart Plan Excerpt
14	Affordable Energy Fund	COALITION/MH I-66 Appendix 11.44 MIPUG/MH I-1 MKO-COALITION/MH I-3 Excerpts -AEF Review
15	Affordable Energy mitigation strategy; First Nations focus	MMF/MH I-24 MKO-COALITION/MH I-2
16	Residential & First Nations Residential Accounts Bill Impacts	MKO/MH I-3 (a-b), (f-h) MMF/MH I-41
17	Non-Utility Generation Policy	MH Exhibit #76 – NUG Policy FIT/microFIT Price Schedule microFIT Eligible Participant Schedule
Special Rates		
18	Surplus Energy Program	Appendix 6.8, pp. 3-15
19	Limited Billing Demand	Appendix 6.12
20	Energy Intensive Industry Rate	Tab 10, pp. 11-13
21	Energy Conservation Rates	MIPUG/MH I-3 (a)
22	LED Area & Roadway Lighting	Appendix 6.13
23	Diesel Communities	MKO/MH I-5 (a-c) MKO/MH I-1 (f) 2014 Interim Application MKO/MH I-3, Attachment 1

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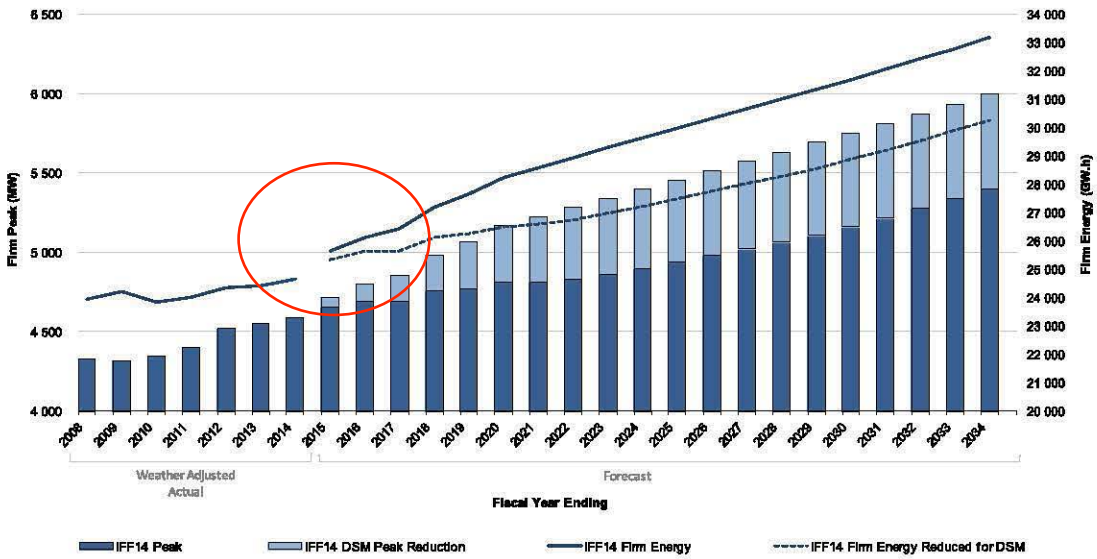
- Historical load values include the effect of Manitoba Hydro's past DSM efforts, including both improvements to energy codes and standards, as well as past market-based Power Smart programs.
- Forecast load values reflect the future impact of implemented or committed energy codes and standards, but not future activity under market–based DSM programs.
- Forecast future activity under market-based DSM programs has not been removed from the 2014 Load Forecast. The energy savings forecast to be achieved through future market-based DSM programs are considered in the Peak and Energy demand information provided in Tab 9 of the Application.

The figure below provides the forecast growth in Manitoba Hydro's load, as well as the reduction to forecast load growth including the impacts of the forecast DSM activities. Manitoba Hydro's DSM initiatives are described in detail in Tab 8 of the Application.

Figure 7.1



The figures in section 7.1 below compare the 2014 Electric Load Forecast to the forecast adjusted for the DSM Savings attributable to the future market-based DSM Programs.

Manitoba Hydro continually seeks to enhance the forecast and its supporting methodologies. The load forecast is produced annually to take into account changes in the markets as well as new outlooks into the future. This allows the planning process at

Table 30 - Monthly Gross Firm Energy

MONTHLY GROSS FIRM ENERGY (GW.h)
History and Forecast
2003/04 - 2033/34

Fiscal Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
2003/04	1,657	1,579	1,520	1,573	1,685	1,548	1,688	2,024	2,198	2,479	2,088	2,029	22,069
2004/05	1,699	1,683	1,545	1,579	1,575	1,574	1,793	1,952	2,411	2,539	2,098	2,140	22,589
2005/06	1,727	1,698	1,660	1,735	1,649	1,610	1,781	2,045	2,301	2,240	2,171	2,139	22,757
2006/07	1,712	1,690	1,681	1,826	1,746	1,622	1,870	2,092	2,303	2,458	2,304	2,159	23,464
2007/08	1,842	1,701	1,663	1,820	1,727	1,650	1,836	2,108	2,490	2,584	2,427	2,273	24,122
2008/09	1,881	1,737	1,662	1,730	1,787	1,681	1,874	2,154	2,652	2,702	2,226	2,331	24,417
2009/10	1,861	1,744	1,671	1,667	1,644	1,672	1,888	1,935	2,560	2,524	2,213	2,032	23,412
2010/11	1,699	1,692	1,611	1,716	1,698	1,638	1,778	2,129	2,563	2,682	2,322	2,364	23,892
2011/12	1,862	1,751	1,603	1,789	1,741	1,643	1,814	2,125	2,435	2,526	2,251	2,064	23,605
2012/13	1,802	1,698	1,688	1,869	1,727	1,606	1,941	2,265	2,665	2,766	2,342	2,383	24,750
2013/14	2,041	1,754	1,650	1,766	1,725	1,657	1,914	2,258	2,884	2,895	2,553	2,527	25,625
13/14 Wadj	1,842	1,778	1,665	1,801	1,678	1,683	1,895	2,218	2,636	2,800	2,371	2,310	24,677
10 Year Hist	15	14	11	21	17	17	18	26	33	46	25	27	269
Avg Growth	0.8%	0.8%	0.7%	1.2%	1.0%	1.1%	1.0%	1.3%	1.4%	1.8%	1.1%	1.2%	1.2%
2014/15	1,959	1,829	1,741	1,865	1,808	1,739	1,975	2,263	2,767	2,828	2,467	2,399	25,639
2015/16	1,996	1,864	1,774	1,900	1,842	1,773	2,012	2,306	2,820	2,882	2,514	2,445	26,130
2016/17	2,020	1,886	1,795	1,922	1,863	1,793	2,036	2,333	2,853	2,916	2,544	2,474	26,436
2017/18	2,076	1,938	1,846	1,977	1,916	1,844	2,093	2,398	2,932	2,997	2,615	2,543	27,174
2018/19	2,113	1,973	1,879	2,013	1,951	1,877	2,131	2,441	2,985	3,050	2,661	2,588	27,662
2019/20	2,157	2,015	1,919	2,056	1,993	1,917	2,176	2,492	3,047	3,115	2,717	2,643	28,247
2020/21	2,183	2,039	1,942	2,081	2,017	1,940	2,201	2,522	3,084	3,152	2,750	2,674	28,583
2021/22	2,210	2,064	1,966	2,106	2,042	1,964	2,229	2,553	3,122	3,191	2,784	2,707	28,937
2022/23	2,236	2,089	1,990	2,132	2,066	1,988	2,255	2,583	3,159	3,229	2,817	2,740	29,284
2023/24	2,263	2,113	2,013	2,157	2,090	2,011	2,282	2,614	3,196	3,267	2,850	2,772	29,626
10 Year Fcst	42	33	35	36	41	33	39	40	56	47	48	46	495
Avg Growth	2.1%	1.7%	1.9%	1.8%	2.2%	1.8%	1.9%	1.7%	1.9%	1.6%	1.9%	1.8%	1.8%
2024/25	2,289	2,138	2,036	2,182	2,114	2,034	2,308	2,644	3,233	3,305	2,883	2,804	29,970
2025/26	2,315	2,162	2,060	2,207	2,139	2,058	2,335	2,674	3,270	3,343	2,916	2,836	30,316
2026/27	2,341	2,187	2,083	2,232	2,163	2,081	2,361	2,705	3,307	3,380	2,949	2,868	30,659
2027/28	2,368	2,212	2,107	2,257	2,188	2,105	2,388	2,735	3,345	3,419	2,983	2,901	31,006
2028/29	2,394	2,236	2,130	2,282	2,212	2,128	2,415	2,766	3,382	3,457	3,016	2,933	31,352
2029/30	2,421	2,261	2,154	2,308	2,237	2,152	2,442	2,797	3,420	3,496	3,050	2,966	31,703
2030/31	2,448	2,287	2,179	2,334	2,262	2,177	2,469	2,828	3,459	3,535	3,084	2,999	32,061
2031/32	2,476	2,313	2,203	2,360	2,288	2,201	2,497	2,860	3,498	3,575	3,119	3,033	32,424
2032/33	2,505	2,339	2,229	2,387	2,314	2,226	2,526	2,893	3,538	3,616	3,155	3,068	32,796
2033/34	2,534	2,366	2,254	2,415	2,341	2,252	2,555	2,927	3,579	3,658	3,192	3,104	33,177
20 Year Fcst	35	29	29	31	33	28	33	35	47	43	41	40	425
Avg Growth	1.6%	1.4%	1.5%	1.5%	1.7%	1.5%	1.5%	1.4%	1.5%	1.3%	1.5%	1.5%	1.5%

Table 5 - General Consumers Sales Energy

GENERAL CONSUMERS SALES (GW.h) History and Forecast 2003/04 - 2033/34												
Fiscal	Residential				General Service						Lighting	Total
Year	Basic	Diesel	Seas	FRWH	Mass Mkt	Top Cons	Diesel	Seas	FRWH	SEP		Sales
2003/04	6,170	6	56	34	7,460	5,423	5	5	13	17	91	19,280
2004/05	6,275	7	58	31	7,516	5,714	5	5	10	25	91	19,735
2005/06	6,171	7	59	30	7,587	5,948	5	5	9	23	91	19,935
2006/07	6,443	7	60	29	7,839	5,989	5	4	9	23	101	20,510
2007/08	6,736	7	68	27	8,006	6,075	5	4	9	24	101	21,061
2008/09	6,847	7	74	25	8,049	6,065	5	5	8	22	102	21,210
2009/10	6,786	7	81	24	7,985	5,461	6	5	8	20	102	20,486
2010/11	6,952	8	77	23	8,258	5,324	5	5	8	24	103	20,786
2011/12	6,818	8	83	22	8,162	5,531	5	5	8	25	103	20,771
2012/13	7,223	8	81	21	8,434	5,560	5	5	7	28	103	21,477
2013/14	7,767	9	92	20	8,839	5,461	5	5	7	29	104	22,338
Weather Adj.	-518	0	0	0	-252	0	0	0	0	-3	0	-772
2013/14 Wadj	7,249	9	92	20	8,587	5,461	5	5	7	26	104	21,566
10 Year Wadj	106	0	4	-1	114	4	0	0	-1	1	1	228
Avg Gr.	1.6%	3.4%	5.1%	-5.2%	1.4%	0.1%	1.4%	1.2%	-6.1%	4.0%	1.3%	1.1%
2014/15	7,380	9	91	19	8,814	6,003	6	5	7	29	104	22,467
2015/16	7,481	9	93	18	8,993	6,147	6	5	6	29	105	22,891
2016/17	7,606	9	95	17	9,190	6,082	6	5	6	32	105	23,153
2017/18	7,726	9	96	16	9,388	6,430	6	5	6	33	106	23,822
2018/19	7,836	10	98	15	9,560	6,590	6	5	6	33	106	24,264
2019/20	7,946	10	100	14	9,705	6,859	6	5	5	33	107	24,791
2020/21	8,049	10	102	14	9,833	6,922	6	5	5	33	107	25,087
2021/22	8,151	10	104	13	9,958	7,006	6	6	5	33	108	25,399
2022/23	8,248	10	106	12	10,079	7,091	6	6	5	33	108	25,704
2023/24	8,342	11	108	12	10,199	7,177	6	6	4	33	109	26,006
10 Year	109	0	2	-1	161	172	0	0	0	1	1	444
Avg Gr.	1.4%	2.1%	1.5%	-5.0%	1.7%	2.8%	1.5%	0.6%	-5.0%	2.2%	0.5%	1.9%
2024/25	8,435	11	110	11	10,320	7,264	6	6	4	33	109	26,309
2025/26	8,527	11	111	11	10,442	7,353	6	6	4	33	110	26,613
2026/27	8,619	11	113	10	10,560	7,443	6	6	4	33	110	26,916
2027/28	8,711	11	115	10	10,681	7,534	6	6	3	33	111	27,221
2028/29	8,802	12	117	9	10,801	7,626	6	6	3	33	111	27,527
2029/30	8,895	12	119	9	10,922	7,719	6	6	3	33	112	27,836
2030/31	8,990	12	121	8	11,046	7,813	6	6	3	33	112	28,151
2031/32	9,087	12	123	8	11,172	7,908	7	6	3	33	113	28,471
2032/33	9,186	13	125	7	11,301	8,005	7	6	3	33	113	28,799
2033/34	9,289	13	127	7	11,433	8,103	7	6	3	33	114	29,134
20 Year	102	0	2	-1	142	132	0	0	0	0	1	378
Avg Gr.	1.2%	2.0%	1.6%	-5.0%	1.4%	2.0%	1.2%	0.5%	-5.0%	1.1%	0.5%	1.5%

SUBJECT: Load Forecast

REFERENCE: Chapter 4; 2012 GRA PUB/MH I-118(a)(c); 2012 Load Forecast

QUESTION:

Please refile PUB-006(b) and (c) to include fiscal years 2011/12 and 2012/13.

RESPONSE:

The following is PUB-006 (b) updated to be the Top Consumers actual usage by industry including the 2011/12 and 2012/13 fiscal years.

GW.h	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Chemicals	1,841	1,847	1,865	1,929	1,912	1,977	2,018	1,993
Petroleum	849	899	879	944	903	728	856	880
Primary Metals	2,237	2,248	2,300	2,237	2,033	2,153	2,200	2,180
Pulp/Paper	763	742	764	674	332	185	171	222
Mining	5	4	4	4	3	3	3	3
Food/Beverage	182	176	188	202	204	201	203	198
College	70	73	75	75	74	76	80	84
Other	0	0	0	0	0	0	0	0
Total GW.h	**5,948**	**5,989**	**6,075**	**6,065**	**5,461**	**5,324**	**5,531**	**5,560**

PUB-006 (c) was the 2013 Load Forecast and as such the forecast values only begin in the 2013/14 fscal year.

GW.h	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Chemicals	2,151	2,235	2,245	2,245	2,245	2,245	2,245	2,245
Petroleum	995	1,110	1,225	1,325	1,330	1,350	1,360	1,370
Primary Metals	2,250	2,153	2,093	1,928	1,818	1,790	1,770	1,750
Pulp/Paper	225	230	235	235	235	235	235	235
Mining	0	0	0	0	0	0	0	0
Food/Beverage	215	215	215	215	215	215	215	215
College	89	93	97	97	97	97	97	97
Other	0	0	0	100	200	300	400	500
Total GW.h	**5,925**	**6,036**	**6,110**	**6,145**	**6,140**	**6,232**	**6,322**	**6,412**

Section:	Tab 9	**Page No.:**	P.7 of 23
Topic:	Energy Supply		
Subtopic:	Domestic Load Forecasts		
Issue:	10 Year Load Growth		

PREAMBLE TO IR (IF ANY):

MH's base domestic load forecast for 2023/24 appears to have been reduced by 865 GWh from the 30,491 GWh in the NFAT 2013 update which reflected new pipeline loads.

QUESTION:

Confirm the energy (GWh) and capacity (MW) tabulations of base load forecasts in 2011, 2012, NFAT 2013 update and 2014 in the attached table.

	Energy (GWh)					Winter Capacity (MW)			
	2011 Base Forecast (no pipeline)	**2012 Base Forecast** (no pipeline)	**NFAT 2013 Update** (with pipeline)	**2012 /2013 Δ** pipeline	**2014 Base Forecast**	**2012 Forecast** (no pipeline)	**NFAT 2013 Update** (with pipeline)	**2012 /2013 Δ** pipeline	**2014 Forecast**
2013/14	25930	25734	25239	24677	-138	4609	4601	-8	4587
2014/15	26684	26071	25676	25321	-382	4677	4680	+3	4716
2015/16	26404	26393	26013	25754	-637	4738	4742	+4	4803
2016/17	26794	26677	26692	26436	-1196	4794	4852	+58	4861
2017/18	27205	27128	27345	27174	-1475	4874	4958	+84	4985
2018/19	27481	27616	28112	27662	-1890	4959	5082	+123	5068
2019/20	27966	27919	28876	28247	-2068	5024	5204	+180	5166
2020/21	28462	28400	29267	28583	-2217	5109	5276	+167	5223
2021/22	28887	28859	29675	28937	-2325	5192	5349	+157	5284
2022/23	29311	29322	30083	29284	-2459	5276	5424	+148	5342
2023/24	29733	29779	30491	29626	-2552	5360	5498	+138	5400
10 yr inc	**+3803**	**+4045**	**+5252**	**+4949**		**751**	**897**		**+818**

RATIONALE FOR QUESTION:

Domestic load is used to forecast domestic revenues.

RESPONSE:

The following tables show the 2012, 2013 and 2014 forecasts, along with the NFAT 2013 update with the pipeline scenario for energy and peak capacity and the table also presents the difference between the NFAT 2013 update with the pipeline scenario and the 2014 base forecast.

	Energy (GWh)				
	2012 Base Forecast	2013 Base Forecast	NFAT 2013 Update (with pipeline)	2014 Base Forecast	NFAT 2013- 2014 Difference
2013/14	25734	25239	25239	24677	-562
2014/15	26071	25676	25676	25639	-37
2015/16	26393	26013	26013	26130	117
2016/17	26677	26322	26691	26436	-255
2017/18	27128	26606	27345	27174	-171
2018/19	27616	27003	28111	27662	-449
2019/20	27919	27398	28876	28247	-629
2020/21	28400	27789	29268	28583	-685
2021/22	28859	28197	29675	28937	-738
2022/23	29322	28605	30084	29284	-800
2023/24	29779	29013	30491	29626	-865
10 yr inc	**4045**	**3774**	**5252**	**4949**	

denotes weather adjusted actual

	Winter Capacity (MW)				
	2012 Base Forecast	2013 Base Forecast	NFAT 2013 Update (with pipeline)	2014 Base Forecast	NFAT 2013 - 2014 Difference
2013/14	4609	4601	4601	4587	-14
2014/15	4677	4680	4680	4716	36
2015/16	4738	4742	4742	4803	61
2016/17	4794	4801	4851	4861	10
2017/18	4874	4857	4959	4985	26
2018/19	4959	4930	5082	5068	-14
2019/20	5024	5002	5205	5166	-39
2020/21	5109	5074	5276	5223	-53
2021/22	5192	5147	5350	5284	-66
2022/23	5276	5222	5424	5342	-82
2023/24	5360	5296	5498	5400	-98
10 yr inc	**751**	**695**	**897**	**813**	

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Table 30 - Monthly Gross Firm Energy

MONTHLY GROSS FIRM ENERGY (GW.h)
History and Forecast
2003/04 - 2033/34

Fiscal Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
2003/04	1,657	1,579	1,520	1,573	1,685	1,548	1,688	2,024	2,198	2,479	2,088	2,029	22,069
2004/05	1,699	1,683	1,545	1,579	1,575	1,574	1,793	1,952	2,411	2,539	2,098	2,140	22,589
2005/06	1,727	1,698	1,660	1,735	1,649	1,610	1,781	2,045	2,301	2,240	2,171	2,139	22,757
2006/07	1,712	1,690	1,681	1,826	1,746	1,622	1,870	2,092	2,303	2,458	2,304	2,159	23,464
2007/08	1,842	1,701	1,663	1,820	1,727	1,650	1,836	2,108	2,490	2,584	2,427	2,273	24,122
2008/09	1,881	1,737	1,662	1,730	1,787	1,681	1,874	2,154	2,652	2,702	2,226	2,331	24,417
2009/10	1,861	1,744	1,671	1,667	1,644	1,672	1,888	1,935	2,560	2,524	2,213	2,032	23,412
2010/11	1,699	1,692	1,611	1,716	1,698	1,638	1,778	2,129	2,563	2,682	2,322	2,364	23,892
2011/12	1,862	1,751	1,603	1,789	1,741	1,643	1,814	2,125	2,435	2,526	2,251	2,064	23,605
2012/13	1,802	1,698	1,688	1,869	1,727	1,606	1,941	2,265	2,665	2,766	2,342	2,383	24,750
2013/14	2,041	1,754	1,650	1,766	1,725	1,657	1,914	2,258	2,884	2,895	2,553	2,527	25,625
13/14 Wadj	1,842	1,778	1,665	1,801	1,678	1,683	1,895	2,218	2,636	2,800	2,371	2,310	24,677
10 Year Hist	15	14	11	21	17	17	18	26	33	46	25	27	269
Avg Growth	0.8%	0.8%	0.7%	1.2%	1.0%	1.1%	1.0%	1.3%	1.4%	1.8%	1.1%	1.2%	1.2%
2014/15	1,959	1,829	1,741	1,865	1,808	1,739	1,975	2,263	2,767	2,828	2,467	2,399	25,639
2015/16	1,996	1,864	1,774	1,900	1,842	1,773	2,012	2,306	2,820	2,882	2,514	2,445	26,130
2016/17	2,020	1,886	1,795	1,922	1,863	1,793	2,036	2,333	2,853	2,916	2,544	2,474	26,436
2017/18	2,076	1,938	1,846	1,977	1,916	1,844	2,093	2,398	2,932	2,997	2,615	2,543	27,174
2018/19	2,113	1,973	1,879	2,013	1,951	1,877	2,131	2,441	2,985	3,050	2,661	2,588	27,662
2019/20	2,157	2,015	1,919	2,056	1,993	1,917	2,176	2,492	3,047	3,115	2,717	2,643	28,247
2020/21	2,183	2,039	1,942	2,081	2,017	1,940	2,201	2,522	3,084	3,152	2,750	2,674	28,583
2021/22	2,210	2,064	1,966	2,106	2,042	1,964	2,229	2,553	3,122	3,191	2,784	2,707	28,937
2022/23	2,236	2,089	1,990	2,132	2,066	1,988	2,255	2,583	3,159	3,229	2,817	2,740	29,284
2023/24	2,263	2,113	2,013	2,157	2,090	2,011	2,282	2,614	3,196	3,267	2,850	2,772	29,626
10 Year Fcst	42	33	35	36	41	33	39	40	56	47	48	46	495
Avg Growth	2.1%	1.7%	1.9%	1.8%	2.2%	1.8%	1.9%	1.7%	1.9%	1.6%	1.9%	1.8%	1.8%
2024/25	2,289	2,138	2,036	2,182	2,114	2,034	2,308	2,644	3,233	3,305	2,883	2,804	29,970
2025/26	2,315	2,162	2,060	2,207	2,139	2,058	2,335	2,674	3,270	3,343	2,916	2,836	30,316
2026/27	2,341	2,187	2,083	2,232	2,163	2,081	2,361	2,705	3,307	3,380	2,949	2,868	30,659
2027/28	2,368	2,212	2,107	2,257	2,188	2,105	2,388	2,735	3,345	3,419	2,983	2,901	31,006
2028/29	2,394	2,236	2,130	2,282	2,212	2,128	2,415	2,766	3,382	3,457	3,016	2,933	31,352
2029/30	2,421	2,261	2,154	2,308	2,237	2,152	2,442	2,797	3,420	3,496	3,050	2,966	31,703
2030/31	2,448	2,287	2,179	2,334	2,262	2,177	2,469	2,828	3,459	3,535	3,084	2,999	32,061
2031/32	2,476	2,313	2,203	2,360	2,288	2,201	2,497	2,860	3,498	3,575	3,119	3,033	32,424
2032/33	2,505	2,339	2,229	2,387	2,314	2,226	2,526	2,893	3,538	3,616	3,155	3,068	32,796
2033/34	2,534	2,366	2,254	2,415	2,341	2,252	2,555	2,927	3,579	3,658	3,192	3,104	33,177
20 Year Fcst	35	29	29	31	33	28	33	35	47	43	41	40	425
Avg Growth	1.6%	1.4%	1.5%	1.5%	1.7%	1.5%	1.5%	1.4%	1.5%	1.3%	1.5%	1.5%	1.5%

Table 32 - Monthly Gross Total Peak

MONTHLY GROSS TOTAL PEAK (MW) History and Forecast 2003/04 - 2033/34													
Fiscal Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
2003/04	3,242	2,587	2,871	2,877	2,921	2,901	2,988	3,467	3,791	3,994	3,743	3,465	3,994
2004/05	2,868	2,773	2,713	2,893	2,632	2,748	2,980	3,598	4,057	4,201	3,843	3,577	4,201
2005/06	2,959	2,845	3,052	3,116	3,050	2,837	2,948	3,672	3,912	3,630	4,085	3,498	4,085
2006/07	3,092	2,821	3,015	3,141	3,040	2,954	3,220	3,789	4,011	4,208	4,203	3,847	4,208
2007/08	3,494	2,736	3,042	3,294	3,033	2,777	2,979	3,996	4,078	4,304	4,289	4,095	4,304
2008/09	3,221	2,893	2,952	2,920	3,110	2,726	3,159	3,804	4,427	4,509	4,196	4,223	4,509
2009/10	3,196	2,933	3,000	2,758	2,933	2,982	3,054	3,297	4,393	4,256	4,092	4,235	4,393
2010/11	2,905	2,843	2,805	2,991	3,163	2,709	3,056	3,927	4,195	4,286	4,250	4,169	4,286
2011/12	3,183	2,886	3,056	3,278	3,189	3,045	3,129	3,756	4,095	4,367	4,270	3,608	4,367
2012/13	3,328	2,775	3,161	3,260	3,253	2,870	3,312	4,087	4,410	4,559	4,543	4,013	4,559
2013/14	3,622	3,129	3,103	3,179	3,276	3,227	3,448	4,026	4,656	4,743	4,579	4,541	4,743
13/14 Norm	3,351	2,971	3,082	3,194	3,178	2,979	3,252	3,966	4,485	4,554	4,446	4,133	4,587
10 Year Hist	33	26	24	29	53	27	34	48	57	74	55	72	55
Avg Growth	1.0%	0.9%	0.8%	1.0%	1.8%	1.0%	1.1%	1.3%	1.4%	1.8%	1.3%	1.9%	1.3%
2014/15	3,445	3,055	3,168	3,283	3,267	3,063	3,343	4,077	4,611	4,682	4,571	4,249	4,716
2015/16	3,511	3,112	3,227	3,341	3,321	3,120	3,406	4,156	4,696	4,769	4,655	4,330	4,803
2016/17	3,558	3,153	3,271	3,384	3,359	3,161	3,452	4,211	4,753	4,826	4,711	4,388	4,861
2017/18	3,650	3,235	3,356	3,474	3,446	3,244	3,543	4,321	4,875	4,950	4,831	4,502	4,985
2018/19	3,713	3,292	3,416	3,537	3,507	3,301	3,605	4,396	4,956	5,033	4,912	4,580	5,068
2019/20	3,785	3,357	3,484	3,609	3,576	3,367	3,678	4,483	5,052	5,131	5,006	4,669	5,166
2020/21	3,831	3,397	3,526	3,653	3,620	3,408	3,722	4,537	5,109	5,188	5,062	4,726	5,223
2021/22	3,878	3,440	3,570	3,699	3,665	3,450	3,768	4,593	5,168	5,248	5,121	4,785	5,284
2022/23	3,924	3,481	3,613	3,743	3,709	3,491	3,813	4,648	5,225	5,306	5,178	4,842	5,342
2023/24	3,970	3,521	3,655	3,787	3,752	3,532	3,858	4,703	5,282	5,364	5,234	4,898	5,400
10 Year Fcst	62	55	57	59	57	55	61	74	80	81	79	77	81
Avg Growth	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.6%	1.6%	1.6%	1.7%	1.6%
2024/25	4,016	3,562	3,697	3,831	3,796	3,573	3,902	4,757	5,339	5,422	5,290	4,955	5,458
2025/26	4,062	3,603	3,740	3,874	3,840	3,614	3,947	4,812	5,396	5,480	5,347	5,012	5,516
2026/27	4,108	3,644	3,782	3,918	3,883	3,655	3,991	4,866	5,452	5,537	5,403	5,068	5,574
2027/28	4,154	3,685	3,824	3,962	3,927	3,696	4,036	4,921	5,509	5,595	5,459	5,126	5,632
2028/29	4,200	3,725	3,867	4,006	3,971	3,737	4,081	4,975	5,566	5,653	5,515	5,183	5,690
2029/30	4,247	3,767	3,910	4,051	4,016	3,779	4,126	5,031	5,623	5,711	5,572	5,240	5,748
2030/31	4,294	3,809	3,954	4,096	4,061	3,821	4,173	5,087	5,682	5,771	5,631	5,299	5,808
2031/32	4,343	3,852	3,998	4,143	4,107	3,865	4,220	5,145	5,741	5,831	5,690	5,359	5,869
2032/33	4,392	3,896	4,044	4,190	4,154	3,909	4,268	5,203	5,802	5,893	5,750	5,420	5,931
2033/34	4,443	3,941	4,091	4,238	4,202	3,954	4,317	5,263	5,865	5,956	5,812	5,483	5,995
20 Year Fcst	55	48	50	52	51	49	53	65	69	70	68	67	70
Avg Growth	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.3%	1.4%	1.3%

Table 5 - General Consumers Sales Energy

GENERAL CONSUMERS SALES (GW.h)
History and Forecast
2003/04 - 2033/34

Fiscal	Residential				General Service						Lighting	Total
Year	Basic	Diesel	Seas	FRWH	Mass Mkt	Top Cons	Diesel	Seas	FRWH	SEP		Sales
2003/04	6,170	6	56	34	7,460	5,423	5	5	13	17	91	19,280
2004/05	6,275	7	58	31	7,516	5,714	5	5	10	25	91	19,735
2005/06	6,171	7	59	30	7,587	5,948	5	5	9	23	91	19,935
2006/07	6,443	7	60	29	7,839	5,989	5	4	9	23	101	20,510
2007/08	6,736	7	68	27	8,006	6,075	5	4	9	24	101	21,061
2008/09	6,847	7	74	25	8,049	6,065	5	5	8	22	102	21,210
2009/10	6,786	7	81	24	7,985	5,461	6	5	8	20	102	20,486
2010/11	6,952	8	77	23	8,258	5,324	5	5	8	24	103	20,786
2011/12	6,818	8	83	22	8,162	5,531	5	5	8	25	103	20,771
2012/13	7,223	8	81	21	8,434	5,560	5	5	7	28	103	21,477
2013/14	7,767	9	92	20	8,839	5,461	5	5	7	29	104	22,338
Weather Adj.	-518	0	0	0	-252	0	0	0	0	-3	0	-772
2013/14 Wadj	7,249	9	92	20	8,587	5,461	5	5	7	26	104	21,566
10 Year Wadj	106	0	4	-1	114	4	0	0	-1	1	1	228
Avg Gr.	1.6%	3.4%	5.1%	-5.2%	1.4%	0.1%	1.4%	1.2%	-6.1%	4.0%	1.3%	1.1%
2014/15	7,380	9	91	19	8,814	6,003	6	5	7	29	104	22,467
2015/16	7,481	9	93	18	8,993	6,147	6	5	6	29	105	22,891
2016/17	7,606	9	95	17	9,190	6,082	6	5	6	32	105	23,153
2017/18	7,726	9	96	16	9,388	6,430	6	5	6	33	106	23,822
2018/19	7,836	10	98	15	9,560	6,590	6	5	6	33	106	24,264
2019/20	7,946	10	100	14	9,705	6,859	6	5	5	33	107	24,791
2020/21	8,049	10	102	14	9,833	6,922	6	5	5	33	107	25,087
2021/22	8,151	10	104	13	9,958	7,006	6	6	5	33	108	25,399
2022/23	8,248	10	106	12	10,079	7,091	6	6	5	33	108	25,704
2023/24	8,342	11	108	12	10,199	7,177	6	6	4	33	109	26,006
10 Year	109	0	2	-1	161	172	0	0	0	1	1	444
Avg Gr.	1.4%	2.1%	1.5%	-5.0%	1.7%	2.8%	1.5%	0.6%	-5.0%	2.2%	0.5%	1.9%
2024/25	8,435	11	110	11	10,320	7,264	6	6	4	33	109	26,309
2025/26	8,527	11	111	11	10,442	7,353	6	6	4	33	110	26,613
2026/27	8,619	11	113	10	10,560	7,443	6	6	4	33	110	26,916
2027/28	8,711	11	115	10	10,681	7,534	6	6	3	33	111	27,221
2028/29	8,802	12	117	9	10,801	7,626	6	6	3	33	111	27,527
2029/30	8,895	12	119	9	10,922	7,719	6	6	3	33	112	27,836
2030/31	8,990	12	121	8	11,046	7,813	6	6	3	33	112	28,151
2031/32	9,087	12	123	8	11,172	7,908	7	6	3	33	113	28,471
2032/33	9,186	13	125	7	11,301	8,005	7	6	3	33	113	28,799
2033/34	9,289	13	127	7	11,433	8,103	7	6	3	33	114	29,134
20 Year	102	0	2	-1	142	132	0	0	0	0	1	378
Avg Gr.	1.2%	2.0%	1.6%	-5.0%	1.4%	2.0%	1.2%	0.5%	-5.0%	1.1%	0.5%	1.5%

Table 14 - Residential Basic Sales

RESIDENTIAL BASIC SALES
History and Forecast
2013/14 - 2033/34

Fiscal Year	Electric Heat Billed			Non Electric Heat Billed			Total Basic			% Elec Space Heat	% Elec Water Heat
	Custs	GW.h	kW.h/cust	Custs	GW.h	kW.h/cust	Custs	GW.h	kW.h/cust		
2013/14	165,576	4,148	25,050	290,554	3,072	10,572	456,130	7,219	15,827	36.3%	49.0%
2014/15	173,561	4,324	24,913	294,514	3,056	10,377	468,075	7,380	15,767	37.1%	49.4%
2015/16	177,387	4,395	24,775	296,375	3,086	10,412	473,762	7,481	15,790	37.4%	50.5%
2016/17	181,184	4,474	24,693	298,780	3,132	10,484	479,964	7,606	15,848	37.7%	51.5%
2017/18	184,929	4,549	24,601	301,458	3,177	10,538	486,387	7,726	15,885	38.0%	52.3%
2018/19	188,478	4,618	24,501	304,222	3,218	10,577	492,700	7,836	15,904	38.3%	53.1%
2019/20	191,795	4,683	24,419	307,092	3,263	10,625	498,887	7,946	15,928	38.4%	53.8%
2020/21	194,868	4,743	24,341	310,046	3,306	10,663	504,914	8,049	15,942	38.6%	54.5%
2021/22	197,696	4,800	24,280	312,991	3,351	10,705	510,687	8,151	15,960	38.7%	55.1%
2022/23	200,277	4,853	24,230	315,883	3,396	10,749	516,160	8,248	15,980	38.8%	55.8%
2023/24	202,640	4,902	24,192	318,697	3,440	10,794	521,337	8,342	16,002	38.9%	56.4%
2024/25	204,859	4,951	24,167	321,424	3,485	10,842	526,283	8,435	16,028	38.9%	57.1%
2025/26	206,970	4,998	24,148	324,046	3,529	10,891	531,016	8,527	16,058	39.0%	57.7%
2026/27	208,970	5,044	24,140	326,547	3,575	10,947	535,517	8,619	16,095	39.0%	58.3%
2027/28	210,869	5,090	24,140	328,932	3,621	11,008	539,801	8,711	16,138	39.1%	59.0%
2028/29	212,686	5,135	24,145	331,228	3,667	11,071	543,914	8,802	16,183	39.1%	59.6%
2029/30	214,445	5,181	24,158	333,479	3,715	11,140	547,924	8,895	16,235	39.1%	60.2%
2030/31	216,165	5,226	24,176	335,713	3,764	11,212	551,878	8,990	16,290	39.2%	60.8%
2031/32	217,856	5,272	24,200	337,951	3,815	11,289	555,807	9,087	16,349	39.2%	61.4%
2032/33	219,528	5,319	24,228	340,203	3,868	11,369	559,731	9,186	16,412	39.2%	62.0%
2033/34	221,184	5,366	24,262	342,474	3,922	11,453	563,658	9,289	16,479	39.2%	62.6%

Electric Heat Billed: Customers who have electric space heating included with their electric bill.
Non Electric Heat Billed: Customers who do not have electric space heating included with their electric bill.
% Electric Space Heat: The proportion of Total Basic customers who are Electric Heat Billed.
% Electric Water Heat: The proportion of Total Basic customers who have Electric Water Heaters.

The average use (kW.h/customer) for Electric Heat Billed customers is decreasing as individually metered apartment suites are making up a higher proportion of the growth. The average use for Non Electric Heat Billed customers is increasing mainly due to the increase in the use of electric water heaters, the increase due to ventilation requirements in new dwellings, and miscellaneous end uses.

3

Figure 3: Comparison of DSM Energy Forecasts

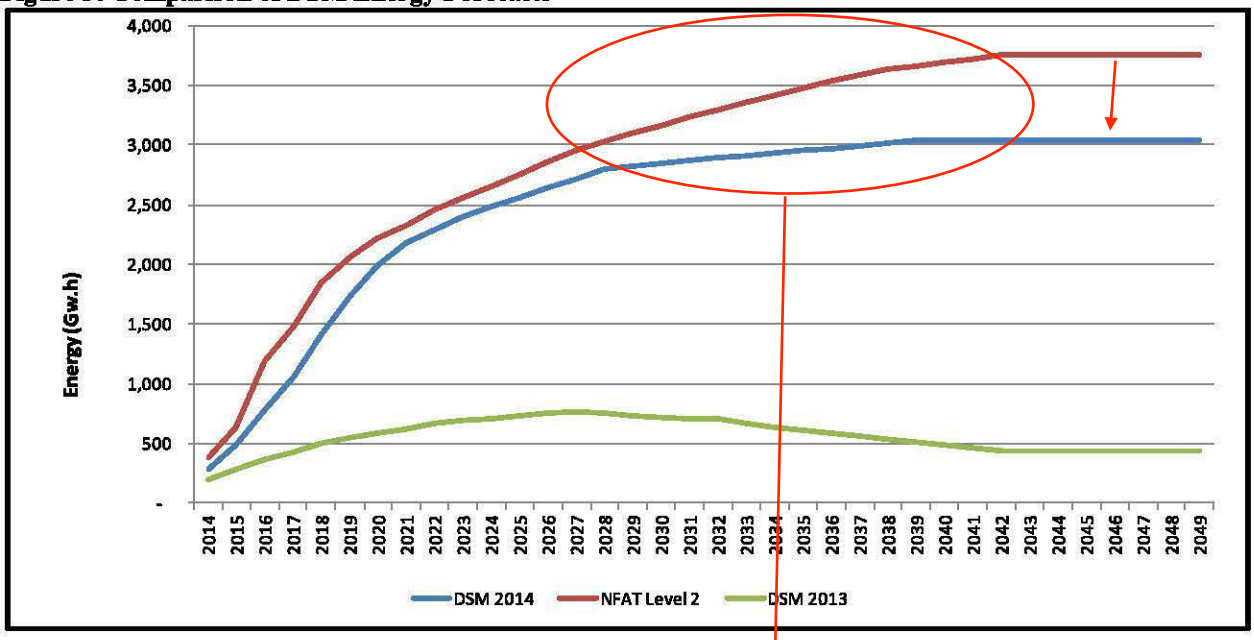
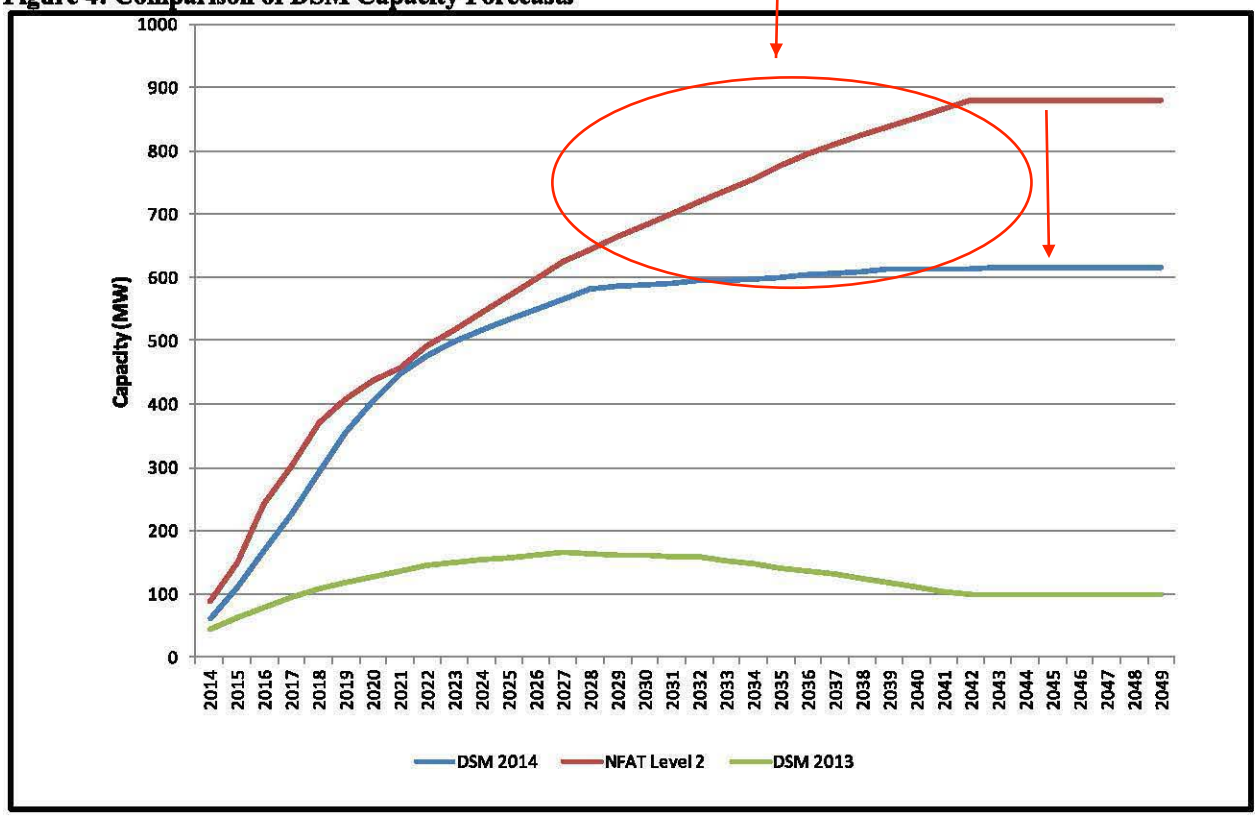
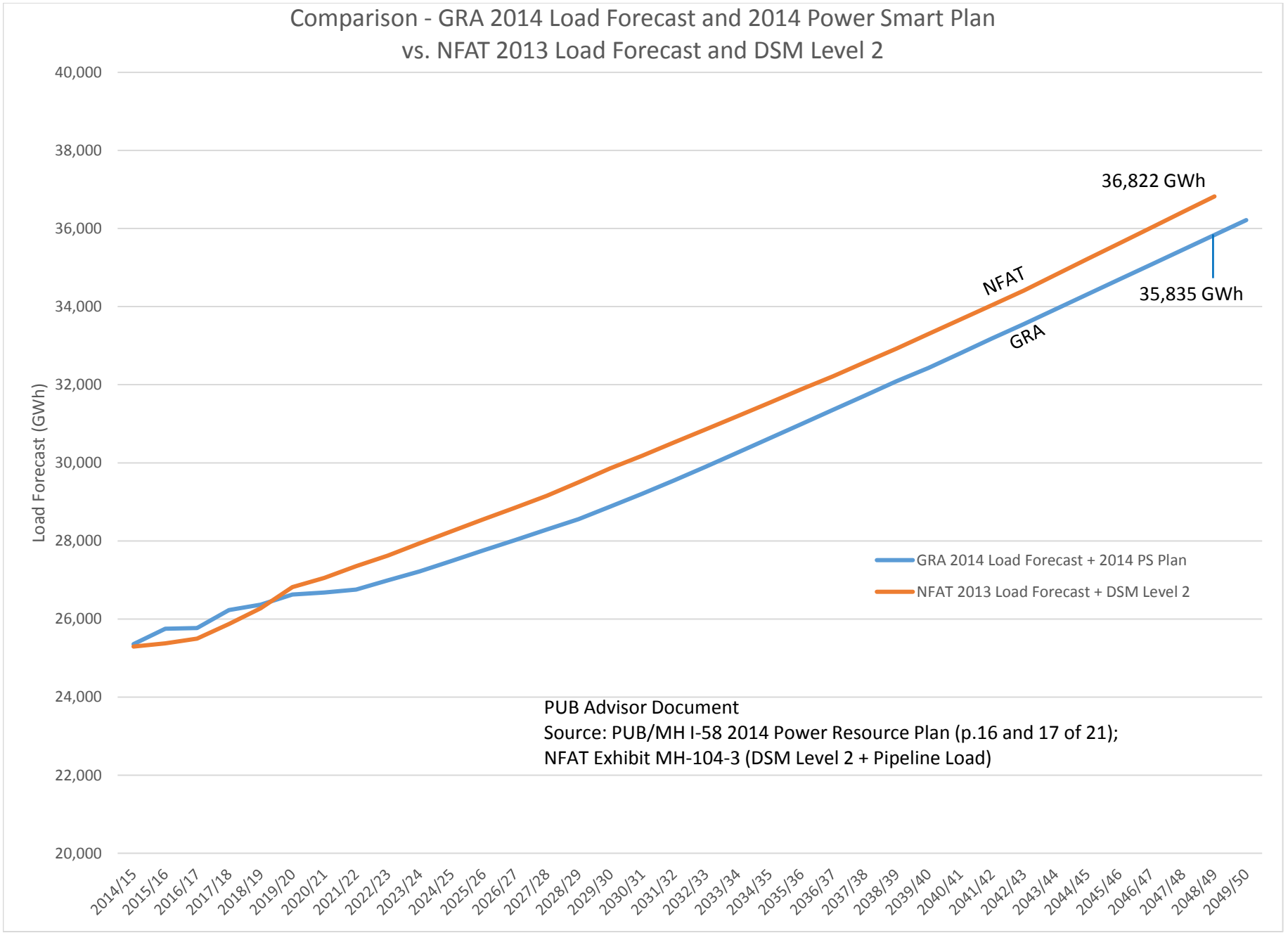


Figure 4: Comparison of DSM Capacity Forecasts





PUB Advisor Document
Source: PUB/MH I-58 2014 Power Resource Plan (p.16 and 17 of 21);
NFAT Exhibit MH-104-3 (DSM Level 2 + Pipeline Load)

Section:	9	**Page No.:**	Figure 9.3, Page 7
Topic:	Energy Supply		
Subtopic:	DSM Impacts		
Issue:	Changes to DSM Load Reduction		

PREAMBLE TO IR (IF ANY):

In the NFAT 2013 update, MH provided annual DSM Level 2 load reductions in average years. In the 2014 PRP MH provided comparable data as follows:

	2013 NFAT Update Level 2 DSM (GWh)	**2014 PRP DSM (GWh)**
2014/15	382	305
2015/16	637	415
2016/17	1196	780
2017/18	1475	1056
2018/19	1890	1407
2019/20	2068	1730
2020/21	2217	1988
2021/22	2325	2183
2022/23	2459	2296
2023/24	2552	2405

QUESTION:

Confirm the above tabulation of DSM energy savings is accurately represented.Please explain the reduced level of DSM in 2014.

RATIONALE FOR QUESTION:

To determine the level of DSM load reductions forecast by Manitoba Hydro.

RESPONSE:

In the 2014 power resource plan, the DSM forecast has a starting year of 2014/15. The 2013 NFAT Update Level 2 DSM forecast has a starting year of 2013/14. To appropriately compare the two DSM forecasts the timeframe for both forecasts must be consistent, therefore the energy savings from 2013/14 in the 2013 NFAT Update Level 2 DSM forecast that persist through the forecast must be removed from each year. The table below shows the 2013 NFAT Update Level 2 DSM forecast energy savings after removing the 2013/14 savings of 138 GW.h from each year.

The energy savings in the 2014/15 and 2015/16 rows of the 2014 power resource plan are incorrect. The correct values have been updated in Figure 9.3 of Tab 9 and they are reproduced in the table below.

	2013 NFAT Update Level 2 DSM (GW.h)	2014 PRP DSM (GW.h)	2014 PRP DSM Increase or (Decrease)
2014/15	244	283	39
2015/16	499	487	(12)
2016/17	1,058	780	(278)
2017/18	1,337	1,056	(281)
2018/19	1,702	1,407	(296)
2019/20	1,925	1,730	(194)
2020/21	2,079	1,988	(91)
2021/22	2,187	2,183	(4)
2022/23	2,321	2,296	(25)
2023/24	2,414	2,405	(9)

The 2013 NFAT Update Level 2 DSM savings were based upon a high-level assessment of forecast energy savings created as part of a sensitivity run for the NFAT hearing. The DSM energy savings included in the 2014 power resource plan were based upon more detailed and refined program designs undertaken subsequent to the Level 2 DSM saving estimates. As such, the energy savings provided in the 2014 power resource plan are an updated estimate to the 2013 NFAT Update Level 2 DSM savings.

The table below outlines the impacts from four modifications to the 2014 – 2017 Power Smart Plan which contributed to the majority of the variances between the two DSM forecasts. The four modifications were related to code savings, delays in expected implementation of fuel choice and conservation rate initiatives and modifications to the energy savings expected from the Load Displacement Program.

	Removal of Manitoba Energy Code for Buildings	Later Launch of Fuel Choice	Later Launch of Conservation Rates	Modifications to Load Displacement Program	Total Change from 2013 NFAT Update Level 2 DSM
2014/15	(11)	(57)	0	113	45
2015/16	(21)	(114)	0	139	3
2016/17	(32)	(171)	0	(48)	(252)
2017/18	(42)	(172)	(29)	(4)	(248)
2018/19	(53)	(171)	(123)	59	(288)
2019/20	(53)	(114)	(68)	48	(188)
2020/21	(53)	(57)	(49)	70	(90)
2021/22	(53)	0	(24)	70	(7)
2022/23	(83)	0	(25)	70	(39)
2023/24	(113)	0	(14)	70	(58)

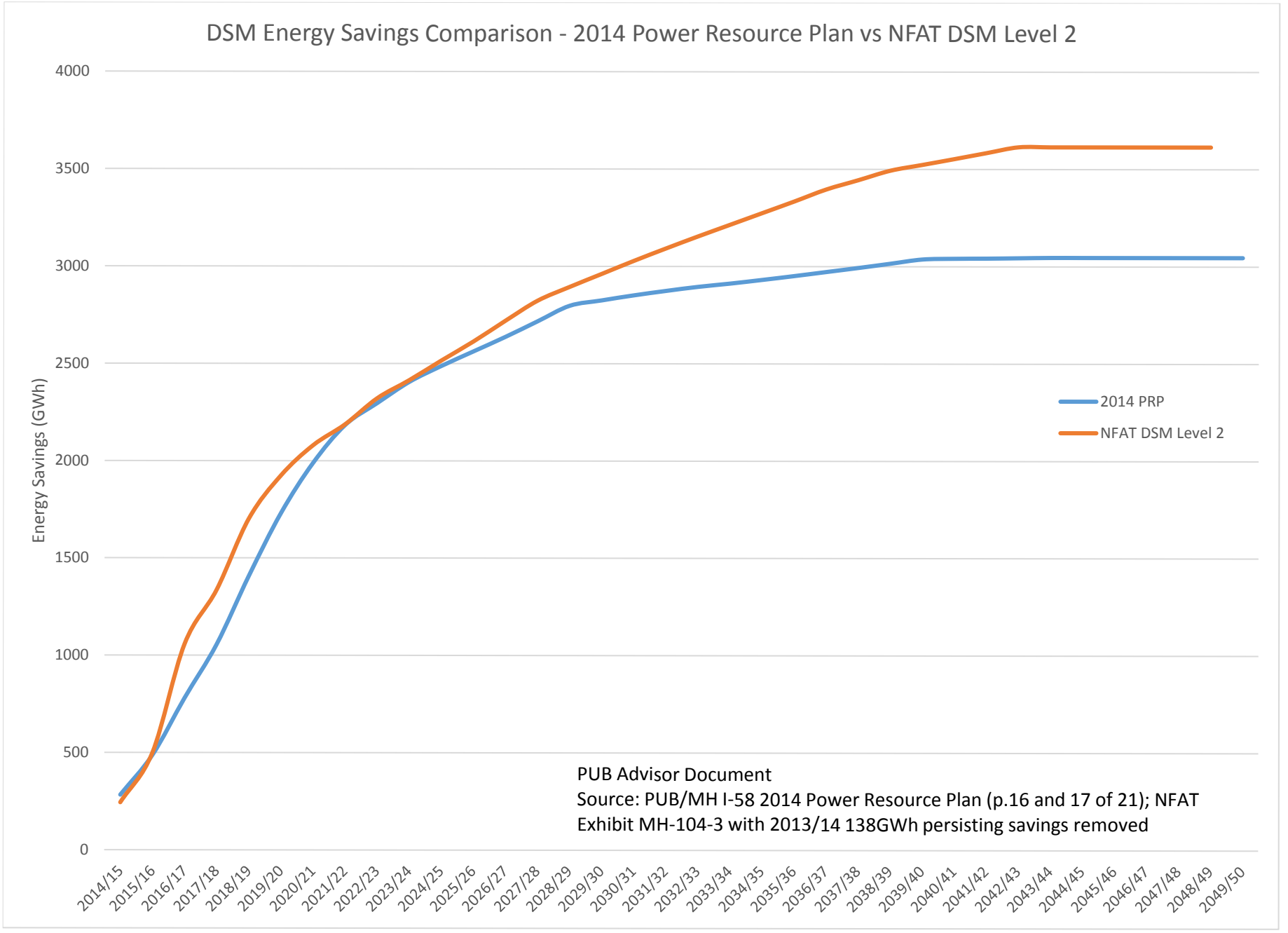
There was also a change in the assignment of code savings in the 2014 power resource plan. The 2013 NFAT Update Level 2 DSM savings included energy savings based on the estimated projected impact of the adoption of the Manitoba Energy Code for Buildings (MECB) which were to become effective December 1, 2014. Energy savings of 113 GW.h in 2023/24 were included as part of the DSM program forecast since they had not been included as a "Codes & Standards" reduction in the 2013 Load Forecast at that time. With the MECB coming into effect in December 2014, the forecast energy reductions due to this code were shifted to "Codes & Standards" for the 2014 – 2017 Power Smart Plan and reflected as a reduction in the 2014 Load Forecast. Based on updated estimates of the impacts from this code, the 2014 Load Forecast was reduced by approximately 230 GW.h in 2023/24 (i.e. a higher impact than previously estimated).

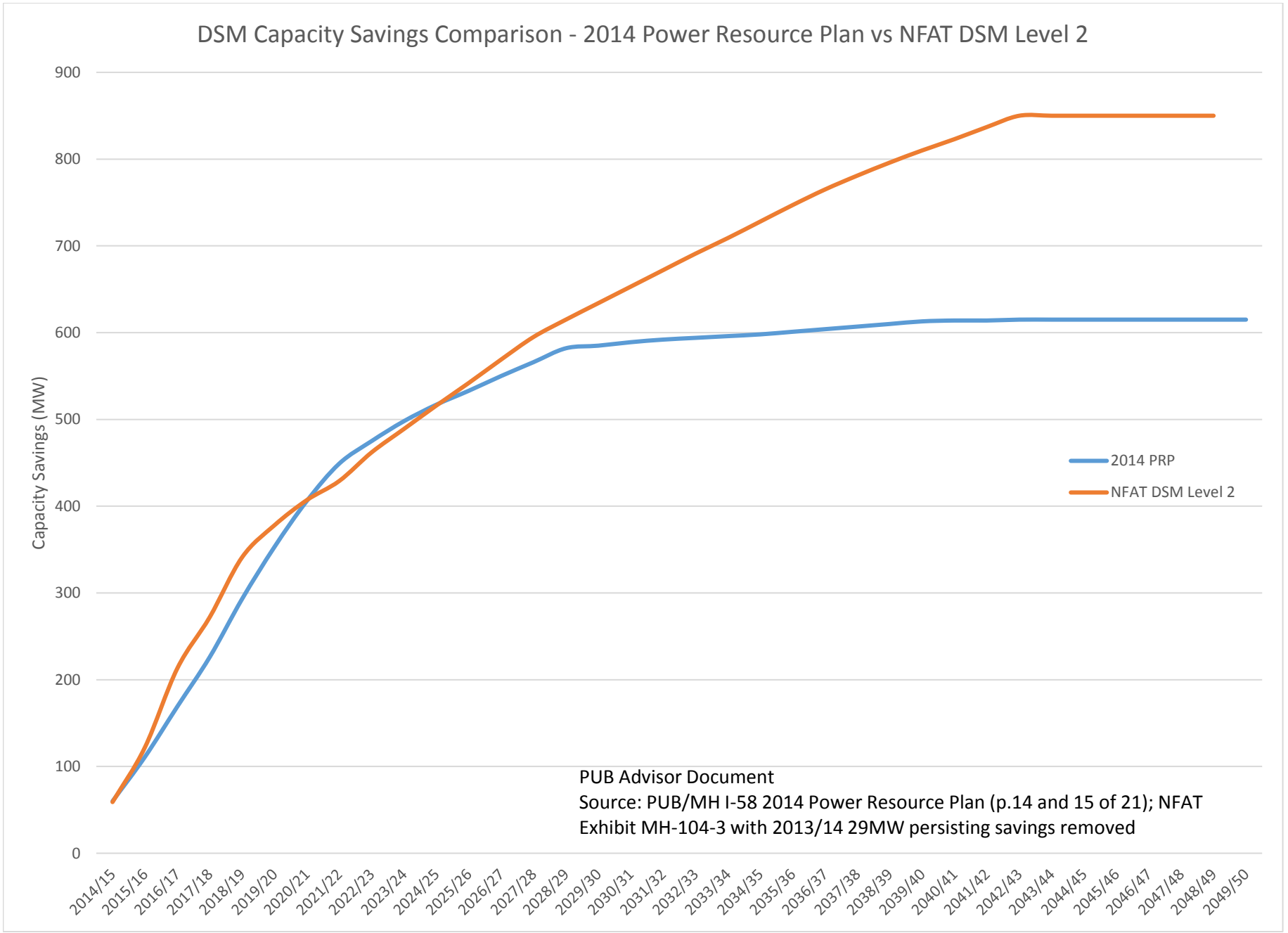
Forecast savings for the Fuel Choice Initiative were included in the 2013 NFAT Update beginning in 2014/15. When this initiative was further refined during the 2014 - 2017 Power

Smart Plan process, a launch date of 2017/18 was incorporated resulting in the forecast savings occurring later in the planning period.

Forecast savings for the Conservation Rates Initiative was included in the 2013 NFAT Update with Residential Conservation Rate energy savings beginning in 2017/18 and Commercial Conservation Rate energy savings beginning in 2018/19. When this initiative was further refined during the 2014 - 2017 Power Smart Plan process, a launch date of 2018/19 for Residential Conservation Rates and 2019/20 for Commercial Conservation Rate were incorporated resulting in the forecast savings occurring later in the planning period.

Forecast energy savings for the Load Displacement Program that were included in the 2013 NFAT were refined during the 2014 – 2017 Power Smart Plan process. This resulted in a change in the timing and magnitude of the forecast energy savings from this program.


DSM Energy Savings Comparison - 2014 Power Resource Plan vs NFAT DSM Level 2
Energy Savings (GWh)
4000
3500
3000
2500
2000
1500
1000
500
0
2014 PRP
NFAT DSM Level 2
2014/15
2015/16
2016/17
2017/18
2018/19
2019/20
2020/21
2021/22
2022/23
2023/24
2024/25
2025/26
2026/27
2027/28
2028/29
2029/30
2030/31
2031/32
2032/33
2033/34
2034/35
2035/36
2036/37
2037/38
2038/39
2039/40
2040/41
2041/42
2042/43
2043/44
2044/45
2045/46
2046/47
2047/48
2048/49
2049/50
PUB Advisor Document
Source: PUB/MH I-58 2014 Power Resource Plan (p.16 and 17 of 21); NFAT Exhibit MH-104-3 with 2013/14 138GWh persisting savings removed


DSM Capacity Savings Comparison - 2014 Power Resource Plan vs NFAT DSM Level 2
Capacity Savings (MW)
900
800
700
600
500
400
300
200
100
0
2014/15
2015/16
2016/17
2017/18
2018/19
2019/20
2020/21
2021/22
2022/23
2023/24
2024/25
2025/26
2026/27
2027/28
2028/29
2029/30
2030/31
2031/32
2032/33
2033/34
2034/35
2035/36
2036/37
2037/38
2038/39
2039/40
2040/41
2041/42
2042/43
2043/44
2044/45
2045/46
2046/47
2047/48
2048/49
2049/50
2014 PRP
NFAT DSM Level 2
PUB Advisor Document
Source: PUB/MH I-58 2014 Power Resource Plan (p.14 and 15 of 21); NFAT Exhibit MH-104-3 with 2013/14 29MW persisting savings removed

CAPITAL EXPENDITURE FORECAST (CEF14)
(in millions of dollars)

	Total Project Cost	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	10 Year Total
Major New Generation & Transmission												
Wuskwatim - Generation	1 448.6	40.5	12.9	14.7	-	-	-	-	-	-	-	68.1
Keeyask - Generation	6 496.1	776.3	676.3	962.2	1 351.3	927.9	616.5	208.6	55.2	4.5	0.1	5 578.8
Grand Rapids Hatchery Upgrade & Expansion	23.5	1.9	4.7	9.3	6.8	-	-	-	-	-	-	22.6
Conawapa - Generation	397.0	43.4	31.4	21.0	-	-	-	-	-	-	-	95.8
Kelsey Improvements & Upgrades	340.4	14.1	9.1	12.9	1.3	-	-	-	-	-	-	37.3
Kettle Improvements & Upgrades	191.6	6.6	23.5	24.6	22.0	31.7	29.5	-	-	-	-	137.9
Pointe du Bois Spillway Replacement	574.8	114.1	51.6	3.8	-	-	-	-	-	-	-	169.5
Pointe du Bois - Transmission	114.3	15.8	17.1	13.8	4.3	-	-	-	-	-	-	50.9
Pointe du Bois Powerhouse Rebuild	1 852.2	-	-	-	-	-	-	-	-	-	-	-
Gillam Redevelopment and Expansion Program (GREP)	266.5	20.0	22.4	22.8	21.8	20.2	18.6	21.3	20.9	19.1	24.6	211.6
Bipole III - Transmission Line	1 655.4	203.5	360.5	381.0	493.8	75.3	-	-	-	-	-	1 514.0
Bipole III - Converter Stations	2 675.1	221.1	580.8	828.7	507.7	195.1	18.4	4.5	-	-	-	2 356.3
Bipole III - Collector Lines	260.2	58.4	75.5	51.7	36.7	4.7	-	-	-	-	-	227.0
Bipole III - Community Development Initiative	62.0	2.3	2.0	1.8	1.6	0.5	-	-	-	-	-	8.1
Riel 230/500kV Station	329.9	36.4	5.6	-	-	-	-	-	-	-	-	42.0
Manitoba-Minnesota Transmission Project	350.3	7.0	32.7	99.6	59.5	65.7	48.1	35.4	-	-	-	348.0
Demand Side Management	NA	51.8	59.2	76.6	83.9	93.7	78.2	72.5	60.8	50.0	49.6	676.2
Generating Station Improvements & Upgrades	NA	-	-	-	-	-	2.8	33.0	33.6	34.3	35.0	138.6
Target Adjustment (Cost Flow)	NA	(161.3)	(51.4)	(61.1)	(12.7)	116.3	71.9	50.9	25.6	8.8	0.7	(12.2)
MAJOR NEW GENERATION & TRANSMISSION TOTAL		**1 451.7**	**1 913.9**	**2 463.5**	**2 577.8**	**1 530.9**	**884.0**	**426.2**	**196.1**	**116.6**	**110.0**	**11 670.7**

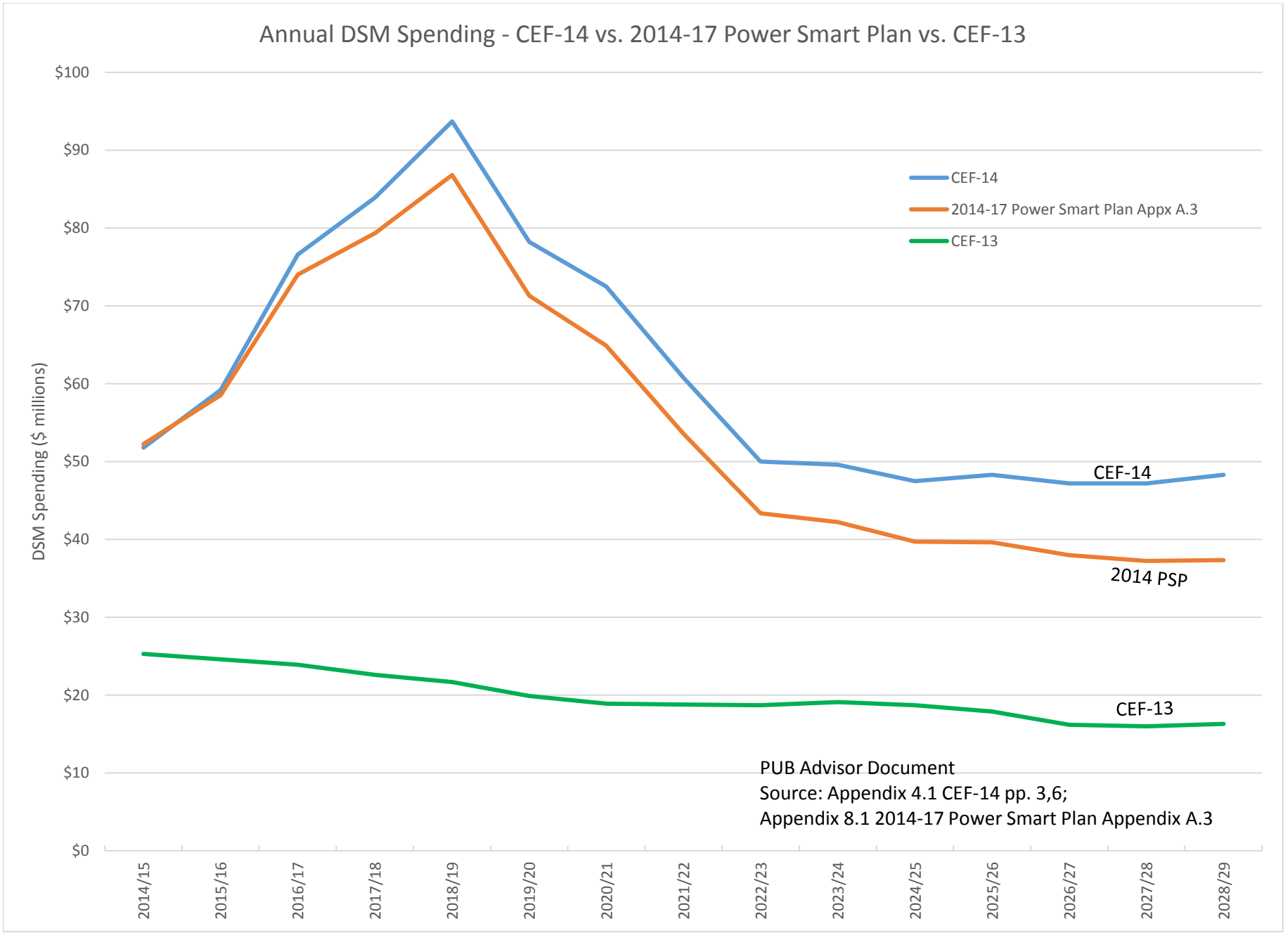
CAPITAL EXPENDITURE FORECAST (CEF14)
(in millions of dollars)

	Total Project Cost	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	20 Year Total
Major New Generation & Transmission												
Wuskwatim - Generation	1 448.6	-	-	-	-	-	-	-	-	-	-	68.1
Keeyask - Generation	6 496.1	-	-	-	-	-	-	-	-	-	-	5 578.8
Grand Rapids Hatchery Upgrade & Expansion	23.5	-	-	-	-	-	-	-	-	-	-	22.6
Conawapa - Generation	397.0	-	-	-	-	-	-	-	-	-	-	95.8
Kelsey Improvements & Upgrades	340.4	-	-	-	-	-	-	-	-	-	-	37.3
Kettle Improvements & Upgrades	191.6	-	-	-	-	-	-	-	-	-	-	137.9
Pointe du Bois Spillway Replacement	574.8	-	-	-	-	-	-	-	-	-	-	169.5
Pointe du Bois - Transmission	114.3	-	-	-	-	-	-	-	-	-	-	50.9
Pointe du Bois Powerhouse Rebuild	1 852.2	-	-	-	-	-	-	0.6	2.6	19.1	45.3	67.6
Gillam Redevelopment and Expansion Program (GREP)	266.5	24.4	26.3	4.2	-	-	-	-	-	-	-	266.5
Bipole III - Transmission Line	1 655.4	-	-	-	-	-	-	-	-	-	-	1 514.0
Bipole III - Converter Stations	2 675.1	-	-	-	-	-	-	-	-	-	-	2 356.3
Bipole III - Collector Lines	260.2	-	-	-	-	-	-	-	-	-	-	227.0
Bipole III - Community Development Initiative	62.0	-	-	-	-	-	-	-	-	-	-	8.1
Riel 230/500kV Station	329.9	-	-	-	-	-	-	-	-	-	-	42.0
Manitoba-Minnesota Transmission Project	350.3	-	-	-	-	-	-	-	-	-	-	348.0
Demand Side Management	NA	47.5	48.3	47.2	47.2	48.3	50.2	52.2	54.4	56.6	58.9	1 186.9
Generating Station Improvements & Upgrades	NA	35.7	36.4	45.0	32.2	21.1	9.4	14.4	15.2	25.8	79.3	453.2
Target Adjustment (Cost Flow)	NA	0.2	(0.3)	1.4	1.8	1.2	1.1	(0.6)	(0.6)	(3.0)	(8.5)	(19.4)
MAJOR NEW GENERATION & TRANSMISSION TOTAL		**107.8**	**110.7**	**97.8**	**81.3**	**70.5**	**60.7**	**66.5**	**71.6**	**98.4**	**175.0**	**12 611.1**

2014 - 2017 Power Smart Plan
Annual Utility Costs
(000's in 2014 $)

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	Cumulative Total	
RESIDENTIAL																	
Incentive Based																	
New Home Program	$0	$0	$0	$448	$496	$700	$626	$0	$0	$0	$0	$0	$0	$0	$0	$2,270	
Home Insulation Program	$2,148	$2,032	$1,900	$1,703	$1,536	$1,405	$1,167	$1,036	$953	$784	$643	$573	$511	$167	$0	$16,558	
Water and Energy Saver Program	$772	$772	$772	$780	$899	$1,020	$0	$0	$0	$0	$0	$0	$0	$0	$0	$5,015	
Affordable Energy Program	$347	$333	$1,008	$1,516	$1,476	$1,444	$1,411	$1,388	$1,367	$1,351	$1,338	$827	$711	$0	$0	$14,516	
Refrigerator Retirement Program	$2,329	$2,289	$1,951	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$6,570	
Residential LED Lighting Program	$1,025	$229	$219	$209	$209	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,893	
Community Geothermal Program	$1,567	$2,017	$2,354	$3,613	$2,703	$2,376	$1,612	$1,612	$1,612	$1,611	$0	$0	$0	$0	$0	$21,076	
Subtotal	$8,187	$7,672	$8,205	$8,269	$7,319	$6,945	$4,816	$4,036	$3,932	$3,746	$1,981	$1,399	$1,222	$167	$0	$67,898	9%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart Residential Loan	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Power Smart PAYS Financing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Residential Earth Power Loan	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Subtotal	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0%
COMMERCIAL																	
Incentive Based																	
Commercial Lighting Program	$8,614	$8,733	$8,356	$8,076	$8,213	$5,828	$5,670	$5,519	$5,331	$5,170	$4,979	$4,655	$4,385	$4,393	$4,404	$92,325	
LED Roadway Lighting Conversion Program	$6,199	$6,062	$5,162	$6,052	$6,788	$6,151	$4,006	$0	$0	$0	$0	$0	$0	$0	$0	$40,419	
Commercial Building Envelope - Windows Program	$950	$857	$752	$763	$763	$763	$763	$768	$768	$768	$777	$777	$777	$777	$777	$11,803	
Commercial Building Envelope - Insulation Program	$986	$987	$812	$812	$812	$812	$816	$816	$816	$816	$816	$816	$816	$816	$816	$12,564	
Commercial Geothermal Program	$970	$2,034	$2,351	$2,532	$2,748	$2,896	$3,037	$3,354	$3,508	$3,661	$3,799	$3,949	$4,103	$4,256	$4,410	$47,609	
Commercial HVAC Program - Chillers	$302	$308	$342	$191	$192	$195	$199	$204	$5	$5	$5	$5	$5	$5	$5	$1,969	
Commercial HVAC Program - CO2 Sensors	$35	$41	$43	$45	$47	$48	$50	$52	$53	$55	$2	$2	$2	$2	$2	$476	
Commercial Custom Measures Program	$427	$479	$489	$557	$594	$604	$640	$650	$687	$718	$755	$765	$802	$963	$1,010	$10,139	
Commercial Building Optimization Program	$252	$222	$241	$241	$258	$277	$277	$287	$287	$296	$296	$306	$306	$316	$332	$4,194	
New Buildings Program	$2,546	$3,091	$3,525	$459	$803	$1,090	$1,434	$1,721	$2,009	$515	$0	$0	$0	$0	$0	$17,194	
Commercial Refrigeration Program	$1,698	$1,531	$344	$362	$370	$381	$400	$419	$438	$457	$465	$478	$460	$479	$499	$8,781	
Commercial Kitchen Appliance Program	$50	$62	$75	$48	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$235	
Network Energy Management Program	$79	$111	$143	$175	$207	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$715	
Internal Retrofit Program	$821	$886	$803	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,511	
Power Smart Shops	$0	$120	$191	$205	$218	$228	$122	$123	$117	$112	$108	$0	$0	$0	$0	$1,546	
Subtotal	$23,928	$25,523	$23,630	$20,518	$22,012	$19,273	$17,414	$13,912	$14,019	$12,575	$12,003	$11,753	$11,655	$12,008	$12,256	$252,479	35%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart for Business PAYS Financing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Subtotal	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0%
INDUSTRIAL																	
Performance Optimization Program	$5,902	$6,916	$7,930	$8,944	$9,958	$10,379	$10,379	$10,379	$10,379	$10,379	$10,379	$10,379	$10,379	$10,379	$10,379	$143,443	
Subtotal	$5,902	$6,916	$7,930	$8,944	$9,958	$10,379	$10,379	$10,379	$10,379	$10,379	$10,379	$10,379	$10,379	$10,379	$10,379	$143,443	20%
ENERGY EFFICIENCY SUBTOTAL	$38,017	$40,112	$39,764	$37,731	$39,290	$36,597	$32,610	$28,328	$28,330	$26,701	$24,363	$23,531	$23,256	$22,554	$22,635	$463,820	63%
LOAD MANAGEMENT																	
Curtailable Rate Program	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$89,261	
LOAD MANAGEMENT SUBTOTAL	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$89,261	12%
LOAD DISPLACEMENT & ALTERNATIVE ENERGY																	
Bioenergy Optimization Program	$2,045	$2,217	$1,767	$1,691	$1,260	$1,188	$0	$0	$0	$0	$0	$0	$0	$0	$0	$10,168	
Customer Sited Load Displacement	$1,560	$5,168	$21,400	$14,653	$20,572	$6,300	$6,300	$1,550	$1,530	$1,510	$775	$755	$755	$755	$755	$84,338	
LOAD DISPLACEMENT & ALTERNATIVE ENERGY SUBTOTAL	$3,605	$7,385	$23,167	$16,344	$21,832	$7,489	$6,300	$1,550	$1,530	$1,510	$775	$755	$755	$755	$755	$94,506	13%
CONSERVATION RATES																	
Conservation Rates - Residential	$0	$0	$0	$2,199	$2,040	$2,805	$1,573	$1,000	$1,000	$1,000	$1,000	$750	$750	$750	$750	$15,618	
Conservation Rates - Commercial	$0	$0	$0	$1,466	$2,040	$2,805	$2,805	$1,101	$775	$805	$1,353	$2,370	$1,000	$952	$972	$18,444	
CONSERVATION RATES SUBTOTAL	$0	$0	$0	$3,664	$4,081	$5,611	$4,379	$2,101	$1,775	$1,805	$2,353	$3,120	$1,750	$1,702	$1,722	$34,062	5%
FUEL CHOICE																	
Fuel Choice	$0	$0	$0	$9,902	$9,882	$9,882	$9,882	$9,882	$0	$0	$0	$0	$0	$0	$0	$49,428	
FUEL CHOICE SUBTOTAL	$0	$0	$0	$9,902	$9,882	$9,882	$9,882	$9,882	$0	$0	$0	$0	$0	$0	$0	$49,428	7%
Subtotal of Programs	$47,572	$53,447	$68,882	$73,592	$81,034	$65,529	$59,121	$47,810	$37,587	$35,966	$33,442	$33,357	$31,712	$30,962	$31,063	$731,078	100%
Program Support	$4,282	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$64,120	
Contingency	$400	$800	$850	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$23,050	
Total Utility Costs (2014 to 2028)	$52,254	$58,522	$74,006	$79,367	$86,809	$71,303	$64,895	$53,585	$43,361	$42,240	$39,716	$39,631	$37,986	$37,236	$37,337	$818,248	
Total Committed to Date																$448,717	
TOTAL UTILITY COSTS (1989 to 2028)	$52,254	$58,522	$74,006	$79,367	$86,809	$71,303	$64,895	$53,585	$43,361	$42,240	$39,716	$39,631	$37,986	$37,236	$37,337	$1,266,965	

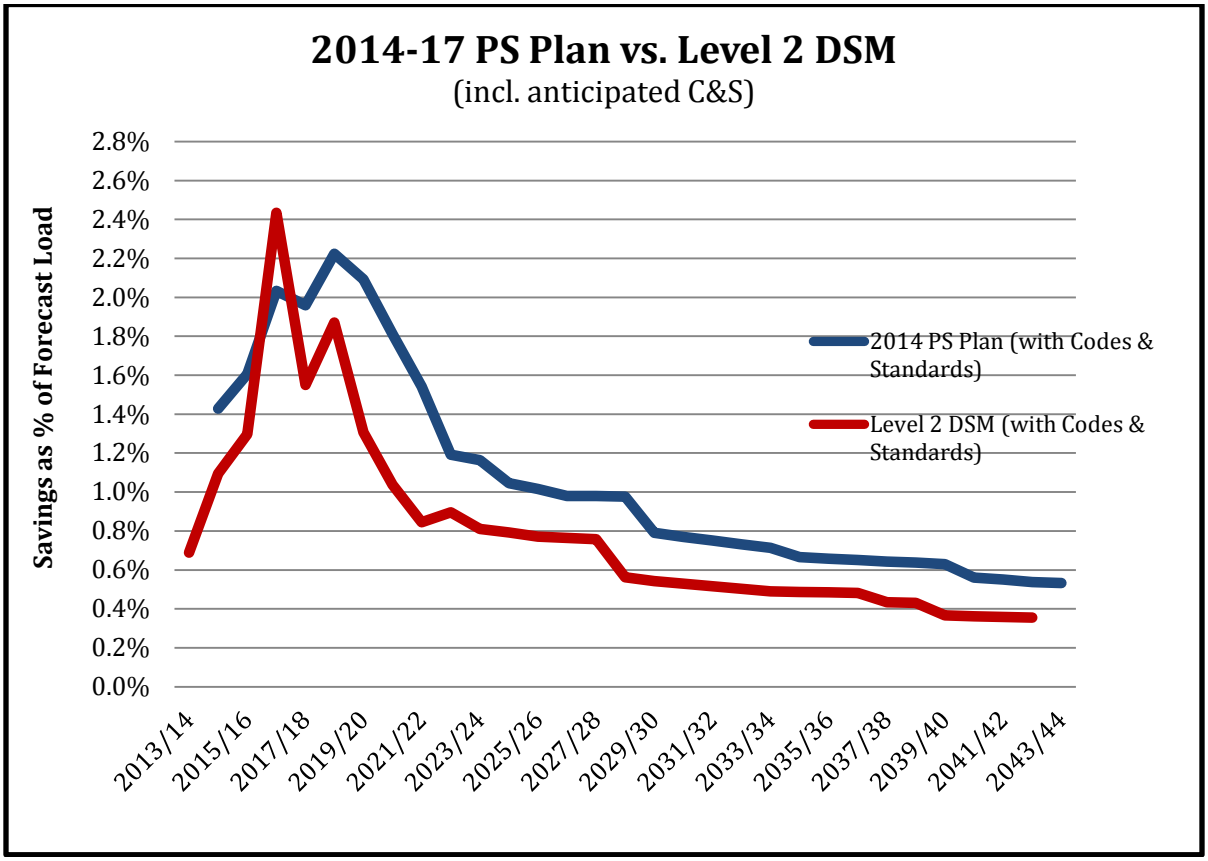
Note: May not add up due to rounding.

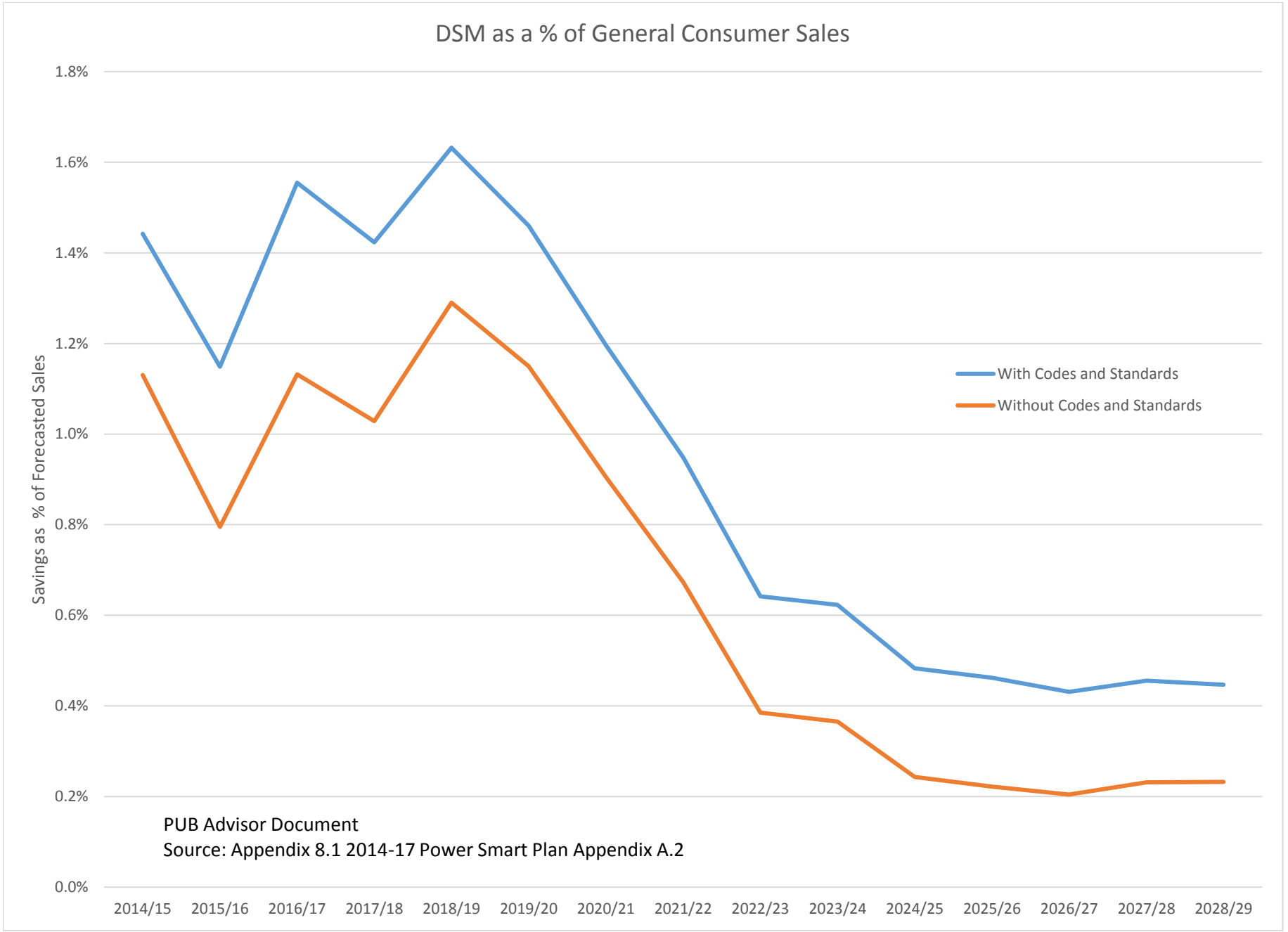

Annual DSM Spending - CEF-14 vs. 2014-17 Power Smart Plan vs. CEF-13
DSM Spending ($ millions)
$100
$90
$80
$70
$60
$50
$40
$30
$20
$10
$0
2014/15
2015/16
2016/17
2017/18
2018/19
2019/20
2020/21
2021/22
2022/23
2023/24
2024/25
2025/26
2026/27
2027/28
2028/29
CEF-14
2014-17 Power Smart Plan Appx A.3
CEF-13
CEF-14
2014 PSP
CEF-13
PUB Advisor Document
Source: Appendix 4.1 CEF-14 pp. 3,6;
Appendix 8.1 2014-17 Power Smart Plan Appendix A.3

NEEDS FOR AND ALTERNATIVES TO (NFAT)

Manitoba Hydro Undertaking #137

The following graph outlines the incremental savings (from programs and codes and standards) from Level 2 of the scenario analysis and from the 2014-17 Power Smart Plan as a percentage of the 2013 Load Forecast.




DSM as a % of General Consumer Sales
Savings as % of Forecasted Sales
1.8%
1.6%
1.4%
1.2%
1.0%
0.8%
0.6%
0.4%
0.2%
0.0%
2014/15
2015/16
2016/17
2017/18
2018/19
2019/20
2020/21
2021/22
2022/23
2023/24
2024/25
2025/26
2026/27
2027/28
2028/29
With Codes and Standards
Without Codes and Standards
PUB Advisor Document
Source: Appendix 8.1 2014-17 Power Smart Plan Appendix A.2

Section:	Tab 9	**Page No.:**	p. 7 of 23
Topic:	Energy Supply		
Subtopic:	Domestic Revenues		
Issue:	DSM Impacts		

PREAMBLE TO IR (IF ANY):

IFF MH 14 assumes up to 1730 GWh of DSM savings by 2019/20.

QUESTION:

a) Provide a revised IFF MH 14 with DSM savings reduced by 50% in each year.
b) What would be the change to annual rate increases (from 3.95%) if MH met the same financial targets/retained earnings with 50% DSM achieved.

RATIONALE FOR QUESTION:

This question explores the impact of not achieving DSM targets.

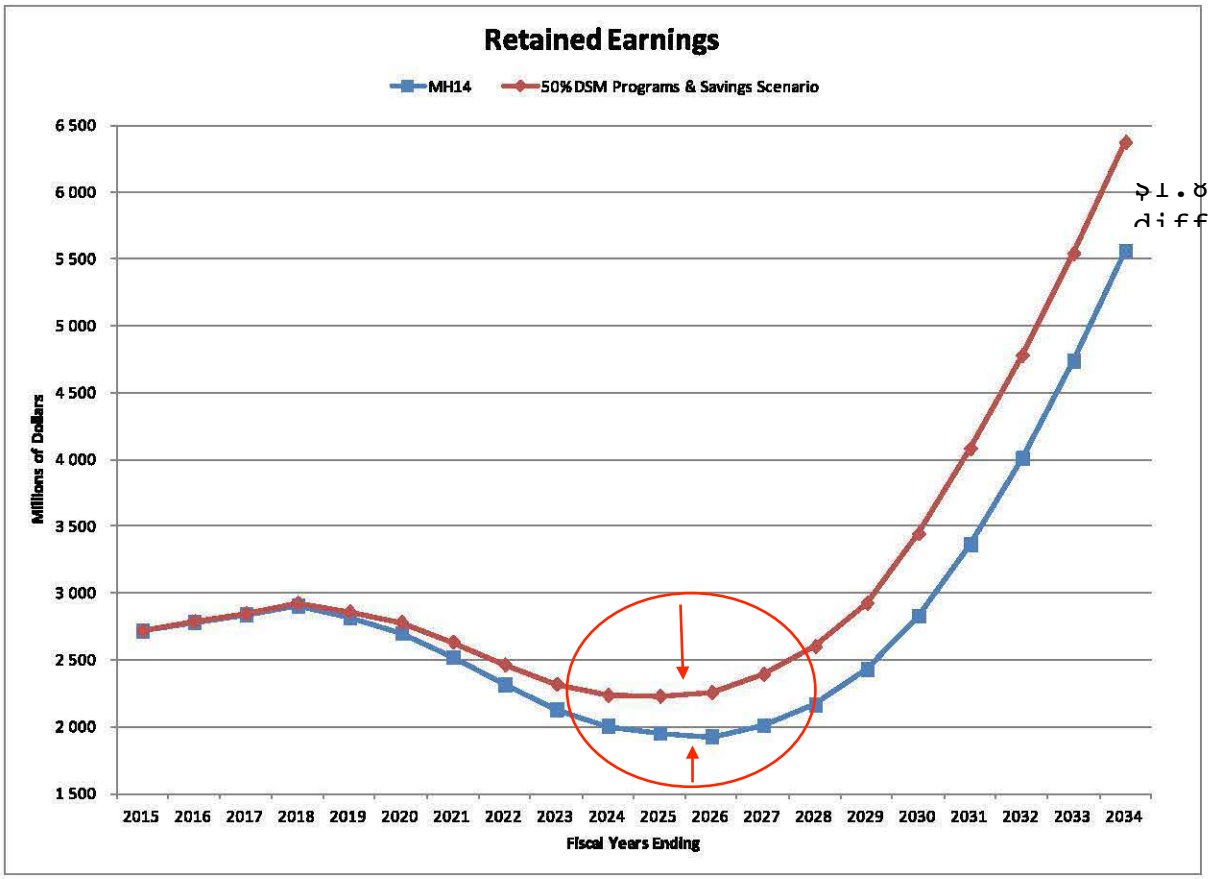
RESPONSE:

The first financial scenario below reflects DSM programs and savings reduced by 50% per year over the forecast period from 2015/16 to 2033/34. This scenario makes the following assumptions:

- DSM utility costs are $0.4 billion lower over the forecast period to 2033/34 compared to MH14 due to the reduction in DSM programs;
- Due to the reduction in DSM savings, new energy resources are required by 2030/31. It is assumed that additional generation is required in 2030/31 and 2032/33 at a total projected cost of $0.4 billion;
- Projected rate increases are the same as MH14;
- Projected Manitoba domestic revenue is $1.7 billion higher (including additional revenue) to 2033/34 compared to MH14 due to the reduction in DSM savings; and

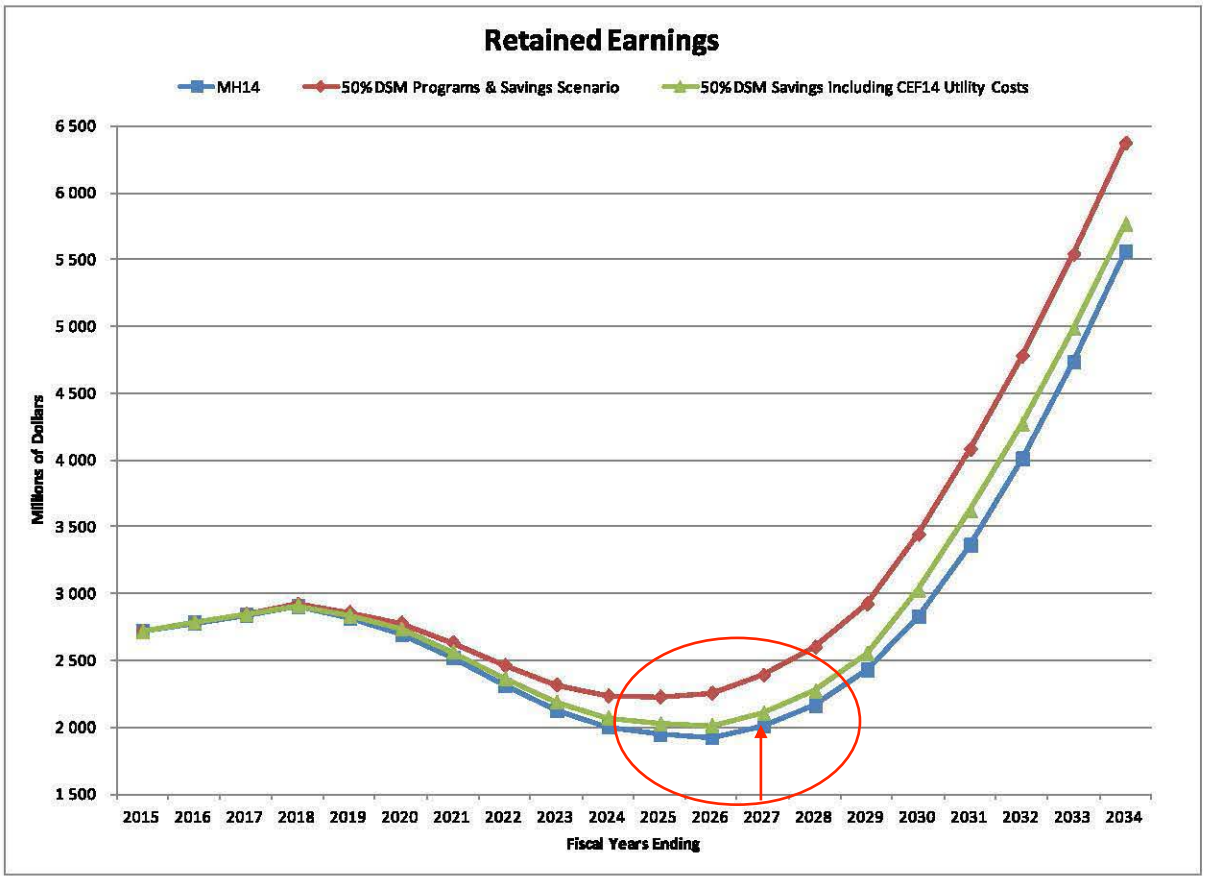
- The reduction in DSM savings results in less energy available for export and reduces projected net export revenue (net of water rentals and fuel and power purchased) by $1.5 billion over the period to 2033/34 compared to MH14.

The following figure shows the retained earnings under MH14 and the 50% DSM programs and savings scenario over the forecast period to 2033/34. The 50% DSM programs and savings scenario results in cumulative projected losses of $694 million over the six year period 2018/19 to 2023/24 compared to $978 million in cumulative losses over the eight year period 2018/19 to 2025/26 in MH14.



An alternative scenario has been prepared with the same assumptions as noted above except that the DSM utility costs are the same as CEF14. This scenario shows the financial impacts of Manitoba Hydro's investment in more aggressive DSM but do not result in the projected savings or customer uptake.

The following figure shows the projected retained earnings of the alternate DSM savings scenario assuming the same utility costs as CEF14 compared to MH14 and the DSM 50% programs and savings scenario.



Projected retained earnings are approximately $200 million higher compared to MH14 due to the shift in energy from export sales to domestic sales and partially offset by the incremental operating and carrying costs for the additional generation required to meet domestic load in 2030/31 and 2032/33. This scenario results in projected cumulative net losses of $898 billion over the eight year period 2018/19 to 2025/26.

Mathematically, the even annual rate increase under the DSM savings scenarios may be reduced from MH14's projected 3.95% rate increases from 2015/16 to 2030/31 to 3.83% and 3.92%, respectively (assumes the 2.0% rate increases 2031/32 to 2033/34 remain the same under both scenarios). However, a reduction to even annual rate increases only serves to increase the cumulative losses projected under both these DSM savings scenarios increasing the risk of rate instability for customers. The proposed and projected 3.95% rate increases

are the minimum required to maintain Manitoba Hydro's financial strength and affordable, predictable rates for customers.

The projected financial statements for the DSM 50% program and savings scenario and the alternate DSM 50% savings scenario including the CEF14 utility costs are attached.

Electric Operations 50% DSM Programs & Savings
Projected Operating Statement
(In Millions of Dollars)

For the year ended March 31	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
REVENUES										
General Consumers Revenue at approved rates	1 437	1 467	1 480	1 510	1 527	1 547	1 558	1 571	1 586	1 601
Additional General Consumers Revenue	-	58	119	186	256	331	408	489	576	668
BPIII Reserve Account	(30)	(33)	(34)	(36)	(11)	-	-	-	-	-
Extraprovincial	409	428	430	438	459	483	762	880	890	910
Other	15	14	14	14	15	15	15	15	16	16
	1 831	1 935	2 009	2 112	2 245	2 375	2 742	2 955	3 068	3 195
EXPENSES										
Operating and Administrative	486	542	552	558	571	586	601	607	619	631
Finance Expense	495	510	546	578	746	878	1 181	1 312	1 317	1 331
Depreciation and Amortization	405	401	420	440	513	512	598	650	718	732
Water Rentals and Assessments	124	123	112	112	112	114	124	127	132	132
Fuel and Power Purchased	134	131	196	210	216	213	240	271	266	277
Capital and Other Taxes	99	107	120	134	143	144	144	151	151	160
Corporate Allocation	9	8	8	8	8	8	8	8	8	8
	1 754	1 825	1 956	2 043	2 312	2 458	2 899	3 127	3 213	3 274
Non-Controlling Interest	25	12	8	7	5	4	10	0	(1)	(3)
Net Income	102	122	60	76	(62)	(79)	(147)	(171)	(146)	(83)
* Additional General Consumers Revenue										
Percent Increase	0.00%	3.95%	3.95%	3.95%	3.95%	3.95%	3.95%	3.95%	3.95%	3.95%
Cumulative Percent Increase	0.00%	3.95%	8.06%	12.32%	16.76%	21.37%	26.17%	31.15%	36.33%	41.72%
Financial Ratios										
Debt Ratio	78	82	84	85	86	86	87	89	89	89
Interest Coverage Ratio	1.16	1.17	1.07	1.07	0.95	0.93	0.89	0.87	0.89	0.94
Capital Coverage Ratio	0.98	1.03	0.94	1.11	0.91	0.85	0.84	0.98	1.13	1.26

Electric Operations 50% DSM Programs & Savings
Projected Operating Statement
(In Millions of Dollars)

For the year ended March 31	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
REVENUES										
General Consumers Revenue at approved rates	1 617	1 633	1 649	1 665	1 681	1 698	1 716	1 734	1 753	1 772
Additional General Consumers Revenue	765	868	976	1 090	1 210	1 338	1 473	1 553	1 637	1 723
BPIII Reserve Account	-	-	-	-	-	-	-	-	-	-
Extraprovincial	913	840	849	824	817	863	848	816	813	810
Other	16	17	17	18	18	18	19	19	19	20
	3 312	3 358	3 491	3 596	3 726	3 918	4 056	4 123	4 222	4 325
EXPENSES										
Operating and Administrative	644	657	669	683	696	705	725	739	761	776
Finance Expense	1 331	1 324	1 311	1 309	1 290	1 262	1 217	1 161	1 122	1 092
Depreciation and Amortization	746	757	770	784	793	804	816	838	852	878
Water Rentals and Assessments	133	132	133	133	134	138	138	137	137	137
Fuel and Power Purchased	288	286	295	297	306	301	332	353	386	406
Capital and Other Taxes	161	162	163	164	166	168	170	172	175	176
Corporate Allocation	8	8	8	8	8	6	5	6	5	5
	3 313	3 330	3 352	3 382	3 396	3 388	3 406	3 410	3 442	3 475
Non-Controlling Interest	(5)	(2)	(3)	(5)	(6)	(10)	(12)	(15)	(17)	(19)
Net Income	(6)	27	136	209	324	520	637	698	763	831
* Additional General Consumers Revenue										
Percent Increase	3.95%	3.95%	3.95%	3.95%	3.95%	3.95%	3.95%	2.00%	2.00%	2.00%
Cumulative Percent Increase	47.31%	53.13%	59.18%	65.47%	72.01%	78.80%	85.86%	89.58%	93.37%	97.24%
Financial Ratios										
Debt Ratio	89	89	88	87	86	84	81	79	76	72
Interest Coverage Ratio	1.00	1.02	1.10	1.16	1.25	1.40	1.51	1.58	1.65	1.74
Capital Coverage Ratio	1.31	1.36	1.53	1.64	1.75	2.09	2.16	2.26	2.33	2.43

Electric Operations 50% DSM Programs & Savings

Projected Balance Sheet

(In Millions of Dollars)

For the year ended March 31	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
ASSETS										
Plant in Service	17 163	17 912	19 127	19 988	24 957	28 333	33 202	33 846	34 478	35 142
Accumulated Depreciation	(5 676)	(6 012)	(6 392)	(6 795)	(7 270)	(7 798)	(8 403)	(9 055)	(9 721)	(10 401)
Net Plant in Service	11 487	11 900	12 735	13 193	17 687	20 535	24 800	24 791	24 757	24 741
Construction in Progress	3 257	4 932	6 755	8 982	6 040	3 939	169	185	241	263
Current and Other Assets	1 798	1 570	1 822	2 268	2 294	2 596	2 726	2 167	2 235	2 438
Goodwill and Intangible Assets	198	186	175	166	166	177	168	152	137	121
Regulated Assets	254	257	265	279	296	306	310	305	293	281
	16 993	18 845	21 753	24 888	26 485	27 553	28 174	27 601	27 662	27 845
LIABILITIES AND EQUITY										
Long Term Debt	11 705	13 808	16 481	18 689	20 977	21 706	22 392	22 555	23 050	23 041
Current and Other Liabilities	2 016	2 124	2 240	2 976	2 265	2 654	2 764	2 228	1 912	2 149
Contributions in Aid of Construction	412	446	480	514	549	583	618	654	690	727
BPIII Reserve Account	49	81	116	152	163	109	54	-	-	-
Retained Earnings	2 717	2 785	2 845	2 921	2 859	2 779	2 632	2 462	2 316	2 233
Accumulated Other Comprehensive Income	94	(399)	(409)	(363)	(328)	(278)	(287)	(298)	(305)	(305)
	16 993	18 845	21 753	24 888	26 485	27 553	28 174	27 601	27 662	27 845

Electric Operations 50% DSM Programs & Savings

Projected Balance Sheet

(In Millions of Dollars)

For the year ended March 31	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
ASSETS										
Plant in Service	35 822	36 544	37 410	38 124	38 859	39 555	40 581	41 337	42 409	43 537
Accumulated Depreciation	(11 096)	(11 807)	(12 532)	(13 274)	(14 030)	(14 800)	(15 585)	(16 394)	(17 219)	(18 069)
Net Plant in Service	24 725	24 737	24 878	24 849	24 828	24 754	24 997	24 943	25 190	25 468
Construction in Progress	322	344	225	254	379	572	472	663	465	255
Current and Other Assets	2 383	2 532	2 778	3 120	3 301	3 623	3 436	4 003	4 689	5 457
Goodwill and Intangible Assets	107	93	80	68	57	45	34	23	11	(0)
Regulated Assets	266	254	243	231	223	220	218	221	226	231
	27 802	27 960	28 204	28 521	28 788	29 215	29 156	29 852	30 582	31 411
LIABILITIES AND EQUITY										
Long Term Debt	22 995	23 598	23 801	23 943	23 876	23 149	23 139	23 143	23 137	22 781
Current and Other Liabilities	2 121	1 611	1 479	1 408	1 380	1 976	1 251	1 207	1 140	1 454
Contributions in Aid of Construction	764	802	839	876	914	952	990	1 029	1 069	1 109
BPIII Reserve Account	-	-	-	-	-	-	-	-	-	-
Retained Earnings	2 227	2 253	2 389	2 598	2 922	3 442	4 079	4 777	5 540	6 371
Accumulated Other Comprehensive Income	(304)	(304)	(304)	(304)	(304)	(304)	(304)	(304)	(304)	(304)
	27 802	27 960	28 204	28 521	28 788	29 215	29 156	29 852	30 582	31 411

$1.8B less than IFF14

Electric Operations 50% DSM Programs & Savings

Projected Cash Flow Statement

(In Millions of Dollars)

For the year ended March 31	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
OPERATING ACTIVITIES										
Cash Receipts from Customers	1 859	1 965	2 041	2 146	2 254	2 373	2 740	2 953	3 065	3 192
Cash Paid to Suppliers and Employees	(803)	(872)	(947)	(981)	(1 009)	(1 023)	(1 075)	(1 106)	(1 132)	(1 165)
Interest Paid	(511)	(515)	(543)	(589)	(779)	(918)	(1 212)	(1 331)	(1 313)	(1 323)
Interest Received	13	15	21	30	35	34	31	28	15	16
	558	593	572	607	501	466	484	544	636	721
FINANCING ACTIVITIES										
Proceeds from Long Term Debt	1 953	2 390	2 990	3 400	2 590	1 600	1 390	600	760	380
Sinking Fund Withdrawals	110	21	-	7	448	203	292	715	165	24
Retirement of Long Term Debt	(800)	(312)	(334)	(330)	(1 195)	(315)	(850)	(718)	(441)	(290)
Other Financing Activities	(45)	(22)	(20)	(20)	(30)	(19)	(101)	(25)	(41)	(32)
	1 218	2 077	2 636	3 057	1 813	1 469	731	572	443	82
INVESTING ACTIVITIES										
Property Plant and Equipment net of contributions	(1 900)	(2 498)	(3 105)	(3 214)	(2 219)	(1 524)	(986)	(737)	(684)	(683)
Sinking Fund Payment	(125)	(202)	(167)	(243)	(240)	(244)	(261)	(358)	(249)	(255)
Other Investing Activities	(21)	(21)	(21)	(21)	(21)	(35)	(30)	(30)	(30)	(30)
	(2 046)	(2 721)	(3 294)	(3 478)	(2 480)	(1 803)	(1 277)	(1 125)	(963)	(968)
Net Increase (Decrease) in Cash	(270)	(51)	(85)	186	(167)	132	(62)	(9)	115	(166)
Cash at Beginning of Year	133	(137)	(187)	(273)	(87)	(254)	(121)	(184)	(193)	(78)
Cash at End of Year	(137)	(187)	(273)	(87)	(254)	(121)	(184)	(193)	(78)	(244)

Electric Operations 50% DSM Programs & Savings

Projected Cash Flow Statement

(In Millions of Dollars)

For the year ended March 31	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
OPERATING ACTIVITIES										
Cash Receipts from Customers	3 309	3 355	3 488	3 593	3 723	3 915	4 052	4 119	4 218	4 322
Cash Paid to Suppliers and Employees	(1 189)	(1 200)	(1 223)	(1 239)	(1 262)	(1 272)	(1 324)	(1 360)	(1 416)	(1 452)
Interest Paid	(1 326)	(1 327)	(1 327)	(1 339)	(1 339)	(1 320)	(1 293)	(1 213)	(1 189)	(1 173)
Interest Received	19	21	35	48	61	70	82	61	75	90
	814	849	974	1 063	1 182	1 393	1 518	1 608	1 689	1 787
FINANCING ACTIVITIES										
Proceeds from Long Term Debt	390	580	190	190	(20)	(30)	(20)	(20)	(40)	(30)
Sinking Fund Withdrawals	293	99	-	-	60	100	700	13	30	-
Retirement of Long Term Debt	(402)	(450)	-	-	(60)	(70)	(700)	(13)	-	20
Other Financing Activities	(31)	(30)	(29)	(27)	(25)	(22)	(21)	(38)	(37)	(36)
	250	199	161	163	(45)	(22)	(41)	(58)	(47)	(46)
INVESTING ACTIVITIES										
Property Plant and Equipment net of contributions	(731)	(738)	(740)	(733)	(851)	(882)	(916)	(940)	(868)	(911)
Sinking Fund Payment	(267)	(265)	(273)	(285)	(298)	(306)	(313)	(291)	(302)	(312)
Other Investing Activities	(30)	(31)	(25)	(26)	(26)	(26)	(26)	(26)	(27)	(27)
	(1 028)	(1 034)	(1 039)	(1 044)	(1 175)	(1 214)	(1 256)	(1 257)	(1 197)	(1 250)
Net Increase (Decrease) in Cash	36	14	96	182	(37)	157	221	293	446	491
Cash at Beginning of Year	(244)	(208)	(194)	(98)	85	48	205	426	719	1 165
Cash at End of Year	(208)	(194)	(98)	85	48	205	426	719	1 165	1 655

Electric Operations 50% DSM Savings including CEF14 Utility Costs
Projected Operating Statement
(In Millions of Dollars)

For the year ended March 31	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
REVENUES										
General Consumers Revenue at approved rates	1 437	1 467	1 480	1 510	1 527	1 547	1 558	1 571	1 586	1 601
Additional General Consumers Revenue	-	58	119	186	256	331	408	489	576	668
BPIII Reserve Account	(30)	(33)	(34)	(36)	(11)	-	-	-	-	-
Extraprovincial	409	428	430	438	459	483	762	880	890	910
Other	15	14	14	14	15	15	15	15	16	16
	1 831	1 935	2 009	2 112	2 245	2 375	2 742	2 955	3 068	3 195
EXPENSES										
Operating and Administrative	486	542	552	558	571	586	601	607	619	631
Finance Expense	495	510	547	581	751	885	1 191	1 323	1 330	1 345
Depreciation and Amortization	405	401	422	445	521	524	612	666	736	752
Water Rentals and Assessments	124	123	112	112	112	114	124	127	132	132
Fuel and Power Purchased	134	131	196	210	216	213	240	271	266	277
Capital and Other Taxes	99	107	121	134	143	144	145	151	151	161
Corporate Allocation	9	8	8	8	8	8	8	8	8	8
	1 754	1 825	1 960	2 052	2 326	2 477	2 924	3 155	3 245	3 309
Non-Controlling Interest	25	12	8	7	5	4	10	0	(1)	(3)
Net Income	102	122	56	67	(76)	(98)	(171)	(199)	(178)	(117)
* Additional General Consumers Revenue										
Percent Increase	0.00%	3.95%	3.95%	3.95%	3.95%	3.95%	3.95%	3.95%	3.95%	3.95%
Cumulative Percent Increase	0.00%	3.95%	8.06%	12.32%	16.76%	21.37%	26.17%	31.15%	36.33%	41.72%
Financial Ratios										
Debt Ratio	78	82	84	85	86	87	88	89	90	90
Interest Coverage Ratio	1.16	1.17	1.07	1.07	0.93	0.92	0.87	0.85	0.87	0.91
Capital Coverage Ratio	0.98	1.03	0.93	1.10	0.91	0.84	0.83	0.96	1.11	1.24

Electric Operations 50% DSM Savings including CEF14 Utility Costs
Projected Operating Statement
(In Millions of Dollars)

For the year ended March 31	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
REVENUES										
General Consumers Revenue at approved rates	1 617	1 633	1 649	1 665	1 681	1 698	1 716	1 734	1 753	1 772
Additional General Consumers Revenue	765	868	976	1 090	1 210	1 338	1 473	1 553	1 637	1 723
BPIII Reserve Account	-	-	-	-	-	-	-	-	-	-
Extraprovincial	913	840	849	824	817	863	848	816	813	810
Other	16	17	17	18	18	18	19	19	19	20
	3 312	3 358	3 491	3 596	3 726	3 918	4 056	4 123	4 222	4 325
EXPENSES										
Operating and Administrative	644	657	669	683	696	705	725	739	761	776
Finance Expense	1 346	1 343	1 331	1 331	1 313	1 289	1 248	1 194	1 156	1 128
Depreciation and Amortization	767	780	791	804	811	820	831	852	866	892
Water Rentals and Assessments	133	132	133	133	134	138	138	137	137	137
Fuel and Power Purchased	288	286	295	297	306	301	332	353	386	406
Capital and Other Taxes	162	163	164	165	166	168	170	172	175	176
Corporate Allocation	8	8	8	8	8	6	5	6	5	5
	3 351	3 372	3 395	3 424	3 438	3 432	3 452	3 457	3 490	3 526
Non-Controlling Interest	(5)	(2)	(3)	(5)	(6)	(10)	(12)	(15)	(17)	(19)
Net Income	(44)	(15)	93	167	281	476	591	651	714	781
* Additional General Consumers Revenue										
Percent Increase	3.95%	3.95%	3.95%	3.95%	3.95%	3.95%	3.95%	2.00%	2.00%	2.00%
Cumulative Percent Increase	47.31%	53.13%	59.18%	65.47%	72.01%	78.80%	85.86%	89.58%	93.37%	97.24%
Financial Ratios										
Debt Ratio	90	90	90	89	87	85	83	81	78	75
Interest Coverage Ratio	0.97	0.99	1.07	1.12	1.21	1.36	1.46	1.53	1.60	1.67
Capital Coverage Ratio	1.28	1.33	1.49	1.60	1.72	2.06	2.11	2.22	2.29	2.38

Electric Operations 50% DSM Savings including CEF14 Utility Costs

Projected Balance Sheet

(In Millions of Dollars)

For the year ended March 31	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
ASSETS										
Plant in Service	17 163	17 912	19 127	19 988	24 957	28 333	33 202	33 846	34 478	35 142
Accumulated Depreciation	(5 676)	(6 012)	(6 392)	(6 795)	(7 270)	(7 798)	(8 403)	(9 055)	(9 721)	(10 401)
Net Plant in Service	11 487	11 900	12 735	13 193	17 687	20 535	24 800	24 791	24 757	24 741
Construction in Progress	3 257	4 932	6 755	8 982	6 040	3 939	169	185	241	263
Current and Other Assets	1 798	1 570	1 822	2 268	2 295	2 598	2 727	2 167	2 237	2 441
Goodwill and Intangible Assets	198	186	175	166	166	177	168	152	137	121
Regulated Assets	254	278	313	352	396	420	434	431	416	398
	16 993	18 866	21 801	24 961	26 585	27 668	28 298	27 727	27 787	27 965
LIABILITIES AND EQUITY										
Long Term Debt	11 705	13 808	16 681	18 689	21 177	21 906	22 592	22 755	23 250	23 441
Current and Other Liabilities	2 016	2 145	2 092	3 061	2 192	2 615	2 758	2 253	1 966	2 032
Contributions in Aid of Construction	412	446	480	514	549	583	618	654	690	727
BPIII Reserve Account	49	81	116	152	163	109	54	-	-	-
Retained Earnings	2 717	2 784	2 841	2 908	2 832	2 734	2 563	2 364	2 186	2 069
Accumulated Other Comprehensive Income	94	(399)	(409)	(363)	(328)	(278)	(287)	(298)	(305)	(305)
	16 993	18 866	21 801	24 961	26 585	27 668	28 298	27 727	27 787	27 965

Electric Operations 50% DSM Savings including CEF14 Utility Costs

Projected Balance Sheet

(In Millions of Dollars)

For the year ended March 31	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
ASSETS										
Plant in Service	35 822	36 544	37 410	38 124	38 859	39 555	40 581	41 337	42 409	43 537
Accumulated Depreciation	(11 096)	(11 807)	(12 532)	(13 274)	(14 030)	(14 800)	(15 585)	(16 394)	(17 219)	(18 069)
Net Plant in Service	24 725	24 737	24 878	24 849	24 828	24 754	24 997	24 943	25 190	25 468
Construction in Progress	322	344	225	254	379	572	472	663	465	255
Current and Other Assets	2 386	2 536	2 785	3 104	3 268	3 733	3 500	4 019	4 654	5 370
Goodwill and Intangible Assets	107	93	80	68	57	45	34	23	11	(0)
Regulated Assets	374	353	333	313	300	295	293	296	304	311
	27 914	28 062	28 300	28 588	28 833	29 400	29 295	29 944	30 625	31 404
LIABILITIES AND EQUITY										
Long Term Debt	23 395	23 998	24 201	24 343	24 276	23 749	23 739	23 743	23 737	23 381
Current and Other Liabilities	2 034	1 556	1 462	1 404	1 396	1 976	1 251	1 207	1 140	1 454
Contributions in Aid of Construction	764	802	839	876	914	952	990	1 029	1 069	1 109
BPIII Reserve Account	-	-	-	-	-	-	-	-	-	-
Retained Earnings	2 025	2 010	2 103	2 269	2 550	3 027	3 618	4 268	4 983	5 763
Accumulated Other Comprehensive Income	(304)	(304)	(304)	(304)	(304)	(304)	(304)	(304)	(304)	(304)
	27 914	28 062	28 300	28 588	28 833	29 400	29 295	29 944	30 625	31 404

Electric Operations 50% DSM Savings including CEF14 Utility Costs

Projected Cash Flow Statement

(In Millions of Dollars)

For the year ended March 31	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
OPERATING ACTIVITIES										
Cash Receipts from Customers	1 859	1 965	2 041	2 146	2 254	2 373	2 740	2 953	3 065	3 192
Cash Paid to Suppliers and Employees	(803)	(872)	(947)	(981)	(1 009)	(1 024)	(1 075)	(1 107)	(1 132)	(1 165)
Interest Paid	(511)	(514)	(547)	(593)	(784)	(924)	(1 222)	(1 342)	(1 324)	(1 337)
Interest Received	13	15	21	30	35	34	31	28	15	16
	558	594	568	602	495	459	473	532	625	706
FINANCING ACTIVITIES										
Proceeds from Long Term Debt	1 953	2 390	3 190	3 200	2 790	1 600	1 390	600	760	580
Sinking Fund Withdrawals	110	21	-	7	448	204	293	716	165	26
Retirement of Long Term Debt	(800)	(312)	(334)	(330)	(1 195)	(315)	(850)	(718)	(441)	(290)
Other Financing Activities	(45)	(22)	(20)	(20)	(30)	(19)	(101)	(25)	(41)	(32)
	1 218	2 077	2 836	2 857	2 013	1 470	733	573	443	284
INVESTING ACTIVITIES										
Property Plant and Equipment net of contributions	(1 900)	(2 518)	(3 134)	(3 244)	(2 253)	(1 550)	(1 010)	(756)	(698)	(697)
Sinking Fund Payment	(125)	(202)	(168)	(243)	(241)	(245)	(262)	(358)	(252)	(258)
Other Investing Activities	(21)	(21)	(21)	(21)	(21)	(35)	(30)	(30)	(30)	(30)
	(2 046)	(2 742)	(3 323)	(3 508)	(2 516)	(1 830)	(1 302)	(1 144)	(980)	(985)
Net Increase (Decrease) in Cash	(270)	(71)	81	(49)	(8)	99	(95)	(40)	88	5
Cash at Beginning of Year	133	(137)	(208)	(127)	(176)	(184)	(85)	(180)	(220)	(132)
Cash at End of Year	(137)	(208)	(127)	(176)	(184)	(85)	(180)	(220)	(132)	(127)

Electric Operations 50% DSM Savings including CEF14 Utility Costs

Projected Cash Flow Statement

(In Millions of Dollars)

For the year ended March 31	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
OPERATING ACTIVITIES										
Cash Receipts from Customers	3 309	3 355	3 488	3 593	3 723	3 915	4 052	4 119	4 218	4 322
Cash Paid to Suppliers and Employees	(1 190)	(1 200)	(1 223)	(1 240)	(1 263)	(1 273)	(1 324)	(1 360)	(1 416)	(1 452)
Interest Paid	(1 345)	(1 346)	(1 347)	(1 362)	(1 364)	(1 344)	(1 324)	(1 247)	(1 225)	(1 211)
Interest Received	19	21	35	48	62	71	83	63	77	92
	794	830	952	1 040	1 158	1 369	1 487	1 575	1 655	1 750
FINANCING ACTIVITIES										
Proceeds from Long Term Debt	390	580	190	190	(20)	170	(20)	(20)	(40)	(30)
Sinking Fund Withdrawals	296	102	-	-	60	100	700	13	30	-
Retirement of Long Term Debt	(402)	(450)	-	-	(60)	(70)	(700)	(13)	-	20
Other Financing Activities	(31)	(30)	(29)	(27)	(25)	(22)	(21)	(38)	(37)	(36)
	253	202	161	163	(45)	178	(41)	(58)	(47)	(46)
INVESTING ACTIVITIES										
Property Plant and Equipment net of contributions	(744)	(751)	(752)	(745)	(864)	(895)	(931)	(955)	(884)	(928)
Sinking Fund Payment	(270)	(269)	(277)	(290)	(302)	(312)	(320)	(298)	(309)	(320)
Other Investing Activities	(30)	(31)	(25)	(26)	(26)	(26)	(26)	(26)	(27)	(27)
	(1 044)	(1 050)	(1 055)	(1 061)	(1 192)	(1 233)	(1 277)	(1 279)	(1 220)	(1 274)
Net Increase (Decrease) in Cash	3	(19)	59	143	(79)	314	169	238	388	430
Cash at Beginning of Year	(127)	(124)	(143)	(84)	59	(21)	293	462	700	1 088
Cash at End of Year	(124)	(143)	(84)	59	(21)	293	462	700	1 088	1 518

4

Section:	Tab 3	**Page No.:**	3
Topic:	Integrated Financial Forecast and Economic Outlook		
Subtopic:	Economic Outlook		
Issue:	Economic Outlook Update		

PREAMBLE TO IR (IF ANY):

The Application notes that certain economic variable were updated from those in the 2014 Economic Outlook to reflect the latest consensus of the source forecasts as of September 2014 (per Appendix 3.1, Attachment B).

QUESTION:

Based on the most recent source forecasts please provide an update to Appendix B.

RATIONALE FOR QUESTION:

Manitoba Hydro's Economic Outlook was last updated in the fall of 2014. Given material change in circumstances, an update is necessary.

RESPONSE:

It is assumed that the reference to "Attachment B" in the Preamble is in reference to Appendix B of the Economic Outlook. The spring 2014 Economic Outlook is filed as Appendix 3.1 of the filing. Appendix B of the Economic Outlook is presented on a calendar year basis and is not consistent with the assumptions used in the filing which are on a fiscal year basis. Rather, Appendix A of the Economic Outlook provides a summary of forecasts on a fiscal year basis and is included as an attachment to this response with updates to interest rates and CAD/USD exchange rate based on updates to end of January 2015 source forecasts.

Economic Outlook Appendix A - January 2015 Update

MANITOBA / CANADA ECONOMIC STATISTICS - FISCAL YEAR BASIS

Year	Man. Real GDP % chge	Man. CPI % chge	Man. Popu-lation '000s	Man. Residential Customers '000s	Cdn. Real GDP % chge	Cdn. CPI % chge	Cdn 90 Day T-Bill Rate %	Cdn LT Bond 10 Yr+ Rate %	C$/ US$
1989/90	2.7	4.7	1,104	385	2.0	5.2	12.37	9.77	1.18
1990/91	1.2	5.0	1,106	387	-1.1	5.0	12.07	10.59	1.16
1991/92	-2.4	3.8	1,110	389	-1.1	4.4	8.03	9.29	1.15
1992/93	0.7	1.9	1,114	391	1.1	1.6	6.25	8.18	1.23
1993/94	1.2	2.4	1,119	394	3.1	1.5	4.46	7.39	1.31
1994/95	2.8	1.6	1,125	396	4.8	0.4	6.46	8.95	1.38
1995/96	0.9	2.5	1,130	398	1.7	2.1	6.17	7.93	1.36
1996/97	3.2	2.5	1,135	400	2.5	1.7	3.67	7.28	1.36
1997/98	4.2	1.5	1,136	404	4.6	1.4	3.63	6.06	1.40
1998/99	3.6	1.5	1,139	405	3.9	0.9	4.81	5.35	1.50
1999/00	2.1	2.2	1,144	408	5.3	2.2	4.82	5.69	1.47
2000/01	3.4	2.5	1,148	411	4.5	2.7	5.42	5.66	1.50
2001/02	1.2	2.1	1,153	413	1.5	2.2	3.09	5.91	1.57
2002/03	1.5	2.3	1,158	415	2.9	3.0	2.79	5.41	1.55
2003/04	1.5	0.9	1,166	419	1.7	1.9	2.67	4.97	1.35
2004/05	2.4	2.7	1,174	422	3.5	2.2	2.31	4.81	1.28
2005/06	3.0	2.4	1,180	426	3.3	2.3	3.02	4.17	1.19
2006/07	3.5	2.0	1,185	430	2.0	1.9	4.16	4.23	1.14
2007/08	3.1	1.9	1,191	434	2.1	2.1	3.83	4.24	1.03
2008/09	2.8	2.2	1,200	440	0.2	2.2	1.84	3.66	1.13
2009/10	0.5	0.6	1,212	444	-1.6	0.4	0.22	3.89	1.09
2010/11	2.4	1.0	1,224	448	3.5	2.0	0.78	3.48	1.02
2011/12	1.9	2.8	1,238	453	2.3	2.8	0.91	2.83	0.99
2012/13	2.5	1.6	1,254	459	1.6	1.2	0.97	2.18	1.00
2013/14	2.2	2.4	1,269	465	2.2	1.1	0.94	2.70	1.05
Forecast									
2014/15	2.2	1.8	1,283	471	2.3	1.6	0.85	2.30	1.13
2015/16	2.5	1.9	1,300	477	2.5	1.9	0.50	2.15	1.29
2016/17	2.7	2.0	1,317	483	2.6	2.0	0.95	2.80	1.25
2017/18	2.6	2.0	1,335	490	2.5	2.1	2.30	3.90	1.13
2018/19	2.1	2.0	1,352	496	2.4	2.0	2.95	3.95	1.11
2019/20	1.8	2.0	1,368	502	2.3	2.0	3.50	3.95	1.10
2020/21	1.6	2.1	1,385	508	1.9	2.0	3.50	4.00	1.09
2021/22	1.6	2.1	1,400	513	1.9	2.0	3.50	4.00	1.09
2022/23	1.6	2.1	1,414	519	1.9	2.0	3.50	4.00	1.09
2023/24	1.6	2.1	1,428	524	1.9	2.0	3.50	4.00	1.10
2024/25	1.6	2.1	1,441	529	1.9	2.0	3.50	4.00	1.10
2025/26	1.6	2.1	1,454	533	1.9	2.0	3.50	4.00	1.10
2026/27	1.6	2.1	1,466	538	1.9	2.0	3.50	4.00	1.10
2027/28	1.6	2.1	1,477	542	1.9	2.0	3.50	4.00	1.10
2028/29	1.6	2.1	1,488	546	1.9	2.0	3.50	4.00	1.10
2029/30	1.6	2.1	1,499	550	1.9	2.0	3.50	4.00	1.10
2030/31	1.6	2.1	1,510	554	1.9	2.0	3.50	4.00	1.10
2031/32	1.6	2.1	1,521	558	1.9	2.0	3.50	4.00	1.10
2032/33	1.6	2.1	1,531	562	1.9	2.0	3.50	4.00	1.10
2033/34	1.6	2.1	1,542	566	1.9	2.0	3.50	4.00	1.10
2034/35	1.6	2.1	1,553	569	1.9	2.0	3.50	4.00	1.10

RESPONSE:

a) The 2013/14 customers numbers presented in Table 14 in the 2014 Load Forecast were inadvertently not updated from the 2012/13 customer numbers during the preparation of the report. The 2013/14 historic customer numbers and corresponding energy is corrected in the following chart and are consistent with the information presented in Manitoba Hydro's response to MMF/MH-I-40:

Table 14 – Residential Basic Sales (Revised)

RESIDENTIAL BASIC SALES
History and Forecast
2013/14 - 2033/34

Fiscal	Electric Heat Billed			Non Electric Heat Billed			Total Basic			% Elec Space	% Elec Water
Year	Custs	GW.h	kW.h/cust	Custs	GW.h	kW.h/cust	Custs	GW.h	kW.h/cust	Heat	Heat
2013/14	169,582	4,237	24,983	292,692	3,013	10,294	462,274	7,249	15,682	36.7%	48.3%
2014/15	173,561	4,324	24,913	294,514	3,056	10,377	468,075	7,380	15,767	37.1%	49.4%
2015/16	177,387	4,395	24,775	296,375	3,086	10,412	473,762	7,481	15,790	37.4%	50.5%
2016/17	181,184	4,474	24,693	298,780	3,132	10,484	479,964	7,606	15,848	37.7%	51.5%
2017/18	184,929	4,549	24,601	301,458	3,177	10,538	486,387	7,726	15,885	38.0%	52.3%
2018/19	188,478	4,618	24,501	304,222	3,218	10,577	492,700	7,836	15,904	38.3%	53.1%
2019/20	191,795	4,683	24,419	307,092	3,263	10,625	498,887	7,946	15,928	38.4%	53.8%
2020/21	194,868	4,743	24,341	310,046	3,306	10,663	504,914	8,049	15,942	38.6%	54.5%
2021/22	197,696	4,800	24,280	312,991	3,351	10,705	510,687	8,151	15,960	38.7%	55.1%
2022/23	200,277	4,853	24,230	315,883	3,396	10,749	516,160	8,248	15,980	38.8%	55.8%
2023/24	202,640	4,902	24,192	318,697	3,440	10,794	521,337	8,342	16,002	38.9%	56.4%
2024/25	204,859	4,951	24,167	321,424	3,485	10,842	526,283	8,435	16,028	38.9%	57.1%
2025/26	206,970	4,998	24,148	324,046	3,529	10,891	531,016	8,527	16,058	39.0%	57.7%
2026/27	208,970	5,044	24,140	326,547	3,575	10,947	535,517	8,619	16,095	39.0%	58.3%
2027/28	210,869	5,090	24,140	328,932	3,621	11,008	539,801	8,711	16,138	39.1%	59.0%
2028/29	212,686	5,135	24,145	331,228	3,667	11,071	543,914	8,802	16,183	39.1%	59.6%
2029/30	214,445	5,181	24,158	333,479	3,715	11,140	547,924	8,895	16,235	39.1%	60.2%
2030/31	216,165	5,226	24,176	335,713	3,764	11,212	551,878	8,990	16,290	39.2%	60.8%
2031/32	217,856	5,272	24,200	337,951	3,815	11,289	555,807	9,087	16,349	39.2%	61.4%
2032/33	219,528	5,319	24,228	340,203	3,868	11,369	559,731	9,186	16,412	39.2%	62.0%
2033/34	221,184	5,366	24,262	342,474	3,922	11,453	563,658	9,289	16,479	39.2%	62.6%

Section:	Tab 6	**Page No.:**	NFAT Final Report, pg. 29
Topic:	Rates		
Subtopic:	Bill Impacts		
Issue:	Equity		

PREAMBLE TO IR (IF ANY):

According to the NFAT Final Report, at pg. 29, rates could double in the period 2013-2032. Increases of this magnitude are particularly harsh for certain segments of the Province.

QUESTION:

In an Excel spreadsheet, list each of the following, by year for each of the last five years and for the next projected two years (including the instant application and approved interim rate increase), including for each year, for each of the categories of residential customers set out below: number of customers, customer charge, usage rate(s), average annual bill by dwelling, percentage change in annual bill by dwelling from the immediately previous year.
The categories are:

a) Dwellings occupied by Low-income households,
c) Dwellings in northern rural Manitoba,
d) Dwellings in rural areas of Manitoba (defined as are as of no natural gas availability),
e) Dwellings using electricity for heat,
f) Dwellings not using electricity for heat,
g) Dwellings in Winnipeg,
h) All residential dwellings,
i) Renters among each of the foregoing categories, and
j) Small and medium business.

RATIONALE FOR QUESTION:

To determine bill impacts on specific segments of the Province.

RESPONSE:

a) The table in the attached Excel spreadsheet, MMF-MH-I-40-Attachment 1.xlsx, presents the number of low income customers (defined as households with a total household income equal to or less than the Statistics Canada Low Income Cut Off – LICO) and the associated average annual kW.h per dwelling and average annual bill. Manitoba Hydro does not track customer income within its billing system. Information related to income is derived from the 2009 Residential Energy Use Survey and represents the usage and annual bills of customers that were identified as low income in 2009. Manitoba Hydro does not forecast future load based on income categories.

c) The table in the attached Excel spreadsheet, MMF-MH-I-40-Attachment 1.xlsx, presents the number of residential customers in Northern Manitoba, the average annual kW.h per customer and average annual bill excluding any taxes for each of the last five years. Manitoba Hydro is unable to provide the forecast for households in northern rural Manitoba as Manitoba Hydro does not prepare load forecasts for individual segments within the Residential Basic rate class.

d) The table in the attached Excel spreadsheet, MMF-MH-I-40-Attachment 1.xlsx, presents the number of residential customers in non-gas available areas of the Province, the average annual kW.h per customer and average annual bill excluding any taxes for each of the last five years. Manitoba Hydro is unable to provide the forecast for households in rural areas of Manitoba as Manitoba Hydro does not prepare load forecasts for individual segments within the Residential Basic rate class.

e) The table in the attached Excel spreadsheet, MMF-MH-I-40-Attachment 1.xlsx, presents the number of electrically heated residential customers, the average annual kW.h per customer and average annual bill excluding any taxes for each of the last five years including the first two years of the forecast.

f) The table in the attached Excel spreadsheet, MMF-MH-I-40-Attachment 1.xlsx, presents the number of non-electrically heated residential customers, the average annual kW.h per customer and average annual bill excluding any taxes for each of the last five years including the first two years of the forecast.

Residential Northern Manitoba
(includes Residential Basic, Seasonal & Diesel)

Fiscal Yr	# of Customers	Average Annual kW.h	Average Annual Bill (excl taxes)	% Change
2009/10	22,199	26,667	$1,626	
2010/11	22,388	27,066	$1,716	5.6%
2011/12	22,583	26,059	$1,720	0.3%
2012/13	22,662	26,449	$1,803	4.8%
2013/14	22,798	25,600	$1,776	-1.5%

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Residential Non-Gas Available
(includes Residential Basic, Seasonal & Diesel)

Fiscal Yr	# of Customers	Average Annual kW.h	Average Annual Bill (excl taxes)	% Change
2009/10	95,841	22,375	$1,487	
2010/11	96,587	22,347	$1,534	3.2%
2011/12	97,041	21,419	$1,500	-2.2%
2012/13	97,582	22,607	$1,639	9.3%
2013/14	98,139	24,523	$1,839	12.2%

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Residential Basic
Electric Heat

Fiscal Yr	# of Customers	Average Annual kW.h	Average Annual Bill (excl taxes)	% Change	W/A Average Annual kW.h	W/A Average Annual Bill (excl taxes)	% Change
2009/10	153,132	25,213	$1,665		25,695	$1,695	
2010/11	156,708	25,229	$1,721	3.4%	25,656	$1,748	3.2%
2011/12	160,600	23,577	$1,643	-4.5%	25,512	$1,767	1.1%
2012/13	164,994	24,974	$1,803	9.7%	25,339	$1,827	3.4%
2013/14	169,582	27,341	$2,048	13.6%	24,983	$1,888	3.3%
2014/15	173,561				24,912	$1,919	1.7%
2015/16	177,387				24,776	$1,989	3.6%

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Residential Basic
Non Electric Heat

Fiscal Yr	# of Customers	Average Annual kW.h	Average Annual Bill (excl taxes)	% Change	W/A Average Annual kW.h	W/A Average Annual Bill (excl taxes)	% Change
2009/10	288,578	10,137	$716		10,413	$733	
2010/11	289,174	10,369	$749	4.5%	10,485	$756	3.2%
2011/12	290,148	10,447	$773	3.3%	10,476	$775	2.4%
2012/13	291,136	10,658	$814	5.2%	10,465	$801	3.4%
2013/14	292,692	10,696	$855	5.1%	10,294	$827	3.3%
2014/15	294,514				10,377	$851	2.9%
2015/16	296,375				10,412	$889	4.5%

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Section:	Tab 7, App. 7.1	**Page No.:**	Table 14, p.18
Topic:	Electric Load Forecast		
Subtopic:	Domestic Load Forecasts Residential Sales Forecasts		
Issue:	Electric Heating		

PREAMBLE TO IR (IF ANY):

MH's Residential Sales forecasts suggest an ongoing shift to electric heat and water heating.

QUESTION:

Provide Manitoba Hydro's Home Heating Cost Comparison charts for the past three years and file a graph that shows the average heating cost for an all-electric residential household and for a gas space and water heat household for each of these documents.

RATIONALE FOR QUESTION:

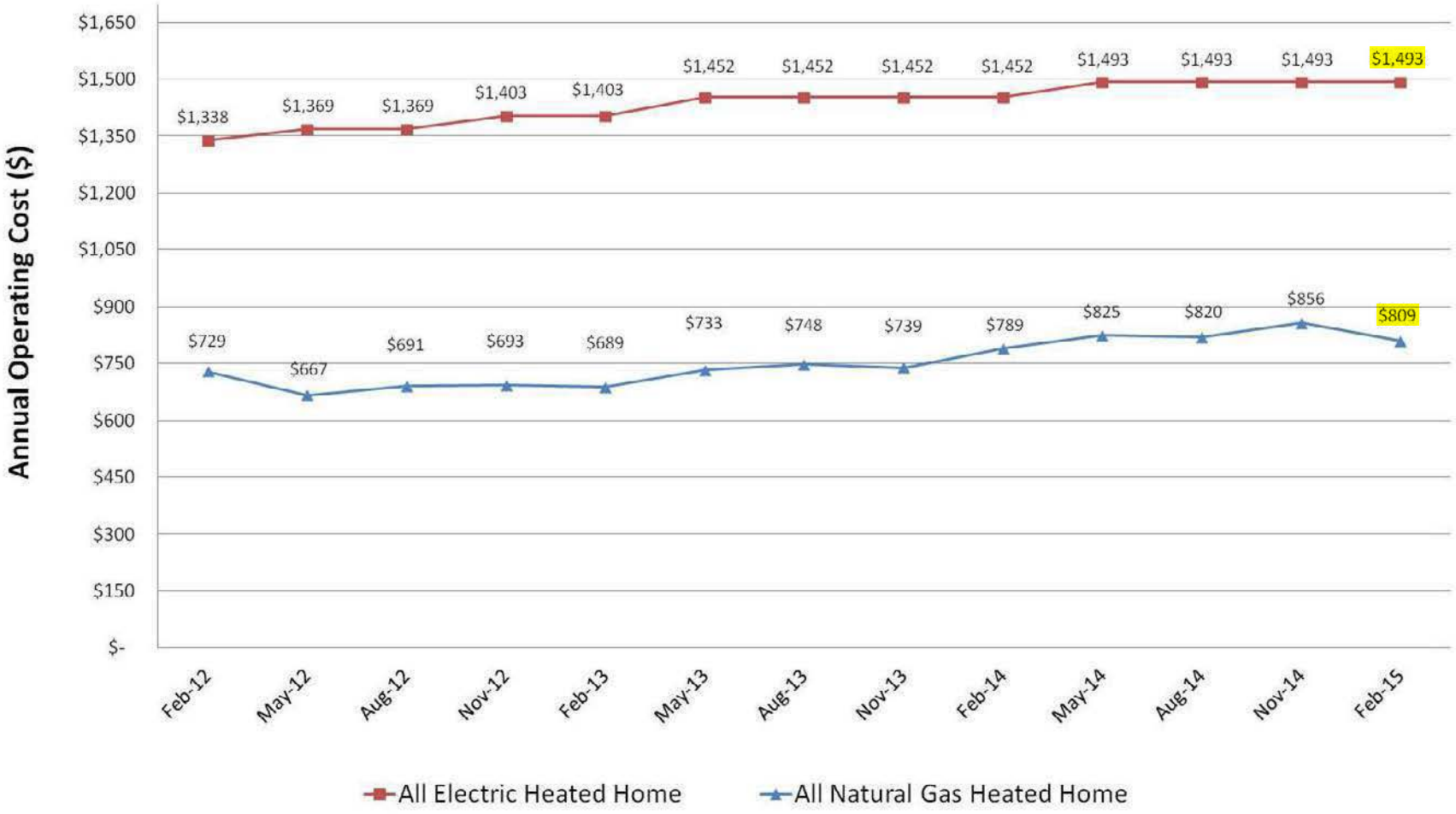
To understand the magnitude of future electric heating energy bills.

RESPONSE:

Please see the attachment to this response for copies of Manitoba Hydro's Home Heating Cost Comparison charts for the past three years. To compare all energy sources on an equivalent basis the Heating Cost Comparison Chart uses an output space heating requirement of 60 Gigajoules to calculate annual space heating costs and water consumption assuming a household with 2.4 people consuming 140 litres of water per day heated to a temperature rise of 50 C to calculate domestic water heating costs.

The following graph presents a summary of the annual costs of heating with electricity compared to heating with natural gas based upon these charts. For the purposes of this example, the all electric heated home assumes an electric furnace for space heating and a 40 gallon electric water heater for domestic water heating. The natural gas heated home assumes a high-efficiency (92% SE) natural gas furnace for space heating and a conventional natural gas water heater (0.59 EF) for domestic water heating.

The Home Heating Cost Comparison Chart's Annual Space and Water Heating Costs



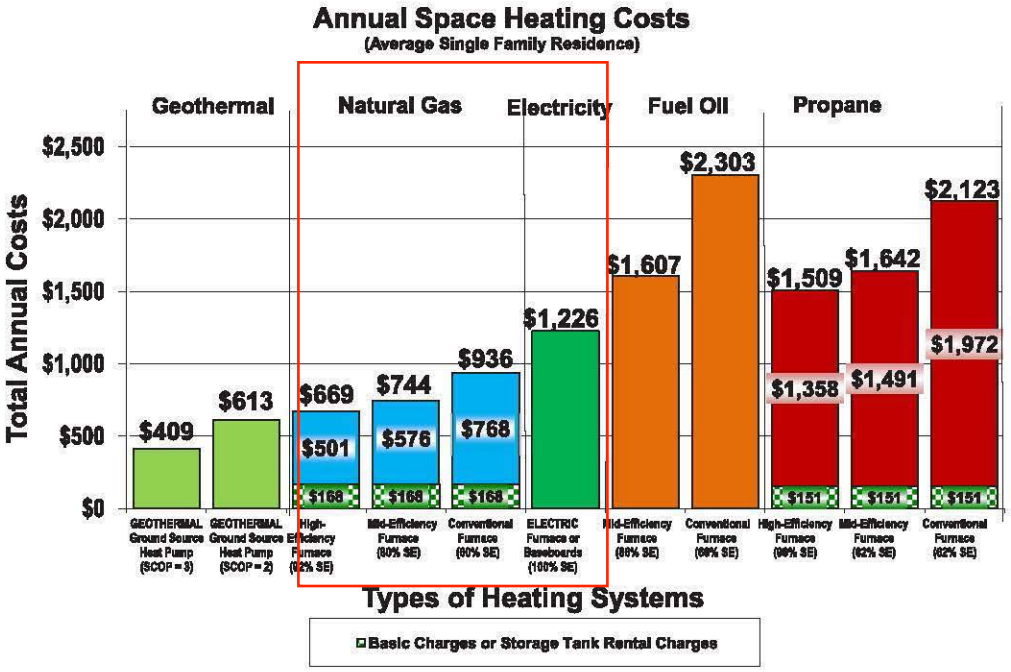
Typical space & water heating costs

Average single family residence at rates in effect February 1, 2015

1

Wondering about your energy options for heating?

1. Consult the charts to identify the costs of your current home heating and water heating systems.
2. Review the costs of other systems to see how your costs compare.
3. Consult the accompanying notes for guidance if you are thinking of switching systems or building a new home.



Energy rates

Natural gas:
$0.2871/cubic metre

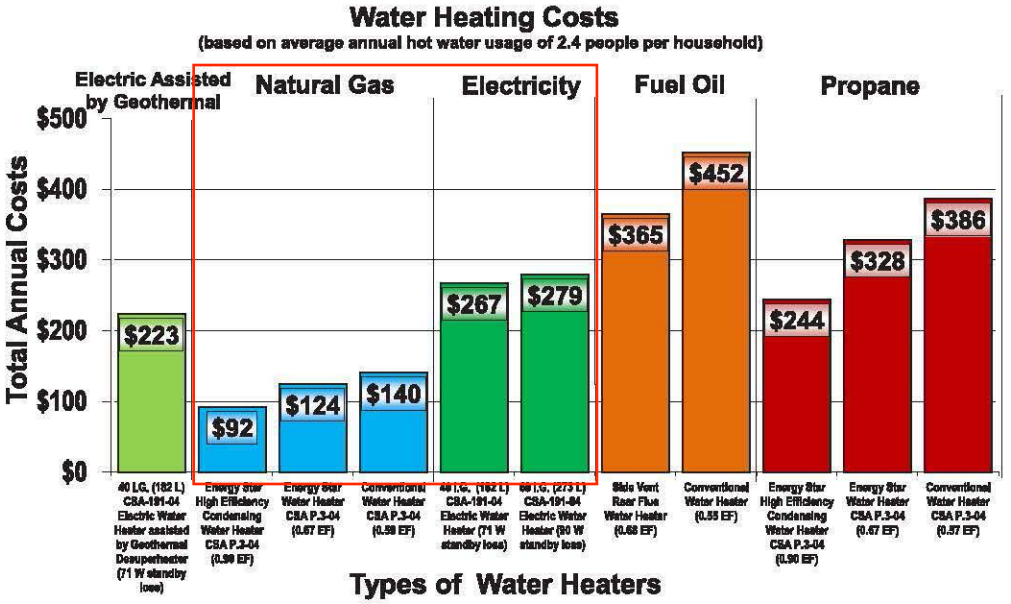
Electricity:
$0.07381/kilowatt-hour

Fuel oil:
$**0.89**/litre

Propane:
$0.522/litre

Basic monthly charge for natural gas is **$14** (**$168** per year)

Annual propane tank rental: **$151**



Manitoba Hydro
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Typical space & water heating costs

Average single family residence at rates in effect February 1, 2015

2

Weigh your options

The home heating costs shown in the chart are based on the amount of gas used to heat the average natural gas-heated home served by Manitoba Hydro. This average home is about 1,200 square feet and uses a mid-efficiency furnace and conventional gas water heater. Your heating costs may differ due to a variety of factors, such as weather, heating equipment, insulation levels, air tightness and lifestyle. Water heating costs are based on typical usage of the average Manitoba household of 2.4 people.

Annual cost estimates

The charts present annual costs as if all energy rates remained fixed for the coming year at rates in effect on February 1, 2015.

Your actual annual costs will vary, since natural gas rates change four times a year, while propane and oil rates can change weekly. Note that Primary Gas represents the bulk of the gas used. With Manitoba Hydro's Quarterly Rate Service, the price you pay for Primary Gas is the same price we pay for the gas in the marketplace. This rate changes every 3 months and is currently $0.1252 per cubic metre. If you buy Primary Gas on a Fixed Rate Service contract from Manitoba Hydro or a Gas Broker, you will continue to pay Manitoba Hydro for Supplemental Gas as well as transportation and distribution charges. The figure of $0.2871 per cubic metre of natural gas that we've used in the charts is known as a "re-bundled" effective rate. It includes charges for Primary and Supplemental gas, as well as for transportation and distribution of the gas on Manitoba Hydro's Quarterly Rate Service.

Key points if you are thinking of converting

Is it economically feasible?

Note that the costs of switching to another system to heat your home and hot water may be economically feasible only if your current system is at or near the end of its useful life, or if you are building a new home. Be sure to obtain quotations from at least three reputable heating contractors before you make your decision.

Conventional furnaces no longer manufactured

The space heating chart includes conventional natural gas, fuel oil, and propane furnaces. These conventional furnaces have not been manufactured since 1992, but many are still in operation.

High efficiency furnaces are now required by law

Effective December 30, 2009 the Province of Manitoba enacted legislation controlling the sale and lease of gas and propane heating equipment. Visit www.greenmanitoba.ca (click on the energy tab) for more information on this regulation.

Size of existing electrical service

Your electrical system may need to be upgraded if you want it to carry a heating load.

Depending on the capacity of the electrical appliances and equipment currently installed, and the size of your home, the Manitoba Electrical Code will allow a maximum of 8 to 10 kilowatts of electric heating on a standard 100-amp service. Most homes will need more than this.

Increasing the size of an electrical service usually involves changing your electrical panel or installing an additional one. An electrician should perform an electrical code load calculation to advise whether your existing service is adequate to serve the heating equipment required to heat your home.

Other gas appliances

If you have other appliances in your home like a range, clothes dryer, fireplace, or swimming pool heater, switching to an all-electric system may be quite costly.

Flue Gas Venting

When natural gas is burned, flue gases are produced which primarily contain carbon dioxide and water vapour which are not harmful to people. However, flue gases can also contain trace amounts of carbon monoxide and other gases that can present a health hazard. High-efficiency natural gas furnaces will not use the existing chimney to vent (remove) flue gases from the home. Instead they will be vented via approved plastic piping through the home's side wall or roof.

If you have a standard natural gas water heater, the Manitoba Gas Notices allow it to continue to use the existing chimney if it is in good condition and meets the requirements of the Code Authority Having Jurisdiction (Manitoba Dept. of Labour). Your heating contractor should inform you if the chimney has corroded or does not meet the code requirements. Generally, installing a new approved smaller diameter chimney liner may meet the requirements.

Issues that can arise once the natural gas water heater vents alone on the old chimney include: flue gases condensing in the chimney, or flue gas spillage into the home. If these venting problems occur, you may need to upgrade your venting system or have other work performed to rectify them. If the upgrades are costly, other options to consider are replacing the conventional heater with a side-wall vented gas water heater or an electric water heater.

Reduced chimney ventilation

Converting to electric heat or to a high-efficiency gas furnace will reduce the uncontrolled ventilation provided by the chimney. The uncontrolled chimney ventilation will be completely eliminated if you also replace your conventional gas water heater and either remove or cap off the chimney.

With a conventional gas furnace, warm moist air continuously exits the house through the chimney. This draws cold and dry replacement air into the house through cracks in walls and around windows and doors. This uncontrolled ventilation dehumidifies your home in winter, but consumes heating energy.

Reducing or eliminating this chimney ventilation can save energy but may also increase humidity levels and change the way that air leaks into and out of your home. Homes usually become slightly more positively pressurized.

The increase in humidity and change in air leakage patterns may cause increased condensation/icing: on interior surfaces of well-sealed windows, and anywhere warm moist air leaks out of the home such as electrical outlets, between the panes of poorly sealed windows, on door seals, in door lock mechanisms and around chimney and plumbing stacks. A very small percentage of homeowners have reported experiencing some of these issues.

There is not one solution that works in every home and for every issue. Here are some of the measures that individually or in combination can minimize or eliminate the effects of reduced chimney ventilation:

- improved weatherstripping and caulking on doors and windows and other areas of air leakage (but not on storm doors)
- seasonal window insulator kits (clear heat shrink poly over inside windows and frames)
- improved windows (preferably triple pane)
- a ventilation system which may consist of:
  - exhaust fan(s)
  - exhaust fan(s) combined with a fresh air intake
  - heat recovery ventilator (HRV)

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Typical space & water heating costs

Average single family residence at rates in effect February 1, 2015

3

Carbon monoxide safety

If you are burning heating oil, diesel, propane, kerosene, natural gas, wood, or coal in your home, or if you have an attached garage, we recommend that you install at least one carbon monoxide detector in your home.

The building code now requires permanently mounted carbon monoxide detectors in all new homes with fuel burning appliances or attached garages.

For further details, contact us for a copy of our brochure on "Carbon monoxide safety — Because your family comes first!"

What is the payback?

Determining how many years it will take for a new heating system to pay for itself may help you reach a decision.

Determine the potential savings

Subtract the annual cost of the new heating system you are considering from the annual cost of your current heating system (check the charts).

The difference is approximately what you can expect to save each year, at current energy rates.

Determine the costs of the new system

Determine how much it will cost to buy and install the new system, along with any other adjustments required. Get quotations from three reputable contractors.

Factor in the cost of financing, if necessary.

Determine the payback

Divide the estimated cost of switching your system, by the estimated savings.

The result is the number of years it will take for the new system to pay for itself.

Explanation of technical information in the charts

- Typical annual home heating requirement (output) of 60 Gigajoules is based on Manitoba Hydro's system average for natural gas heated homes.
- Water heating usage is based on Manitoba Hydro's average electric and natural gas water heating household of 2.4 people consuming about 140 litres per day that are heated up an average temperature rise of 50 C.
- The Electric water heating assisted by geothermal desuperheater option is based on Manitoba Hydro's field monitoring of nine homes with geothermal heating and desuperheaters where 80 per cent of the average water heating load was provided by the electric heating elements of the water tank and 20 per cent by the desuperheater.
- The cost of heating with propane includes a propane tank rental or lease charge of $151 per year for a typical 500 US gallon tank. See table below. This charge may not apply to all customers and may vary.
- The cost of space heating with natural gas includes a basic monthly charge of $14 ($168 per year).
- SE (seasonal efficiency) is defined as the total heat output delivered by the furnace during one heating season as a percentage of the total energy input to the system. SE takes into consideration not only normal operating losses but also the fact that most furnaces rarely run long enough to reach their steady-state efficiency temperature, particularly during milder weather at the beginning and end of the heating season.
- Energy Factor (EF) is an overall efficiency rating of the water heater. The higher the EF, the more efficient the model. Electric water heaters are required to have maximum standby losses of 71 watts for a 40 gallon and 90 Watts for a 60 gallon.
- SCOP (Seasonal Coefficient of Performance) = 2 and = 3 appears in the home heating chart under geothermal closed loop heat pump. It refers to the Seasonal Coefficient of Performance of the heat pump over an entire heating season.

  SCOP is defined as the total heat output of the system during the heating season, divided by the total energy input to the system.

  The SCOP of a geothermal heat pump system typically ranges from 2.0 to 3.0. For reference, the SCOP of an electric baseboard heater is 1.0. The SCOP rating accounts for cycling losses, circulating fan and pump energy and auxiliary electric heating loads which are not included in the manufacturer's COP rating of the heat pump "unit". The overall system SCOP will therefore always be significantly lower than the unit COP.

  The SCOP of a geothermal system can vary significantly and is highly dependent on the quality of the system design, installation, commissioning and ongoing maintenance practices.
- Note that the natural gas energy price reflected in the charts is a bundled price that includes primary and supplemental gas, and transportation and distribution charges. For reference, one of the major components of the bundled price is the price of Primary Gas, at $0.1252 per cubic metre. Primary Gas currently comprises 89 per cent of the gas supplied (supplemental gas is 11 per cent.)
- Taxes are not included in these calculations and costs.

ENERGY RATES — in effect February 1, 2015

	Commodity charge	Heating value
Natural gas	$0.2871/cubic metre	35,310 Btu/cubic metre
Electricity	$0.07381/kilowatt-hour	3,413 Btu/kilowatt-hour
Fuel oil	$0.89/litre	36,500 Btu/litre
Propane	$0.522/litre	24,200 Btu/litre

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Section:	Tab 7, App. 7.1	**Page No.:**	Table 14, p.18
Topic:	Electric Load Forecast		
Subtopic:	Domestic Load Forecasts Residential Sales Forecasts		
Issue:	Electric Heating		

PREAMBLE TO IR (IF ANY):

MH's Residential Sales forecasts suggest an ongoing shift to electric heat and water heating.

QUESTION:

Provide a definition and calculation of a typical residential customer in Winnipeg and in Thompson.

RATIONALE FOR QUESTION:

To understand the magnitude of future electric heating energy bills.

RESPONSE:

For purposes of this response, Manitoba Hydro has defined an average residential customer to include all customers residing in single detached, multi-attached or apartment suite dwellings within the community noted. Variations in the demographics of each community will influence the average amount of electricity consumed per residential customer; differences in the distribution of housing types, housing sizes, and saturation of electric space and water heating will influence the average annual electricity consumption by a residential customer.

The following outlines the demographics of Winnipeg and Thompson based upon the 2009 Residential Energy Use Survey:

Community Demographics	Thompson	Winnipeg
Total Number of Dwellings	4 237	237 829
Average Square Feet of Dwelling	1 318	1 198
Average Year Built	1968	1963
% Electric Space Heat Billed[1]	61.4%	11.6%
% Electric Water Heat Billed[1]	82.4%	22.5%
% Gas Space Heat Billed[1]	0.0%	73.9%
% Gas Water Heat Billed[1]	0.0%	58.3%
% Central Air Conditioning	6.2%	68.9%
Distribution of Dwelling Types by Community		
% Single Detached	74.1%	69.2%
% Multi-Attached	15.5%	11.2%
% Apartment Suites	10.4%	19.5%
Weather Factors by Community		
25 Year Average Degree Days Heating (Base 14)	6302	4570
25 Year Average Degree Days Cooling (Base 18)	44	183

Note: 1. The % of Space Heat Billed and the % of Water Heat Billed reflects the number of customers that have their space or water heating recorded on their individual electricity or natural gas bills compared to the total number of residential customers. Some residential customers, such as those residing in apartment suites, may be heated from a central or common source and not directly billed for space and/or water heating.

The table below provides a calculation of the annual energy usage and the associated total annual energy bill for an average residential customer, as previously defined, situated in Winnipeg or Thompson. Please note that the calculation of average electrical usage and bills represents all residential customers, including both standard and all-electric customers. For Winnipeg the average electric bill and the average natural gas bill may not be additive.

	WINNIPEG				THOMPSON	
2013/14	AVERAGE ANNUAL KWH	AVERAGE ANNUAL ELECTRIC BILL	AVERAGE ANNUAL M3	AVERAGE ANNUAL NATURAL GAS BILL	AVERAGE ANNUAL KWH	AVERAGE ANNUAL ELECTRIC BILL
Actual	10 542	$842	2 714	$875	25 946	$1 949
Weather Adjusted	10 115	$812	2 342	$771	23 671	$1 785

Note: Electric bill amounts are based on May 1, 2013 PUB approved rates. Natural gas bill amounts are based on PUB approved rates in place during the 2013/14 fiscal year applied to actual and normalized consumption for an average Winnipeg residential customer. In Winnipeg in 2013/14, there were 248 730 electric customers and 184 138 natural gas customers.

Section:	Tab 7, App. 7.1	**Page No.:**	Table 14, p.18
Topic:	Electric Load Forecast		
Subtopic:	Domestic Load Forecasts Residential Sales Forecasts		
Issue:	Electric Heating		

PREAMBLE TO IR (IF ANY):

MH's Residential Sales forecasts suggest an ongoing shift to electric heat and water heating.

QUESTION:

Provide a typical residential total energy bill comparison for all-electric vs. natural gas space and water heating customers in Winnipeg for the next ten years.

RATIONALE FOR QUESTION:

To understand the magnitude of future electric heating energy bills.

RESPONSE:

The following tables provide the forecast average annual energy usage and the respective estimated annual bill amounts for residential standard and residential all-electric customers from 2015 to 2024. Manitoba Hydro notes that load forecasts are prepared on an aggregate level and as such, separate load forecasts for residential customers situated in Winnipeg or Thompson are not available. Electric and natural gas load forecast information is therefore shown on a province-wide basis.

Annual electric energy bills are estimated by applying the forecast usage per customer in each year by Manitoba Hydro's proposed and indicative rates. Annual natural gas bills have been estimated by applying the forecast natural gas usage per customer and February 1, 2015 natural gas rates.

Average Annual All-Electric Bill:

	ANNUAL ELECTRIC BILL	
YEAR ENDING	AVERAGE YRLY KWH	ANNUAL ELECTRIC BILL
2015	24,913	$1,926
2016	24,776	$1,992
2017	24,693	$2,064
2018	24,601	$2,138
2019	24,501	$2,213
2020	24,419	$2,293
2021	24,341	$2,377
2022	24,280	$2,465
2023	24,230	$2,557
2024	24,192	$2,654

Average Annual Standard Electric (Non-Electric Heat) Bill:

	ANNUAL ELECTRIC BILL (Non-Heating)		ANNUAL NATURAL GAS BILL		
YEAR ENDING	ANNUAL KWH	ANNUAL ELECTRIC BILL	ANNUAL m3	ANNUAL GAS BILL	TOTAL ANNUAL ENERGY BILL
2015	10,377	$853	2,271	$766	$1,619
2016	10,412	$890	2,232	$755	$1,645
2017	10,484	$931	2,188	$744	$1,675
2018	10,538	$972	2,176	$741	$1,713
2019	10,577	$1,013	2,166	$738	$1,751
2020	10,625	$1,058	2,159	$736	$1,794
2021	10,663	$1,103	2,150	$734	$1,837
2022	10,706	$1,151	2,143	$732	$1,883
2023	10,749	$1,253	2,109	$723	$1,926
2024	10,794	$1,253	2,077	$715	$1,968

Notes:

1) 2014/15 electric bill amounts based on May 1, 2014 rates
2) 2015/16 electric bill amounts based on proposed April 1, 2015 rates
3) 2016/18 – 2023/24 electric bill amounts are based on proposed April 1, 2016 rates, escalated by 3.95% each year
4) Gas bill amounts based on February 1, 2015 rates, and are not escalated.
5) All bills calculations do not include taxes

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Section:	Appendix 7.1	**Page No.:**	14
Topic:	GS Top Consumers		
Subtopic:			
Issue:			

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a schedule, similar to MIPUG/MH I-40a (i) and (ii) from the 2012/13 & 2013/14 GRA that compares for 2000 to 2014 load forecasts for each GSL<30kV, GSL 30-100kV and GSL>100kV:

i. Manitoba Hydro's forecast (GW.h) to GSL customers for each of the next 20 years (i.e. the 2000 load forecast should show sales forecasts for 2001 through 2020, etc.)
ii. Manitoba Hydro actual sales to GSL customers (separated by subclass) for 2000 to 2014.

RATIONALE FOR QUESTION:

To investigate the GSL load forecast.

RESPONSE:

The tables on the following pages provide forecast sales (GW.h) from the 2000 to 2014 Load Forecasts for fiscal years 2000/01 to 2033/34 inclusive for each General Service Large sub-class. The last table provides actual data for the period 2000 to 2014. Limited Use of Billing Demand (LUBD) sales are not included in these figures.

LARGE 750-30 kV (Forecast GW.h)

FIS YR	YEAR OF SYSTEM LOAD FORECAST														
ENDING	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
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						1,545		1,630		1,599
2006	1,406	1,260	1,248	1,271	1,494	1,509					1,643		1,687		
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
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
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
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
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
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
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
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
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
2025					1,880	1,971	1,960	1,878	1,856	1,851	1,861	2,415	2,012	2,005	2,176
2026						1,994	1,980	1,902	1,874	1,873	1,881	2,460	2,028	2,038	2,210
2027							2,000	1,925	1,892	1,894	1,902	2,505	2,055	2,058	2,254

First year forecast greater than actual 3.4%

LARGE 750-30 kV (Forecast GW.h)

FIS YR	YEAR OF SYSTEM LOAD FORECAST														
ENDING	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
2028								1,950	1,911	1,916	1,923	2,550	2,072	2,091	2,289
2029									1,929	1,938	1,944	2,590	2,102	2,113	2,336
2030										1,961	1,966	2,630	2,131	2,148	2,372
2031											1987	2669	2,149	2,169	2,422
2032													2,178	2,199	2,459
2033														2,228	2,510
2034															2,550

LARGE 30 - 100 kV (Forecast GW.h)

FIS YR	YEAR OF SYSTEM LOAD FORECAST														
ENDING	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
2001	535														
2002	623	505													
2003	682	646	679												
2004	739	758	694	784											
2005	743	772	701	888	736					Actual	941	972		1164	
2006	746	785	708	891	771	807					1222	1283			
2007	750	798	715	877	806	1,022	861				(3%)		5%	9%	11%
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

First Year Forecast Greater than actual by:

LARGE 30 - 100 kV (Forecast GW.h)

FIS YR	YEAR OF SYSTEM LOAD FORECAST														
ENDING	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
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
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
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
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
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
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
2023			780	834	911	1,636	1,468	1,513	1,382	1,120	1,067	1,485	1,538	1,561	2,344
2024				836	914	1,638	1,469	1,515	1,386	1,124	1,072	1,493	1,538	1,561	2,356
2025					917	1,640	1,470	1,517	1,389	1,128	1,076	1,501	1,538	1,574	2,356
2026						1,641	1,471	1,519	1,392	1,132	1,081	1,508	1,550	1,574	2,368
2027							1,472	1,522	1,396	1,136	1,085	1,516	1,550	1,587	2,368
2028								1,524	1,399	1,140	1,089	1,524	1,561	1,587	2,380
2029									1,403	1,144	1,094	1,531	1,561	1,600	2,380
2030										1,149	1,098	1,538	1,561	1,600	2,392
2031											1,103	1,545	1,573	1,613	2,392
2032													1,573	1,613	2,404
2033														1,613	2,404
2034															2,416

LARGE >100 (Forecast GW.h)

FIS YR	YEAR OF SYSTEM LOAD FORECAST														
ENDING	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
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
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
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
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
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
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
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
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
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
2025					6,308	5,709	6,565	7,585	7,531	6,965	6,565	5,561	5,553	5,349	5,008
2026						5,759	6,595	7,651	7,631	7,065	6,665	5,661	5,653	5,449	5,097
2027							6,625	7,717	7,731	7,165	6,765	5,761	5,753	5,549	5,187

LARGE >100 (Forecast GW.h)

FIS YR	YEAR OF SYSTEM LOAD FORECAST														
ENDING	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
2028								7,783	7,831	7,265	6,865	5,861	5,853	5,649	5,278
2029									7,931	7,365	6,965	5,961	5,953	5,749	5,370
2030										7,465	7,065	6,061	6,053	5,849	5,463
2031											7,165	6,161	6,153	5,949	5,557
2032													6,253	6,049	5,652
2033														6,149	5,749
2034															5,847

ACTUALS (GW.h)

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

Section:	Appendix 7.1	**Page No.:**	MIPUG I-25
Topic:	Electric Load Forecast		
Subtopic:	Historical Accuracy		
Issue:	Initial year forecasts		

PREAMBLE TO IR (IF ANY):

MIPUG I-25 indicates that MH's first load forecasts for the three GSL subclasses are typically higher than actuals for 2013/14:

	Forecast (GWh)	**Actual (GWh)**	
GSL <30	1746	1687	(59)
GSL 30-100	1438	1283	(145)
GSL >100	4610	4222	(388)

QUESTION:

a) Explain why MH's 2013/14 load forecast for the initial forecast year was significantly higher than actual.

b) Explain why GSL >100 actual loads have not increased over the last four years why the 2013/14 actual is 1400 GWh lower than forecast in 2010.

c) Explain why GSL 30-100 loads have grown by 445 GWh over the last four years and are now forecast to increase by 523 GWh in the next four years.

d) Indicate what portions of the new pipeline load are GSL 30-100 & GSL >100.

RATIONALE FOR QUESTION:

To gain an appreciation of MH's near future industrial load growth prospects.

RESPONSE:

a) The table shown in the preamble compares different years as it presents the 2014 forecast for 2014/15 compared to 2013/14 actuals. The following table presents the

2013 forecast for 2013/14 compared to the actual energy use for 2013/14.

	2013 Forecast for 2013/14 (GWh)	2013/14 Actual (GWh)	Difference
GSL <30	1 679	1 687	9
GSL 30-100	1 324	1 283	(41)
GSL >100	4 651	4 222	(429)

The observed difference between 2013/14 actuals compared to forecast load for 2013/14 was primarily due to Top Consumers. As described on page 14 of the 2014 Load Forecast, Top Consumers load was down 464 GW.h in 2013/14 compared to forecast due to a temporary equipment problem with one top consumer and an unexpected reduction of a second top consumer.

b) The 2010 forecast for GSL >100 in 2013/14 was 5,496 GW.h. The 2013/14 actuals were 4,222 GW.h resulting in a difference of 1,274 GW.h compared to the 2010 forecast. Approximately one half of this difference is due to delays in projects in the pipeline sector and slightly less than one third of the difference is due to one customer expansion not using as much energy as originally projected.

c) The GSL 30-100 kV rate classification has grown by 445 GWh over the last four years primarily as a result of growth in the pipeline sector. The GSL 30-100 kV rate classification currently includes approximately half of the pipeline sector loads. The forecast growth reflects a substantial portion of the expected growth in the pipeline sector.

d) Manitoba Hydro is projecting that approximately 90% of the new pipeline load will be within the GSL 30-100 kV rate classification with the remaining 10% expected to be within the GSL >100 kV rate classification.

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Table 5 - General Consumers Sales Energy

GENERAL CONSUMERS SALES (GW.h)
History and Forecast
2003/04 - 2033/34

Fiscal	Residential				General Service						Lighting	Total
Year	Basic	Diesel	Seas	FRWH	Mass Mkt	Top Cons	Diesel	Seas	FRWH	SEP		Sales
2003/04	6,170	6	56	34	7,460	5,423	5	5	13	17	91	19,280
2004/05	6,275	7	58	31	7,516	5,714	5	5	10	25	91	19,735
2005/06	6,171	7	59	30	7,587	5,948	5	5	9	23	91	19,935
2006/07	6,443	7	60	29	7,839	5,989	5	4	9	23	101	20,510
2007/08	6,736	7	68	27	8,006	6,075	5	4	9	24	101	21,061
2008/09	6,847	7	74	25	8,049	6,065	5	5	8	22	102	21,210
2009/10	6,786	7	81	24	7,985	5,461	6	5	8	20	102	20,486
2010/11	6,952	8	77	23	8,258	5,324	5	5	8	24	103	20,786
2011/12	6,818	8	83	22	8,162	5,531	5	5	8	25	103	20,771
2012/13	7,223	8	81	21	8,434	5,560	5	5	7	28	103	21,477
2013/14	7,767	9	92	20	8,839	5,461	5	5	7	29	104	22,338
Weather Adj.	-518	0	0	0	-252	0	0	0	0	-3	0	-772
2013/14 Wadj	7,249	9	92	20	8,587	5,461	5	5	7	26	104	21,566
10 Year Wadj	106	0	4	-1	114	4	0	0	-1	1	1	228
Avg Gr.	1.6%	3.4%	5.1%	-5.2%	1.4%	0.1%	1.4%	1.2%	-6.1%	4.0%	1.3%	1.1%
2014/15	7,380	9	91	19	8,814	6,003	6	5	7	29	104	22,467
2015/16	7,481	9	93	18	8,993	6,147	6	5	6	29	105	22,891
2016/17	7,606	9	95	17	9,190	6,082	6	5	6	32	105	23,153
2017/18	7,726	9	96	16	9,388	6,430	6	5	6	33	106	23,822
2018/19	7,836	10	98	15	9,560	6,590	6	5	6	33	106	24,264
2019/20	7,946	10	100	14	9,705	6,859	6	5	5	33	107	24,791
2020/21	8,049	10	102	14	9,833	6,922	6	5	5	33	107	25,087
2021/22	8,151	10	104	13	9,958	7,006	6	6	5	33	108	25,399
2022/23	8,248	10	106	12	10,079	7,091	6	6	5	33	108	25,704
2023/24	8,342	11	108	12	10,199	7,177	6	6	4	33	109	26,006
10 Year	109	0	2	-1	161	172	0	0	0	1	1	444
Avg Gr.	1.4%	2.1%	1.5%	-5.0%	1.7%	2.8%	1.5%	0.6%	-5.0%	2.2%	0.5%	1.9%
2024/25	8,435	11	110	11	10,320	7,264	6	6	4	33	109	26,309
2025/26	8,527	11	111	11	10,442	7,353	6	6	4	33	110	26,613
2026/27	8,619	11	113	10	10,560	7,443	6	6	4	33	110	26,916
2027/28	8,711	11	115	10	10,681	7,534	6	6	3	33	111	27,221
2028/29	8,802	12	117	9	10,801	7,626	6	6	3	33	111	27,527
2029/30	8,895	12	119	9	10,922	7,719	6	6	3	33	112	27,836
2030/31	8,990	12	121	8	11,046	7,813	6	6	3	33	112	28,151
2031/32	9,087	12	123	8	11,172	7,908	7	6	3	33	113	28,471
2032/33	9,186	13	125	7	11,301	8,005	7	6	3	33	113	28,799
2033/34	9,289	13	127	7	11,433	8,103	7	6	3	33	114	29,134
20 Year	102	0	2	-1	142	132	0	0	0	0	1	378
Avg Gr.	1.2%	2.0%	1.6%	-5.0%	1.4%	2.0%	1.2%	0.5%	-5.0%	1.1%	0.5%	1.5%

SUBJECT: Load Forecast

REFERENCE: Chapter 4; 2012 GRA, PUB/MH I-118(c)

QUESTION:

Please explain how General Service Mass Market and Residential loads were affected by the pulp and paper mill closure in 2009. In particular, please advise whether the 550 GWh load drop as set out in PUB/MH I-006(d) is exclusive to the disappearance of a Top Consumer or contained a component attributable to load reductions in other consumer classes.

RESPONSE:

The approximate 550 GW.h load reduction represents the load reduction associated with the specific Top Consumer. Manitoba Hydro is unable to decern the ancillary effect of this customer closure on the energy requirements of the Residentilal and General Service Mass Market sectors within the Province as a whole.

SUBJECT: Load Forecast

REFERENCE: Chapter 4; 2012 GRA, PUB/MH I-118(c)

QUESTION:

Please explain how General Service Mass Market and Residential loads will be affected by the impending smelter closure. In particular, please advise whether the anticipated 550 GWh load drop as set out in PUB/MH I-006(d) is exclusive to the disappearance of a Top Consumer or contained a component attributable to load reductions in other consumer classes.

RESPONSE:

The forecast reduction of 550 GW.h is reflects a reduction in Top Consumers alone; it is unknown at this time what, if any, auxiliary load changes will occur as a result of the smelter closure and as such the forecast does not specifically contain a component attributable to auxiliary load reductions in other classes.

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SUBJECT: Load Forecast

REFERENCE: Chapter 4; 2012 GRA PUB/MH I-118(a)(c); 2012 Load Forecast

QUESTION:

Please refile PUB-006(b) and (c) to include fiscal years 2011/12 and 2012/13.

RESPONSE:

The following is PUB-006 (b) updated to be the Top Consumers actual usage by industry including the 2011/12 and 2012/13 fiscal years.

GW.h	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Chemicals	1,841	1,847	1,865	1,929	1,912	1,977	2,018	1,993
Petroleum	849	899	879	944	903	728	856	880
Primary Metals	2,237	2,248	2,300	2,237	2,033	2,153	2,200	2,180
Pulp/Paper	763	742	764	674	332	185	171	222
Mining	5	4	4	4	3	3	3	3
Food/Beverage	182	176	188	202	204	201	203	198
College	70	73	75	75	74	76	80	84
Other	0	0	0	0	0	0	0	0
Total GW.h	**5,948**	**5,989**	**6,075**	**6,065**	**5,461**	**5,324**	**5,531**	**5,560**

PUB-006 (c) was the 2013 Load Forecast and as such the forecast values only begin in the 2013/14 fscal year.

GW.h	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Chemicals	2,151	2,235	2,245	2,245	2,245	2,245	2,245	2,245
Petroleum	995	1,110	1,225	1,325	1,330	1,350	1,360	1,370
Primary Metals	2,250	2,153	2,093	1,928	1,818	1,790	1,770	1,750
Pulp/Paper	225	230	235	235	235	235	235	235
Mining	0	0	0	0	0	0	0	0
Food/Beverage	215	215	215	215	215	215	215	215
College	89	93	97	97	97	97	97	97
Other	0	0	0	100	200	300	400	500
Total GW.h	**5,925**	**6,036**	**6,110**	**6,145**	**6,140**	**6,232**	**6,322**	**6,412**

Table 5 - General Consumers Sales Energy

GENERAL CONSUMERS SALES (GW.h)
History and Forecast
2003/04 - 2033/34

Fiscal	Residential				General Service						Lighting	Total
Year	Basic	Diesel	Seas	FRWH	Mass Mkt	Top Cons	Diesel	Seas	FRWH	SEP		Sales
2003/04	6,170	6	56	34	7,460	5,423	5	5	13	17	91	19,280
2004/05	6,275	7	58	31	7,516	5,714	5	5	10	25	91	19,735
2005/06	6,171	7	59	30	7,587	5,948	5	5	9	23	91	19,935
2006/07	6,443	7	60	29	7,839	5,989	5	4	9	23	101	20,510
2007/08	6,736	7	68	27	8,006	6,075	5	4	9	24	101	21,061
2008/09	6,847	7	74	25	8,049	6,065	5	5	8	22	102	21,210
2009/10	6,786	7	81	24	7,985	5,461	6	5	8	20	102	20,486
2010/11	6,952	8	77	23	8,258	5,324	5	5	8	24	103	20,786
2011/12	6,818	8	83	22	8,162	5,531	5	5	8	25	103	20,771
2012/13	7,223	8	81	21	8,434	5,560	5	5	7	28	103	21,477
2013/14	7,767	9	92	20	8,839	5,461	5	5	7	29	104	22,338
Weather Adj.	-518	0	0	0	-252	0	0	0	0	-3	0	-772
2013/14 Wadj	7,249	9	92	20	8,587	5,461	5	5	7	26	104	21,566
10 Year Wadj	106	0	4	-1	114	4	0	0	-1	1	1	228
Avg Gr.	1.6%	3.4%	5.1%	-5.2%	1.4%	0.1%	1.4%	1.2%	-6.1%	4.0%	1.3%	1.1%
2014/15	7,380	9	91	19	8,814	6,003	6	5	7	29	104	22,467
2015/16	7,481	9	93	18	8,993	6,147	6	5	6	29	105	22,891
2016/17	7,606	9	95	17	9,190	6,082	6	5	6	32	105	23,153
2017/18	7,726	9	96	16	9,388	6,430	6	5	6	33	106	23,822
2018/19	7,836	10	98	15	9,560	6,590	6	5	6	33	106	24,264
2019/20	7,946	10	100	14	9,705	6,859	6	5	5	33	107	24,791
2020/21	8,049	10	102	14	9,833	6,922	6	5	5	33	107	25,087
2021/22	8,151	10	104	13	9,958	7,006	6	6	5	33	108	25,399
2022/23	8,248	10	106	12	10,079	7,091	6	6	5	33	108	25,704
2023/24	8,342	11	108	12	10,199	7,177	6	6	4	33	109	26,006
10 Year	109	0	2	-1	161	172	0	0	0	1	1	444
Avg Gr.	1.4%	2.1%	1.5%	-5.0%	1.7%	2.8%	1.5%	0.6%	-5.0%	2.2%	0.5%	1.9%
2024/25	8,435	11	110	11	10,320	7,264	6	6	4	33	109	26,309
2025/26	8,527	11	111	11	10,442	7,353	6	6	4	33	110	26,613
2026/27	8,619	11	113	10	10,560	7,443	6	6	4	33	110	26,916
2027/28	8,711	11	115	10	10,681	7,534	6	6	3	33	111	27,221
2028/29	8,802	12	117	9	10,801	7,626	6	6	3	33	111	27,527
2029/30	8,895	12	119	9	10,922	7,719	6	6	3	33	112	27,836
2030/31	8,990	12	121	8	11,046	7,813	6	6	3	33	112	28,151
2031/32	9,087	12	123	8	11,172	7,908	7	6	3	33	113	28,471
2032/33	9,186	13	125	7	11,301	8,005	7	6	3	33	113	28,799
2033/34	9,289	13	127	7	11,433	8,103	7	6	3	33	114	29,134
20 Year	102	0	2	-1	142	132	0	0	0	0	1	378
Avg Gr.	1.2%	2.0%	1.6%	-5.0%	1.4%	2.0%	1.2%	0.5%	-5.0%	1.1%	0.5%	1.5%

Section:	Tab 7, Appendix 7.1	**Page No.:**	PUB/MH I-54(b)
Topic:	Electric Load Forecast		
Subtopic:	Industry Sector Load Growth		
Issue:	Forecast growth surge		

PREAMBLE TO IR (IF ANY):

MH's Top Consumers are expected to increase energy consumption from 5,461 GWh in 2013/14 to 7,177 GWh in 23/24, following a decline in the previous six years.

QUESTION:

a) Provide a companion table to PUB/MHI-54(b) showing the peak annual industry sector demand in MW.

b) Indicate the current contracted demand for each industry sector.

RATIONALE FOR QUESTION:

To test Manitoba Hydro's assumptions regarding industrial load growth.

RESPONSE:

The following table presents the peak annual hourly megawatt usage (MW) by the Top Consumers within each sector (i.e. the non-coincident peak) in each of the historical fiscal years from 2007/08 to 2013/14.

Non-Coincident Peak Demand for Top Consumers by Industry Sector (MW)

Fiscal Year	Primary Metals & Mining	Chemical / Treatment	Petro / Oil / Natural Gas	Pulp / Paper	Food / Beverage	College
2007/08	351	255	179	120	36.9	17.6
2008/09	341	253	184	117	37.6	14.5
2009/10	368	253	188	114	37.0	14.9
2010/11	370	253	226	35	37.8	15.3
2011/12	371	254	202	39	36.9	16.9
2012/13	371	265	188	43	39.1	16.8
2013/14	367	263	165	40	38.2	17.0
Average Annual Growth	0.7%	0.5%	-1.3%	-16.7%	0.6%	-0.6%

The following table provides the present aggregated contract demand for each industry sector.

Aggregated Contract Demand for Top Consumers by Industry Sector (MW)

Primary Metals & Mining	Chemical / Treatment	Petro / Oil / Natural Gas	Pulp / Paper	Food / Beverage	College
429	234	310	50	48	22

Please note that Manitoba Hydro does not forecast demand for individual customers or sector peaks.

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RESPONSE:

The following tables show the 2012, 2013 and 2014 forecasts, along with the NFAT 2013 update with the pipeline scenario for energy and peak capacity and the table also presents the difference between the NFAT 2013 update with the pipeline scenario and the 2014 base forecast.

	Energy (GWh)				
	2012 Base Forecast	**2013 Base Forecast**	**NFAT 2013 Update** (with pipeline)	**2014 Base Forecast**	**NFAT 2013- 2014 Difference**
2013/14	25734	25239	25239	24677	-562
2014/15	26071	25676	25676	25639	-37
2015/16	26393	26013	26013	26130	117
2016/17	26677	26322	26691	26436	-255
2017/18	27128	26606	27345	27174	-171
2018/19	27616	27003	28111	27662	-449
2019/20	27919	27398	28876	28247	-629
2020/21	28400	27789	29268	28583	-685
2021/22	28859	28197	29675	28937	-738
2022/23	29322	28605	30084	29284	-800
2023/24	29779	29013	30491	29626	-865
10 yr inc	**4045**	**3774**	**5252**	**4949**	-3 03

denotes weather adjusted actual

	Winter Capacity (MW)				
	2012 Base Forecast	2013 Base Forecast	NFAT 2013 Update (with pipeline)	2014 Base Forecast	NFAT 2013 - 2014 Difference
2013/14	4609	4601	4601	4587	-14
2014/15	4677	4680	4680	4716	36
2015/16	4738	4742	4742	4803	61
2016/17	4794	4801	4851	4861	10
2017/18	4874	4857	4959	4985	26
2018/19	4959	4930	5082	5068	-14
2019/20	5024	5002	5205	5166	-39
2020/21	5109	5074	5276	5223	-53
2021/22	5192	5147	5350	5284	-66
2022/23	5276	5222	5424	5342	-82
2023/24	5360	5296	5498	5400	-98
10 yr inc	**751**	**695**	**897**	**813**	8

Section:	Tab 9	**Page No.:**	P.7 of 23
Topic:	Energy Supply		
Subtopic:	Domestic Load Forecasts		
Issue:	10 Year Load Growth		

PREAMBLE TO IR (IF ANY):

MH's base domestic load forecast for 2023/24 appears to have been reduced by 865 GWh from the 30,491 GWh in the NFAT 2013 update which reflected new pipeline loads.

QUESTION:

Explain the 865 GWh/94 MW decline in 2014, from 2013, with specific reference to industry sectors affected.

RATIONALE FOR QUESTION:

Domestic load is used to forecast domestic revenues.

RESPONSE:

The 2014 base load forecast for 2023/24 was increased by 613 GW.h and 104 MW compared to the 2013 base load forecast. The 613 GW.h increase included an increase of 655 GW.h in pipeline load for two new pipeline projects that were not included in the 2013 forecast, and a net reduction of 42 GW.h to all other load.

The NFAT 2013 update filed as part of the NFAT proceedings (Manitoba Hydro Exhibit 104-3) was a scenario update to the 2013 Forecast designed to approximately represent the emerging information related to new planned pipeline expansions in the Petroleum sector. The scenario was 1,478 GW.h higher than the 2013 base load forecast for 2023/24.

The 865 GW.h difference between the NFAT 2013 update and the 2014 Forecast is from:

1. 1,478 GW.h extra load assumed in NFAT 2013 update, less
2. 655 GW.h load added for new pipeline projects in the 2014 Forecast, plus
3. 42 GW.h of other changes to the 2014 Forecast.

The pipeline load increase for 2023/24 in the 2014 forecast was 824 GW.h lower (1,478 GW.h – 655 GW.h) than the NFAT 2013 forecast. This lower forecast was for the pipeline load reflecting updated information on the expected load increases anticipated in this sector.

Preliminary Indications of Potential Future Changes in Keeyask ISD

Ed Wojczynski
NFAT PUB
March 5, 2014

Load Forecast – Potential Adjustments - Losses added in

Change Item	Impact – GW.h	Loss additions	Total GW.h Inlcuding losses	Date
Pipeline Sector	1700 GW.h*	170 GW.h	1870 GW.h	2019/20
Codes and Standards	(300) GW.h	(42) GW.h	(342) GW.h	2027/28
Price Elasticity	(500-600) GW.h	0	(500-600) GW.h	2027/28
Fuel Choice	(100) GW.h	(14)	(114) GW.h	2027/28
Total Load forecast increase			914 GW.h 2 to 3 year load growth increase	

- Concurrently, The Potential Large Industrial Load (PLIL) Value To Be Used For The 2014 Forecast Will Need To Be Assessed

Caution: information is subject to further analysis/confirmation

Keeyask ISD's for DSM Options

-2013 Reference Load Forecast, no new exports

DSM Option	Energy 2027/28	
• 2013 Base DSM	773 GWh (1 X DSM)	2023 Keeyask ISD
• NFAT DSM 1	1704 GWh (2 X DSM)	2028 Keeyask ISD
• NFAT DSM 2	2962 GWh (4 X DSM)	2031 Keeyask ISD
• NFAT DSM 3	3546 GWh (5 X DSM)	2033 Keeyask ISD

Calculations of # Years Advancement of Keeyask for MP, WPS & NSP Sales

NFAT Submission assumed Keeyask Advancement would be:

- 3 to 4 years with base load growth
- 9 years with low load growth
- 11 years with base load and 4X DSDM

1. NFAT DSM 2 (all of Option 2) =2031 Keeyask ISD
2. NFAT DSM 2 (reduced somewhat) =2029 to 2030 Keeyask ISD
3. Add pipeline load & reduce growth due to elasticity, codes and fuel choice =2026 TO 2028 Keeyask ISD

Keeyask Advancement from 2019 = 7 to 9 years

4. If Keeyask deferred from 2019 to 2020

Keeyask Advancement from 2020 = 6 to 8 years

Thus overall, **Keeyask Advancement likely would be from 6 to 9 years**

Table 1: Probability that Load Growth Greater than Supply When Considering Uncertainty in Economic Load Growth
– Not considering weather more extreme than normal or uncertainty in DSM Achievement
+ 2013 Load forecast plus 1700 GWh pipeline load minus level 2 DSM (MH Exhibit #104-3, p. 79)

	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
2013 Base Load Forecast	27789	28197	28605	29013	29418	29822	30225	30625	31041	31453	31863
Pipeline Load Including Losses	1478	1478	1478	1478	1478	1478	1478	1478	1478	1478	1478
2013 Load Forecast Plus Pipeline [1]	29267	29675	30083	30491	30896	31300	31703	32103	32519	32931	33341
Economic and Model Standard Deviation	1038	1121	1202	1280	1357	1433	1507	1579	1651	1721	1791
Surplus Dependable Energy - No New Exports or Generation	1138	872	590	275	-39	661	298	-10	-369	-726	-1109
Probability Point - Load Growth Uncertainty Exceeds Surplus [2]	**24%**	**22%**	**31%**	41%	51%	32%	42%	50%	59%	66%	73%

THE GLOBE AND MAIL

TransCanada delays Energy East, won't build Quebec oil terminal

JEFF LEWIS and NICOLAS VAN PRAET

CALGARY and MONTREAL — The Globe and Mail

Published Thursday, Apr. 02 2015, 9:32 AM EDT

Last updated Thursday, Apr. 02 2015, 7:29 PM EDT

TransCanada Corp. postponed its Energy East pipeline by at least a year and ruled out its preferred site for an oil-export terminal in Quebec, as sharply lower crude prices force a major rewrite of industry growth plans.

The Calgary-based company on Thursday said it is studying alternative sites for the export facility in the province after scrapping designs for a marine terminal at Cacouna, Que. amid concerns the project would harm beluga whales. As a result, the company said the $12-billion pipeline to carry oil sands crude as far as Canada's east coast would start up in early 2020, more than a year later than originally planned.

The delay marks another setback for efforts to expand markets for Alberta's landlocked oil sands deposits, which have been hit hard by the steep plunge in benchmark crude prices since last summer.

For years, efforts to tap richer global markets from Canada's coasts have been stymied, as multibillion-dollar pipelines encounter stiff resistance from environmental and local groups. Now, some analysts are questioning whether so many outlets are needed and by when, as oil companies cut billions from capital budgets and shelve longer-term expansions to cope with one of the worst downturns in years.

Some 500,000 barrels per day of new oil sands capacity – equivalent to roughly 45 per cent of Energy East's total capacity – has already been shaved from energy sector growth forecasts since last June, according to industry data.

"The market today suggests there's a need for pipe, but that need only grows with the production profile," said Michael Wojciechowski, analyst at Wood Mackenzie.

He said rival projects, including TransCanada's stalled Keystone XL pipeline, could sap commercial support for Energy East if they get built first, an assertion the company rejects.

If built, Energy East would convert portions of TransCanada's under-used natural gas mainline system to ship up to 1.1 million barrels per day of mainly oil sands crude to Irving Oil Ltd.'s refinery in Saint John, N.B. From there, the crude could be exported to global buyers.

TransCanada spokesman Tim Duboyce said the project serves a different market than Keystone XL. Both are underpinned by firm customer support, he said. "The contracts are in place. And that supports the projects themselves and their viability," he said.

TransCanada aims to file a project amendment with regulators for Energy East detailing how it plans to proceed in Quebec by the end of the fourth quarter this year, he said. Critics say the National Energy Board review should be halted until the application is complete.

The company suspended work on Cacouna on Dec. 1, immediately after the Committee on the Status of Endangered Wildlife in Canada recommended the beluga population in the St. Lawrence be declared endangered with full protection of their habitat. The Cacouna area is a migration and calving spot for the whales.

Four months later, the company concluded the site was not workable.

Quebec's Liberal government expressed frustration on Thursday that the company still hasn't submitted a definitive project for the province to review. Questions about possible oil supply to Quebec refineries run by Suncor Energy Inc. and Valero Energy Corp., as well as a dispute with natural gas distributors, remain outstanding, said natural resources minister Pierre Arcand.

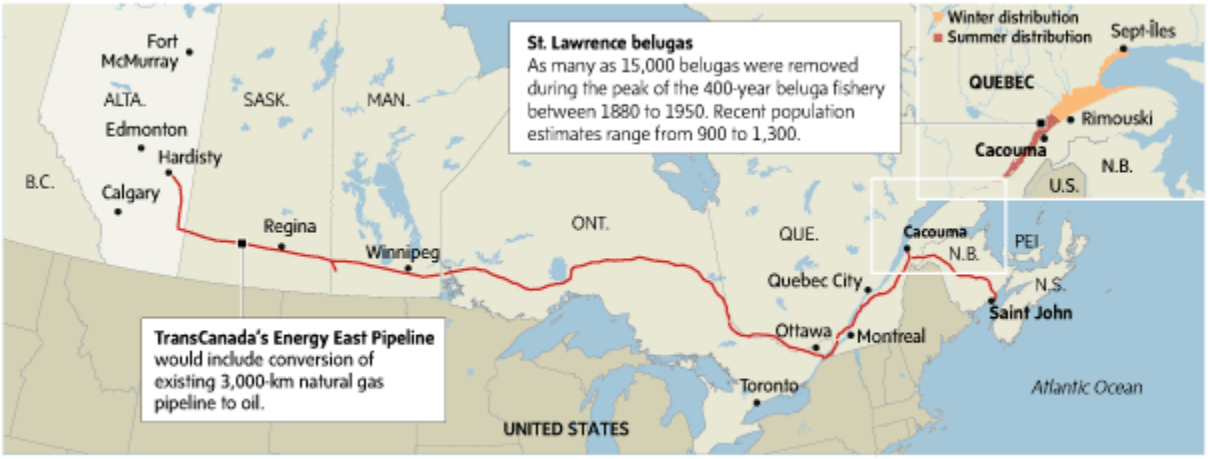
Scrapping the Quebec terminal entirely would weaken the economic benefit argument in the province because fewer permanent jobs would be created. But it wouldn't necessarily quash Quebec's support for the project, he said.

"There are also construction and maintenance benefits and maybe an office in Montreal. Whether it's enough, we'll analyze that," Mr. Arcand said in an interview.

TransCanada has already completed an initial assessment of eight potential sites for a marine terminal in Quebec, taking into account seaway navigation conditions, proximity to the main pipeline as well as environmental considerations and local support. Only three were judged appropriate: Cacouna, East Lévis across the river from Quebec City and Baies-des-Sables, just north of Mont-Joli.

At East Lévis, the narrow channel in front of the terminal site would limit the size of tankers that could call at the port, the company said. To use the Baies-des-Sables site would require building another 160 kilometres of pipeline, which would add to the project's already hefty cost.

ENERGY EAST PIPELINE



BY THE NUMBERS

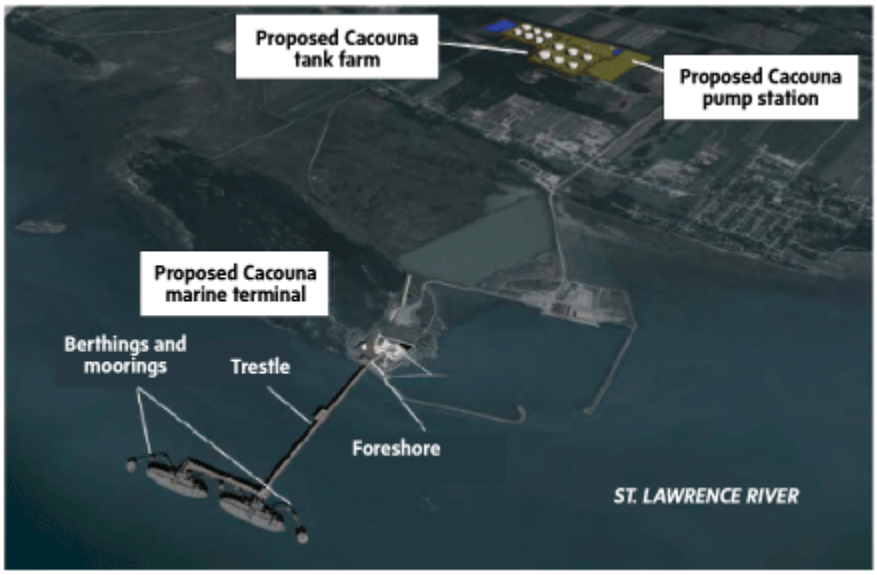
2020
Revised in-service target for the $12-billion Energy East Pipeline. The previous target date had been late 2018.

1.1 million
Estimated number of oil barrels per day that TransCanada estimates the 4,600-kilometre pipeline will move from Alberta and Saskatchewan to refineries in Eastern Canada.

1,805
Number of applications the National Energy Board has received to participate in hearings on the proposed pipeline.

JOHN SOPINSKI/THE GLOBE AND MAIL
SOURCES: TRANSCANADA PIPELINE; CAPP

PROPOSED CACOUNA MARINE TERMINAL AND TANK FARM



10

LOAD SENSITIVITES AND EXTREME EVENTS

Manitoba Hydro examines the effect of possible events on the load. The information presented here provides planners with an understanding of what the potential scale of these individual events may have on the system load requirements.

The individual effects of each event can be included in scenario or sensitivity analysis if the need arises. Each change in assumption can be individually applied to the forecast as required to capture the annual energy and peak effect of the desired assumption in any given year. All values are listed at Generation and include transmission and distribution losses.

A change of 1% in annual growth rate over 20 years would be equivalent to a 20% change in any individual event. Effects are summarized below, and the details of each effect follow.

Sensitivity of the Load to a Change In Assumptions	Annual Energy Effect (GW.h)	Peak Effect (MW)
1% Increase/Decrease in Population	± 130	± 24
1% Increase/Decrease in Income and GDP	± 125	± 23
1% Increase/Decrease in Electricity Price	∓ 62	∓ 11
1% Increase/Decrease in Gas to Electricity Price Ratio	± 0.5	± 0.1
Climate Change per Degree Celsius Warmer	+ 23	- 47

Certain events may have a significant effect on the load and are provided for scenario analysis.

Evaluation of Extreme Events	Annual Energy Effect (GW.h)	Peak Effect (MW)
If 0% or 100% of Residential had Electric Space Heat	-2,733, +4,796	-891, +1,564
If 0% or 100% Residential had Electric Water Heat	-892, +928	-102, +106
Increase/Decrease of One Very Large Industrial Customer	± 1,500	± 180
Maximum Potential Effect of Increased Online Shopping	- 846	- 156
Additional Load if 100% Electric Vehicle Saturation Rate	+ 4,172	+ 289
Illustrated Effect of Grid Parity (e.g. Solar Panels)	- 1,824	-104

For context, one year of energy growth is 425 GW.h and one year of peak growth is 70 MW.

Population / Economic / Price Changes

The population, economy and prices are the most significant drivers of the load in Manitoba. These variables are inputs to the econometric models utilized in this forecast. The individual effect of each driver based on the coefficients found in the models is summarized below.

Population: A 1% increase in population (12,686 people) results in a 1% increase in the number of Residential Basic customers (4,653 customers representing 74 GW.h) and a 0.60% change in the number of GS Mass Market Small and Medium customers (397 customers representing 41 GW.h). The total effect on Manitoba Gross Firm Energy would be 130 GW.h (0.53%).

Income / GDP: A 1% increase in real income results in a 0.27% increase in Residential average use (43 kW.h per customer and 20 GW.h overall). A 1% increase in Manitoba GDP results in a 0.55% increase in GS Mass Market Small and Medium average use (563 kW.h per customer totaling 37 GW.h). A 1% increase in Canada/US GDP results in 0.29% increase in GS Large Customer average use (15,934 kW.h per customer totaling 5 GW.h) and a 0.86% change in Top Consumers use (47 GW.h). The total effect of a 1% increase in Income and GDP together on Manitoba Gross Firm Energy is 125 GW.h (0.51%).

Electricity Price: A 1% increase in real electricity price results in a 0.26% decrease in Residential average use (-41 kW.h per customer totaling -19 GW.h). It will also result in a 0.12% decrease in GS Mass Market Small and Medium average use (-120 kW.h per customer totaling -8 GW.h; a 0.26% decrease in GS Mass Market Large average use (-14,213 kW.h per customer totaling -5 GW.h) and a 0.43% decrease in GS Top Consumers use (-23 GW.h). The total effect on Manitoba Gross Firm Energy is -62 GW.h (-0.25%).

Gas to Electricity Price Ratio: The gas to electricity price ratio is only modeled to affect new Residential construction therefore its effect is relatively small. A 1% increase in the ratio will result in 26 new electrically heated dwellings, with a total effect of about 0.5 GW.h.

	Energy (GW.h)	Peak (MW)
1% Increase/Decrease in Population	± 130	± 24
1% Increase/Decrease in Income and GDP	± 125	± 23
1% Increase/Decrease in Electricity Price	∓ 62	∓ 11
1% Increase/Decrease in Gas to Electricity Price Ratio	± 0.5	± 0.1

Table 14 - Residential Basic Sales

RESIDENTIAL BASIC SALES
History and Forecast
2013/14 - 2033/34

Fiscal Year	Electric Heat Billed			Non Electric Heat Billed			Total Basic			% Elec Space Heat	% Elec Water Heat
	Custs	GW.h	kW.h/cust	Custs	GW.h	kW.h/cust	Custs	GW.h	kW.h/cust		
2013/14	165,576	4,148	25,050	290,554	3,072	10,572	456,130	7,219	15,827	36.3%	49.0%
2014/15	173,561	4,324	24,913	294,514	3,056	10,377	468,075	7,380	15,767	37.1%	49.4%
2015/16	177,387	4,395	24,775	296,375	3,086	10,412	473,762	7,481	15,790	37.4%	50.5%
2016/17	181,184	4,474	24,693	298,780	3,132	10,484	479,964	7,606	15,848	37.7%	51.5%
2017/18	184,929	4,549	24,601	301,458	3,177	10,538	486,387	7,726	15,885	38.0%	52.3%
2018/19	188,478	4,618	24,501	304,222	3,218	10,577	492,700	7,836	15,904	38.3%	53.1%
2019/20	191,795	4,683	24,419	307,092	3,263	10,625	498,887	7,946	15,928	38.4%	53.8%
2020/21	194,868	4,743	24,341	310,046	3,306	10,663	504,914	8,049	15,942	38.6%	54.5%
2021/22	197,696	4,800	24,280	312,991	3,351	10,705	510,687	8,151	15,960	38.7%	55.1%
2022/23	200,277	4,853	24,230	315,883	3,396	10,749	516,160	8,248	15,980	38.8%	55.8%
2023/24	202,640	4,902	24,192	318,697	3,440	10,794	521,337	8,342	16,002	38.9%	56.4%
2024/25	204,859	4,951	24,167	321,424	3,485	10,842	526,283	8,435	16,028	38.9%	57.1%
2025/26	206,970	4,998	24,148	324,046	3,529	10,891	531,016	8,527	16,058	39.0%	57.7%
2026/27	208,970	5,044	24,140	326,547	3,575	10,947	535,517	8,619	16,095	39.0%	58.3%
2027/28	210,869	5,090	24,140	328,932	3,621	11,008	539,801	8,711	16,138	39.1%	59.0%
2028/29	212,686	5,135	24,145	331,228	3,667	11,071	543,914	8,802	16,183	39.1%	59.6%
2029/30	214,445	5,181	24,158	333,479	3,715	11,140	547,924	8,895	16,235	39.1%	60.2%
2030/31	216,165	5,226	24,176	335,713	3,764	11,212	551,878	8,990	16,290	39.2%	60.8%
2031/32	217,856	5,272	24,200	337,951	3,815	11,289	555,807	9,087	16,349	39.2%	61.4%
2032/33	219,528	5,319	24,228	340,203	3,868	11,369	559,731	9,186	16,412	39.2%	62.0%
2033/34	221,184	5,366	24,262	342,474	3,922	11,453	563,658	9,289	16,479	39.2%	62.6%

Electric Heat Billed: Customers who have electric space heating included with their electric bill.
Non Electric Heat Billed: Customers who do not have electric space heating included with their electric bill.
% Electric Space Heat: The proportion of Total Basic customers who are Electric Heat Billed.
% Electric Water Heat: The proportion of Total Basic customers who have Electric Water Heaters.

The average use (kW.h/customer) for Electric Heat Billed customers is decreasing as individually metered apartment suites are making up a higher proportion of the growth. The average use for Non Electric Heat Billed customers is increasing mainly due to the increase in the use of electric water heaters, the increase due to ventilation requirements in new dwellings, and miscellaneous end uses.

Potential Changes in Load from Very Large Industrial Customers

This forecast includes an expectation that there may be new large industrial users of electricity that may come to Manitoba. GS Top Consumers includes a Potential Large Industrial Loads category that adds 1,541 GW.h to GS Top Consumers by 2033/34. This is expected to be made up of increases and decreases by current top consumers, additions of new top consumers and company closures. However, this forecast does not anticipate the scenario of a single customer using up the entire PLIL projection.

Manitoba Hydro's largest customer currently uses in excess of 1,500 GW.h annually and has a coincident peak load of about 180 MW. It is feasible that one or more customers of this size could decide to start up in Manitoba in the next 20 years. A single large new customer could use the entire amount of energy that has been forecast under the Potential Large Industrial Loads projection.

Similarly, it is possible that one or more very large customers may discontinue operations in Manitoba. This could also be the equivalent of losing Manitoba Hydro's largest customer.

	Energy (GW.h)	Peak (MW)
Increase/Decrease of One Very Large Industrial Customer	± 1,500	± 180

Maximum Potential Load Effect of Increased Online Shopping

Online shopping is a growing service offering by many retailers. It is possible that this trend could lead to fewer retail establishments if online shopping becomes pervasive. The potential load reduction of such a scenario will be the electricity use of about 6,300 General Service customers in the Retail sector who currently use about 742 GW.h. At generation, this represents a potential total of 846 GW.h and 156 MW (using a 62% load factor). This assumes that the structures used for retail are torn down or are refurbished with other businesses that would otherwise have built a new structure.

	Energy (GW.h)	Peak (MW)
Maximum Potential Load Effect of Increased Online Shopping	-846	-156

11

The Public Utilities Board

Report on the

Needs **F**or and **A**lternatives **T**o **(NFAT)**

Review of Manitoba Hydro's Preferred Development Plan

June 2014

5. The Panel recommends that the Government of Manitoba direct Manitoba Hydro to immediately cease any and all expenditures associated with the design, implementation, and future development of the Conawapa Project.

Demand Side Management Plans and Programs

During the NFAT Review hearings, the Panel heard that Demand Side Management initiatives were "game changers." The Panel learned that Demand Side Management can have a profound impact on the need for, and timing of, new energy resources. According to its 2014 Supplementary Power Smart Plan, Manitoba Hydro can achieve 1,136 MW and 3,978 GWh of electricity savings by 2028/29. This would amount to more than 80% of the net system capacity addition from the proposed Conawapa Project.

Successful Demand Side Management initiatives are based on ambitious and achievable targets. In recent years and on an annual basis as a percentage of total demand, Manitoba Hydro's DSM savings have declined to approximately 0.4%, well below the 1.5% to 2% levels seen in many other jurisdictions. Demand Side Management savings in the order of 1.5% (including codes and standards) are achievable and economic.

Manitoba Hydro was formerly recognized as a leader in DSM but has since been surpassed by a number of jurisdictions. The Panel is concerned that the full potential for Demand Side Management will not be realized if the responsibility for Demand Side Management remains within Manitoba Hydro. Commitment, independent action and external monitoring of performance are the demonstrated and proven ingredients of successful DSM programs. Interveners encouraged the Panel to take these steps.

6. The Panel recommends that the Government of Manitoba divest Manitoba Hydro of its responsibilities for Demand Side Management.

7. The Panel recommends that the Government of Manitoba mandate incremental annual Demand Side Management targets in the order of 1.5% of forecast domestic load (including codes and standards) over the long term.

8. The Panel recommends that the Government of Manitoba establish a regulated, independent arm's-length entity that would be responsible for developing and implementing a plan to meet the mandated Demand Side Management targets.

9. The Panel recommends that the Demand Side Management savings reported by the independent arm's-length entity be independently audited on an annual basis.

10. The Panel recommends that until the independent arm's-length entity is established, Manitoba Hydro continue to address the barriers to lower income customer participation in its Demand Side Management programs.

11. The Panel recommends that until the independent arm's-length entity is established, Manitoba Hydro proceed with its fuel switching and heating fuel choice initiatives to encourage customers to use natural gas for space and water heating.

Rates and Ratepayer Impacts

Manitoba Hydro will have to invest in replacing aging infrastructure and in building Bipole III. This will result in increasing electricity rates over the coming decade. The construction of new generation and associated transmission facilities will add to and prolong these rate increases. Furthermore, construction costs will most likely grow and revenue projections may not be achieved. This gap between rising costs and unrealized revenues will be borne by ratepayers.

Given the length of time projected for these rate increases and their magnitude, especially in the early years, the Panel is concerned about intergenerational fairness and the impact on vulnerable residents and communities. Lower income consumers, particularly those in northern and aboriginal communities where energy choices are limited or non-existent, will especially feel this impact.

The Government of Manitoba will receive significant revenues from incremental capital taxes and water rental fees from the development of the Keeyask Project. It would be reasonable for the Government of Manitoba to use some or all of the incremental revenue it will realize from the Keeyask Project to mitigate adverse rate impacts on vulnerable consumers. Furthermore, Manitoba Hydro should take internal actions to moderate rate increases.

12. The Panel recommends that the Government of Manitoba direct a portion of the incremental capital taxes and water rental fees from the development of the Keeyask Project to be used to mitigate the impact of rate increases on lower income consumers, northern and aboriginal communities.

13. The Panel recommends that Manitoba Hydro relax its 75/25 debt-to-equity ratio policy to moderate its proposed electricity rate increases.

14. The Panel recommends that Manitoba Hydro implement cost containment measures to moderate its proposed electricity rate increases.

12

Section:	Tab 4: Sustaining Capital Figures 4.11 & 4.12	**Page No.:**	11,12
Topic:	Capital Expenditures		
Subtopic:	Sustaining Capital Expenditures		
Issue:	Target Adjustment		

PREAMBLE TO IR (IF ANY):

Manitoba Hydro is requesting rate increases to cover base capital spending.

QUESTION:

Please update figure 4.11 incorporating the base capital spending forecast in CEF09, CEF10 , CEF11, CEF12 and CEF 13 for the respective years . Please provide a table of data points.

RATIONALE FOR QUESTION:

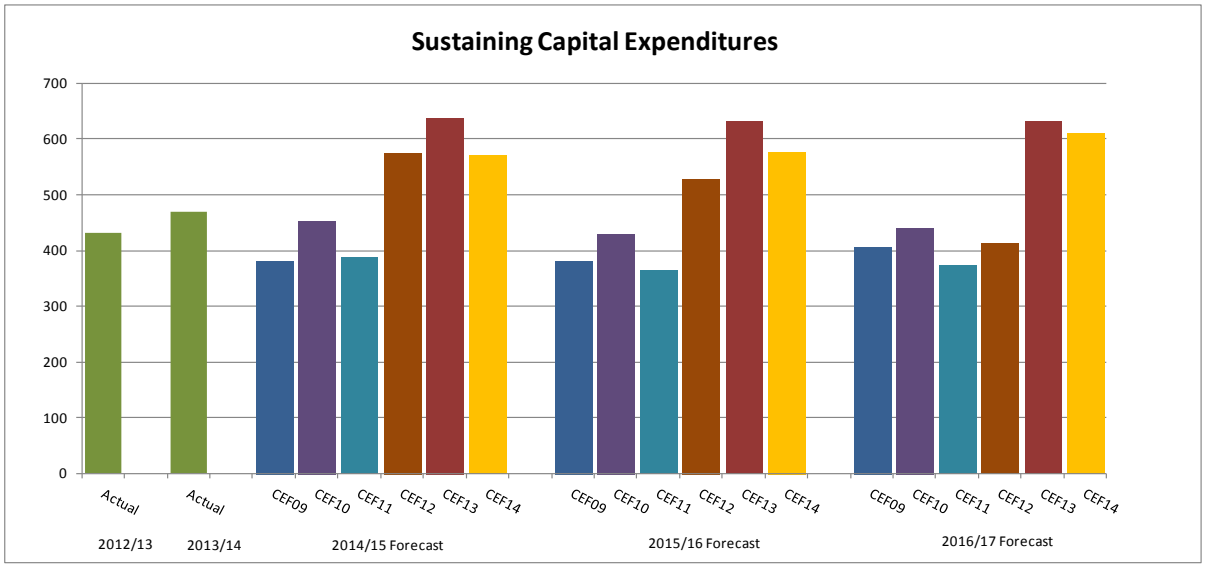
Increases in sustaining capital spending are a major driver around proposed rate increases. This information explores the impact of sustaining capital on rate increases.

RESPONSE:

Please see the following table and charts with respect to sustaining capital and DSM expenditures.

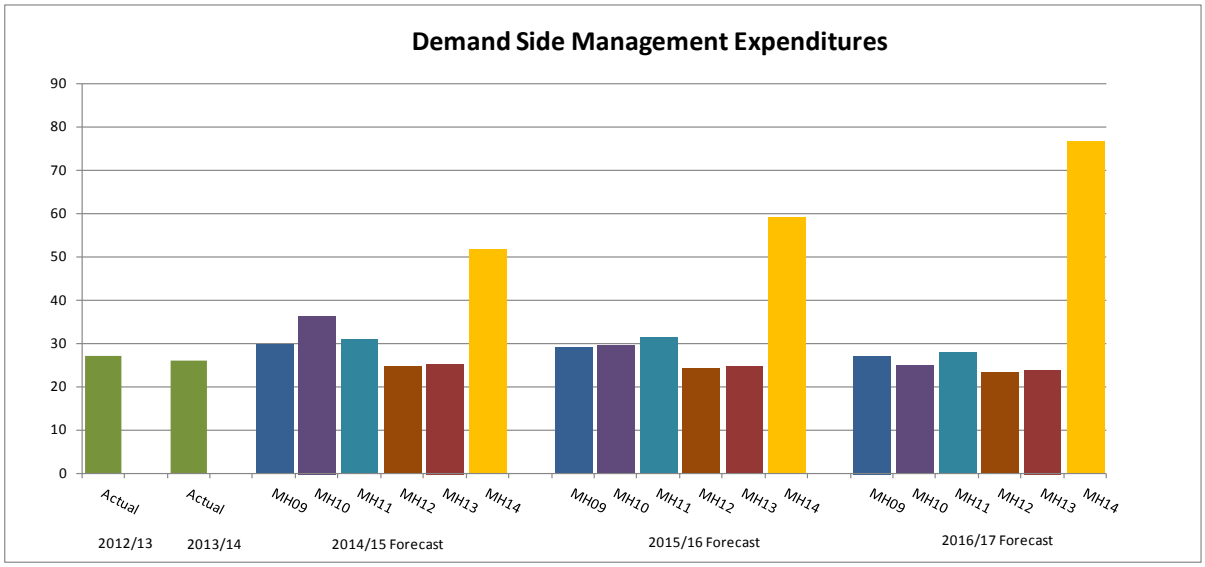
Sustaining Capital Expenditures (in millions)	2012/13 Actual	2013/14 Actual	2014/15 Forecast	2015/16 Forecast	2016/17 Forecast
Actual	433	470			
CEF09			382	381	406
CEF10			452	430	440
CEF11-2*			387	364	372
CEF12*			574	529	414
CEF13			637	631	632
CEF14			571	577	610

*Includes IFRS OH Adjustment



DSM Expenditures (in millions)	2012/13 Actual	2013/14 Actual	2014/15 Forecast	2015/16 Forecast	2016/17 Forecast
Actual	27	26			
MH09			30	29	27
MH10			36	30	25
MH11*			31	31	28
MH12*			25	24	23
MH13			25	25	24
MH14			52	59	77

* Assumed no continuation of rate regulated accounting and expensed under IFRS.



Section:	Tab 3	**Page No.:**	13 - 15
Topic:	Integrated Financial Forecast and Economic Outlook		
Subtopic:	Electric Operations Forecast		
Issue:	Financial Targets		

PREAMBLE TO IR (IF ANY):

QUESTION:

With reference to page 14 (lines 21-22), please provide a schedule that sets out the annual spending for the years 2011/12 through 2031/32 for i) DSM and ii) the renewal and replacement of aging infrastructure as forecast in IFF11-2, IFF12, IFF13 and IFF14. Where appropriate please include the actual spending values in the schedule.

RATIONALE FOR QUESTION:

Assist in understanding the factors affecting the change in the outlook for Manitoba Hydro's financial targets which goes to credibility of forecasts. Questions are distinct from those posed in PUB/Hydro 1-17.

RESPONSE:

The following tables set out the forecasted and actual annual spending for DSM and Sustaining Capital (Major and Base Capital).

	DSM Spending ($ Millions)					Sustaining Capital ($ Millions)				
	Actual	MH14	MH13	MH12	MH11-2	Actual	MH14	MH13	MH12*	MH11-2*
2012	27				32	465				417
2013	27			29	34	433			434	412
2014	26		28	28	34	470		526	544	394
2015		52	25	25	31		571	637	575	387
2016		59	25	24	31		577	631	530	364
2017		77	24	23	28		610	632	414	372
2018		84	23	22	24		547	468	358	380
2019		94	22	22	23		547	474	408	388
2020		78	20	20	21		548	477	348	396
2021		73	19	19	21		573	481	404	360
2022		61	19	19	21		555	484	440	386
2023		50	19	19	21		563	487	513	430
2024		50	19	19	21		571	493	534	462
2025		48	19	19	22		621	493	531	523
2026		48	18	18	17		624	499	500	499
2027		47	16	16	16		637	503	448	515
2028		47	16	17	17		649	508	512	503
2029		48	16	17	17		675	512	558	536
2030		50	17	17	17		665	520	592	568
2031		52	17	18	18		703	521	624	479
2032		54	17	18	18		711	526	536	584
2033		57	18				724	531		
2034		59					735			

* Includes IFRS OH Adjustment

M A N I T O B A	Order No. 43/13
THE PUBLIC UTILITIES BOARD ACT	April 26, 2013

Before: Régis Gosselin, B.A., M.B.A., C.G.A., Chair
Raymond Lafond, B.A., C.M.A., F.C.A., Member
Larry Soldier, Member

FINAL ORDER WITH RESPECT TO
MANITOBA HYDRO'S 2012/13 AND 2013/14
GENERAL RATE APPLICATION

6. That Manitoba Hydro file with the Board an International Financial Reporting Standards status update report prior to the next General Rate Application that will provide the Board options available for rate-setting purposes.

7. That Manitoba Hydro complete and file with the Board an Asset Condition Assessment Study no later than the filing of the next updated depreciation study with the Board.

8. That Manitoba Hydro file updated depreciation rates and schedules based on an International Financial Reporting Standards-compliant Average Service Life methodology with the next General Rate Application.

9. That Manitoba Hydro file with the Board, with the next General Rate Application, a chart showing a comparison of the impact on its Integrated Financial Forecast (i.e. 'Budget') of asset depreciation pursuant to the Average Service Life methodology (without net salvage) and the Equal Life Group methodology (without net salvage), applying both methodologies to all planned major capital additions.

10. That Manitoba Hydro file, with its next General Rate Application, a detailed quantitative and probabilistic risk assessment and review of all of its operating and financial risks in order to allow the Board to assess the adequacy of the reserves. Commercially sensitive information in the report is to be redacted from the public version and filed in confidence with the Board.

11. That Manitoba Hydro file with the Board any negotiated agreements or changes with respect to the Wuskwatim Power Limited Partnership when finalized, and detail the impacts on Manitoba Hydro's operating results and rates.

12. That Manitoba Hydro's revenue requirements are determined based on the level of Demand-Side Management spending as set out in Manitoba Hydro's 2011 Power Smart report, i.e., $34 million for 2012/13 and $35 million for 2013/14, for a total of $69 million. To the extent Manitoba Hydro's spending on Demand-Side Management in the test years, including the Affordable Energy Fund and the Lower Income Energy Efficiency Program, falls below $69 million, Manitoba Hydro shall establish a deferral account for the discrepancy, the disposition of which the Board will consider at the next General Rate Application.

13. That Manitoba Hydro's proposed changes to the Curtailable Rate Program **BE AND ARE HEREBY APPROVED ON AN INTERIM BASIS**, to be reviewed by the Board at a General Rate Application to follow the Needs For And Alternatives To (NFAT) hearing with respect to Manitoba Hydro's Preferred Development Plan.

prepare an energy efficiency plan in consultation with the minister responsible for Manitoba Hydro by March 31, 2013.

13.2.0 Board Findings

The Board believes that it is fundamental that Manitoba Hydro enhances Demand-Side Management efforts from those reflected in the 2011 Power Smart Plan. Given an outlook where rates are forecast to more than double over the next twenty years, which is twice the expected level of inflation, the Board is of the view that Manitoba Hydro should be providing ratepayers with the tools to mitigate their exposure to rising electricity bills through Demand-Side Management.

The Board does not agree with Manitoba Hydro's decision to cut Demand-Side Management spending and targeted savings. For rate-setting purposes, Demand-Side Management spending and its related revenue requirement costs will be established at a minimum of $34 million for 2012/13 and $35 million in 2013/14, consistent with the 2011 Power Smart Plan. If monies are not spent on the Demand-Side Management programs to meet the minimum threshold, any underspend from the set levels will be accumulated in a deferral account.

DSM spending is beneficial to ratepayers and will be more prominent in the future as pressures from increasing rates continue in future years. The Board urges Manitoba Hydro to incorporate Demand-Side Management programs into its plan that target higher levels of energy efficiency, as was recommended by Mr. Dunsky and endorsed by the Consumers' Association of Canada (Manitoba) Inc. and the Green Action Centre. The Board further notes that Demand-Side Management may have a role in limiting future load growth and expects to evaluate Demand-Side Management options in the upcoming Needs For And Alternatives To hearing into Manitoba Hydro's Preferred Development Plan. The Board notes Mr. Dunsky's testimony that Keeyask could be delayed several years and Conawapa could be delayed indefinitely with an increased focus on Demand-Side Management.

In evaluating Demand-Side Management programs, the Rate Impact Measure test should not be a barrier to higher levels of Demand-Side Management savings and should be applied only at the portfolio level, not the individual program level. The Board recommends that Manitoba Hydro undertake an independent assessment of its Power Smart Plan with a goal of evaluating and improving the Plan. The Board further recommends that Manitoba Hydro should consider revising the marginal cost used to evaluate Demand-Side Management to include the cost of new generation. In light of low export rates, a marginal cost focus on generation deferral rather than export pricing may be preferable.

Manitoba Hydro has made modest progress in implementing the Lower Income Energy Efficiency Program, and the Board believes that the reduction in homes being targeted for the Lower Income Energy Efficiency Program is a reflection of the difficulty in reaching the target market. The Board urges Manitoba Hydro to continue or increase its

efforts in implementing the Lower Income Energy Efficiency Program, as increasing energy prices will place a significant burden on low-income individuals.

Section:	Tab 10	**Page No.:**	
Topic:	Rate impacts on specific customer segments		
Subtopic:	DSM mitigation strategy		
Issue:	Funding; Scale		

PREAMBLE TO IR (IF ANY):

MH's proposes to rescind the Board's DSM deferral order requiring maintenance of an account for unexpended ordered DSM on the grounds that it has proposed to increase spending.

QUESTION:

For each of the past 10 years, provide the:

a) planned:
b) ordered; and
c) actual expenditures for:

i. all DSM;
ii. the Affordable Energy Program;
iii. Low income program(s);
iv. First Nation programs(s);
v. all-electric residential buildings;
vi. residential buildings in areas without access to natural gas;
vii. residential buildings in North Manitoba;
vii. renters; and
viii. small and medium business.

RATIONALE FOR QUESTION:

To determine the history of the Board's funding orders and MH's compliance therewith.

RESPONSE:

The DSM deferral referenced in the preamble to this question applies to the 2012/13 and 2013/14 years only. As such, this response focuses on data for this timeframe only.

Please see the response to COALITION/MH I-72c for the calculation of the $16.3 million included in the DSM deferral account, which reflects the amounts included in Order 43/13 based on the IFF11-2.

Please note the DSM amounts of $34 million for 2012/13 and $35 million for 2013/14 included in Order 43/13 do not include in forecast Affordable Energy Fund program spending.

The following table provides the electric DSM budget in the 2011 Power Smart Plan as well as the planned and actual DSM expenditures for the 2012/13 and 2013/14 fiscal years.

Some of the information requested in this IR is not available. Manitoba Hydro is unable to provide the breakdown requested for v) to vii). As well, expenditures related to the Affordable Energy Program, low income programs and First Nation programs are not tracked separately. Manitoba Hydro supports this market through its DSM budget and through its Affordable Energy Fund (AEF) budget. The DSM expenditures can be found in the table below under "Residential Expenditures" and the AEF expenditures can be found in the AEF section. Manitoba Hydro has provided the expenditures for all commercial programs, as the amounts for small and medium businesses only are not available.

($ millions)	2012/13			2013/14		
		Planned	Actual		Planned	Actual
	2011 PS Plan	2012 Base DSM		2011 PS Plan	2013-16 PS Plan	
Residential Expenditures						
Low Income/Affordable Energy Program/First Nations	$0.4	$0.3	$0.3	$0.4	$0.3	$0.3
All Other Residential Expenditures	$4.8	$4.3	$3.7	$4.5	$4.1	$3.6
Total Residential Expenditures	$5.2	$4.6	$4.0	$4.9	$4.4	$3.9
Commercial Expenditures	$10.7	$10.2	$11.2	$9.8	$9.3	$10.6
All Other Expenditures	$17.7	$13.7	$11.3	$19.2	$14.3	$11.7
Total Capital DSM Expenditures	**$33.6**	**$28.5**	**$26.6**	**$33.9**	**$28.1**	**$26.1**
DSM Operating Expenditures	$0.8	$0.9	$0.8	$0.8	$0.9	$1.0
Total DSM Expenditures	**$34.4**	**$29.4**	**$27.4**	**$34.7**	**$29.0**	**$27.2**
Low Income/Affordable Energy Program/First Nations AEF	$1.0	$0.9	$0.4	$1.0	$0.9	$0.4
Other AEF Expenditures	$1.3	$1.9	$1.4	$1.0	$0.2	$0.1
Total AEF Expenditures	**$2.3**	**$2.8**	**$1.9**	**$2.0**	**$1.0**	**$0.5**
Total DSM and AEF Expenditures	**$36.7**	**$32.2**	**$29.3**	**$36.7**	**$30.0**	**$27.7**

Section:	Tab 10 Tab 11: Appendix 11.1 Tab 11: Appendix 11.43	**Page No.:**	6 Various Letters 2
Topic:	PUB Directives and Interim Orders		
Subtopic:	Directives from Order 143/13		
Issue:	DSM Deferral Account - Proposed Disposition		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please confirm that the actual level of electric DSM spending in 2012/13 was $26.6 M (per Manitoba Hydro's letter of March 25, 2014). If not what was the amount?

RATIONALE FOR QUESTION:

To confirm DSM Deferral Account balance as of March 31, 2014 and to clarify the proposed disposition of the balance.

RESPONSE:

Manitoba Hydro confirms that electric DSM spending was $26.6 million for fiscal 2012/13.

Section:	Tab 10 Tab 11: Appendix 11.1 Tab 11: Appendix 11.43	**Page No.:**	6 Various Letters 2
Topic:	PUB Directives and Interim Orders		
Subtopic:	Directives from Order 143/13		
Issue:	DSM Deferral Account - Proposed Disposition		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide the actual level of electric DSM spending for 2013/14.

RATIONALE FOR QUESTION:

To confirm DSM Deferral Account balance as of March 31, 2014 and to clarify the proposed disposition of the balance.

RESPONSE:

Electric DSM spending for fiscal 2013/14 was $26.1 million.

Section:	Tab 10 Tab 11: Appendix 11.1 Tab 11: Appendix 11.43	**Page No.:**	6 Various Letters 2
Topic:	PUB Directives and Interim Orders		
Subtopic:	Directives from Order 143/13		
Issue:	DSM Deferral Account - Proposed Disposition		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please set out the calculation of the $16.3 M included in the DSM Deferral Account as of March 31, 2014 (per Appendix 11.43).

RATIONALE FOR QUESTION:

To confirm DSM Deferral Account balance as of March 31, 2014 and to clarify the proposed disposition of the balance.

RESPONSE:

The following table provides the calculation of the $16.3 million included in the Electric DSM deferral account at March 31, 2014.

($ millions)	**2013**	**2014**	**Total**
DSM spending identified in Board Order 43/13	$ 34.0	$ 35.0	$ 69.0
Actual DSM spending	26.6	26.1	52.7
DSM Deferral - electric	$ 7.4	$ 8.9	$ 16.3

Section:	Tab 10 Tab 11: Appendix 11.1 Tab 11: Appendix 11.43	**Page No.:**	6 Various Letters 2
Topic:	PUB Directives and Interim Orders		
Subtopic:	Directives from Order 143/13		
Issue:	DSM Deferral Account - Proposed Disposition		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please clarify how Manitoba Hydro has treated this balance for purposes of determining the revenue requirement for 2014/15 and 2015/16 as set out in the current Application. In particular, with respect to Appendix 11.43, does the $16.3 M in the DSM deferral account affect in any way the forecast DSM amortization for 2014/15 through 2016/17?

RATIONALE FOR QUESTION:

To confirm DSM Deferral Account balance as of March 31, 2014 and to clarify the proposed disposition of the balance.

RESPONSE:

The DSM deferral balances were established as of March 31, 2014. These balances have not been amortized and as such are not included in revenue requirement for 2014/15, 2015/16 or 2016/17.

Section:	Tab 3: Appendix 3.3	**Page No.:**	4-5
Topic:	Integrated Financial Forecast and Economic Outlook		
Subtopic:	Demand Side Management		
Issue:	Actual and Forecasted DSM Savings and Costs		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a schedule that shows the actual/forecast annual spending on DSM for the period 2012/13 to 2033/34 based on each of IFF11-2, IFF12, IFF13 and IFF14.

RATIONALE FOR QUESTION:

Understand how the forecast DSM savings and spending have changed from previous IFFs and actual results to-date. This goes to reliability of past forecasts and the reasonableness of the current plan.

RESPONSE:

Please see the response to Coalition/MH I-19g, which shows the actual / forecast annual spending on DSM based on IFF11-2, IFF12, IFF13 and IFF14.

Section:	Tab 3: Appendix 3.3	**Page No.:**	4-5
Topic:	Integrated Financial Forecast and Economic Outlook		
Subtopic:	Demand Side Management		
Issue:	Actual and Forecasted DSM Savings and Costs		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a schedule that sets out the annual actual/forecast amortization of DSM costs included in the revenue requirement for the period 2012/13 to 2033/34 based on each of IFF11-2, IFF12, IFF13 and IFF14.

RATIONALE FOR QUESTION:

Understand how the forecast DSM savings and spending have changed from previous IFFs and actual results to-date. This goes to reliability of past forecasts and the reasonableness of the current plan.

RESPONSE:

Please see the following table.

	DSM Amortization ($ Millions)				
	Actual	**IFF14**	**IFF13**	**IFF12**	**IFF11-2**
2012	**26**				26
2013	**28**			28	29
2014	**30**		30	30	-
2015		32	32	-	-
2016		35	32	-	-
2017		38	32	-	-
2018		41	30	-	-
2019		45	27	-	-
2020		51	26	-	-
2021		55	25	-	-
2022		60	24	-	-
2023		63	23	-	-
2024		65	22	-	-
2025		68	21	-	-
2026		67	21	-	-
2027		66	20	-	-
2028		63	19	-	-
2029		60	19	-	-
2030		55	18	-	-
2031		52	18	-	-
2032		50	18	-	-
2033		49	17		
2034		50			

Section:	Tab 3: Appendix 3.3	**Page No.:**	4-5
Topic:	Integrated Financial Forecast and Economic Outlook		
Subtopic:	Demand Side Management		
Issue:	Actual and Forecasted DSM Savings and Costs		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a schedule that sets on the forecast cumulative energy savings from DSM programs associated with each of the four Integrated Financial Forecasts for each of the years 2012/13 through 2033/34 (excluding the impacts of program spending prior to 2012/13).

RATIONALE FOR QUESTION:

Understand how the forecast DSM savings and spending have changed from previous IFFs and actual results to-date. This goes to reliability of past forecasts and the reasonableness of the current plan.

RESPONSE:

Please see the following table.

		GW.h savings @generation											
Power Smart Plan	**Integrated Financial Forecast**	**2011/12**	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**	**2020/21**	**2021/22**	**2022/23**
2011 Power Smart Plan	IFF11-2	240	412	591	779	969	1,156	1,287	1,411	1,514	1,613	1,687	1,763
2012/13 DSM Base Forecast	IFF-12	0	99	276	439	613	792	941	1,072	1,180	1,278	1,371	1,452
2013-16 Power Smart Plan (15 Year Supplementary Analysis Report)	IFF-13	0	0	174	335	510	694	833	958	1,059	1,153	1,245	1,312
2014-17 Power Smart Plan (15 Year Supplementary Analysis Report)	IFF-14	0	0	0	363	660	1,064	1,445	1,890	2,301	2,641	2,913	3,101

		GW.h savings @generation									
Power Smart Plan	**Integrated Financial Forecast**	**2023/24**	**2024/25**	**2025/26**	**2026/27**	**2027/28**	**2028/29**	**2029/30**	**2030/31**	**2031/32**	**2032/33**	**2033/34**
2011 Power Smart Plan	IFF11-2	1,831	1,895	1,944	1,933	1,913	1,890	1,877	1,860	1,855	1,855	1,853
2012/13 DSM Base Forecast	IFF-12	1,488	1,520	1,567	1,624	1,642	1,627	1,610	1,595	1,576	1,524	1,447
2013-16 Power Smart Plan (15 Year Supplementary Analysis Report)	IFF-13	1,357	1,396	1,445	1,505	1,552	1,535	1,518	1,504	1,493	1,451	1,372
2014-17 Power Smart Plan (15 Year Supplementary Analysis Report)	IFF-14	3,284	3,428	3,567	3,699	3,839	3,978	4,051	4,119	4,180	4,243	4,302

13

Power Smart Plan

2014 to 2017

SUPPLEMENTAL REPORT:

15yr (2014 to 2029)

Manitoba Hydro
POWER SMART

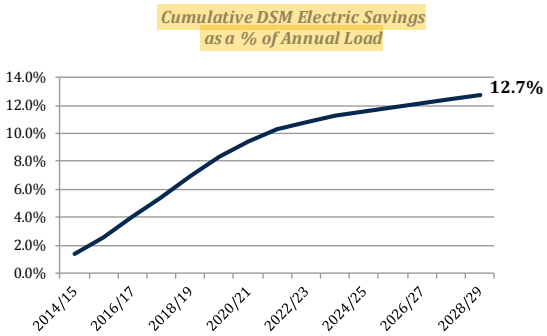
2 DEMAND SIDE MANAGEMENT

2.1 DSM Targets

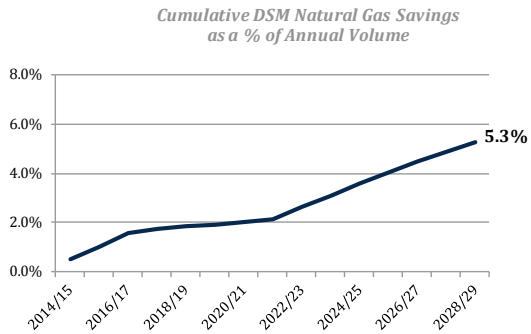
2.1.1 Electric and Natural Gas DSM Savings

In summary, the plan sets out to realize electricity savings of 1,136 MW and 3,978 GW.h, natural gas savings of 108 million cubic meters and combined global greenhouse gas emission reductions of 2.9 million tonnes by 2028/29.

This demand side management plan represents 12.7% of the estimated electric load forecast offsetting 66% of projected load growth during this period and 5.3% of the estimated natural gas volume forecast by 2028/29, further reducing natural gas consumption in Manitoba.



Note: Total DSM Electric savings per the above graph includes forecast savings from program impacts and savings from Codes, Standards and Regulations.
Source of Load Forecast: 2013 Electric Load Forecast



Note: Total DSM Natural Gas savings per the above graph includes forecast savings from program impacts and Codes, Standards and Regulations
Source of Natural Gas Volume Forecast: 2013 Natural Gas Volume Forecast

Combined with energy savings achieved to date, total electrical savings of 1,635 MW and 6,286 GW.h and total natural gas savings of 211 million cubic meters will be realized by 2028/29. These combined energy savings are expected to result in an overall reduction of greenhouse gas emissions of 4.6 million tonnes by 2028/29. This activity represents 20.1% of the estimated electric load forecast and 10.2% of the estimated natural gas volume forecast by 2028/29.

The following table shows detailed DSM savings associated with the 2014-2017 Power Smart Plan - 15 year supplemental report by sector to 2028/29.

Electric and Natural Gas DSM Savings
2014/15 - 2028/29

	Annual Capacity (MW)		Annual Energy (GW.h)		Annual Energy (million m^3)	
Residential						
New Home Program	12.0		39.9		6.4	
Home Insulation Program	16.8		31.2		8.9	
Water and Energy Saver Program	2.4		12.3		2.5	
Affordable Energy Program						
Affordable Energy Program - Insulation	15.6		31.1		6.1	
Affordable Energy Program - Furnace	n/a		n/a		0.0	
Affordable Energy Program - Total	15.6		31.1		6.1	
Refrigerator Retirement Program	0.2		1.5		0.0	
Residential LED Lighting Program	1.4		5.9		0.0	
Community Geothermal Program	15.7		59.7		0.0	
Residential Programs Total (@ Meter)	64.1	10%	181.7	7%	23.9	74%
Customer Service Initiatives / Financial Loan Programs						
Power Smart Residential Loan	3.9		7.5		4.6	
Power Smart PAYS Financing	1.4		5.2		0.1	
Residential Earth Power Loan	4.3		18.0		2.0	
Residential CSI / Financial Loan Programs Total (@ Meter)	9.7	1%	30.7	1%	6.8	21%
Commercial						
Commercial Lighting Program	70.7		254.3		-	
LED Roadway Lighting Conversion Program	5.2		35.3		n/a	
Commercial Building Envelope - Windows Program	12.6		31.8		4.2	
Commercial Building Envelope - Insulation Program	11.8		30.1		13.1	
Commercial Geothermal Program	24.3		101.6		n/a	
Commercial HVAC Program - Boilers	n/a		n/a		4.7	
Commercial HVAC Program - Chillers	-		8.4		n/a	
Commercial HVAC Program - CO2 Sensors	1.3		1.7		2.8	
Commercial HVAC Program - Water Heaters	n/a		n/a		0.7	
Commercial Custom Measures Program	5.7		21.6		2.1	
Commercial Building Optimization Program	2.9		14.4		3.7	
New Buildings Program	21.7		49.1		1.5	
Commercial Refrigeration Program	7.0		62.1		-	
Commercial Kitchen Appliance Program	2.7		2.2		1.0	
Network Energy Management Program	1.8		4.7		-	
Internal Retrofit Program	0.5		2.7		0.0	
Power Smart Shops	1.1		3.9		0.1	
Commercial Programs Total (@ Meter)	169.3	26%	624.0	26%	33.9	105%
Customer Service Initiatives / Financial Loan Programs						
Power Smart For Business PAYS Financing	0.6		2.3		0.1	
Commercial CSI / Financial Loan Programs Total (@ Meter)	0.6	0%	2.3	0%	0.1	0%
Industrial						
Performance Optimization Program	57.0		363.5		n/a	
Natural Gas Optimization Program	n/a		n/a		4.8	
Industrial Programs Total (@ Meter)	57.0	9%	363.5	15%	4.8	15%
Energy Efficiency Subtotal (@ Meter)	300.6	46%	1,202.2	49%	69.5	214%
Load Management						
Curtailable Rate Program	146.2		n/a		n/a	
Load Management Programs Total (@ Meter)	146.2	23%	n/a	0%	n/a	0%
Load Displacement & Alternative Energy						
Bioenergy Optimization Program	7.1		61.9		1.7	
Customer Sited Load Displacement	85.9		580.6		n/a	
Load Displacement & Alt. Energy Programs Total (@ Meter)	93.0	14%	642.5	26%	1.7	5%
Conservation Rates						
Conservation Rates - Residential	16.9		140.1		n/a	
Conservation Rates - Commercial	24.3		202.1		n/a	
Conservation Rates Total	41.2	6%	342.1	14%	n/a	0%
Fuel Choice						
Fuel Choice	66.7		250.7		(38.8)	
Fuel Choice Total	66.7	10%	250.7	10%	(38.8)	(120%)
Program Impacts Total (@ Meter)	647.8	100%	2,437.5	100%	32.4	100%
Interactive Effects					(2.2)	
Codes, Standards and Regulations (@ Meter)	358.8		1,087.4		78.0	
Power Smart 2014/15 to 2028/29 Impacts (@ Meter)	1,007		3,525			
Power Smart 2014/15 to 2028/29 Impacts (@ Generation)	1,136		3,978		108	
Savings Achieved To 2013/14 (@ Meter)	442		2,043			
Savings Achieved To 2013/14 (@ Generation)	500		2,307		103	
Grand Total (@ Meter)	1,448		5,568			
Grand Total (@ Generation)	1,635		6,286		211	

2.2 DSM Utility Investment

2.2.1 Internal Sources

The following table provides the cumulative electric and natural gas internal DSM investment totals to 2028/29 broken down by market sector and cost basis. Including other internal DSM investments, it is expected that by 2028/29, an additional cumulative investment amount of $978 million dollars will have been spent on Power Smart programs and initiatives. Including investments to date, it is expected that by 2028/29, a cumulative investment of achieving the energy savings will have been $1.6 billion dollars.

Internal DSM Utility Investment
2014/15 - 2028/29

	Electric Cumulative Utility Costs (Millions 2014$)		Natural Gas Cumulative Utility Costs (Millions 2014$)		Total Cumulative Utility Costs (Millions 2014$)		
Residential							
New Home Program	$2.3		$0.1		$2.4		
Home Insulation Program	$16.6		$15.4		$32.0		
Water and Energy Saver Program	$5.0		$3.2		$8.2		
Affordable Energy Program							
Affordable Energy Program - Insulation	$16.7		$35.6		$52.4		**
Affordable Energy Program - Furnace	n/a		$19.3		$19.3		**
Affordable Energy Program - Total	$16.7		$54.9		$71.7		**
Refrigerator Retirement Program	$6.6		$0.0		$6.6		
Residential LED Lighting Program	$1.9		$0.0		$1.9		
Community Geothermal Program	$21.1		$0.0		$21.1		
Opower (Behavioral)	$0.0		$0.0		$0.0		
Residential Programs Total	$70.1	10%	$73.7	61%	$143.8	17%	
Commercial							
Commercial Lighting Program	$92.3		$0.0		$92.3		
LED Roadway Lighting Conversion Program	$40.4		$0.0		$40.4		
Commercial Building Envelope - Windows Program	$11.8		$6.7		$18.5		
Commercial Building Envelope - Insulation Program	$12.6		$20.9		$33.5		
Commercial Geothermal Program	$47.6		$0.0		$47.6		
Commercial HVAC Program - Boilers	n/a		$2.4		$2.4		
Commercial HVAC Program - Chillers	$2.0		$0.0		$2.0		
Commercial HVAC Program - CO2 Sensors	$0.5		$1.9		$2.4		
Commercial HVAC Program - Water Heaters	n/a		$0.9		$0.9		
Commercial Custom Measures Program	$10.1		$3.2		$13.3		
Commercial Building Optimization Program	$4.2		$4.4		$8.6		
New Buildings Program	$17.2		$3.7		$20.9		
Commercial Refrigeration Program	$8.8		$0.0		$8.8		
Commercial Kitchen Appliance Program	$0.2		$0.5		$0.7		
Network Energy Management Program	$0.7		$0.0		$0.7		
Internal Retrofit Program	$2.5		$0.1		$2.6		
Power Smart Shops	$1.5		$0.1		$1.7		
Commercial Programs Total	$252.5	34%	$44.7	37%	$297.2	35%	
Industrial							
Performance Optimization Program	$143.4		n/a		$143.4		
Natural Gas Optimization Program	n/a		$2.3		$2.3		
Industrial Programs Total	$143.4	20%	$2.3	2%	$145.7	17%	
Energy Efficiency Subtotal	$466.1	64%	$120.7	99%	$586.7	69%	
Load Management							
Curtailable Rate Program	$89.3		n/a		$89.3		
Load Management Programs Total	$89.3	12%	n/a	0%	$89.3	10%	
Load Displacement & Alternative Energy							
Bioenergy Optimization Program	$10.2		$0.8		$11.0		
Customer Sited Load Displacement	$84.3		n/a		$84.3		
Load Displacement & Alt. Energy Programs Total	$94.5	13%	$0.8	1%	$95.4	11%	
Conservation Rates							
Conservation Rates - Residential	$15.6		n/a		$15.6		
Conservation Rates - Commercial	$18.4		n/a		$18.4		
Conservation Rates Total	$34.1	5%	n/a	0%	$34.1	4%	
Fuel Choice							
Fuel Choice	$49.4		$0.0		$49.4		
Fuel Choice Total	$49.4	7%	$0.0	0%	$49.4	6%	
Program Impacts Total	$733.3	100%	$121.5	100%	$854.8	100%	
Program Support and Contingency Costs	$87.2		$34.3		$121.4		
Power Smart Investment Total, 2014/15 - 2028/29	$820.5		$155.8		$976.2		
Other Internal DSM Investments							
Afforedable Energy Fund	$1.1		$0.7		$1.8		
Cumulative Investment Total, 2014/15 - 2028/29	$821.5		$156.5		$978.0		
Spent to 2013/14	$461.0		$123.6		$584.6		
Cumulative Investment Total, 1989/90 - 2028/29	$1,282.5		$280.1		$1,562.6		

*** Includes all Affordable Energy Fund Expenditures and Furnace Replacement Program*

The following table outlines the total projected DSM budget including all internal sources of funding to 2028/29. A total investment of $978 million is planned for the period of 2014/15 to 2028/29.

Forecasted Internal DSM Budget
2014/15 - 2028/29
(Millions 2014 $)

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	Total
Electric DSM																
Electric Power Smart	52.3	58.5	74.0	79.4	86.8	71.3	64.9	53.6	43.4	42.2	39.7	39.6	38.0	37.2	37.3	818.2
Affordable Energy Fund	1.4	1.1	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0
Annual Electric Budget	$53.6	$59.6	$74.4	$79.4	$86.9	$71.3	$64.9	$53.6	$43.4	$42.2	$39.7	$39.6	$38.0	$37.2	$37.3	$821.3
Natural Gas DSM																
Natural Gas Power Smart	10.2	10.8	11.2	9.5	8.7	8.7	8.6	8.7	8.8	8.9	8.6	8.6	8.5	5.1	5.0	129.9
Affordable Energy Fund	3.3	3.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.2
Furnace Replacement Budget	2.6	2.7	2.7	2.6	2.4	2.3	1.9	1.2	0.7	0.2	0.1	0.1	0.1	0.0	0.0	19.3
Annual Natural Gas Budget	$16.1	$16.4	$14.8	$12.1	$11.1	$11.1	$10.5	$9.9	$9.5	$9.1	$8.6	$8.6	$8.6	$5.1	$5.0	$156.5
Oil and Propane DSM																
Affordable Energy Fund	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Annual Oil and Propane Budget	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.3
Manitoba Hydro Annual Budget	$69.7	$76.1	$89.2	$91.5	$98.0	$82.4	$75.4	$63.5	$52.8	$51.4	$48.4	$48.3	$46.6	$42.3	$42.4	
Cumulative Investment 2014/15 - 2028/29	$69.7	$145.8	$235.0	$326.5	$424.5	$506.9	$582.3	$645.9	$698.7	$750.1	$798.4	$846.7	$893.3	$935.7	$978.0	$978.0

Note: Figures may not add due to rounding

Including investments to date, it is expected that by 2028/29, a cumulative investment of achieving the energy savings will have been $1.6 billion dollars, $1.3 billion of the costs are funded through the Corporation's Power Smart electricity budget, $232 million from the Power Smart natural gas budget, $37 million from the Affordable Energy Fund, and $27 million from the Furnace Replacement budget for targeting furnace replacement.

Total Internal DSM Budget
1989/90 - 2028/29
(Millions 2014 $)

	Expenditures to date 1989/90 - 2013/14	15 yr planning horizon 2014/15 - 2028/29	Total 1989/90 - 2028/29
Electric DSM			
Electric Power Smart	448.7	818.2	1,267.0
Affordable Energy Fund	11.8	3.0	14.8
Annual Electric Budget	$460.5	$821.3	$1,281.8
Natural Gas DSM			
Natural Gas Power Smart	102.1	129.9	232.0
Affordable Energy Fund	13.7	7.2	20.9
Furnace Replacement Budget	7.8	19.3	27.1
Annual Natural Gas Budget	$123.6	$156.5	$280.1
Oil and Propane DSM			
Affordable Energy Fund	0.5	0.3	0.7
Annual Oil and Propane Budget	$0.5	$0.3	$0.7
Cumulative Investment 1989/90 - 2028/29	$584.6	$978.0	$1,562.6

Note: Figures may not add due to rounding

Manitoba Hydro
Consolidated Capital Expenditure Forecast (CEF14)
For the Years 2014/15 – 2033/34

CAPITAL EXPENDITURE FORECAST (CEF14)
(in millions of dollars)

	Total Project Cost	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	10 Year Total
Major New Generation & Transmission												
Wuskwatim - Generation	1 448.6	40.5	12.9	14.7	-	-	-	-	-	-	-	68.1
Keeyask - Generation	6 496.1	776.3	676.3	962.2	1 351.3	927.9	616.5	208.6	55.2	4.5	0.1	5 578.8
Grand Rapids Hatchery Upgrade & Expansion	23.5	1.9	4.7	9.3	6.8	-	-	-	-	-	-	22.6
Conawapa - Generation	397.0	43.4	31.4	21.0	-	-	-	-	-	-	-	95.8
Kelsey Improvements & Upgrades	340.4	14.1	9.1	12.9	1.3	-	-	-	-	-	-	37.3
Kettle Improvements & Upgrades	191.6	6.6	23.5	24.6	22.0	31.7	29.5	-	-	-	-	137.9
Pointe du Bois Spillway Replacement	574.8	114.1	51.6	3.8	-	-	-	-	-	-	-	169.5
Pointe du Bois - Transmission	114.3	15.8	17.1	13.8	4.3	-	-	-	-	-	-	50.9
Pointe du Bois Powerhouse Rebuild	1 852.2	-	-	-	-	-	-	-	-	-	-	-
Gillam Redevelopment and Expansion Program (GREP)	266.5	20.0	22.4	22.8	21.8	20.2	18.6	21.3	20.9	19.1	24.6	211.6
Bipole III - Transmission Line	1 655.4	203.5	360.5	381.0	493.8	75.3	-	-	-	-	-	1 514.0
Bipole III - Converter Stations	2 675.1	221.1	580.8	828.7	507.7	195.1	18.4	4.5	-	-	-	2 356.3
Bipole III - Collector Lines	260.2	58.4	75.5	51.7	36.7	4.7	-	-	-	-	-	227.0
Bipole III - Community Development Initiative	62.0	2.3	2.0	1.8	1.6	0.5	-	-	-	-	-	8.1
Riel 230/500kV Station	329.9	36.4	5.6	-	-	-	-	-	-	-	-	42.0
Manitoba-Minnesota Transmission Project	350.3	7.0	32.7	99.6	59.5	65.7	48.1	35.4	-	-	-	348.0
Demand Side Management	NA	51.8	59.2	76.6	83.9	93.7	78.2	72.5	60.8	50.0	49.6	676.2
Generating Station Improvements & Upgrades	NA	-	-	-	-	-	2.8	33.0	33.6	34.3	35.0	138.6
Target Adjustment (Cost Flow)	NA	(161.3)	(51.4)	(61.1)	(12.7)	116.3	71.9	50.9	25.6	8.8	0.7	(12.2)
MAJOR NEW GENERATION & TRANSMISSION TOTAL		**1 451.7**	**1 913.9**	**2 463.5**	**2 577.8**	**1 530.9**	**884.0**	**426.2**	**196.1**	**116.6**	**110.0**	**11 670.7**

2014 - 2017 Power Smart Plan
Annual Capacity Savings (MW)

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	MW at Generation 2028/29	
RESIDENTIAL																	
Incentive Based																	
New Home Program	0.0	0.0	0.0	0.3	1.0	2.2	4.3	5.4	6.4	7.3	8.3	9.2	10.2	11.1	12.0	13.7	
Home Insulation Program	2.6	4.8	6.9	8.7	10.3	11.7	12.9	13.9	14.8	15.5	16.0	16.5	16.8	16.8	16.8	19.1	
Water and Energy Saver Program	0.6	1.2	1.7	1.9	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.8	
Affordable Energy Program	1.8	3.6	5.3	7.0	8.6	10.2	11.8	13.1	14.3	15.4	16.3	16.5	16.6	16.1	15.6	17.8	
Refrigerator Retirement Program	1.2	2.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.5	1.5	0.7	0.4	0.2	0.2	
Residential LED Lighting Program	0.5	0.6	0.9	1.2	1.6	1.7	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.6	
Community Geothermal Program	1.1	2.6	4.4	7.0	9.1	10.9	12.1	13.3	14.5	15.7	15.7	15.7	15.7	15.7	15.7	17.9	
Subtotal	7.8	15.3	22.7	29.6	36.2	42.6	48.7	53.0	57.3	61.3	62.7	63.3	63.8	64.0	64.1	73.1	10%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart Residential Loan	0.3	0.5	0.8	1.0	1.3	1.6	1.8	2.1	2.3	2.6	2.9	3.1	3.4	3.7	3.9	4.5	
Power Smart PAYS Financing	0.1	0.2	0.3	0.5	0.6	0.7	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.4	1.6	
Residential Earth Power Loan	0.3	0.6	0.9	1.2	1.6	1.9	2.4	2.8	3.3	3.8	4.3	4.3	4.3	4.3	4.3	4.9	
Subtotal	0.6	1.3	2.0	2.7	3.4	4.2	4.9	5.7	6.5	7.4	8.3	8.6	9.0	9.3	9.7	11.0	1%
COMMERCIAL																	
Incentive Based																	
Commercial Lighting Program	9.1	18.7	27.7	36.0	44.6	49.4	54.0	58.3	62.3	66.1	67.7	68.9	69.0	69.9	70.7	80.6	
LED Roadway Lighting Conversion Program	0.7	1.5	2.1	2.9	3.8	4.6	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.9	
Commercial Building Envelope - Windows Program	1.0	1.9	2.7	3.5	4.3	5.1	5.9	6.7	7.6	8.4	9.2	10.1	10.9	11.7	12.6	14.3	
Commercial Building Envelope - Insulation Program	1.0	1.9	2.7	3.4	4.2	4.9	5.7	6.4	7.2	8.0	8.7	9.5	10.2	11.0	11.8	13.4	
Commercial Geothermal Program	0.4	1.3	2.3	3.5	4.9	6.3	7.8	9.6	11.4	13.3	15.3	17.4	19.6	21.9	24.3	27.7	
Commercial HVAC Program - Chillers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Commercial HVAC Program - CO2 Sensors	0.1	0.1	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.3	1.3	1.3	1.3	1.3	1.3	1.4	
Commercial Custom Measures Program	0.2	0.5	0.8	1.1	1.4	1.8	2.1	2.5	2.9	3.3	3.7	4.1	4.6	5.1	5.7	6.5	
Commercial Building Optimization Program	0.1	0.2	0.4	0.5	0.7	0.9	1.2	1.4	1.7	2.0	2.2	2.4	2.5	2.7	2.9	3.3	
New Buildings Program	4.1	9.5	16.3	16.3	16.6	17.4	18.5	19.9	21.7	21.7	21.7	21.7	21.7	21.7	21.7	24.8	
Commercial Refrigeration Program	1.2	1.8	2.1	2.5	2.8	3.2	3.6	4.0	4.4	4.9	5.4	5.8	6.2	6.6	7.0	8.0	
Commercial Kitchen Appliance Program	0.6	1.5	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.8	2.8	2.8	2.8	2.7	3.1	
Network Energy Management Program	0.2	0.5	0.8	1.3	2.0	2.0	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.0	
Internal Retrofit Program	0.2	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Power Smart Shops	0.0	0.0	0.2	0.4	0.6	0.9	0.9	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.3	
Subtotal	18.8	39.7	61.4	75.0	89.6	100.3	110.8	121.1	131.6	140.2	146.6	152.6	157.5	163.4	169.3	193.0	26%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart for Business PAYS Financing	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	
Subtotal	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0%
INDUSTRIAL																	
Performance Optimization Program	2.4	5.3	8.6	12.2	16.3	20.4	24.4	28.5	32.6	36.7	40.7	44.8	48.9	53.0	57.0	62.7	
Subtotal	2.4	5.3	8.6	12.2	16.3	20.4	24.4	28.5	32.6	36.7	40.7	44.8	48.9	53.0	57.0	62.7	9%
ENERGY EFFICIENCY SUBTOTAL	29.7	61.6	94.8	119.8	145.7	167.7	189.1	208.7	228.4	246.0	258.7	269.8	279.7	290.1	300.6	340.4	46%
LOAD MANAGEMENT																	
Curtailable Rate Program	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	160.9	
LOAD MANAGEMENT SUBTOTAL	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	146.2	160.9	23%
LOAD DISPLACEMENT & ALTERNATIVE ENERGY																	
Bioenergy Optimization Program	1.5	3.1	4.3	5.5	6.3	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.8	
Customer Sited Load Displacement	21.9	34.1	50.9	61.9	77.9	81.9	85.9	85.9	85.9	85.9	85.9	85.9	85.9	85.9	85.9	94.5	
LOAD DISPLACEMENT & ALTERNATIVE ENERGY SUBTOTAL	23.4	37.2	55.1	67.3	84.2	89.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	102.3	14%
CONSERVATION RATES																	
Conservation Rates - Residential	0.0	0.0	0.0	0.0	3.1	10.9	12.0	13.1	14.5	15.9	16.1	16.3	16.5	16.7	16.9	19.2	
Conservation Rates - Commercial	0.0	0.0	0.0	0.0	0.0	5.2	11.4	15.4	16.6	17.8	19.0	20.3	21.6	23.0	24.3	27.8	
CONSERVATION RATES SUBTOTAL	0.0	0.0	0.0	0.0	3.1	16.1	23.3	28.5	31.0	33.7	35.1	36.6	38.1	39.7	41.2	47.0	6%
FUEL CHOICE																	
Fuel Choice	0.0	0.0	0.0	13.3	26.7	40.0	53.4	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	76.1	
FUEL CHOICE SUBTOTAL	0.0	0.0	0.0	13.3	26.7	40.0	53.4	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	76.1	10%
Impacts (at meter)	199	245	296	347	406	459	505	543	565	586	600	612	624	636	648		100%
Impacts (at generation)	220	272	329	386	453	513	565	609	634	657	673	687	700	713	727		
Codes, Standards & Regulations (at meter)	19	42	71	101	129	154	179	203	226	249	271	294	316	337	359		
Codes, Standards & Regulations (at generation)	22	48	81	115	147	176	204	231	258	284	309	335	360	385	409		
POWER SMART 2014 to 2028 Impacts (at meter)	219	287	367	448	535	613	684	746	791	834	871	906	939	973	1,007		
POWER SMART 2014 to 2028 Impacts (at generation)	243	319	411	502	600	689	769	840	891	940	982	1,022	1,059	1,098	1,136		
POWER SMART SAVINGS TO DATE																	
Incentive Based Program Impacts (at meter)	240	240	240	240	240	240	240	240	239	239	239	238	238	237	237		
Incentive Based Program Impacts (at generation)	270	270	270	270	270	270	270	270	269	269	269	268	268	267	267		
Customer Service Initiatives Program Impacts (at meter)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10		
Customer Service Initiatives Program Impacts (at generation)	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11		
Discontinued Programs (at meter)	46	46	42	38	50	50	50	50	50	50	50	50	50	50	50		
Discontinued Programs (at generation)	52	52	48	43	56	56	56	56	56	56	56	56	56	56	56		
Impacts of Codes & Standards (at meter)	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145		
Impacts of Codes & Standards (at generation)	166	166	166	166	166	166	166	166	166	166	166	166	166	166	166		
TOTAL MW (at meter)	660	728	805	881	979	1,058	1,129	1,191	1,235	1,279	1,315	1,349	1,382	1,415	1,448		
TOTAL MW (at generation)	741	818	905	991	1,103	1,192	1,272	1,343	1,393	1,442	1,484	1,523	1,560	1,597	1,635		

Note: May not add up due to rounding.

2014 - 2017 Power Smart Plan
Annual Energy Savings (GW.h)

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	GW.h at Generation 2028/29	
RESIDENTIAL																	
Incentive Based																	
New Home Program	0.0	0.0	0.0	0.9	3.0	7.0	14.0	17.5	20.8	24.1	27.3	30.5	33.7	36.8	39.9	45.5	
Home Insulation Program	4.7	9.0	12.8	16.1	19.1	21.7	23.9	25.8	27.4	28.8	29.8	30.6	31.2	31.2	31.2	35.6	
Water and Energy Saver Program	2.9	5.8	8.7	9.8	10.9	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	14.0	
Affordable Energy Program	3.4	6.7	9.8	13.2	16.5	19.7	22.8	25.4	27.8	30.2	32.0	32.6	32.9	32.0	31.1	35.5	
Refrigerator Retirement Program	11.1	22.3	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	22.7	13.8	6.0	3.7	1.5	1.7	
Residential LED Lighting Program	2.2	2.5	3.9	5.2	6.6	7.1	7.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	5.9	6.8	
Community Geothermal Program	4.0	9.8	16.5	26.5	34.4	41.4	46.0	50.6	55.2	59.7	59.7	59.7	59.7	59.7	59.7	68.1	
Subtotal	28.5	56.1	83.3	103.3	122.2	140.8	157.7	169.3	181.2	192.8	190.1	185.8	182.0	182.0	181.7	207.1	7%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart Residential Loan	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.5	
Power Smart PAYS Financing	0.4	0.8	1.2	1.6	2.0	2.4	2.7	3.0	3.4	3.7	4.0	4.3	4.6	4.9	5.2	6.0	
Residential Earth Power Loan	1.1	2.3	3.6	5.0	6.5	8.1	9.8	11.7	13.7	15.8	18.0	18.0	18.0	18.0	18.0	20.6	
Subtotal	2.0	4.1	6.3	8.6	11.0	13.5	16.0	18.7	21.5	24.5	27.5	28.3	29.1	29.9	30.7	35.0	1%
COMMERCIAL																	
Incentive Based																	
Commercial Lighting Program	32.8	67.2	99.4	129.5	160.3	177.7	194.1	209.7	224.1	237.8	243.6	247.7	248.3	251.3	254.3	289.9	
LED Roadway Lighting Conversion Program	5.1	10.0	14.4	19.7	25.9	31.6	35.3	35.3	35.3	35.3	35.3	35.3	35.3	35.3	35.3	40.3	
Commercial Building Envelope - Windows Program	2.5	4.8	6.8	8.8	10.9	12.9	15.0	17.0	19.1	21.2	23.3	25.5	27.6	29.7	31.8	36.3	
Commercial Building Envelope - Insulation Program	2.4	4.9	6.8	8.7	10.6	12.6	14.5	16.5	18.4	20.3	22.3	24.2	26.2	28.1	30.1	34.3	
Commercial Geothermal Program	1.6	5.3	9.8	14.8	20.4	26.4	32.8	40.0	47.6	55.6	64.0	72.8	82.0	91.6	101.6	115.8	
Commercial HVAC Program - Chillers	2.2	3.5	4.9	5.3	5.8	6.3	6.7	7.2	7.4	7.6	7.8	7.9	8.1	8.3	8.4	9.6	
Commercial HVAC Program - CO2 Sensors	0.1	0.2	0.3	0.5	0.6	0.8	1.0	1.3	1.5	1.8	1.8	1.8	1.8	1.7	1.7	2.0	
Commercial Custom Measures Program	0.9	1.9	2.9	4.1	5.3	6.6	7.9	9.3	10.8	12.3	13.9	15.6	17.3	19.4	21.6	24.6	
Commercial Building Optimization Program	0.5	1.0	1.8	2.6	3.5	4.6	5.8	7.1	8.4	9.8	10.7	11.8	12.6	13.5	14.4	16.4	
New Buildings Program	9.2	21.4	36.8	36.8	37.6	39.2	41.7	45.0	49.1	49.1	49.1	49.1	49.1	49.1	49.1	55.9	
Commercial Refrigeration Program	10.3	15.7	18.7	21.8	25.0	28.3	31.7	35.4	39.2	43.2	47.3	51.5	54.8	58.4	62.1	70.8	
Commercial Kitchen Appliance Program	0.6	1.3	2.3	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.6	2.5	2.4	2.2	2.5	
Network Energy Management Program	0.4	1.2	2.2	3.6	5.2	5.2	5.1	5.0	4.9	4.7	4.7	4.7	4.7	4.7	4.7	5.4	
Internal Retrofit Program	1.1	2.1	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.7	2.7	2.7	2.7	2.7	3.1	
Power Smart Shops	0.0	0.2	0.7	1.4	2.2	3.1	3.3	3.5	3.6	3.8	3.9	3.9	3.9	3.9	3.9	4.5	
Subtotal	69.6	140.7	210.7	263.0	318.9	360.7	400.5	437.7	474.9	508.0	533.1	557.1	576.9	600.1	624.0	711.3	26%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart for Business PAYS Financing	0.2	0.5	0.7	0.8	0.9	1.1	1.2	1.3	1.5	1.6	1.7	1.9	2.0	2.1	2.3	2.6	
Subtotal	0.2	0.5	0.7	0.8	0.9	1.1	1.2	1.3	1.5	1.6	1.7	1.9	2.0	2.1	2.3	2.6	0%
INDUSTRIAL																	
Performance Optimization Program	15.6	33.8	54.5	77.9	103.9	129.8	155.8	181.7	207.7	233.7	259.6	285.6	311.6	337.5	363.5	399.8	
Subtotal	15.6	33.8	54.5	77.9	103.9	129.8	155.8	181.7	207.7	233.7	259.6	285.6	311.6	337.5	363.5	399.8	15%
ENERGY EFFICIENCY SUBTOTAL	115.9	235.1	355.6	453.6	556.9	645.8	731.2	808.8	886.9	960.5	1,012.0	1,058.6	1,101.6	1,151.7	1,202.2	1,356.0	49%
LOAD MANAGEMENT																	
Curtailable Rate Program	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
LOAD MANAGEMENT SUBTOTAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0%
LOAD DISPLACEMENT & ALTERNATIVE ENERGY																	
Bioenergy Optimization Program	13.0	26.9	37.3	47.8	55.1	61.9	61.9	61.9	61.9	61.9	61.9	61.9	61.9	61.9	61.9	68.1	
Customer Sited Load Displacement	125.0	173.7	305.1	391.3	517.5	549.0	580.6	580.6	580.6	580.6	580.6	580.6	580.6	580.6	580.6	638.6	
LOAD DISPLACEMENT & ALTERNATIVE ENERGY SUBTOTAL	138.0	200.5	342.4	439.2	572.6	610.9	642.5	642.5	642.5	642.5	642.5	642.5	642.5	642.5	642.5	706.7	26%
CONSERVATION RATES																	
Conservation Rates - Residential	0.0	0.0	0.0	0.0	25.8	90.2	99.2	109.1	120.0	132.0	133.6	135.2	136.8	138.4	140.1	159.7	
Conservation Rates - Commercial	0.0	0.0	0.0	0.0	0.0	43.2	94.2	127.5	137.5	147.7	158.1	168.7	179.6	190.7	202.1	230.4	
CONSERVATION RATES SUBTOTAL	0.0	0.0	0.0	0.0	25.8	133.4	193.4	236.6	257.5	279.7	291.7	303.9	316.4	329.1	342.1	390.0	14%
FUEL CHOICE																	
Fuel Choice	0.0	0.0	0.0	50.1	100.3	150.4	200.6	250.7	250.7	250.7	250.7	250.7	250.7	250.7	250.7	285.8	
FUEL CHOICE SUBTOTAL	0.0	0.0	0.0	50.1	100.3	150.4	200.6	250.7	250.7	250.7	250.7	250.7	250.7	250.7	250.7	285.8	10%
Impacts (at meter)	254	436	698	943	1,256	1,541	1,768	1,939	2,038	2,133	2,197	2,256	2,311	2,374	2,438		100%
Impacts (at generation)	283	487	780	1,054	1,404	1,727	1,983	2,177	2,289	2,397	2,468	2,534	2,597	2,667	2,739		
Codes, Standards & Regulations (at meter)	70	152	249	343	426	504	577	646	713	778	842	906	967	1,027	1,087		
Codes, Standards & Regulations (at generation)	79	173	284	391	486	574	658	736	813	887	960	1,033	1,103	1,171	1,240		
POWER SMART 2014 to 2028 Impacts (at meter)	324	587	947	1,286	1,682	2,044	2,344	2,585	2,750	2,912	3,039	3,162	3,278	3,402	3,525		
POWER SMART 2014 to 2028 Impacts (at generation)	363	660	1,064	1,445	1,890	2,301	2,641	2,913	3,101	3,284	3,428	3,567	3,699	3,839	3,978		
POWER SMART SAVINGS TO DATE																	
Incentive Based Program Impacts (at meter)	1,120	1,120	1,120	1,120	1,120	1,120	1,119	1,119	1,108	1,108	1,108	1,108	1,099	1,088	1,088		
Incentive Based Program Impacts (at generation)	1,258	1,258	1,258	1,258	1,258	1,258	1,257	1,257	1,245	1,245	1,245	1,245	1,234	1,221	1,221		
Customer Service Initiatives Program Impacts (at meter)	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25		
Customer Service Initiatives Program Impacts (at generation)	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29		
Discontinued Programs (at meter)	296	296	276	249	320	320	320	320	320	320	320	320	320	320	320		
Discontinued Programs (at generation)	336	335	313	282	362	362	362	362	362	363	363	363	363	363	363		
Impacts of Codes & Standards (at meter)	610	610	610	610	610	610	610	610	610	610	610	610	610	610	610		
Impacts of Codes & Standards (at generation)	694	694	694	694	694	694	694	694	694	694	694	694	694	694	694		
TOTAL GW.h (at meter)	2,375	2,639	2,978	3,290	3,757	4,119	4,418	4,658	4,813	4,975	5,103	5,225	5,332	5,444	5,568		
TOTAL GW.h (at generation)	2,679	2,977	3,358	3,709	4,234	4,644	4,983	5,256	5,432	5,615	5,759	5,898	6,019	6,146	6,286		

Note: May not add up due to rounding.

2014 - 2017 Power Smart Plan
Annual Utility Costs
(000's in 2014 $)

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	Cumulative Total	
RESIDENTIAL																	
Incentive Based																	
New Home Program	$0	$0	$0	$448	$496	$700	$626	$0	$0	$0	$0	$0	$0	$0	$0	$2,270	
Home Insulation Program	$2,148	$2,032	$1,900	$1,703	$1,536	$1,405	$1,167	$1,036	$953	$784	$643	$573	$511	$167	$0	$16,558	
Water and Energy Saver Program	$772	$772	$772	$780	$899	$1,020	$0	$0	$0	$0	$0	$0	$0	$0	$0	$5,015	
Affordable Energy Program	$347	$333	$1,008	$1,516	$1,476	$1,444	$1,411	$1,388	$1,367	$1,351	$1,338	$827	$711	$0	$0	$14,516	
Refrigerator Retirement Program	$2,329	$2,289	$1,951	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$6,570	
Residential LED Lighting Program	$1,025	$229	$219	$209	$209	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,893	
Community Geothermal Program	$1,567	$2,017	$2,354	$3,613	$2,703	$2,376	$1,612	$1,612	$1,612	$1,611	$0	$0	$0	$0	$0	$21,076	
Subtotal	$8,187	$7,672	$8,205	$8,269	$7,319	$6,945	$4,816	$4,036	$3,932	$3,746	$1,981	$1,399	$1,222	$167	$0	$67,898	9%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart Residential Loan	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Power Smart PAYS Financing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Residential Earth Power Loan	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Subtotal	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0%
COMMERCIAL																	
Incentive Based																	
Commercial Lighting Program	$8,614	$8,733	$8,356	$8,076	$8,213	$5,828	$5,670	$5,519	$5,331	$5,170	$4,979	$4,655	$4,385	$4,393	$4,404	$92,325	
LED Roadway Lighting Conversion Program	$6,199	$6,062	$5,162	$6,052	$6,788	$6,151	$4,006	$0	$0	$0	$0	$0	$0	$0	$0	$40,419	
Commercial Building Envelope - Windows Program	$950	$857	$752	$763	$763	$763	$763	$768	$768	$768	$777	$777	$777	$777	$777	$11,803	
Commercial Building Envelope - Insulation Program	$986	$987	$812	$812	$812	$812	$816	$816	$816	$816	$816	$816	$816	$816	$816	$12,564	
Commercial Geothermal Program	$970	$2,034	$2,351	$2,532	$2,748	$2,896	$3,037	$3,354	$3,508	$3,661	$3,799	$3,949	$4,103	$4,256	$4,410	$47,609	
Commercial HVAC Program - Chillers	$302	$308	$342	$191	$192	$195	$199	$204	$5	$5	$5	$5	$5	$5	$5	$1,969	
Commercial HVAC Program - CO2 Sensors	$35	$41	$43	$45	$47	$48	$50	$52	$53	$55	$2	$2	$2	$2	$2	$476	
Commercial Custom Measures Program	$427	$479	$489	$557	$594	$604	$640	$650	$687	$718	$755	$765	$802	$963	$1,010	$10,139	
Commercial Building Optimization Program	$252	$222	$241	$241	$258	$277	$277	$287	$287	$296	$296	$306	$306	$316	$332	$4,194	
New Buildings Program	$2,546	$3,091	$3,525	$459	$803	$1,090	$1,434	$1,721	$2,009	$515	$0	$0	$0	$0	$0	$17,194	
Commercial Refrigeration Program	$1,698	$1,531	$344	$362	$370	$381	$400	$419	$438	$457	$465	$478	$460	$479	$499	$8,781	
Commercial Kitchen Appliance Program	$50	$62	$75	$48	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$235	
Network Energy Management Program	$79	$111	$143	$175	$207	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$715	
Internal Retrofit Program	$821	$886	$803	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,511	
Power Smart Shops	$0	$120	$191	$205	$218	$228	$122	$123	$117	$112	$108	$0	$0	$0	$0	$1,546	
Subtotal	$23,928	$25,523	$23,630	$20,518	$22,012	$19,273	$17,414	$13,912	$14,019	$12,575	$12,003	$11,753	$11,655	$12,008	$12,256	$252,479	35%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart for Business PAYS Financing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Subtotal	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0%
INDUSTRIAL																	
Performance Optimization Program	$5,902	$6,916	$7,930	$8,944	$9,958	$10,379	$10,379	$10,379	$10,379	$10,379	$10,379	$10,379	$10,379	$10,379	$10,379	$143,443	
Subtotal	$5,902	$6,916	$7,930	$8,944	$9,958	$10,379	$10,379	$10,379	$10,379	$10,379	$10,379	$10,379	$10,379	$10,379	$10,379	$143,443	20%
ENERGY EFFICIENCY SUBTOTAL	$38,017	$40,112	$39,764	$37,731	$39,290	$36,597	$32,610	$28,328	$28,330	$26,701	$24,363	$23,531	$23,256	$22,554	$22,635	$463,820	63%
LOAD MANAGEMENT																	
Curtailable Rate Program	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$89,261	
LOAD MANAGEMENT SUBTOTAL	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$5,951	$89,261	12%
LOAD DISPLACEMENT & ALTERNATIVE ENERGY																	
Bioenergy Optimization Program	$2,045	$2,217	$1,767	$1,691	$1,260	$1,188	$0	$0	$0	$0	$0	$0	$0	$0	$0	$10,168	
Customer Sited Load Displacement	$1,560	$5,168	$21,400	$14,653	$20,572	$6,300	$6,300	$1,550	$1,530	$1,510	$775	$755	$755	$755	$755	$84,338	
LOAD DISPLACEMENT & ALTERNATIVE ENERGY SUBTOTAL	$3,605	$7,385	$23,167	$16,344	$21,832	$7,489	$6,300	$1,550	$1,530	$1,510	$775	$755	$755	$755	$755	$94,506	13%
CONSERVATION RATES																	
Conservation Rates - Residential	$0	$0	$0	$2,199	$2,040	$2,805	$1,573	$1,000	$1,000	$1,000	$1,000	$750	$750	$750	$750	$15,618	
Conservation Rates - Commercial	$0	$0	$0	$1,466	$2,040	$2,805	$2,805	$1,101	$775	$805	$1,353	$2,370	$1,000	$952	$972	$18,444	
CONSERVATION RATES SUBTOTAL	$0	$0	$0	$3,664	$4,081	$5,611	$4,379	$2,101	$1,775	$1,805	$2,353	$3,120	$1,750	$1,702	$1,722	$34,062	5%
FUEL CHOICE																	
Fuel Choice	$0	$0	$0	$9,902	$9,882	$9,882	$9,882	$9,882	$0	$0	$0	$0	$0	$0	$0	$49,428	
FUEL CHOICE SUBTOTAL	$0	$0	$0	$9,902	$9,882	$9,882	$9,882	$9,882	$0	$0	$0	$0	$0	$0	$0	$49,428	7%
Subtotal of Programs	$47,572	$53,447	$68,882	$73,592	$81,034	$65,529	$59,121	$47,810	$37,587	$35,966	$33,442	$33,357	$31,712	$30,962	$31,063	$731,078	100%
Program Support	$4,282	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$64,120	
Contingency	$400	$800	$850	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$23,050	
Total Utility Costs (2014 to 2028)	$52,254	$58,522	$74,006	$79,367	$86,809	$71,303	$64,895	$53,585	$43,361	$42,240	$39,716	$39,631	$37,986	$37,236	$37,337	$818,248	
Total Committed to Date																$448,717	
TOTAL UTILITY COSTS (1989 to 2028)	$52,254	$58,522	$74,006	$79,367	$86,809	$71,303	$64,895	$53,585	$43,361	$42,240	$39,716	$39,631	$37,986	$37,236	$37,337	$1,266,965	

Note: May not add up due to rounding.

2014 - 2017 Power Smart Plan
Annual Administration Costs
(000's in 2014 $)

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	Cumulative Total	
RESIDENTIAL																	
Incentive Based																	
New Home Program	$0	$0	$0	$448	$496	$700	$626	$0	$0	$0	$0	$0	$0	$0	$0	$2,270	
Home Insulation Program	$972	$979	$962	$871	$803	$766	$613	$563	$554	$456	$379	$369	$362	$167	$0	$8,817	
Water and Energy Saver Program	$632	$632	$632	$50	$50	$50	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,047	
Affordable Energy Program	$112	$108	$791	$979	$959	$944	$927	$916	$904	$896	$891	$512	$428	$0	$0	$9,367	
Refrigerator Retirement Program	$1,779	$1,739	$1,501	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$5,020	
Residential LED Lighting Program	$390	$229	$219	$209	$209	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,258	
Community Geothermal Program	$275	$187	$202	$358	$94	$89	$79	$79	$79	$79	$0	$0	$0	$0	$0	$1,521	
Subtotal	$4,160	$3,875	$4,308	$2,915	$2,611	$2,549	$2,245	$1,559	$1,538	$1,431	$1,270	$881	$790	$167	$0	$30,300	14%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart Residential Loan	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Power Smart PAYS Financing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Residential Earth Power Loan	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Subtotal	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0%
COMMERCIAL																	
Incentive Based																	
Commercial Lighting Program	$2,225	$2,225	$2,225	$2,225	$2,225	$2,225	$2,225	$2,225	$2,225	$2,225	$2,225	$2,225	$2,225	$2,225	$2,225	$33,379	
LED Roadway Lighting Conversion Program	$420	$420	$420	$420	$420	$420	$420	$0	$0	$0	$0	$0	$0	$0	$0	$2,938	
Commercial Building Envelope - Windows Program	$408	$408	$408	$408	$408	$408	$408	$408	$408	$408	$408	$408	$408	$408	$408	$6,119	
Commercial Building Envelope - Insulation Program	$426	$426	$426	$426	$426	$426	$426	$426	$426	$426	$426	$426	$426	$426	$426	$6,394	
Commercial Geothermal Program	$304	$576	$582	$585	$589	$596	$595	$601	$604	$606	$593	$592	$595	$598	$601	$8,616	
Commercial HVAC Program - Chillers	$79	$79	$79	$79	$79	$79	$79	$79	$5	$5	$5	$5	$5	$5	$5	$669	
Commercial HVAC Program - CO2 Sensors	$32	$32	$32	$32	$32	$32	$32	$32	$32	$32	$2	$2	$2	$2	$2	$326	
Commercial Custom Measures Program	$241	$283	$283	$327	$349	$349	$371	$371	$393	$415	$437	$437	$459	$547	$569	$5,827	
Commercial Building Optimization Program	$206	$176	$176	$176	$176	$176	$176	$176	$176	$176	$176	$176	$176	$176	$176	$2,669	
New Buildings Program	$821	$791	$650	$459	$515	$515	$571	$571	$571	$515	$0	$0	$0	$0	$0	$5,982	
Commercial Refrigeration Program	$1,270	$1,270	$170	$170	$170	$170	$170	$170	$170	$170	$170	$170	$170	$170	$170	$4,744	
Commercial Kitchen Appliance Program	$10	$10	$10	$8	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$39	
Network Energy Management Program	$31	$31	$31	$31	$31	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$155	
Internal Retrofit Program	$821	$886	$803	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,511	
Power Smart Shops	$0	$83	$67	$67	$67	$67	$67	$67	$67	$67	$67	$0	$0	$0	$0	$683	
Subtotal	$7,293	$7,696	$6,361	$5,412	$5,487	$5,462	$5,539	$5,125	$5,076	$5,045	$4,508	$4,441	$4,466	$4,556	$4,581	$81,051	38%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart for Business PAYS Financing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Subtotal	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0%
INDUSTRIAL																	
Performance Optimization Program	$2,342	$2,763	$3,184	$3,605	$4,026	$4,447	$4,447	$4,447	$4,447	$4,447	$4,447	$4,447	$4,447	$4,447	$4,447	$60,388	
Subtotal	$2,342	$2,763	$3,184	$3,605	$4,026	$4,447	$4,447	$4,447	$4,447	$4,447	$4,447	$4,447	$4,447	$4,447	$4,447	$60,388	29%
ENERGY EFFICIENCY SUBTOTAL	$13,796	$14,335	$13,854	$11,932	$12,124	$12,458	$12,231	$11,131	$11,061	$10,923	$10,225	$9,768	$9,703	$9,170	$9,028	$171,739	81%
LOAD MANAGEMENT																	
Curtailable Rate Program	$4	$4	$4	$4	$4	$4	$4	$4	$4	$4	$4	$4	$4	$4	$4	$60	
LOAD MANAGEMENT SUBTOTAL	$4	$4	$4	$4	$4	$4	$4	$4	$4	$4	$4	$4	$4	$4	$4	$60	0%
LOAD DISPLACEMENT & ALTERNATIVE ENERGY																	
Bioenergy Optimization Program	$233	$268	$238	$250	$219	$206	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,414	
Customer Sited Load Displacement	$60	$120	$190	$210	$150	$70	$70	$50	$30	$10	$25	$5	$5	$5	$5	$1,005	
LOAD DISPLACEMENT & ALTERNATIVE ENERGY SUBTOTAL	$293	$388	$428	$460	$369	$276	$70	$50	$30	$10	$25	$5	$5	$5	$5	$2,419	1%
CONSERVATION RATES																	
Conservation Rates - Residential	$0	$0	$0	$2,199	$2,040	$2,805	$1,573	$1,000	$1,000	$1,000	$1,000	$750	$750	$750	$750	$15,618	
Conservation Rates - Commercial	$0	$0	$0	$1,466	$2,040	$2,805	$2,805	$1,101	$775	$805	$1,353	$2,370	$1,000	$952	$972	$18,444	
CONSERVATION RATES SUBTOTAL	$0	$0	$0	$3,664	$4,081	$5,611	$4,379	$2,101	$1,775	$1,805	$2,353	$3,120	$1,750	$1,702	$1,722	$34,062	16%
FUEL CHOICE																	
Fuel Choice	$0	$0	$0	$668	$647	$647	$647	$647	$0	$0	$0	$0	$0	$0	$0	$3,258	
FUEL CHOICE SUBTOTAL	$0	$0	$0	$668	$647	$647	$647	$647	$0	$0	$0	$0	$0	$0	$0	$3,258	2%
Subtotal of Programs	$14,093	$14,727	$14,285	$16,729	$17,225	$18,996	$17,331	$13,933	$12,871	$12,741	$12,608	$12,897	$11,462	$10,881	$10,759	$211,538	100%
Program Support	$4,282	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$4,274	$64,120	
Contingency	$400	$800	$850	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$23,050	
Total Adminstration Costs (2014 to 2028)	$18,774	$19,801	$19,409	$22,503	$23,000	$24,771	$23,105	$19,707	$18,645	$19,016	$18,882	$19,171	$17,736	$17,155	$17,033	$298,708	
Total Committed to Date																$189,749	
TOTAL ADMINISTRATION COSTS (1989 to 2028)	$18,774	$19,801	$19,409	$22,503	$23,000	$24,771	$23,105	$19,707	$18,645	$19,016	$18,882	$19,171	$17,736	$17,155	$17,033	$488,457	

Note: May not add up due to rounding.

2014 - 2017 Power Smart Plan
Annual Incentive Costs
(000's in 2014 $)

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	Cumulative Total	
RESIDENTIAL																	
Incentive Based																	
New Home Program	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Home Insulation Program	$1,175	$1,053	$938	$832	$733	$640	$554	$473	$399	$329	$264	$204	$149	$0	$0	$7,741	
Water and Energy Saver Program	$140	$140	$140	$730	$849	$970	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,968	
Affordable Energy Program	$235	$225	$217	$537	$517	$500	$485	$472	$462	$454	$447	$315	$283	$0	$0	$5,149	
Refrigerator Retirement Program	$550	$550	$450	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,550	
Residential LED Lighting Program	$635	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$635	
Community Geothermal Program	$1,292	$1,830	$2,153	$3,255	$2,609	$2,286	$1,533	$1,533	$1,533	$1,532	$0	$0	$0	$0	$0	$19,555	
Subtotal	$4,027	$3,797	$3,897	$5,354	$4,708	$4,396	$2,571	$2,478	$2,394	$2,315	$711	$519	$432	$0	$0	$37,598	7%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart Residential Loan	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Power Smart PAYS Financing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Residential Earth Power Loan	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Subtotal	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0%
COMMERCIAL																	
Incentive Based																	
Commercial Lighting Program	$6,389	$6,507	$6,131	$5,851	$5,988	$3,602	$3,444	$3,293	$3,105	$2,945	$2,754	$2,430	$2,160	$2,168	$2,179	$58,947	
LED Roadway Lighting Conversion Program	$5,779	$5,642	$4,742	$5,632	$6,368	$5,731	$3,587	$0	$0	$0	$0	$0	$0	$0	$0	$37,481	
Commercial Building Envelope - Windows Program	$542	$449	$344	$355	$355	$355	$355	$360	$360	$360	$369	$369	$369	$369	$370	$5,684	
Commercial Building Envelope - Insulation Program	$560	$561	$386	$385	$385	$385	$390	$390	$390	$390	$390	$390	$390	$390	$390	$6,170	
Commercial Geothermal Program	$666	$1,459	$1,770	$1,946	$2,159	$2,300	$2,442	$2,753	$2,904	$3,055	$3,206	$3,357	$3,508	$3,659	$3,810	$38,993	
Commercial HVAC Program - Chillers	$223	$229	$263	$112	$113	$116	$120	$125	$0	$0	$0	$0	$0	$0	$0	$1,300	
Commercial HVAC Program - CO2 Sensors	$3	$9	$11	$13	$15	$17	$18	$20	$22	$23	$0	$0	$0	$0	$0	$150	
Commercial Custom Measures Program	$186	$196	$206	$230	$245	$255	$269	$279	$294	$304	$318	$328	$343	$416	$441	$4,311	
Commercial Building Optimization Program	$46	$46	$65	$65	$82	$101	$101	$111	$111	$120	$120	$130	$130	$140	$157	$1,525	
New Buildings Program	$1,725	$2,300	$2,875	$0	$288	$575	$863	$1,150	$1,438	$0	$0	$0	$0	$0	$0	$11,213	
Commercial Refrigeration Program	$429	$261	$174	$193	$200	$212	$230	$249	$268	$287	$296	$308	$290	$310	$329	$4,037	
Commercial Kitchen Appliance Program	$40	$52	$64	$40	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$196	
Network Energy Management Program	$48	$80	$112	$144	$176	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$560	
Internal Retrofit Program	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Power Smart Shops	$0	$37	$125	$138	$152	$161	$56	$57	$51	$46	$41	$0	$0	$0	$0	$863	
Subtotal	$16,635	$17,827	$17,268	$15,105	$16,525	$13,810	$11,875	$8,787	$8,942	$7,530	$7,495	$7,312	$7,189	$7,452	$7,675	$171,428	33%
Customer Service Initiatives / Financial Loan Programs																	
Power Smart for Business PAYS Financing	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Subtotal	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0%
INDUSTRIAL																	
Performance Optimization Program	$3,559	$4,153	$4,746	$5,339	$5,932	$5,932	$5,932	$5,932	$5,932	$5,932	$5,932	$5,932	$5,932	$5,932	$5,932	$83,055	
Subtotal	$3,559	$4,153	$4,746	$5,339	$5,932	$5,932	$5,932	$5,932	$5,932	$5,932	$5,932	$5,932	$5,932	$5,932	$5,932	$83,055	16%
ENERGY EFFICIENCY SUBTOTAL	$24,221	$25,777	$25,911	$25,799	$27,166	$24,139	$20,379	$17,197	$17,269	$15,778	$14,138	$13,763	$13,553	$13,384	$13,607	$292,081	56%
LOAD MANAGEMENT																	
Curtailable Rate Program	$5,947	$5,947	$5,947	$5,947	$5,947	$5,947	$5,947	$5,947	$5,947	$5,947	$5,947	$5,947	$5,947	$5,947	$5,947	$89,201	
LOAD MANAGEMENT SUBTOTAL	$5,947	$5,947	$5,947	$5,947	$5,947	$5,947	$5,947	$5,947	$5,947	$5,947	$5,947	$5,947	$5,947	$5,947	$5,947	$89,201	17%
LOAD DISPLACEMENT & ALTERNATIVE ENERGY																	
Bioenergy Optimization Program	$1,812	$1,949	$1,530	$1,441	$1,041	$982	$0	$0	$0	$0	$0	$0	$0	$0	$0	$8,754	
Customer Sited Load Displacement	$1,500	$5,048	$21,210	$14,443	$20,422	$6,230	$6,230	$1,500	$1,500	$1,500	$750	$750	$750	$750	$750	$83,333	
LOAD DISPLACEMENT & ALTERNATIVE ENERGY SUBTOTAL	$3,312	$6,997	$22,740	$15,884	$21,462	$7,212	$6,230	$1,500	$1,500	$1,500	$750	$750	$750	$750	$750	$92,088	18%
CONSERVATION RATES																	
Conservation Rates - Residential	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Conservation Rates - Commercial	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
CONSERVATION RATES SUBTOTAL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0%
FUEL CHOICE																	
Fuel Choice	$0	$0	$0	$9,234	$9,234	$9,234	$9,234	$9,234	$0	$0	$0	$0	$0	$0	$0	$46,171	
FUEL CHOICE SUBTOTAL	$0	$0	$0	$9,234	$9,234	$9,234	$9,234	$9,234	$0	$0	$0	$0	$0	$0	$0	$46,171	9%
Total Incentive Costs (2014 to 2028)	$33,480	$38,720	$54,597	$56,863	$63,809	$46,532	$41,790	$33,878	$24,716	$23,225	$20,835	$20,460	$20,250	$20,081	$20,304	$519,540	100%
Total Committed to Date																$262,568	
TOTAL INCENTIVE COSTS (1989 to 2028)	$33,480	$38,720	$54,597	$56,863	$63,809	$46,532	$41,790	$33,878	$24,716	$23,225	$20,835	$20,460	$20,250	$20,081	$20,304	$782,108	

Note: May not add up due to rounding.

POWER SMART PLAN

The 2015/16 Power Smart Plan was developed through an intensive planning process and it offers programs and initiatives to pursue opportunities in all market sectors; residential, commercial, and industrial. These programs are designed based on in-depth knowledge of the technology and the market environment. An in-depth understanding is essential to ensure that the program design is adequately and effectively addressing the appropriate target market and contains the tools and strategies to address market barriers.

The following table outlines the forecasted achievements of 2015/16:

Programs	Participation Definition	2015/16 Participation	Capacity Savings (MW)	Energy Savings (GW.h)	Natural Gas Savings (million m^3)	Utility Investment (Millions, 2015$)
Service Extension Initiative for New Homes	No. of houses	0	0.0	0.0	0.0	$0.0
Home Insulation Program	No. of houses	2,286	2.2	4.3	0.7	$3.2
Water and Energy Saver Program	No. of houses	29,000	0.8	4.6	0.8	$2.1
Affordable Energy Program	No. of retrofits	2,725	2.6	6.2	1.4	$9.4
Refrigerator Retirement Program	No. of appliances	11,000	1.6	15.2	0.0	$2.3
Drain Water Heat Recovery Initiative	No. of houses	1,856	0.3	1.9	0.0	$0.6
Residential LED Lighting Program	No. of bulbs	392,724	4.0	12.7	0.0	$2.6
Community Geothermal Program	No. of systems	220	1.9	3.8	0.0	$1.5
Power Smart Residential Loan	No. of loans	5,700	0.3	0.5	0.3	$0.0
Power Smart PAYS Financing	No. of loans	336	0.1	0.3	0.0	$0.0
Residential Earth Power Loan	No. of loans	130	0.3	0.7	0.1	$0.0
Residential Programs			**14.1**	**50.1**	**3.2**	**$21.7**
Commercial Lighting Program	No. of projects	767	10.3	39.3	-	$8.9
LED Roadway Lighting Conversion Program	No. of conversions	27,863	1.6	10.8	-	$11.0
Commercial Building Envelope - Windows Program	No. of projects	225	1.0	2.1	0.3	$1.7
Commercial Building Envelope - Insulation Program	No. of projects	230	1.0	2.2	0.8	$2.1
Commercial Geothermal Program	No. of buildings	23	1.2	2.4	-	$0.5
Commercial HVAC Program - Boilers	No. of boilers	117	-	-	1.0	$1.1
Commercial HVAC Program - Chillers	No. of chillers	24	0.0	5.1	-	$0.5
Commercial HVAC Program - CO2 Sensors	No. of sensors	112	0.1	0.2	0.1	$0.2
Commercial HVAC Program - Water Heaters	No. of water heaters	25	-	-	0.0	$0.1
Commercial Custom Measures Program	No. of projects	9	0.1	0.6	0.1	$0.5
Commercial Building Optimization Program	No. of buildings	2	0.1	0.3	0.1	$0.4
New Buildings Program	No. of buildings	40	4.2	14.0	0.4	$3.8
Commercial Refrigeration Program	No. of locations	310	1.1	9.5	0.0	$0.8
Commercial Kitchen Appliance Program	No. of appliances	970	0.2	0.9	0.3	$0.3
Network Energy Management Program	No. of licenses	1,932	0.0	0.3	0.0	$0.1
Internal Retrofit Program	No. of projects	23	0.2	0.8	0.0	$0.7
Power Smart Shops	No. of projects	500	0.1	0.6	0.0	$0.3
Power Smart for Business PAYS Financing	No. of loans	33	0.0	0.0	0.0	$0.0
Commercial Programs			**21.2**	**89.1**	**3.2**	**$32.8**
Performance Optimization Program	No. of projects	96	2.1	17.0	-	$5.2
Natural Gas Optimization Program	No. of projects	12	-	-	1.0	$0.5
Indutrial Programs			**2.1**	**17.0**	**1.0**	**$5.7**
Energy Efficiency Subtotal			**37.4**	**156.2**	**7.3**	**$60.2**
Curtailable Rate Program	No. of customers	3	157.8	-	-	$6.0
Load Management			**157.8**	**-**	**0.0**	**$6.0**
Bioenergy Optimization Program	No. of projects	1	0.6	3.8	0.0	$0.8
Customer Sited Load Displacement	No. of customers	1	8.0	57.2	0.0	$5.5
Load Displacement & Alternative Energy			**8.6**	**61.0**	**0.0**	**$6.3**
Interactive Effects			-	-	-1.9	-
Program Support			-	-	-	$6.4
Power Smart Plan - 2015/16			**204**	**217**	**5.4**	**$79.0**

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Section:	Tab 5: Appendix 5.1 Tab 8: Appendix 8.2 Tab 11, Appendix 11.44	**Page No.:**	103 (j)
Topic:	Demand Side Management		
Subtopic:	Affordable Energy Fund (AEF)		
Issue:	Accounting Treatment and Projected Balances		

PREAMBLE TO IR (IF ANY):

QUESTION:

How does Manitoba Hydro determine the programs/initiatives that will be "charged" to the AEF in any given year?

RATIONALE FOR QUESTION:

To clarify the usage and future outlook for the Affordable Energy Fund.

RESPONSE:

The allocations of funds from the Affordable Energy Fund are determined in consultation with the Minister responsible for Manitoba Hydro. The allocation of the Fund by program is provided in Appendix 11.44 – DSM MFR 2.

Section:	Tab 5: Appendix 5.1 Tab 8: Appendix 8.2 Tab 11, Appendix 11.44	**Page No.:**	103 (j)
Topic:	Demand Side Management		
Subtopic:	Affordable Energy Fund (AEF)		
Issue:	Accounting Treatment and Projected Balances		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please explain and contrast the accounting treatment for Affordable Energy Fund expenditures as compared to other DSM expenditures. (i.e., are AEF expenditures charged directly to the fund as opposed to being deferred and amortized as is the case with other DSM expenditures?).

RATIONALE FOR QUESTION:

To clarify the usage and future outlook for the Affordable Energy Fund.

RESPONSE:

In 2007, Manitoba Hydro established an Affordable Energy Fund (AEF) in the initial amount of $35 million. For accounting purposes, the AEF is classified as an asset with an offsetting liability. Annual expenditures are charged directly against the liability. The offsetting asset is amortized at the same rate as the expenditures draw down the liability.

All DSM expenditures are charged to a rate regulated asset when the expenditures are incurred and are subsequently amortized on a straight-line basis over a period of 10 years.

Manitoba Hydro

Section:	Tab 5: Appendix 5.1 Tab 8: Appendix 8.2 Tab 11, Appendix 11.44	**Page No.:**	103 (j)
Topic:	Demand Side Management		
Subtopic:	Affordable Energy Fund (AEF)		
Issue:	Accounting Treatment and Projected Balances		

PREAMBLE TO IR (IF ANY):

QUESTION:

Does interest accrue each year on the remaining balance in the AEF?

RATIONALE FOR QUESTION:

To clarify the usage and future outlook for the Affordable Energy Fund.

RESPONSE:

Interest is accrued on the outstanding balance each month.

Section:	Tab 5: Appendix 5.1 Tab 8: Appendix 8.2 Tab 11, Appendix 11.44	**Page No.:**	103 (j)
Topic:	Demand Side Management		
Subtopic:	Affordable Energy Fund (AEF)		
Issue:	Accounting Treatment and Projected Balances		

PREAMBLE TO IR (IF ANY):

QUESTION:

Based on the 2014-2017 Power Smart Plan (and the associated 15-year outlook) when will the Affordable Energy Fund be fully depleted?

RATIONALE FOR QUESTION:

To clarify the usage and future outlook for the Affordable Energy Fund.

RESPONSE:

The forecast of the Affordable Energy Fund is provided in the Power Smart Plan on page 34 of Appendix 8.1. The Fund is forecast to be fully depleted in 2027/28.

Section:	Tab 5: Appendix 5.1 Tab 8: Appendix 8.2 Tab 11, Appendix 11.44	**Page No.:**	103 (j)
Topic:	Demand Side Management		
Subtopic:	Affordable Energy Fund (AEF)		
Issue:	Accounting Treatment and Projected Balances		

PREAMBLE TO IR (IF ANY):

QUESTION:

Once the funds in the AEF have been completely depleted will the programs that it currently supports be continued and funded as any other DSM program?

RATIONALE FOR QUESTION:

To clarify the usage and future outlook for the Affordable Energy Fund.

RESPONSE:

A decision on how the programs currently funded under the Affordable Energy Fund will be funded or continued once the funds have been depleted, has not been made at this time.

DSM MFR 2

An update on the Affordable Energy Fund (AEF) including the projected use of the funds, by program and a detailed description of the programs, including a continuity schedule of program spending since inception.

Please see below a description of projects supported through the Affordable Energy Fund.

- **Low-Income/Community-Based Initiative: $23.1 Million**
  This initiative targets low-income Manitobans, including Aboriginals and seniors. These funds would be incremental to incentives that are available through Manitoba Hydro's Power Smart programs.

- **Geothermal Support Program: $1.6 Million**
  This initiative supports the application of geothermal technology.

- **Community Energy Development: $7.8 Million**

  - ***Energy & Resource Fund - $750 000***
    This fund, managed by the First Peoples Economic Growth Fund, is a joint initiative between the Government of Manitoba and the Assembly of Manitoba Chiefs. The fund was created to maximize First Nations participation in Major Energy and Resource Projects.

  - ***ecoENERGY Program Funding - $4.1 Million***
    This initiative provides funding to support the cost of offering ecoENERGY audits in Manitoba at a reduced cost for customers.

  - ***Power Smart Residential Loan (Additional) - $350 000***
    This initiative provides funding to reduce the interest rate for the Power Smart Residential Loan from a cost-recovery rate to a rate of 3.9%.

  - ***Electric Bus - $1.2 Million***
    This joint initiative among the Province of Manitoba, Manitoba Hydro, Red River Community College, New Flyer Industries and Mitsubishi Heavy Industries, provides funding to assist in developing a commercially viable all-electric bus design with near-zero emissions for use in urban transit systems.

- ***Fort Whyte EcoVillage - $120 000***
  This initiative provides funding to support the research and design of a world-class EcoVillage located at Fort Whyte Alive.

- ***Diesel Community Green Pilot Demonstration - $400 000***
  This initiative provides funding to support a pilot demonstration focusing on green technologies in one of four diesel communities.

- ***Metis Generation Fund for Resource & Development - $500 000***
  This funding is to be managed by the Métis Economic Development Organization for the purposes outlined in Bill 11.

- ***Power Smart Pay As You Save (PAYS) Financing Program - $400 000***
  This initiative provides funding to reduce the interest rate for the Power Smart PAYS Financing Program from a cost-recovery rate to a rate of 3.9%.

- **Community Support and Outreach: $750 000**
  This initiative provides support for the participation of First Nation communities in the Lower Income Energy Efficiency Program through dedicated internal resources.

- **Oil and Propane-Heated Residential Homes: $250 000**
  This initiative extends the eligibility of Power Smart programs to include homes currently heated by a source other than electricity and natural gas.

- **Special Projects: $4.6 Million (including accrued fund interest as of December 31, 2014)**

  - ***Residential Energy Assessment Service - $545 000***
    This initiative funds the incremental costs associated with delivering Manitoba Hydro's In-home Energy Assessment service under the Federal ecoENERGY Retrofit program to rural and northern Manitobans.

  - ***Oil and Propane Furnace Replacement - $150 000***
    This initiative targets the replacement of oil and propane furnaces with either an electric or high efficient natural gas furnace. The program provides a rebate of $245 to participating customers. Low Income customers will be eligible to convert at a cost of $9.50 per month for five years.

- ***Residential Solar Water Heating Program - $305 000***
  This initiative supports the application of solar domestic hot water pre-heating systems and the development of the local solar industry.

- ***Power Smart Residential Loan - $2.45 Million***
  This initiative provides funding to reduce the interest rate for the Power Smart Residential Loan from the cost recovery rate to a rate of 3.9%.

- ***Oil and Propane-Heated Residential Homes (Additional) - $300 000***
  This initiative provides further funding to extend the eligibility of Power Smart programs to include homes currently heated by a source other than electricity or natural gas.

- ***Spruce Wood Loggers - $175 000***
  This initiative provides funding to support Spruce Wood Loggers in upgrading their operations to include pelletized ground wood and waste sawdust material. The pellets would provide an alternative fuel for coal-fired boilers and potentially prevent some customer in close proximity to Spruce Wood Loggers from converting to electric boilers.

The table below provides information on Affordable Energy Fund program expenditures since inception.

Affordable Energy Fund ($millions)

	Actual Expenditures (millions)								Forecasted Expenditures (millions)				
Initiative	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17*	2017/18 - 2026/27	Total
Low-Income/Community Based Initiative	0.3	0.2	0.9	1.7	2.7	3.1	3.3	3.0	4.0	3.7	1.0	-	23.9
Geothermal Support	0.6	0.3	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	1.6
Community Energy Development													
ecoENERGYProgram Funding	-	-	-	-	-	2.8	1.2	0.0	-	-	-	-	4.1
Power Smart PAYS Financing Program	-	-	-	-	-	-	-	0.0	0.1	0.1	0.1	0.1	0.4
Energy & Resource Fund	-	-	-	0.8	-	-	-	-	-	-	-	-	0.8
Manitoba Electric Bus	-	-	-	-	-	0.7	0.1	0.2	0.2	0.0	0.0	0.0	1.2
FortWhyte EcoVillage	-	-	-	-	-	0.1	-	-	-	-	-	-	0.1
Diesel Community Green Pilot Demonstration	-	-	-	-	-	-	-	-	0.4	-	-	-	0.4
Métis Generation Fund	-	-	-	-	-	-	-	0.5	-	-	-	-	0.5
Community Support and Outreach	-	-	0.0	0.1	0.1	0.1	0.1	0.1	0.1	-	-	-	0.8
Oil and Propane Heated Homes	-	0.1	0.1	0.0	0.0	0.0	-	0.0	-	-	-	-	0.3
Special Projects													
Residential ecoEnergy Audits	-	0.1	0.2	0.1	0.1	0.0	-	-	-	-	-	-	0.5
Oil and Propane Furnace Replacement	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	0.2
Solar Water Heaters	-	-	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Residential Loan	-	-	-	0.1	0.3	0.4	0.5	0.5	0.4	0.2	0.1	0.0	2.5
Oil and Propane-Heated Residential Homes -	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3
Spruce Wood Loggers	-	-	-	-	-	-	-	-	0.2	-	-	-	0.2
ANNUAL EXPENDITURES	0.9	0.6	1.4	3.1	3.5	7.5	5.4	4.4	5.3	4.1	1.3	0.5	38.0

Note: Zeros indicate a small amount that rounds to zero.

* Assumes future reallocation of unused funds to support the Low-Income/Community Based Initiative as required.

Section:	Appendix 8.1	**Page No.:**	31 & 32
Topic:	DSM		
Subtopic:	Forecast Internal DSM Budget		
Issue:	Actual and Forecast DSM spending		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please expand the Internal DSM Utility Investment by program (as seen on page 31) by year from 2014/15 to 2028/29.

RATIONALE FOR QUESTION:

MIPUG would like to compare the spending year over year and increases made in the new DSM program following the NFAT review.

RESPONSE:

The Electric Cumulative Costs (in millions) column on page 31 outlines the following categories of investment:

Cumulative Investment Total, 2014/15 – 2028/29	$821.5
Spent to 2013/14	$461.0
Total Electric Expenditures	$1,282.5

The Cumulative Investment Total, 2014/15 – 2028/29 (in millions) can be broken into two categories:

Power Smart Electric, 2014/15 – 2028/29	$818.2
Electric Affordable Energy Fund, 2014/15 – 2028/29	$3.3
Cumulative Investment Total, 2014/15 – 2028/29	$821.5

A breakdown of Power Smart Electric forecast of $818.2 million by program is provided in Appendix 8.1 of the filing in Appendix A.3 of the report.

A breakdown of the Electric Affordable Energy Fund forecast of $3.3 million by program is shown in the table below.

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25 - 2028/29	Total
Electric DSM												
Affordable Energy Program	$1.0	$1.0	$0.3	-	-	-	-	-	-	-	-	$2.2
Geothermal Support	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	-	-	-	$0.2
Community Support and Outreach	$0.1	-	-	-	-	-	-	-	-	-	-	$0.1
Special Projects												
Solar Water Heaters	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Power Smart Residential Loan	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.1
Spruce Wood Loggers	$0.2	-	-	-	-	-	-	-	-	-	-	$0.2
Community Energy Development												
Power Smart PAYS Financing Program	$0.0	$0.1	$0.1	$0.0	$0.0	$0.0	$0.0	-	-	-	-	$0.2
Total Electric DSM	**$1.4**	**$1.1**	**$0.4**	**$0.1**	**$0.1**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$3.0**
Oil and Propane DSM												
Oil & Propane Furnace Replacement	$0.0	-	-	-	-	-	-	-	-	-	-	$0.0
Oil & Propane Heated Homes – Additional Funding	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.3
Total Oil & Propane DSM	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.3**
Total Affordable Energy Fund DSM	**$1.4**	**$1.1**	**$0.4**	**$0.1**	**$0.1**	**$0.1**	**$0.1**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$3.3**

Please see Manitoba Hydro's response to MIPUG/MH-I-1b for a breakdown by program of the costs to 2013/14 amount of $461.0 million.

Section:	Appendix 8.1	**Page No.:**	31 & 32
Topic:	DSM		
Subtopic:	Forecast Internal DSM Budget		
Issue:	Actual and Forecast DSM spending		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please expand the Internal DSM Utility Investment by program for actual years until 2013/14 encompassed in the "spent to 2013/14" line for total expenditures equal to $584.6 million.

RATIONALE FOR QUESTION:

MIPUG would like to compare the spending year over year and increases made in the new DSM program following the NFAT review.

RESPONSE:

The total internal DSM utility investment to 2013/14 of $584.6 million includes natural gas investments. As outlined on page 32 of Appendix 8.1 and in the table below, the total Electric DSM expenditures to date is $461.0 million:

Electric Power Smart	$448.7
Affordable Energy Fund – Electric	$11.8
Affordable Energy Fund – Oil & Propane	$0.5
Total Electric Expenditures	$461.0

A breakdown of the Electric Power Smart expenditures to date by program is provided in Appendix 8.1 of the filing in Appendix B.3 of the report.

A breakdown of the electric Affordable Energy Fund expenditures (in millions) to date by program is shown in the following table.

	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	Total
Electric DSM									
Affordable Energy Program	$0.1	$0.1	$0.3	$0.5	$0.7	$0.8	$0.9	$0.8	$4.1
Geothermal Support	$0.7	$0.3	$0.1	$0.1	$0.1	$0.1	$0.1	$0.0	$1.6
Community Support and Outreach	-	-	$0.0	$0.1	$0.1	$0.1	$0.1	$0.1	$0.7
Special Projects									
Residential ecoENERGY Audits	-	$0.1	$0.3	$0.1	$0.1	$0.0	-	-	$0.6
Solar Water Heaters	-	-	$0.1	$0.1	$0.1	$0.0	$0.0	$0.0	$0.3
Power Smart Residential Loan	-	-	-	$0.0	$0.0	$0.0	$0.1	$0.1	$0.2
Community Energy Development									
ecoENERGYProgram Funding	-	-	-	-	-	$3.0	$1.3	$0.0	$4.3
Power Smart PAYS Financing Program	-	-	-	-	-	-	-	$0.0	$0.0
Total Electric DSM	**$0.8**	**$0.4**	**$0.8**	**$1.0**	**$1.2**	**$4.2**	**$2.4**	**$1.0**	**$11.8**
Oil and Propane DSM									
Oil & Propane Heated Homes	-	$0.1	$0.1	$0.0	$0.0	$0.0	$0.0	$0.0	$0.3
Oil & Propane Furnace Replacement	-	-	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.1
Oil & Propane Heated Homes – Additional Funding	-	-	-	-	-	$0.0	$0.0	$0.0	$0.1
Total Oil & Propane DSM	**$0.0**	**$0.1**	**$0.1**	**$0.1**	**$0.1**	**$0.1**	**$0.0**	**$0.0**	**$0.5**
Total Affordable Energy Fund DSM	**$0.8**	**$0.5**	**$0.9**	**$1.0**	**$1.3**	**$4.2**	**$2.5**	**$1.1**	**$12.3**

Section:	Appendix 8.1, section 1.3	**Page No.:**	9
Topic:	Affordable Energy Program		
Subtopic:	Proposed participation details 2014/15-2028/29		
Issue:	Multi-residential participation		

PREAMBLE TO IR (IF ANY):

Manitoba Hydro projects 24,025 cumulative retrofits for the Affordable Energy Program for the period 2014/15-2028/29.

QUESTION:

Describe any program efforts within the Affordable Energy Program to provide energy efficiency services to multi-unit residential housing.

RATIONALE FOR QUESTION:

These data are necessary to assess the level of engagement that Manitoba Hydro is pursuing with lower income customers.

RESPONSE:

The Affordable Energy Program targets lower income customers who occupy single detached and multi attached homes including townhouses, row houses, and tri and four-plex houses along with mobile homes on a permanent foundation. Lower income tenants living in multi-unit residential housing have limited economic energy efficient opportunities.

All customers, including lower income tenants living in multi-unit residential housing, are eligible to participate in the residential LED Lighting Program. Manitoba Hydro is exploring options where some LED lighting could be provided in an economic manner to lower income tenants living in multi-unit residential housing.

Benefiting all tenants, property managers can access the entire suite of commercial Power Smart programs which includes but is not limited to incentive programs for: insulation;

windows; heating, ventilation and air conditioning; and common area lighting. Multi-unit residential properties are also eligible for the free direct installation of low flow kitchen and bathroom faucet aerators and showerheads under the Water & Energy Saver Program. To ensure multi-unit residential housing property managers are taking full advantage of the suite of commercial Power Smart programs, Manitoba Hydro has fostered a long-term relationship with the Professional Property Managers Association of Manitoba to provide targeted promotion of program offerings and services. Power Smart sales representatives service this sector offering face-to-face meetings with property managers, conducting walkthroughs of properties to help identify energy savings opportunities, as well as providing assistance throughout the entire process including program application submission to final incentive payout.

Section:	Appendix 8.1, section 1.3	**Page No.:**	9
Topic:	Affordable Energy Program		
Subtopic:	Proposed participation details 2014/15-2028/29		
Issue:	Multi-residential participation		

PREAMBLE TO IR (IF ANY):

Manitoba Hydro projects 24,025 cumulative retrofits for the Affordable Energy Program for the period 2014/15-2028/29.

QUESTION:

How many of the 24,025 cumulative retrofits, by year, will be for multi-residential units?

RATIONALE FOR QUESTION:

These data are necessary to assess the level of engagement that Manitoba Hydro is pursuing with lower income customers.

RESPONSE:

Manitoba Hydro's Affordable Energy Program does not have cumulative retrofit projections for multi-residential units. As indicated in Manitoba Hydro's response to MKO-COALITION/MH-I-3a, Manitoba Hydro is exploring opportunities for multi-residential units.

Section:	Appendix 8.1, section 1.3	**Page No.:**	9
Topic:	Affordable Energy Program		
Subtopic:	Proposed participation details 2014/15-2028/29		
Issue:	Multi-residential participation		

PREAMBLE TO IR (IF ANY):

Manitoba Hydro projects 24,025 cumulative retrofits for the Affordable Energy Program for the period 2014/15-2028/29.

QUESTION:

Provide the expected savings, by year, for multi-residential units within the Affordable Energy Program.

RATIONALE FOR QUESTION:

These data are necessary to assess the level of engagement that Manitoba Hydro is pursuing with lower income customers.

RESPONSE:

Manitoba Hydro's Affordable Energy Program does not have projections for expected savings for multi-residential units. As indicated in Manitoba Hydro's response to MKO-COALITION/MH-I-3a, Manitoba Hydro is exploring opportunities for multi-residential units under the Affordable Energy Program.

External Review of the Affordable Energy Program

PREPARED BY:
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SUMMERHILL GROUP

Submitted to:
Cheryl Pilek, Manager, Power Smart Planning, Evaluation & Research
Colleen Galbraith, Program Manager, Affordable Energy Unit

Manitoba Hydro

March 3rd, 2015 – **FINAL REPORT**

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Table 3.1 - AEP's LICO 125 Income Thresholds

Household size	Total Income[14]
1 Person	$29,826
2 People	$37,133
3 People	$45,650
4 People	$54,425
5 People	$62,863
6 People	$70,898
7 or more Persons	$78,934

Once eligibility has been established and a customer has been approved, a free energy audit by a Manitoba Hydro certified Energy Advisor is conducted to determine which upgrades are available. Free energy saving items, including low flow showerheads, caulking, faucet aerators, insulating pipe wrap, and energy efficient lighting, are installed or provided to the customer during the audit. Materials, installation and labour for qualifying insulation upgrades are free for qualifying customers.

Owners of homes with structural or health & safety issues are referred to the provincial assistance programs. First, the energy advisor and/or contractor identifies the issues, and then there is some coordination between the AEP project manager and provincial programs' employees to transfer the project. Homeowners come back to the AEP when the issues have been dealt with.

3.2 PARTICIPATION RATES AND SAVINGS

The program is forecasting an annual participation level of 2,093 participants for 2016/17, an increase over the historical participation levels (Table 3.2).

[14] Total income of household before deductions.

Table 3.2 – Historic and Forecasted Participation

	2007/08 to 2013/14	2014/15	2015/16	2016/17	TOTAL
Participants	8,072	2,155	2,180	2,093	14,500
Furnace	3,009	680	690	700	5,079
Boiler	75	15	15	15	120
Insulation	5,683	1,249	1,141	1,049	9,122

The annual participation rate[15] of 1.8% compares well to other low income programs[16]. The AEP is targeting homes that require significant upgrades, and this focus translates into higher participation from homes that have a standard furnace (3.4% target market/yr.) and poor/fair insulation levels (4.1%/yr.). It is estimated[17] that 25% of standard furnaces will have been replaced and 36% of homes with poor/fair insulation levels will have been upgraded by the end of 2016/17. Boiler replacement numbers are lower, with an annual replacement rate of only 0.9%, which is analyzed in further details in section 4.5.

Table 3.3 – Participation Rates

Component	Estimated Market	Total Participation Rate (end 2016/17)	Yearly Participation Rate (2016/17)
Total Participants	115,100 [18]	12.6%	1.8%
Furnaces	20,525	24.7%	3.4%
Insulation	25,298	36.1%	4.1%
Boilers	1,725	7.0%	0.9%

[15] AEP participants divided by total estimated low income market.

[16] According to a Dunsky review of leading programs (confidential), the best programs achieve an annual participation rate of 1% to 4%.

[17] The market size for furnace/boiler replacements and insulation upgrades has been estimated by Manitoba Hydro using self-reported information obtained through surveys, which can be unreliable especially for insulation levels.

[18] 105,100 homeowners and 10,000 renters

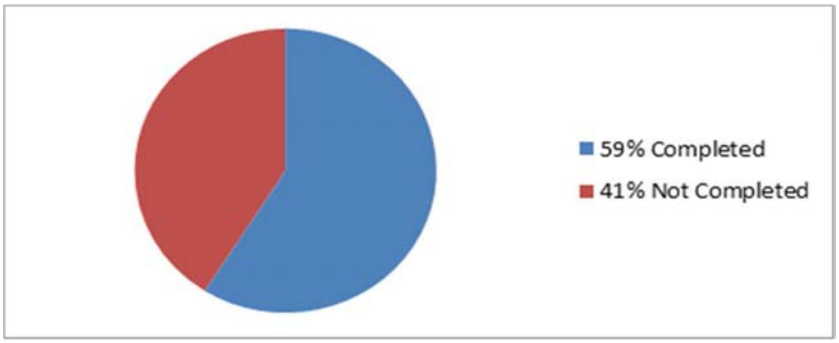
Table 4.5 - Recommended Improvements to the AEP Individual Process

Findings	Recommendations
1. Submitting tax forms / missing documentation	Consider allowing government issued forms instead of CRA, such as: Income Assistance, Disability, Guaranteed Income Supplement, Allowance for Seniors, Allowance for the Survivor, National Child Benefit Supplement
2. Program rules & application requirements are sometimes difficult for participants to understand	Consider expanding application material formats to include audio and video explanations with instructions. Continue and increase support and dialogue with each applicant by either Manitoba Hydro, or refer applicant to a community canvasser to facilitate them through the process from start to end. Continue to filter marketing materials and application documentation through a low income specialist to ensure language is accessible and appropriate.
3. Agreement Form signature on-site	On-site signature of Agreement Form – submitted to Energy Auditor on day of audit or add an automatic reminder call to the database to follow up with the applicant 1-2 weeks following the audit.
4. Rural requirement for three (3) contractor quotes	MH to work with contractors for rural quotes directly, continue to be lenient and supportive with applicants

4.3.2 First Nations Channel

There are 63 First Nation Communities in Manitoba and all of them have been approached and engaged by Manitoba Hydro's First Nations advisor to participate in the AEP. As of August 31, 2014, 1266 homes have received insulation upgrade in 37 communities.

Figure 4.7 – Percent of First Nation Communities Completed to Date



The Manitoba Hydro First Nations Power Smart Energy Advisor works with the individual housing managers within each of the First Nation Communities to identify which homes would benefit from an upgrade. The Housing Manager selects, based on their knowledge of the construction and insulation levels in the homes, the homes that qualify for insulation upgrades. Some communities have indicated they exceed the minimum insulation levels to be eligible, or they are currently addressing flood issues, so they are not participating. The Advisor does a walk-through of the homes when he visits the communities. There is no application process required.

The First Nations Housing Manager identifies the local labourer. Manitoba Hydro funds the training, labour and material for a community member to do the installation. Manitoba Hydro funds the supplier directly. It was noted in the research that it would assist the First Nation Housing Managers if Manitoba Hydro could provide an advance payment for the labour to assist with cash flow. Manitoba Hydro has a Band Council resolution agreement with each First Nation. This has successfully removed the paperwork and is a model that other Utilities are interested in learning more about.

Manitoba Hydro is currently finalizing a process to provide basic energy efficient upgrades to homes with sufficient insulation levels in First Nations Communities by employing local labour.

Manitoba Hydro is launching a Direct Install Program of low cost/ no cost measures in each of the First Nations starting November 2014. According to Manitoba Hydro, there are approximately 10,000 eligible homes.

There is currently no First Nations representative on the AEP Advisory Committee.

Recommendations:

1. Go forward with a direct install of low-cost, no-cost at all homes on the First Nations;
2. Consider an advance payment to the Bands to help with cash flow for the community labour; and
3. Consider inviting a First Nations representative to the Advisory Committee.

4.3.3 Social Housing Channel

Manitoba Hydro takes a unique approach to engaging the social housing sector. For single detached, attached (townhouses and row houses), and mobile homes that are managed by non-profit social housing providers, the housing provider simply needs to demonstrate that they only rent to low income tenants to apply to AEP and no individual applications from the tenants are required. The individual tenants living in Social Housing are not required to demonstrate or prove their income to Manitoba Hydro as they automatically qualify by living in social housing units.

The housing provider and Manitoba Hydro have a direct agreement that outlines what Manitoba Hydro provides and the housing locations. Manitoba Hydro reviews the properties in advance. This has been an efficient process to date with 100% of applications submitted approved and 99% of projects completed.

As of August 31, a total of 2,039 installs have been completed on attached homes and 30 installations completed in detached homes, accounting for 23% of the total results to date.

Social Housing authorities are represented on the AEP Advisory Committee.

OPPORTUNITIES TO CONSIDER

There are two opportunities to consider with respect to eligibility and design of the social housing channel for the AEP.

First, is to consider eligibility and upgrades for the multi-residential, apartment-style buildings that social housing providers manage (beyond row houses and townhouses). These buildings are currently eligible for upgrades through Manitoba Hydro's Commercial Lighting Program (CLP), and tenants can access the free Water & Energy Saver Program kits.

The AEP offer could be customized and based on more limited retrofit activity within suites. For example, direct install of the low-cost / no-cost measures in suites and boiler retrofits for apartment buildings. Installing low-cost measures for direct install may not be cost effective because it is fairly labour intensive, but it is worth exploring further.

The second opportunity is to continue to work and have discussions with Manitoba Housing on a case-by-case basis, to identify opportunities within their buildings (including multi-residential and apartment style). There is a precedent in both Ontario and Quebec for rate-payer utility programs to support upgrades in low income government funded social housing.

Recommendations:

1. Consider redesigning the eligibility criteria to include multi-residential and apartment-style commercial buildings that social housing providers manage (beyond row houses and townhouses) for certain measures (i.e. in-suite lighting direct install, and boiler upgrades);

2. Consider low cost measure direct install in all social housing units (regardless of which are receiving insulation upgrades); and

Continue exploring opportunities with Manitoba Housing, or some of their sponsored partners, to participate.

4.3.4 Landlord/Tenant Channel

The landlord and tenant channel was added to the program in July 2013. The upgrade offering is the same as the individual approach. Typically the landlord completes the application for the rental properties. Manitoba Hydro collects the income qualifying information directly from the tenants in a pre-paid/posted envelope.

The tenants are not required to pay their utility bill directly to Manitoba Hydro for the building to qualify for the program. If the tenant does pay the bill directly, then they directly realize the energy savings. If the bill is included with the rent, Manitoba Hydro asks the landlord to pass on the savings to the tenant; however, Manitoba Hydro does not have any enforcement jurisdiction in this matter as all rent regulations are administered through the Province of Manitoba – Residential Tenancy Branch (RTB).

Originally, the landlord needed to commit to rent to lower income tenants for 10 years, which was reduced to 5 years and now has been removed from the requirements altogether, as this was a significant barrier to entry for landlords and property managers. Currently the only requirement is that they can't sell the property within the first year, which is the same as the individual stream.

Similarly to the social housing channel, single detached, multi-attached, multi-residential (up to 4-plex), row homes and town homes qualify. Multi-residential apartment blocks that are bulk meter billed are excluded.

Marketing of the program currently targets landlords and tenants through bill inserts, the overall promotional campaign, some door-to-door canvassing.

There is landlord representation on the AEP Advisory Committee.

The table below highlights recommended changes to consider to the landlord channel, with the associated benefits and impacts.

Table 4.6 - Landlord Channel: Existing and Potential Strategies and their Impact

Potential additional strategies	Benefits & Impact
Eligibility for multi-residential apartment buildings larger than 4-plexes could be considered, with limits placed on the retrofit activity, not the building eligibility (i.e. in-suite direct install lighting)	This will help to reach even more building types, install more measures and reach more lower income customers who rent
Increased targeted marketing to landlords and property mgt associations explaining recent changes to the program and ease of entry	Increase uptake for landlords & multi-residential
Direct Install for multi-residential low cost measures	Install more measures, reach more tenants

4.3.5 The Neighbourhood Power Smart Project Channel

The Neighbourhood Power Smart Project channel was born out of a community-based approach which was originally an outreach strategy in which Manitoba Hydro worked with local community organizations, housing groups, associations, and MLAs to find opportunities and expand reach of the program.

Manitoba Hydro now provides funding to the North End Community Renewal Corporation and the Brandon Community Renewal Corporation so they can hire, train and manage local canvassers who do door-to-door outreach in the communities, attend local events, connect with local groups with the primary objective of marketing the program, and recruiting applicants.

The skill set required to do this work is unique – the canvassers require sales skill as well as the communication and social skill to build trust and establish a rapport with the target demographic.

recommendation is to better document some of the assumptions used in algorithms and some of the deemed savings.

Manitoba Hydro conducts impact evaluation of the AEP on an annual basis. This evaluation is currently limited to a desk review of savings estimates using deemed savings and engineering algorithms. There is a risk associated with using only savings estimates. Empirical impact evaluations, using real consumption data, would help ensure that savings estimates are in line with reality. Another empirical mean of confirming savings for furnaces and boilers would be to conduct combustion tests before and after their replacement, to confirm starting and ending AFUE estimates.

Our main recommendations to Manitoba Hydro are to:

1. Review the income eligibility paperwork required and consider allowing alternative government issued forms, instead of income tax CRA forms only.
2. Review the suggested improvements to the marketing plan and continue expanding the outreach to landlords and property managers specifically.
3. Consider eligibility for multi-residential and apartment buildings for both the landlord and social housing channel based on more limited retrofit activity (i.e. no insulation, but boilers).
4. Continue to engage and train social agencies and traditional poverty relief organizations who already work with low income customers to promote the program and support their clients through the application (i.e. meals-on-wheels, senior orgs) and continue to engage and update stakeholders working with lower income customers.
5. Align eligibility for bill assistance programs with AEP so that mandatory enrolment happens automatically once customers are identified as challenged by paying bills or referred to NHN
6. Review the current program offering and consider the addition of new energy efficiency measures, especially for electrically-heated homes.
7. Review some savings assumptions, as further detailed in section 5.1, and better document assumptions and deemed savings.
8. Add empirical evaluation and data collection methods (billing analysis, combustion tests) to actual evaluation activities to confirm savings estimates.
9. Consider using the SCT as the main cost-effectiveness tests, and review the benefits adder currently used for unquantified benefits.

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Section:	Tab 8	**Page No.:**	Appendix 8.2
Topic:	Rate impacts on specific customer segments		
Subtopic:	Affordable Energy mitigation strategy; First Nations focus		
Issue:	DSM programs; DSM equity		

PREAMBLE TO IR (IF ANY):

The Board has expressed interest in DSM programs for certain segments of the Province.

QUESTION:

Describe in detail the electric offering(s) of the a) Affordable Energy and b) First Nations Power Smart programs. Include documentation, all marketing materials, complete list of measures and their rebates and final cost to participating customers, and income eligibility guidelines.

RATIONALE FOR QUESTION:

To determine the details of the DSM program offerings to certain segments of the Province.

RESPONSE:

The Affordable Energy Program provides energy efficiency upgrades for homeowners and landlords with lower income tenants and the First Nations Power Smart Program provides energy efficiency upgrades to residents of First Nation Communities. Both programs are focused on capturing energy efficient opportunities and assisting customers through having lower energy costs. The following table provides the electric measures targeted.

AEP and First Nations Power Smart Program Electric Offering (Inception to October 2014)	AEP and First Nations Power Smart Program Electric Offering (November 2014 to Present)
Insulation	Insulation
Basic Measures	Basic Measures
CFLs (6 - 3x23watt, 3x13 watt)	LED bulbs (4)
Showerheads (2)	Showerheads (2)
Kitchen Aerators (1)	Kitchen Aerators (1)
Bathroom Aerators (2)	Bathroom Aerators (2)
Fridge Freezer Card (1)	Fridge Freezer Card (1)
Caulking Tubes (1)	Window Kits (3)
Caulking Guns (1)	Package of Electric Socket Gaskets
Packages of Electric Socket Gaskets	Package of Electric Sockets Caps
Packages of Electric Socket Caps	Pipe wrap for Hot Water Tanks (3m)
Pipe wrap for Hot Water Tanks (3m)	

The income eligibility guidelines are based on 125% of Statistics Canada Winnipeg Low Income Cut Off (LICO) income thresholds, as follows:

Total Income Threshold*	
Number of People	**Total Income**
1 person	$29,826
2 people	$37,133
3 people	$45,650
4 people	$55,425
5 people	$62,863
6 people	$70,898
7 or more people	$78,934
*Income qualifications are based on how many people live in your home and the total income (before deductions) of the household.	

There is no cost for lower income customers to participate in the Affordable Energy and First Nation Power Smart programs.

The Affordable Energy Program utilizes a broad, comprehensive and multi-pronged marketing approach to reach lower income customers, including those in arrears. See attachment 1 for samples of the Affordable Energy Program marketing material and see attachment 2 for a copy of the Affordable Energy Marketing Plan. Manitoba Hydro has worked with and continues to work with a number of different government and non-government and community based organizations (including First Nation communities) to educate, promote, market and deliver the Affordable Energy Program. The following describes efforts on a number of fronts to market the Affordable Energy and First Nation Power Smart Programs.

Direct Marketing Approach

Manitoba Hydro markets its Affordable Energy directly to customers utilizing a province wide marketing campaign run year round and utilizing a number of channels to reach customers including radio, news print, bill inserts, community posters, billboard advertising, TV, radio, direct mailer, transit bus shelters, etc.

LiveSafe!

In July 2010, Canada, Manitoba and Winnipeg signed a five-year Memorandum of Collaboration to better align government work and resources to help improve the socio-economic outcomes of Winnipeg's urban Aboriginal residents. The MOC is supported by an Intergovernmental Strategic Aboriginal Alignment (ISAA) Working Group, comprised of representation from the three participating levels of government. Consultations with Aboriginal people and Winnipeg residents took place and "increasing neighbourhood safety by promoting affordable, appropriate, safe housing and community services" was identified as a priority.

As a result, the LiveSafe! Working Group was established to develop and implement a Community Safety and Wellness plan within a targeted 21 block area of Winnipeg in the William Whyte and Dufferin neighbourhoods. Manitoba Hydro was invited to speak with the LiveSafe! Working Group about its Power Smart programs; specifically, the Affordable Energy Program. As a result of that presentation, Manitoba Hydro has been further invited to participate on a sub-committee established to look at ways that housing can be improved in the 21 block area.

Residential rehabilitation Assistance Program ("RRAP")

The RRAP is a program offered by the Province of Manitoba. RRAP provides financial assistance to low-income homeowners by providing a forgivable loan to pay for eligible repairs to their homes, including structural, electrical, plumbing, heating and fire safety repairs. Manitoba Hydro encourages customers to apply for RRAP where their home may require repair before additional insulation can be installed. Similarly, RRAP encourages customers who may require additional insulation and/or a new heating system to apply for the Affordable Energy Program. In addition, RRAP and Manitoba Hydro often consult each other on the application of program policies, terms and conditions.

Neighbourhoods Alive!

Manitoba Hydro has built relationships with many community renewal organizations since the inception of the Affordable Energy Program. In the fall of 2011, Manitoba Hydro partnered with Neighbourhoods Alive! to host a meeting of community renewal corporations located in Neighbourhoods Alive! communities to brainstorm ways to promote the Affordable Energy Program and improve housing. Manitoba Hydro has and continues to work with community renewal corporations to promote the Affordable Energy Program.

Community and Social Enterprise Groups

Manitoba Hydro works with a number of community and social enterprise groups who specifically target, support and market the Affordable Energy Program to neighbourhoods or communities. These community based and social enterprise groups include North End Community Renewal Corporation (NECRC), Brandon Neighbourhood Renewal Corporation (BNRC) and BUILD.

With NECRC, Manitoba Hydro provides funding to employ an individual from the community to act as a Community Energy Advocate in the William Whyte Neighbourhood. The Community Energy Advocate promotes and markets the Affordable Energy Program and offers customers assistance when completing the required documentation. Similar with BNRC, Manitoba Hydro provides funding to employ an individual from the community to act as a Community Energy Advocate in Brandon for the same purposes.

Manitoba Hydro provided funding to BUILD for hiring a marketing coordinator. The marketing coordinator further supported the promotion of the community based initiative in the William White area and also target marketed the Affordable Energy Program to landlords, property managers and non-profit housing organizations.

Neighbourhood Street by Street Approach

Working in partnership with NECRC and BNRC, the Affordable Energy Program is aggressively marketing to households using a door to door approach. The door to door campaign is undertaken utilizing Manitoba Hydro's staff and the energy advocates from BNRC and NECRC. The initiative targets specific neighbourhoods which have a higher concentration of lower income customers. The Neighbourhood Pilot Project was launched at an event attended by the Honourable Stan Struthers and Honourable Kevin Chief in May 2014.

First Nation Community Approach

To promote the First Nation Program, Manitoba Hydro takes a direct marketing approach with each First Nation community. Under the First Nations Power Smart Program, a dedicated First Nations Energy Advisor promotes and markets the program directly to First Nation Communities. Using a dedicated team partnership approach, each First Nations Community works with Manitoba Hydro's First Nations Energy Advisor to help support and encourage the communities to capture energy efficient opportunities. Energy efficient workshops and seminars are offered to the community as well as training and funding for the installation of materials. This provides economic support to the community as well as sustainable solutions for home improvements.

Manitoba Metis Federation

An Advisory Committee is in place for the Affordable Energy Program to facilitate communication between parties with a vested interest in the Program and its customers. The group typically meets quarterly to discuss program developments and marketing efforts. The Advisory Committee is comprised of representation from Green Action Centre, Consumer's Association of Canada (Manitoba Chapter), Manitoba Housing, Professional Property Managers Association, Manitoba Metis Federation, and Manitoba Non-Profit Housing Association. The goal of the committee is to discuss program updates and identify opportunities related to the program to further increase participation.

The Affordable Energy Program is working directly with the MMF Advisory Committee member to promote the program through the Manitoba Metis Federation regional offices

Manitoba Housing and Non-Profit Social Housing Organizations

Manitoba Hydro works with both Manitoba Housing as well as non-profit social housing organizations to capture energy efficient opportunities in homes designated for customers

with lower incomes. Social enterprises are often engaged to perform the energy efficient retrofits. For example the Affordable Energy Program is currently working with BUILD (Building Urban Industries for Local Development), MGR (Manitoba Green Retrofit), BEEP (Brandon Energy Efficient Program), and various nonprofit housing groups to retrofit a number of homes under the program.

Community Outreach Marketing Efforts

The Community Outreach Program seeks to increase awareness and therefore participation in communities with higher incidences of lower income customers through the use of public spaces. This is achieved by utilizing public bulletin boards, connecting with community groups, providing presentations and information material such as posters or brochures and attending community events. The objective is to increase program exposure and awareness, and to build relationships with leaders in the community. This outreach has been conducted in the West Broadway and South Osborne outside of the William Whyte and targeted neighbourhoods in Brandon. A broad variety of venues have been used to promote the Affordable Energy Program including community centres, arenas, libraries, grocery stores, laundry mats, and legions. Specific examples of Manitoba Hydro's efforts to increase awareness and participation in the Affordable Energy Program includes:

- Staff from Manitoba Hydro's Affordable Energy group visited the Safeway on Mountain Avenue in August 2014 to directly promote the program during an in-store promotion. As part of the promotional efforts, reusable grocery bags containing program information and other promotional items were handed out to customers going to Safeway.

- Staff from Manitoba Hydro's Affordable Energy group visited the South Osborne Street Festival on August 23, 2014 to promote the program. At this event, customers were also given reusable grocery bags containing program information and other promotional items.

- In September 2014, Manitoba Hydro's Affordable Energy Program sponsored a drive-in movie night at the Norberry-Glenlee Community Centre. Attendees were provided with promotional items and program information.

Salvation Army

Manitoba Hydro currently works closely with The Salvation Army to provide assistance to individuals facing financial hardship. Through participation in the Neighbours Helping Neighbours, customers are required to complete an Affordable Energy application to encourage participation in the Affordable Energy Program. Affordable Energy staff follow up with former NHN participants on a weekly basis to further promote participation in the program. The Salvation Army is also promoting the Affordable Energy Program to individuals requesting food assistance or food hampers.

Seniors and Healthy Aging Secretariat

Manitoba Hydro works with the Seniors and Healthy Aging Secretariat to promote energy efficiency programs, including the Affordable Energy Program.

Employment and Income Assistance

Manitoba Hydro works with Employment and Income Assistance to promote its Affordable Energy Program to recipients receiving assistance through their case workers.

Participating Contractors

The Affordable Energy staff provide participating contractors with information and training to encourage the contractors to promote the program.

Financial Institutions

The Affordable Energy Program works with financial institutions to provide program information to their members. The Affordable Energy Program is currently working with the Assiniboine Credit Union and Austin Credit Union.

Residential Tenancies Branch

The Affordable Energy Program also promotes its benefits to landlords through the RTB via communication.

Manitoba Non-Profit Housing Association (MNPHA)

The Affordable Energy Program is a member of the Manitoba Non-Profit Housing Association and promotes the program through the MNPHA Conference. Interacting with members and delegates increases program awareness and promotes the program's benefits to Housing Managers.

Professional Property Managers Association (PPMA)

Manitoba Hydro has a long established relationship with the PPMA and has a representative who attends meetings to continually promote all of Manitoba Hydro's Power Smart Programs including the Affordable Energy Program.

MMF/MH- 1-24 Affordable Energy Program Marketing Materials PDF

Contents

PG.53 – Reusable Shopping Bag – It's True

PG.54 – Social Media Ad

PG.55 – Social Media Ad

PG.56 – Superboard

PG.57 – Transit Ad

Affordable Energy Program

Marketing Plan 2015-16

Executive Summary

The Affordable Energy Program (AEP), formerly the Lower Income Energy Efficiency Program, was launched in 2007. The program offers sustainable solutions to help lower income customers move towards self sufficiency through energy efficiency upgrades which reduce their energy bills. Through the program, qualifying customers may receive:

- Free insulation upgrades, including installation (Attic, basement, walls).
- New high-efficiency natural gas furnace for $9.50/month for 5 years ($570 total cost).
- Free drain water heat recovery unit for electrically heated water tanks.
- $3000 rebate towards the purchase of a qualifying high efficiency condensing boiler.
- Free in-home energy efficiency review and energy saving items:
    - Low flow shower head;
    - Low flow faucet aerators;
    - Pipe wrapping for water heater;
    - Electrical socket caps;
    - Electrical socket draft stoppers;
    - Window weatherization kits;
    - LED Lighting (Light Emitting Diodes).
- Customers may also qualify for an electric furnace, if they are switching from an oil, coal, or propane heating system in an area without natural gas service.

Feedback indicated customers may not want to identify themselves as ‘lower income’ or share their experience in participating in a program titled the Lower Income Energy Efficient Program. As a result, the program name was changed to the Affordable Energy Program in 2013 in an effort to increase participation.

Marketing Strategy Objectives

The objective of the Affordable Energy 2015 Marketing Plan is to increase awareness of the program and achieve or exceed participation forecast for 2015-16. The strategy utilizes multiple approaches to reach specific target groups including;

1. Provide turnkey solutions to motivate customers to participate.
2. Overcome stigma associated with programs labeled ‘low income’.
3. Reinforce the benefits of participation. (i.e. reduced energy bills, free or low costs upgrades, easy to participate.)
4. Reduce the burden placed on rural program participants.
5. Increase word of mouth and referrals from participating customers.
6. Continue the Community Outreach Program.

Situation Analysis

The following SWOT analysis was undertaken to assess Manitoba Hydro's ability to provide and promote DSM programs to lower income customers.

	Internal	External
Successes	**Strengths**	**Opportunities**
	• Specialized staff to manage customer requests. • Dedicated phone and email address to manage customer requests and inquiries. • Participating contractors who provide energy efficient upgrades. • Turn key solution for customers. • A specialized neighbourhood street approach offers the AEP directly to customers. • Dedicated staff to coordinate the Power Smart First Nation Program. • Multi channeled approach with customized communication strategies for target customer groups, such as customers in arrears.	• Increase network of participating contractors. • Build more relationships with additional community groups and organizations. • Provide customers with an online application process. • Continue to work with financial institutions to promote AEP to qualifying customers. • Work with various stakeholders to increase participation from landlords and tenants. • Target new comers.
Challenges	**Weaknesses**	**Threats**
	• Required documentation. • Customers are required to provide original documentation by dropping off the documents or sending them in the mail. • Customers can not submit documentation via email, online application, of fax.	• Financial institutions may provide customers with financing options to support energy efficient upgrades for their home. • Contractors promoting their own financing options and not the upgrades offered through the Affordable Energy Program

Market Analysis

Target Market

The overall target market for the AEP is lower income customers who own or rent their home and live in a single detached, multi-attached, or mobile homes with a permanent structure. Lower income customers are defined by the LICO – 125 income qualifier.

The 'LICO – 125' income qualifier uses the Low Income Cut Offs (LICO), as estimated by Statistics Canada, for urban centres with more than 500,000 residents. The AEP adds an

additional 25% to the LICO qualifier for urban centres with more than 500,000 residents. This has been done to increase the number of Manitoba customers who are eligible to qualify for the Affordable Energy Program.

Affordable Energy Income Qualifiers

Number of People	Total Income
1 person	$29,826
2 people	$37,133
3 people	$45,650
4 People	$55,425
5 people	$62, 863
6 people	$70,898
7 people or more	$78,934
Income qualifications are based on how many people live in the home and the total income (before deductions) of the household. Total income is based on the number of people in the home who are over the age of 18, but not in school full time. The thresholds above are effective May 1, 2014	

Market Segment Profile

Manitoba Hydro's LICO-125 customers can be broken-down into two segments home owners and landlord/tenant.	
Home Owners	105415
Renters	9712
Total Customers	115127

Target Market Segmentation

Research and past program experience has identified the following target audiences. These audiences will be targeted with specific messaging to assist in achieving the objects of the marketing strategy.

Primary Target Audiences

Renters or homeowners who meet the LICO-125 income qualifier (including First Nation customers).

Landlords who rent to individuals who meet the LICO-125 income qualifier.

Secondary Target Market

Influencers or support groups for individuals who provide information for LICO – 125 customers.

- Social Housing & Non-Profit Organizations
- Community Groups
- Contractors
- Parents, friends, or family

Marketing Strategy

Manitoba Hydro is awaiting the results of a focus group study to determine what final changes may be made to the 'IT'S TRUE marketing campaign' for the 2015-2016 fiscal year. This is being done to determine current market perceptions, barriers, and motivators in Manitoba. The results of the focus group will be used to develop a 3-5 year marketing strategy in line with the program's goals and objectives.

Key Success Factors of the Affordable Energy Program

- Turn key approach for participating customers.
- Dedicated customer service portals to allow customers the information and resources to complete the required eligibility forms and participate in the program.
- Multiple pronged approached utilizing targeted media and strategic relationships with non-profit organizations, social groups, community groups and participating contractors.
- Continuous marketing throughout the year to ensure the AEP is top of mind when customers are looking to lower their energy bills, or upgrade their furnace and insulation.
- Messaging will focus on the customer benefits, stress the offer is true, and outline how easy the application process is.
- Reduce paperwork by implementing an online application process.

A province wide marketing campaign will run year round with efforts focused in areas with higher percentages of lower income customers. The campaign will address the barriers identified above and those identified by the focus group. The goal of the campaign is to increase awareness and customers applications, and achieve or exceed the participation goals forecast for the 2015-16 fiscal year.

The campaign will consist of the following approaches / components:

- **General awareness focused in areas identified to have lower income customers.**
  - The messaging focuses on the low initial investment and long term benefits to the customer.
  - The messaging clearly outlines the four simple steps required to participate in the program, making it easy for customers to participate.

- **Community Group Affiliations**
  - **Neighbourhood Power Smart Project**
    The AEP works with community groups in specific target neighbourhoods to bring the program and its advantages to customers who would most benefit from the program.

  - **North End Community Renewal Corporation (NECRC)**
    - Manitoba Hydro provides funding to employ an individual from the community to act as a Community Energy Advocate in the William Whyte Neighbourhood. The Community Energy Advocate promotes the AEP and offers customer's assistance when completing the required documentation.

  - **Brandon Neighbourhood Renewal Corporation (BNRC)**
    Manitoba Hydro provides funding to employ an individual from the community to act as a Community Energy Advocate in the BNRC's catchment area. The Community Energy Advocate promotes the AEP and offers customer's assistance when completing the required documentation.

- **Non-Profit Social Enterprises**
  The Affordable Energy Program works with various Non-Profit Organizations to participate in the program or provides them with information to benefit their members. For example the Affordable Energy Program is currently working with BUILD (Building Urban Industries for Local Development), MGR (Manitoba Green Retrofit), BEEP (Brandon Energy Efficient Program), The Salvation Army, and various nonprofit housing groups.

- **Neighbourhood Approach Street Pilot Project**
  This pilot project is coordinated with both BNRC and NECRC. The objective of the pilot project is to engage customers with a door to door campaign. The income qualifier of the program has also been removed to further increase participation. The pilot project targets specific neighbourhoods that have higher incidence of lower income customers.

- **First Nation Communities – Power Smart First Nations Program**
  The First Nations Power Smart Program provides funding for energy efficiency upgrades including insulation and basic energy efficient materials such as pipe wrap, low flow showerheads, window kits, and energy efficient lighting. Using a dedicated team partnership approach, each First Nations community works with a Manitoba Hydro energy specialist to help support and encourage the communities to capture energy efficient opportunities. Energy efficient workshops and seminars offered to the community as well as providing training and funding for the installation of materials. This provides economic support to the community as well as sustainable solutions for home improvements. For the 2015/16 year, an educational energy conservation component will be developed for First Nation Communities.

- **Social Housing & Private Landlords**
  Affordable Energy is aggressively targeting social housing providers and private landlords who rent to lower income tenants to help reduce their utility bill. This includes increasing awareness and participation through general marketing, targeted communication pieces, presentations through rental groups and associations and continuing to utilize internal resources who have contact with landlords and property managers.

- **Targeted Data Driven Outreach**

Utilizing Manitoba Hydro's billing system and the Corporation's autodialer functionality, specific call campaigns and mailers, including email, will continue to be pursued to increase participation. Areas of focus include customers in arrears, rental property owners (landlords), high consumption users, customers completing Manitoba Hydro's free online Home Comfort & Energy Assessment and any other customer groups who can benefit from the Affordable Energy Program.

- **Participating Contractors**
  AEP Staff provides participating contractors with information and training to communicate the benefits and details of the program to their customers. The AEP has an open expression of interest available to contractors in rural and urban areas who wish to participate in the program.

- **Manitoba Hydro Front Line Staff**
  AEP Staff provides internal front line staff with information, training, and resources to ensure they are aware of the program and can identify customers who may benefit from the program.

- **Financial Institutions**
  AEP staff works with financial institutions in the community to provide program information that may benefit their members. AEP has currently established a relationship with the Assiniboine and Austin Credit Union.

- **Municipality**
  AEP staff works with rural municipality members/leaders to provide training and program materials so they can inform their residents who may qualify and benefit from the program. (E.G. Mayors in the South Basin Town and Counsel)

Marketing Mix

Product

The AEP offers qualifying customers with the following energy efficient upgrades:

- Free insulation upgrades, including installation (Attic, basement, walls).
- New high-efficiency natural gas furnace for $9.50/month for 5 years ($570 total cost).
- $3000 rebate towards the purchase of a qualifying high-efficiency condensing boiler.
- Free drain water heat recovery units for electrically heated water tanks.
- Free in-home energy efficiency review and energy saving items.
    - Low flow shower head;
    - Low flow faucet aerators;
    - Pipe wrapping for water heater;
    - Electrical socket caps;
    - Electrical socket draft stoppers;
    - Window weatherization kits;
    - LED Lighting (Light Emitting Diodes)
    - Energy Efficient Lighting.
- Customer may also qualify for a electric furnace, if they are switching from an oil or propane furnace in an area without natural gas service.

Price

Manitoba Hydro Perspective

- Insulation upgrades are provided at no cost to the customer. Both the materials and the cost of installation are covered through the AEP.
- The new high-efficiency natural gas furnace for $9.50/month for 5 years ($570 total cost).
- Customers who install a qualifying high-efficiency condensing boiler will receive a $3000 rebate.
- Drain water heat recovery units will be provided at no cost to the customer. Both the material and the cost of installation are covered through the AEP.
- Free in-home energy efficiency review and energy saving items. Energy saving items are installed by the energy advisors unless otherwise instructed by customers.

Customer Perspective

- Time:
    - To complete the eligibility forms and provide the supporting tax documents.
- Commitment:
    - Live in the home for 1 (one) year. If the homeowner or landlord sells the home within the first year, the owner is responsible for repaying the total cost of the upgrades received through the AEP program.

Distribution

- Customers can obtain application forms from District Offices, the website, and upon request from program staff, contractors, non-profits organizations, and other program affiliates.

- The AEP coordinates the in home energy review and the contractors for qualifying upgrades. (Turn Key Solution)
- AEP is offered throughout the province of Manitoba. AEP is continuously exploring opportunities to enroll additional participating contractors to better service our customers.

Promotion

- Awareness Campaign:
    - Social Media
    - Manitoba Hydro's Website
    - Radio
    - Community Event Sponsorships
    - Community Posters
    - TV
    - Direct Mailer
    - Bill Inserts
    - Newspapers
    - Billboards Advertising
    - Transit Bus Shelters
    - Interior Transit Ads
    - Convenience Stores
    - Online Media
- Manitoba Hydro Awareness
    - Internal training resources.
    - Tailored presentations to specific work groups who interact with lower income customers
- Community Approach:
    - Community Centres
    - Non-Profit Resource Groups
    - Community Resource Centres
    - Sponsorships - Supporting and participating in community events
    - Financial Institutions
    - Neighbourhood Power Smart Pilot Street Project
        - Manitoba Hydro branded event tent
        - AEP Promotional T-Shirts for Staff
        - Lamp Post Signs
        - Lawn Signs
        - Post-participation lawn signs
        - Power Smart Float
    - Neighbourhood Power Smart Project team marketers (BNRC & NECRC)
- Landlords
    - Professional Property Management Association (PPMA)
    - Winnipeg Rental Network

    - Manitoba Non-profit Housing Association
    - Targeted mailer to landlords from Billing System data
    - Residential Tenancies Branch
- Participating Contractors
- Social Media Channels (Facebook & Twitter)
  A social media strategy will be created to take advantage of this yet-untapped channel for Power Smart. Options for leveraging social media include advertising targeted to key demographics in Manitoba, inviting customers to use a hashtag (e.g. #affordableenergy, #ITSTRUE) to share their feedback in regards to the AEP, and sharing photos of AEP staff and Neighbourhood Power Smart Staff at community events.)

Budget

AEP has a marketing budget of $500,000 for the 2015-2016 fiscal year.

Participation Forecast

The Affordable Energy Program has set a target of approximately 2,725 homes to be completed in the next year (2015-2016). A target of approximately 1,315 insulation projects, 686 furnace installations, 950 drain water heat recovery units and 15 boiler installations has been set for the 2015-2016 year.

Evaluation Analysis

The marketing strategy will be evaluated based on each individual approach / component, each media channel, and the campaign as a whole. The analysis will evaluate the Return on Investment the overall marketing strategy and each specific media channel, by taking into consideration the cost, reach, frequency, engagement, applications received, and total homes completed.

The Customer Satisfaction Survey will be used to measure program awareness, identify Manitoba specific barriers, and feedback on the overall program.

Section:	Appendix 8.1	**Page No.:**	33
Topic:	Affordable Energy Program		
Subtopic:	Customer arrears		
Issue:	Programs to assist customers in arrears		

PREAMBLE TO IR (IF ANY):

The Affordable Energy Fund, and the Affordable Energy Program, are designed to encourage "…energy efficiency and conservation through programs and services for rural and northern Manitobans, low income customers and seniors…." This question should be read with GAC/Hydro 1-41 through 1-49. It has a specific First Nation focus.

QUESTION:

Provide historical data on bill payment issues for each of the past three years, including:

a) What fraction of residential customers are in arrears on their bills?

RATIONALE FOR QUESTION:

Information on customer arrears and the extent to which the Affordable Energy Programs are available to customers who are challenged in meeting their utility bill payments is important in assessing the success of the programs. The IR can be distinguished from GAC 1-41 – 1-49 given its distinct First Nations focus.

RESPONSE:

Please refer to Manitoba Hydro's response to MMF/MH-I-45m.

Section:	Appendix 8.1	**Page No.:**	33
Topic:	Affordable Energy Program		
Subtopic:	Customer arrears		
Issue:	Programs to assist customers in arrears		

PREAMBLE TO IR (IF ANY):

The Affordable Energy Fund, and the Affordable Energy Program, are designed to encourage "…energy efficiency and conservation through programs and services for rural and northern Manitobans, low income customers and seniors…." This question should be read with GAC/Hydro 1-41 through 1-49. It has a specific First Nation focus.

QUESTION:

Provide historical data on bill payment issues for each of the past three years, including:

b) What fraction are in arrears more than 90 days?

RATIONALE FOR QUESTION:

Information on customer arrears and the extent to which the Affordable Energy Programs are available to customers who are challenged in meeting their utility bill payments is important in assessing the success of the programs. The IR can be distinguished from GAC 1-41 – 1-49 given its distinct First Nations focus.

RESPONSE:

Please see the tables below.

Residential Customers in 90+ Day Arrears as a Percentage of Residential Customers			
Month	**2012**	**2013**	**2014**
January	n/a	2.69%	2.51%
February	2.75%	2.93%	2.74%
March	2.61%	3.05%	2.94%
April	2.74%	2.98%	3.05%
May	2.52%	2.81%	2.81%
June	2.57%	2.75%	2.69%
July	2.62%	2.70%	2.63%
August	2.45%	2.60%	2.63%
September	2.54%	2.51%	2.54%
October	2.40%	2.13%	2.16%
November	2.36%	2.11%	2.32%
December	2.82%	2.47%	2.55%

First Nation Residential Customers in 90+ Day Arrears as a Percentage of Residential Customers			
Month	**2012**	**2013**	**2014**
January	n/a	0.74%	0.70%
February	0.74%	0.80%	0.74%
March	0.79%	0.89%	0.79%
April	0.85%	0.90%	0.80%
May	0.80%	0.95%	0.78%
June	0.79%	0.98%	0.69%
July	0.83%	0.95%	0.68%
August	0.84%	0.99%	0.65%
September	0.85%	0.88%	0.57%
October	0.78%	0.73%	0.49%
November	0.76%	0.70%	0.51%
December	0.83%	0.72%	0.56%

Section:	Appendix 8.1	**Page No.:**	33
Topic:	Affordable Energy Program		
Subtopic:	Customer arrears		
Issue:	Programs to assist customers in arrears		

PREAMBLE TO IR (IF ANY):

The Affordable Energy Fund, and the Affordable Energy Program, are designed to encourage "…energy efficiency and conservation through programs and services for rural and northern Manitobans, low income customers and seniors…." This question should be read with GAC/Hydro 1-41 through 1-49. It has a specific First Nation focus.

QUESTION:

Provide historical data on bill payment issues for each of the past three years, including:

c) What demographic information, if any, does Manitoba Hydro collect on customers who are in arrears? What insight can Manitoba Hydro provide into the magnitude of the arrears issue in Northern First Nations or all First Nations?

RATIONALE FOR QUESTION:

Information on customer arrears and the extent to which the Affordable Energy Programs are available to customers who are challenged in meeting their utility bill payments is important in assessing the success of the programs. The IR can be distinguished from GAC 1-41 – 1-49 given its distinct First Nations focus.

RESPONSE:

Manitoba Hydro does not collect demographic information on customers in arrears. See Manitoba Hydro's response to MMF/MH-I-45m which provides insight into the magnitude of arrears among all First Nation customers and Manitoba Hydro's response to MKO/MH-I-3a-h which provides insight into the size of areas in First Nations located in the North.

Section:	Appendix 8.1	**Page No.:**	33
Topic:	Affordable Energy Program		
Subtopic:	Customer arrears		
Issue:	Programs to assist customers in arrears		

PREAMBLE TO IR (IF ANY):

The Affordable Energy Fund, and the Affordable Energy Program, are designed to encourage "…energy efficiency and conservation through programs and services for rural and northern Manitobans, low income customers and seniors…." This question should be read with GAC/Hydro 1-41 through 1-49. It has a specific First Nation focus.

QUESTION:

Provide historical data on bill payment issues for each of the past three years, including:

d) What is the annual magnitude of the utility's credit and collection costs?

RATIONALE FOR QUESTION:

Information on customer arrears and the extent to which the Affordable Energy Programs are available to customers who are challenged in meeting their utility bill payments is important in assessing the success of the programs. The IR can be distinguished from GAC 1-41 – 1-49 given its distinct First Nations focus.

RESPONSE:

Residential collection activities are part of the services provided by several Divisions at Manitoba Hydro including Business Support Services, Consumer Marketing & Sales, Customer Service Operations (South), and Customer Service Operations (Winnipeg & North).

Electric Credit and Collection Costs ($1000s)

	2012	2013	2014
Collection Expenses *	266	195	259
Labour	8,518	6,395	5,082
Overhead	1,448	1,599	1,271
Total Collection Costs*	**10,232**	**8,188**	**6,612**

*Collection Expenses exclude Bad Debt Expense

Section:	Appendix 8.1	**Page No.:**	33
Topic:	Affordable Energy Program		
Subtopic:	Customer arrears		
Issue:	Programs to assist customers in arrears		

PREAMBLE TO IR (IF ANY):

The Affordable Energy Fund, and the Affordable Energy Program, are designed to encourage "…energy efficiency and conservation through programs and services for rural and northern Manitobans, low income customers and seniors…." This question should be read with GAC/Hydro 1-41 through 1-49. It has a specific First Nation focus.

QUESTION:

Provide historical data on bill payment issues for each of the past three years, including:

e) What is Manitoba Hydro's arrears policy?

i. Does Manitoba Hydro have any programs to help customers who are in arrears get up to date?

ii. At what point, and under what circumstances, does Manitoba Hydro shut off power to customers in arrears?

RATIONALE FOR QUESTION:

Information on customer arrears and the extent to which the Affordable Energy Programs are available to customers who are challenged in meeting their utility bill payments is important in assessing the success of the programs. The IR can be distinguished from GAC 1-41 – 1-49 given its distinct First Nations focus.

RESPONSE:

i. Please refer to Manitoba Hydro's response to GAC/MH-I-50 for Manitoba Hydro's arrears policy.

Please refer to Manitoba Hydro's response to MMF/MH-I-34 and GAC/MH-I-42 for a discussion on the programs and initiatives Manitoba Hydro has in place to reduce the number of residential disconnections for nonpayment.

ii. Please refer to Manitoba Hydro's response to GAC/MH-I-3 outlining the process followed assuming an energy bill is issued and no payment or payment arrangement is made throughout the entire process.

Section:	Appendix 8.1	**Page No.:**	33
Topic:	Affordable Energy Program		
Subtopic:	Customer arrears		
Issue:	Programs to assist customers in arrears		

PREAMBLE TO IR (IF ANY):

The Affordable Energy Fund, and the Affordable Energy Program, are designed to encourage "…energy efficiency and conservation through programs and services for rural and northern Manitobans, low income customers and seniors…." This question should be read with GAC/Hydro 1-41 through 1-49. It has a specific First Nation focus.

QUESTION:

Provide historical data on bill payment issues for each of the past three years, including:

f) Does Manitoba Hydro permit customers in arrears to participate in energy efficiency programs. If not, why not?

RATIONALE FOR QUESTION:

Information on customer arrears and the extent to which the Affordable Energy Programs are available to customers who are challenged in meeting their utility bill payments is important in assessing the success of the programs. The IR can be distinguished from GAC 1-41 – 1-49 given its distinct First Nations focus.

RESPONSE:

DSM is a key component of Manitoba Hydro's overall strategy in assisting customers with managing their energy bills, minimizing arrears and bad debt, lowering the number of disconnects and other business activities such as meeting the future energy demands of the province at the lowest cost. All Manitoba Hydro customers, including those in arrears, are eligible to participate in Manitoba Hydro's incentive-based Power Smart programs, such as

the Water & Energy Saver, Home Insulation, Residential LED lighting, Refrigerator Retirement, and Affordable Energy Programs.

For financing programs, such as the Power Smart Pay-As-You-Save (PAYS) Financing, Power Smart Residential Loan or Residential Earth Energy Loan, customers are required to be in good standing. These programs offer loans which require payment of an additional sum of money over and above the customer's energy bill. The rationale for limitations placed on participation in financing initiatives where additional debt is incurred is consistent with good business practices associated with providing financing to customers.

Section:	Appendix 8.1	**Page No.:**	33
Topic:	Affordable Energy Program		
Subtopic:	Customer arrears		
Issue:	Programs to assist customers in arrears		

PREAMBLE TO IR (IF ANY):

The Affordable Energy Fund, and the Affordable Energy Program, are designed to encourage "…energy efficiency and conservation through programs and services for rural and northern Manitobans, low income customers and seniors…." This question should be read with GAC/Hydro 1-41 through 1-49. It has a specific First Nation focus.

QUESTION:

Provide historical data on bill payment issues for each of the past three years, including:

g) Does Manitoba Hydro target any energy efficiency programs to customers in arrears? If not, why not?

RATIONALE FOR QUESTION:

Information on customer arrears and the extent to which the Affordable Energy Programs are available to customers who are challenged in meeting their utility bill payments is important in assessing the success of the programs. The IR can be distinguished from GAC 1-41 – 1-49 given its distinct First Nations focus.

RESPONSE:

Customers in arrears are considered a key target market for Manitoba Hydro's Affordable Energy Program. The Program targets customers both directly through marketing efforts and indirectly through the Corporation's Credit & Recovery Services and other generic opportunities which may provide marketing leads.

On the direct marketing front, the Affordable Energy Program utilizes an auto dialer call campaign which specifically calls customers who are in arrears. The purpose of this campaign is to contact, inform and encourage customers to participate in the Affordable Energy Program. The Affordable Energy Program also targets customers receiving Neighours Helping Neighbours assistance by following up with those who have received assistance to encourage participation.

Customers who are in contact with Credit & Recovery Services are advised of the Neighbours Helping Neighbours Program, general Power Smart programs and the Affordable Energy Program. An Affordable Energy package of information is sent to customers who may qualify. The Corporation also pursues numerous other leads to encourage customers to participate in the Affordable Energy Program (e.g. recently a customer sent an email to Manitoba Hydro's President regarding an arrears concern and within 24 hours, a member of the Affordable Energy team contacted the customer and her landlord for participation in the program).

Section:	Appendix 8.1	**Page No.:**	33
Topic:	Affordable Energy Program		
Subtopic:	Customer arrears		
Issue:	Programs to assist customers in arrears		

PREAMBLE TO IR (IF ANY):

The Affordable Energy Fund, and the Affordable Energy Program, are designed to encourage "…energy efficiency and conservation through programs and services for rural and northern Manitobans, low income customers and seniors…." This question should be read with GAC/Hydro 1-41 through 1-49. It has a specific First Nation focus.

QUESTION:

Provide historical data on bill payment issues for each of the past three years, including:

h) Given the identified magnitude of the arrears problem in Northern First Nations, what new programs does Hydro propose with regard to addressing arrears and making energy efficiency programming accessible.

RATIONALE FOR QUESTION:

Information on customer arrears and the extent to which the Affordable Energy Programs are available to customers who are challenged in meeting their utility bill payments is important in assessing the success of the programs. The IR can be distinguished from GAC 1-41 – 1-49 given its distinct First Nations focus.

RESPONSE:

The First Nations Power Smart Program, offered under the Affordable Energy Program, has and continues to work directly with First Nation Communities to make energy efficiency upgrades regardless of arrears. Qualifying homes receive free insulation and free basic energy savings measures such as energy efficient lighting, showerheads, faucet aerators, window kits and draft stoppers. The work associated with installing these measures is

achieved by employing local members of the community. All First Nation Communities are eligible for these upgrades with progress in each community primarily dependent on each community's priorities and timelines.

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MKO/MH I-3 a+b, f-h

	Residential Accounts				First Nation Residential Accounts			
Community	**a) Residential Customers in Arrears**	**f) % of Accounts in Arrears**	**g) 2013/14 Billed Consumption in kW.h**	**h) Value in $ of Accounts in Arrears**	**b) First Nation Residential Customers in Arrears**	**f) % of Accounts in Arrears**	**g) 2013/14 Billed Consumption in kW.h**	**h) Value in $ of Accounts in Arrears**
Barren Lands First Nation	59	43.1%	985,306	$29,468	46	43.4%	759,459	$20,396
Chemanwawin Cree Nation	171	52.1%	5,827,521	$95,584	169	53.8%	5,778,402	$94,974
Fox Lake First Nation	31	59.6%	924,634	$9,223	26	57.8%	810,481	$7,980
Garden Hill First Nation	368	73.9%	10,995,835	$240,616	367	73.8%	10,961,783	$239,816
Gods Lake First Nation	117	40.3%	3,787,909	$55,739	117	40.8%	3,787,909	$55,739
Manto Sipi Cree Nation	98	80.3%	4,028,584	$590,158	97	81.5%	3,989,460	$589,413
Marcel Colomb First Nation	*	*	*	*	*	*	*	*
Mathias Colomb First Nation	105	26.4%	3,857,920	$68,852	104	27.3%	3,825,640	$67,659
Misipawistik Cree Nation	122	55.5%	4,178,105	$53,283	116	56.6%	4,036,285	$50,122
Mosakahiken Cree Nation	146	58.4%	5,297,562	$93,141	139	69.8%	5,104,727	$87,962
Nischawayaksihk Cree Nation	140	27.8%	5,056,997	$76,381	134	27.9%	4,909,583	$71,621
Northlands Dene First Nation	61	40.7%	779,263	$21,734	59	40.1%	750,011	$21,249
Norway House Cree Nation	700	58.4%	25,125,379	$356,018	700	61.8%	25,125,379	$356,018
O-PIPON-NA-PIWIN	148	69.8%	4,694,802	$150,019	130	76.0%	4,171,909	$130,280
Opaskwayak Cree Nation	367	50.3%	11,710,591	$174,316	332	50.1%	10,779,110	$162,238
Oxford House First Nation	224	53.7%	7,664,925	$205,021	223	54.7%	7,629,975	$201,407
Pimicikamak Cree Nation	624	67.7%	25,406,227	$3,594,154	621	68.0%	25,310,574	$3,578,013
Red Sucker Lake First Nation	141	67.1%	4,088,261	$63,252	138	70.1%	3,995,470	$62,564
Sapotaweyak Cree Nation	99	39.4%	2,839,025	$28,483	90	37.3%	2,640,096	$25,209
Sayisi Dene First Nation	78	66.7%	970,815	$19,631	76	66.7%	950,945	$18,668
Shamattawa First Nation	74	41.3%	1,300,931	$27,111	70	42.2%	1,219,920	$26,741
St Theresa Point First Nation	334	58.3%	10,347,583	$185,856	325	58.3%	10,151,931	$178,293
Tataskweyak Cree Nation	185	48.1%	7,810,740	$90,144	181	48.8%	7,678,067	$86,070
War Lake First Nation	14	42.4%	444,435	$10,591	13	44.8%	419,508	$10,196
Wasagamack First Nation	161	60.1%	4,441,460	$64,491	161	61.5%	4,441,460	$64,491
Wuskwi Sipihk First Nation	24	68.6%	920,242	$32,784	23	69.7%	923,788	$32,132
York Factory First Nation	46	35.7%	1,548,329	$32,529	44	36.7%	1,488,789	$30,029

* Denotes an insufficiently large number of customers to ensure the protection of identifiable customer information

Section:	Tab 6	**Page No.:**	
Topic:	Rates		
Subtopic:	Bill impacts		
Issue:	Equity		

PREAMBLE TO IR (IF ANY):

The Board has expressed particular concern for rate impacts on low-income and First Nations customers, and customers in arrears, and noted the value of DSM in mitigating such impacts (e.g., NFAT Final Report at pgs. 21, 29).

QUESTION:

State, describe, and document all strategies, including bill assistance, **(a)** considered, **(b)** adopted, and **(c)** proposed to mitigate bill impacts on the following, and with respect to each provide a complete description of expenditures and customer benefits:

i. Dwellings occupied by Low-income households,
ii. Dwellings occupied by First Nations households,
iii. Dwellings in northern rural Manitoba,
iv. Dwellings in rural areas of Manitoba (defined as areas of no natural gas availability),
v. Dwellings using electricity for heat,
vi. Dwellings not using electricity for heat,
vii. Dwellings in Winnipeg,
viii. All residential dwellings, and
ix. Small and medium business.

RATIONALE FOR QUESTION:

To explore strategies for bill assistance.

RESPONSE:

Manitoba Hydro's overall strategy to mitigate bill impacts for its customers involves Demand Side Management, bill management and emergency financial assistance using a holistic and integrated approach. Manitoba Hydro recognizes all three components are important however energy conservation along with customer education are key as this component offers the best long term solution for customers and the utility. Where applicable, all of Manitoba Hydro's customers can participate in its various residential, commercial and industrial DSM programs.

Manitoba Hydro's bill management strategy provides customers with very accommodating practices which include payment arrangements, equal payment plans, disconnection avoidance, negotiable late payment charges, and custom due dates. When customers face personal hardship or a crisis, Manitoba Hydro refers these customers to seek emergency financial assistance through the Neighbours Helping Neighbours Program. Through this program, customers can qualify for funding and be referred to various community resources to help with their personal situation.

For the overall residential market, Power Smart is the primary strategy employed to assist customers in lowering their home energy costs. Since the program's inception, Power Smart has been successful in reducing overall residential customer bills by $37 million (see Appendix 8.2 p 49); savings which continue to be realized into the future. Recognizing the higher cost of heating using electricity, the Home Insulation Program was recently enhanced in order to specifically target and assist those consumers.

The Affordable Energy Program provides lower income households, owners and renters, with a free in-home energy efficiency review including free basic energy saving measures, free insulation and a new high efficient furnace for $9.50/month over five years for a total cost of $570. Participating lower income households directly benefit with reduced utility bills. The Affordable Energy Program promotes participation through various media channels, partners with community organizations, provides information sessions, connects with community networks and the program is marketed directly through call campaigns to customers including those in arrears or receiving Neighbours Helping Neighbours assistance.

The First Nations Power Smart Program has a dedicated energy advisor who works directly with First Nation Communities to complete free basic energy savings measures and free

insulation upgrades to all qualifying homes. Funding is provided for training, labour and material allowing local members to complete the installation. A new initiative under the Program, will provide free basic energy savings measures to all remaining First Nation homes with funding for labour provided to the First Nation communities for implementing this program. First Nation households directly benefit with reduced utility bills.

Working in partnership with AKI Energy and participating First Nation communities, geothermal heating and cooling systems are currently being installed in four First Nation communities through Manitoba Hydro's Power Smart Geothemal Community program. AKI Energy is currently in discussions with other First Nation communities to expand this program to include broader participation.

In partnership with AKI Energy and Pequis First Nation, Manitoba Hydro is piloting a solar hot water initiative with 20 systems being installed and monitored for system performance and cost effectiveness. Manitoba Hydro is also working AKI Energy through the Power Smart Bioenergy Optimization Program to evaluate opportunities for the use of biomass for space and hot water heating within three First Nation Communities, focusing on the utilization of locally-available biomass resources to displace electric load for space and hot water heating needs that would otherwise be served from the Manitoba Hydro system.

Another key strategy employed to assist all customers in lowering their energy costs is the Heating Fuel Choice Initiative. The objective of the initiative is to increase awareness and understanding of the total lifetime cost of natural gas, electricity and geothermal heating systems and to provide customers with the information to effectively choose the most economic system which best meets their needs and circumstance. To aid in offsetting the capital cost of a new heating system, Manitoba Hydro also offers innovative on-bill financing through its various financing programs, including the Power Smart Residential Loan, the Power Smart PAYS Financing program and the Residential Earth Power Loan. Customers can choose which financing program best fits their needs.

For the overall commercial market, Power Smart is also the key strategy employed to assist business and institutional customers in lowering their energy costs. Since the program's inception, Power Smart has been successful at reducing overall commercial customer bills by $37 million (see Appendix 8.2 p 49); savings which continue to be realized each year into the future. Although, Power Smart programs are available to all commercial customers regardless of heat source, in the 2014/2015 plan, several commercial programs were

enhanced in order to specifically assist commercial customers using electricity consuming technologies.

Manitoba Hydro continues to provide its industrial and commercial customers with opportunities to conserve energy and improve efficiency, improving the overall productivity and competitiveness of Manitoba industry through participation in its Power Smart Performance Optimization and Natural Gas Optimization Programs. Additionally, opportunities to use low-cost or no-cost waste and byproducts streams to generate heat and electricity through combined heat and power systems are also supported through Manitoba Hydro's Power Smart Bioenergy Optimization and Load Displacement Programs, which support customer-sited generation as an opportunity to displace energy purchases that would otherwise be made from Manitoba Hydro's system.

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MANITOBA HYDRO

2012/13 & 2013/14 ELECTRIC GENERAL RATE APPLICATION

UNDERTAKING PROVIDED BY: L. MORRISON

Manitoba Hydro Undertaking #60

Manitoba Hydro to file its non-utility generation policy.

Response:

Manitoba Hydro's Non-Utility Generation Policy is as follows:

1. Sale of Independent Power to Manitoba Hydro

   Manitoba Hydro will encourage existing and potential customers to install Non-Utility Generation (NUG) in Manitoba. All concerned parties including the NUG Owner and the NUG must meet and comply with applicable statutory requirements, including but not limited to, required licenses, Orders-in-Council, permits and approvals.

   The NUG Owner must supply its on-site load first, if applicable.

   For sale of Independent Power from NUG 200 kW or less, Manitoba Hydro at its sole discretion may purchase Independent Power made available to it by a NUG Owner at a price to be established and published annually based on the Standard Residential Run-off Rate.

   For sale of Independent Power from NUG greater than 200 kW, Manitoba Hydro at its sole discretion may purchase Independent Power made available to it by a NUG Owner for a project-specific price to be determined by Manitoba Hydro which reflects, at a minimum, the value of the power to Manitoba Hydro.

   Special consideration may be given to a NUG Owner whose NUG meets one or more of the following:

- supports or increases industrial and economic development in Manitoba
- provides support to Manitoba Hydro's transmission system
- provides support to Manitoba Hydro's distribution system

2. Manitoba Hydro Initiated Independent Power Purchases

   Manitoba Hydro may solicit Independent Power purchases through a standard procurement process which may consist of processes such as:

   - Request for Proposal
   - Single-sourcing
   - Sole-sourcing
   - Expression of Interest.

3. Installation of NUG

   Installation of NUG in Manitoba must meet and comply with the applicable interconnection and operating requirements of Manitoba Hydro's transmission and distribution system as detailed in its Open Access Transmission Tariff.

APPENDIX
A. DEPENDABLE SUPPLY & DEMAND

System Firm Winter Peak Demand and Capacity Resources (MW) @ generation
2014/15 PRP
No New Resources

	Fiscal Year		2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32
	Power Resources																			
	New Power Resources																			
	New Hydro																			
	Conawapa																			
	Keeyask							90	630	630	630	630	630	630	630	630	630	630	630	630
1	**Total New Hydro**							90	630	630	630	630	630	630	630	630	630	630	630	630
	New Thermal																			
	SCGT																			
	CCGT																			
2	**Total New Thermal**																			
	New NUG PPA																			
	Contracted																			
	Proposed				12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
3	**Total New NUG PPA**				12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
4	**Total New Power Resources**	1+2+3			**12**	**12**	**12**	**102**	**642**	**642**	**642**	**642**	**642**	**642**	**642**	**642**	**642**	**642**	**642**	**642**
	Base Supply Power Resources																			
	Existing Hydro		5 133	5 172	5 164	5 190	5 195	5 196	5 181	5 172	5 167	5 167	5 167	5 167	5 167	5 167	5 167	5 167	5 167	5 167
	Existing Thermal																			
	Brandon Coal - Unit 5		105	105	105	105	105													
	Selkirk Gas			66	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132
	Brandon Units 6-7 SCGT		280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280
	Contracted Imports		605	605	605	605	605	605	605	605	605	605	605	220	220	220	220	220		
	Proposed Imports																			
	Pointe du Bois Rebuild																			
	Bipole III Reduced Losses						90	90	80	80	80	80	80	80	80	80	80	80	80	80
5	**Total Base Supply Power Resources**		**6 123**	**6 228**	**6 286**	**6 312**	**6 407**	**6 303**	**6 278**	**6 269**	**6 264**	**6 264**	**6 264**	**5 879**	**5 879**	**5 879**	**5 879**	**5 879**	**5 659**	**5 659**
6	**Total Power Resources**	4+5	**6 123**	**6 228**	**6 298**	**6 324**	**6 419**	**6 405**	**6 920**	**6 911**	**6 906**	**6 906**	**6 906**	**6 521**	**6 521**	**6 521**	**6 521**	**6 521**	**6 301**	**6 301**
	Peak Demand																			
	2014 Base Load Forecast		4 716	4 803	4 861	4 985	5 068	5 166	5 223	5 284	5 342	5 400	5 458	5 516	5 574	5 632	5 690	5 748	5 808	5 869
	Less: 2014 DSM Forecast		- 60	- 111	- 169	- 226	- 293	- 353	- 406	- 449	- 475	- 498	- 517	- 533	- 550	- 566	- 582	- 585	- 589	- 592
7	**Manitoba Net Load**		4 656	4 692	4 692	4 759	4 775	4 813	4 817	4 835	4 867	4 902	4 941	4 983	5 024	5 066	5 108	5 163	5 219	5 277
	Contracted Exports		726	484	724	724	559	559	779	908	880	880	880	385	385	275	275	275	275	275
	Proposed Exports																			
8	**Total Exports**		726	484	724	724	559	559	779	908	880	880	880	385	385	275	275	275	275	275
9	**Total Peak Demand**	7+8	**5 382**	**5 176**	**5 416**	**5 483**	**5 334**	**5 372**	**5 596**	**5 743**	**5 747**	**5 782**	**5 821**	**5 368**	**5 409**	**5 341**	**5 383**	**5 438**	**5 494**	**5 552**
10	Reserves		513	563	563	571	573	577	578	580	584	588	593	598	603	608	613	620	626	633
11	**System Surplus**	6-9-10	**228**	**489**	**319**	**270**	**512**	**456**	**746**	**588**	**575**	**536**	**492**	**555**	**509**	**572**	**525**	**463**	**181**	**116**

System Firm Winter Peak Demand and Capacity Resources (MW) @ generation
2014/15 PRP
No New Resources

	Fiscal Year		2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49	2049/50
	Power Resources																			
	New Power Resources																			
	New Hydro																			
	Conawapa																			
	Keeyask		630	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630
1	**Total New Hydro**		630	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630
	New Thermal																			
	SCGT																			
	CCGT																			
2	**Total New Thermal**																			
	New NUG PPA																			
	Contracted																			
	Proposed		12	12	12	12														
3	**Total New NUG PPA**		12	12	12	12														
4	**Total New Power Resources**	1+2+3	**642**	**642**	**642**	**642**	**630**	**630**	**630**	**630**	**630**	**630**	**630**	**630**	**630**	**630**	**630**	**630**	**630**	**630**
	Base Supply Power Resources																			
	Existing Hydro		5 167	5 167	5 167	5 167	5 167	5 167	5 167	5 167	5 167	5 167	5 167	5 167	5 167	5 167	5 167	5 167	5 167	5 167
	Existing Thermal																			
	Brandon Coal - Unit 5																			
	Selkirk Gas		132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132
	Brandon Units 6-7 SCGT		280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280
	Contracted Imports																			
	Proposed Imports																			
	Pointe du Bois Rebuild									87	87	87	87	87	87	87	87	87	87	87
	Bipole III Reduced Losses		80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
5	**Total Base Supply Power Resources**		**5 659**	**5 659**	**5 659**	**5 659**	**5 659**	**5 659**	**5 659**	**5 746**	**5 746**	**5 746**	**5 746**	**5 746**	**5 746**	**5 746**	**5 746**	**5 746**	**5 746**	**5 746**
6	**Total Power Resources**	4+5	**6 301**	**6 301**	**6 301**	**6 301**	**6 289**	**6 289**	**6 289**	**6 376**	**6 376**	**6 376**	**6 376**	**6 376**	**6 376**	**6 376**	**6 376**	**6 376**	**6 376**	**6 376**
	Peak Demand																			
	2014 Base Load Forecast		5 931	5 995	6 058	6 122	6 185	6 249	6 313	6 376	6 440	6 504	6 567	6 631	6 694	6 758	6 822	6 885	6 949	7 012
	Less: 2014 DSM Forecast		- 594	- 596	- 598	- 601	- 604	- 607	- 610	- 613	- 614	- 614	- 615	- 615	- 615	- 615	- 615	- 615	- 615	- 615
7	**Manitoba Net Load**		5 337	5 399	5 460	5 521	5 581	5 642	5 703	5 763	5 826	5 890	5 952	6 016	6 079	6 143	6 207	6 270	6 334	6 397
	Contracted Exports		275	275	275															
	Proposed Exports																			
8	**Total Exports**		275	275	275															
9	**Total Peak Demand**	7+8	**5 612**	**5 674**	**5 735**	**5 521**	**5 581**	**5 642**	**5 703**	**5 763**	**5 826**	**5 890**	**5 952**	**6 016**	**6 079**	**6 143**	**6 207**	**6 270**	**6 334**	**6 397**
10	Reserves		640	648	655	663	670	677	684	692	699	707	714	722	729	737	745	752	760	768
11	**System Surplus**	6-9-10	**49**	**- 21**	**- 89**	**117**	**38**	**- 30**	**- 98**	**- 79**	**- 149**	**- 221**	**- 290**	**- 362**	**- 432**	**- 504**	**- 576**	**- 646**	**- 718**	**- 789**

System Firm Energy Demand and Dependable Resources (GWh) @ generation
2014/15 PRP
No New Resources

	Fiscal Year		2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32
	Power Resources																			
	New Power Resources																			
	New Hydro																			
	Conawapa																			
	Keeyask							493	2 974	3 003	3 003	3 003	3 003	3 003	3 003	3 003	3 003	3 003	3 003	3 003
1	**Total New Hydro**							**493**	**2 974**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**
	New Thermal																			
	SCGT																			
	CCGT																			
2	**Total New Thermal**																			
	New Nug PPA																			
	Contracted																			
	Proposed				97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97
3	**Total New Nug PPA**				**97**	**97**	**97**	**97**	**97**	**97**	**97**	**97**	**97**	**97**	**97**	**97**	**97**	**97**	**97**	**97**
4	New Wind																			
5	**Total New Power Resources**	1+2+3+4			**97**	**97**	**97**	**590**	**3 071**	**3 100**	**3 100**	**3 100**	**3 100**	**3 100**	**3 100**	**3 100**	**3 100**	**3 100**	**3 100**	**3 100**
	Base Supply Power Resources																			
	Existing Hydro		21 928	21 924	21 892	21 878	21 880	21 863	21 816	21 775	21 743	21 743	21 733	21 723	21 723	21 713	21 703	21 703	21 693	21 693
	Existing Thermal																			
	Brandon Coal - Unit 5		811	811	811	811	811	592												
	Selkirk Gas		953	953	953	953	953	953	953	953	953	953	953	953	953	953	953	953	953	953
	Brandon Units 6-7 SCGT		2 354	2 354	2 354	2 354	2 354	2 354	2 354	2 354	2 354	2 354	2 354	2 354	2 354	2 354	2 354	2 354	2 354	2 354
	Contracted Imports		2 730	2 485	2 575	2 575	2 575	2 575	3 502	3 688	3 688	3 688	3 688	2 321	2 050	2 050	2 050	2 050	1 268	1 113
	Proposed Imports																			
	Hydro Adjustment		373	784	844	844	844	844	844	844	844	844	844	406	307	307	307	307	70	
	Market Purchases		337	583	493	493	493	493	958	1 050	1 050	1 050	1 050	2 417	2 671	2 283	2 226	2 259	2 911	3 100
	Existing Wind		771	771	771	771	771	771	771	771	771	771	771	771	771	771	771	771	771	771
	Pointe du Bois Rebuild																			
	Bipole III Reduced Losses						101	101	177	177	177	177	177	177	177	177	177	177	177	177
6	**Total Base Supply Power Resources**		**30 257**	**30 665**	**30 693**	**30 679**	**30 782**	**30 546**	**31 375**	**31 612**	**31 580**	**31 580**	**31 570**	**31 122**	**31 006**	**30 608**	**30 541**	**30 574**	**30 197**	**30 161**
7	**Total Power Resources**	5+6	**30 257**	**30 665**	**30 789**	**30 775**	**30 878**	**31 135**	**34 446**	**34 712**	**34 680**	**34 680**	**34 670**	**34 221**	**34 105**	**33 707**	**33 640**	**33 673**	**33 297**	**33 261**
	Manitoba Domestic Load																			
	2014 Base Load Forecast		25 639	26 130	26 436	27 174	27 662	28 247	28 583	28 937	29 284	29 626	29 970	30 316	30 659	31 006	31 352	31 703	32 061	32 424
	Construction Power - Hydro			110	110	110	110	110	83											
	Less: 2014 DSM Forecast		- 283	- 487	- 780	-1 056	-1 407	-1 730	-1 988	-2 183	-2 296	-2 405	-2 487	-2 562	-2 637	-2 717	-2 797	-2 825	-2 851	-2 874
8	**Manitoba Net Load**		**25 356**	**25 753**	**25 766**	**26 228**	**26 365**	**26 627**	**26 678**	**26 754**	**26 988**	**27 221**	**27 483**	**27 754**	**28 022**	**28 289**	**28 555**	**28 878**	**29 210**	**29 550**
	Contracted Exports		3 421	2 631	3 247	3 367	3 166	3 125	3 951	4 604	4 503	4 476	4 476	2 193	2 049	1 634	1 551	1 551	1 389	1 389
	Proposed Exports																			
	Less: Adverse Water			- 309	- 370	- 370	- 370	- 370	- 370	- 489	- 512	- 512	- 512	- 85						
9	**Total Net Exports**		**3 421**	**2 322**	**2 877**	**2 997**	**2 796**	**2 755**	**3 581**	**4 115**	**3 991**	**3 964**	**3 964**	**2 108**	**2 049**	**1 634**	**1 551**	**1 551**	**1 389**	**1 389**
10	**Total Energy Demand**	8+9	**28 777**	**28 075**	**28 643**	**29 225**	**29 161**	**29 382**	**30 259**	**30 869**	**30 979**	**31 185**	**31 447**	**29 862**	**30 071**	**29 923**	**30 106**	**30 429**	**30 599**	**30 939**
11	**System Surplus**	7-10	**1 481**	**2 590**	**2 146**	**1 551**	**1 718**	**1 753**	**4 187**	**3 843**	**3 701**	**3 495**	**3 223**	**4 359**	**4 034**	**3 784**	**3 534**	**3 244**	**2 698**	**2 322**

System Firm Energy Demand and Dependable Resources (GWh) @ generation
2014/15 PRP
No New Resources

	Fiscal Year		2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49	2049/50
	Power Resources																			
	New Power Resources																			
	New Hydro																			
	Conawapa																			
	Keeyask		3 003	3 003	3 003	3 003	3 003	3 003	3 003	3 003	3 003	3 003	3 003	3 003	3 003	3 003	3 003	3 003	3 003	3 003
1	**Total New Hydro**		**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**
	New Thermal																			
	SCGT																			
	CCGT																			
2	**Total New Thermal**																			
	New Nug PPA																			
	Contracted																			
	Proposed		97	97	97	97														
3	**Total New Nug PPA**		**97**	**97**	**97**	**97**														
4	New Wind																			
5	**Total New Power Resources**	1+2+3+4	**3 100**	**3 100**	**3 100**	**3 100**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**	**3 003**
	Base Supply Power Resources																			
	Existing Hydro		21 683	21 673	21 673	21 663	21 653	21 653	21 643	21 643	21 633	21 623	21 623	21 613	21 603	21 603	21 593	21 583	21 583	21 573
	Existing Thermal																			
	Brandon Coal - Unit 5																			
	Selkirk Gas		953	953	953	953	953	953	953	953	953	953	953	953	953	953	953	953	953	953
	Brandon Units 6-7 SCGT		2 354	2 354	2 354	2 354	2 354	2 354	2 354	2 354	2 354	2 354	2 354	2 354	2 354	2 354	2 354	2 354	2 354	2 354
	Contracted Imports		1 113	1 113	1 113	186														
	Proposed Imports																			
	Hydro Adjustment																			
	Market Purchases		3 135	3 172	3 208	3 135	3 150	3 187	3 224	3 257	3 295	3 333	3 370	3 408	3 446	3 484	3 522	3 560	3 598	3 636
	Existing Wind		771	771	771	771	771	771	771	771	771	771	771	771	771	771	771	771	771	771
	Pointe du Bois Rebuild									147	237	237	237	237	237	237	237	237	237	237
	Bipole III Reduced Losses		177	177	177	177	177	177	177	177	177	177	177	177	177	177	177	177	177	177
6	**Total Base Supply Power Resources**		**30 186**	**30 213**	**30 249**	**29 239**	**29 058**	**29 095**	**29 122**	**29 302**	**29 420**	**29 448**	**29 485**	**29 513**	**29 541**	**29 579**	**29 607**	**29 635**	**29 673**	**29 701**
7	**Total Power Resources**	5+6	**33 286**	**33 313**	**33 349**	**32 339**	**32 061**	**32 098**	**32 125**	**32 305**	**32 423**	**32 451**	**32 488**	**32 516**	**32 544**	**32 582**	**32 610**	**32 638**	**32 676**	**32 704**
	Manitoba Domestic Load																			
	2014 Base Load Forecast		32 796	33 177	33 557	33 937	34 317	34 698	35 078	35 458	35 839	36 219	36 599	36 980	37 360	37 740	38 121	38 501	38 881	39 262
	Construction Power - Hydro					4	12	16	28	8	8	4								
	Less: 2014 DSM Forecast		-2 895	-2 912	-2 931	-2 951	-2 972	-2 993	-3 015	-3 037	-3 041	-3 042	-3 044	-3 046	-3 046	-3 046	-3 046	-3 046	-3 046	-3 046
8	**Manitoba Net Load**		**29 901**	**30 265**	**30 626**	**30 990**	**31 357**	**31 721**	**32 091**	**32 429**	**32 806**	**33 181**	**33 555**	**33 934**	**34 314**	**34 694**	**35 075**	**35 455**	**35 835**	**36 216**
	Contracted Exports		1 389	1 389	1 389	353	145	145	145	145	145	145	145	145	145	145	145	145	145	145
	Proposed Exports																			
	Less: Adverse Water																			
9	**Total Net Exports**		**1 389**	**1 389**	**1 389**	**353**	**145**	**145**	**145**	**145**	**145**	**145**	**145**	**145**	**145**	**145**	**145**	**145**	**145**	**145**
10	**Total Energy Demand**	8+9	**31 290**	**31 654**	**32 015**	**31 343**	**31 502**	**31 866**	**32 236**	**32 574**	**32 951**	**33 326**	**33 700**	**34 079**	**34 459**	**34 839**	**35 220**	**35 600**	**35 980**	**36 361**
11	**System Surplus**	7-10	**1 995**	**1 658**	**1 333**	**996**	**559**	**232**	**- 111**	**- 269**	**- 528**	**- 875**	**-1 212**	**-1 563**	**-1 915**	**-2 257**	**-2 610**	**-2 962**	**-3 304**	**-3 657**

System Firm Winter Peak Demand and Capacity Resources (MW) @ generation
2014/15 PRP
Recommended Plan (Keeyask 2019, Conawapa 2029)

	Fiscal Year		2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32
	Power Resources																			
	New Power Resources																			
	New Hydro																			
	Conawapa																	520	1 040	1 300
	Keeyask							90	630	630	630	630	630	630	630	630	630	630	630	630
1	**Total New Hydro**							90	630	630	630	630	630	630	630	630	630	1 150	1 670	1 930
	New Thermal																			
	SCGT																			
	CCGT																			
2	**Total New Thermal**																			
	New NUG PPA																			
	Contracted																			
	Proposed				12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
3	**Total New NUG PPA**				12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
4	**Total New Power Resources**	1+2+3			**12**	**12**	**12**	**102**	**642**	**642**	**642**	**642**	**642**	**642**	**642**	**642**	**642**	**1 162**	**1 682**	**1 942**
	Base Supply Power Resources																			
	Existing Hydro		5 133	5 172	5 164	5 190	5 195	5 196	5 181	5 172	5 167	5 167	5 167	5 167	5 167	5 167	5 167	5 167	5 167	5 143
	Existing Thermal																			
	Brandon Coal - Unit 5		105	105	105	105	105													
	Selkirk Gas			66	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132
	Brandon Units 6-7 SCGT		280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280
	Contracted Imports		605	605	605	605	605	605	605	605	605	605	605	220	220	220	220	220		
	Proposed Imports																			
	Pointe du Bois Rebuild																			
	Bipole III Reduced Losses						90	90	80	80	80	80	80	80	80	80	80	80	21	21
5	**Total Base Supply Power Resources**		**6 123**	**6 228**	**6 286**	**6 312**	**6 407**	**6 303**	**6 278**	**6 269**	**6 264**	**6 264**	**6 264**	**5 879**	**5 879**	**5 879**	**5 879**	**5 879**	**5 600**	**5 576**
6	**Total Power Resources**	4+5	**6 123**	**6 228**	**6 298**	**6 324**	**6 419**	**6 405**	**6 920**	**6 911**	**6 906**	**6 906**	**6 906**	**6 521**	**6 521**	**6 521**	**6 521**	**7 041**	**7 282**	**7 518**
	Peak Demand																			
	2014 Base Load Forecast		4 716	4 803	4 861	4 985	5 068	5 166	5 223	5 284	5 342	5 400	5 458	5 516	5 574	5 632	5 690	5 748	5 808	5 869
	Less: 2014 DSM Forecast		- 60	- 111	- 169	- 226	- 293	- 353	- 406	- 449	- 475	- 498	- 517	- 533	- 550	- 566	- 582	- 585	- 589	- 592
7	**Manitoba Net Load**		4 656	4 692	4 692	4 759	4 775	4 813	4 817	4 835	4 867	4 902	4 941	4 983	5 024	5 066	5 108	5 163	5 219	5 277
	Contracted Exports		726	484	724	724	559	559	779	908	880	880	880	385	385	275	275	614	614	614
	Proposed Exports																			
8	**Total Exports**		726	484	724	724	559	559	779	908	880	880	880	385	385	275	275	614	614	614
9	**Total Peak Demand**	7+8	**5 382**	**5 176**	**5 416**	**5 483**	**5 334**	**5 372**	**5 596**	**5 743**	**5 747**	**5 782**	**5 821**	**5 368**	**5 409**	**5 341**	**5 383**	**5 777**	**5 833**	**5 891**
10	Reserves		513	563	563	571	573	577	578	580	584	588	593	598	603	608	613	620	626	633
11	**System Surplus**	6-9-10	**228**	**489**	**319**	**270**	**512**	**456**	**746**	**588**	**575**	**536**	**492**	**555**	**509**	**572**	**525**	**644**	**823**	**994**

FIT/microFIT PRICE SCHEDULE
(Effective September 30, 2014 for FIT and January 1, 2015 for microFIT)

Renewable Fuel	Project Size Tranche*	Price (¢/kWh)	Escalation Percentage**
Solar (PV) (Rooftop)	≤ 10 kW	38.4	0%
	> 10 kW ≤ 100 kW	34.3	0%
	> 100 kW ≤ 500 kW	31.6	0%
Solar (PV) (Non-Rooftop)	≤ 10 kW	28.9	0%
	> 10 kW ≤ 500 kW	27.5	0%
On-Shore Wind	≤ 500 kW	12.8	20%
Waterpower	≤ 500 kW	24.6	20%
Renewable Biomass	≤ 500 kW	17.5	50%
On-Farm Biogas	≤ 100 kW	26.3	50%
	> 100 kW ≤ 250 kW	20.4	50%
Biogas	≤ 500 kW	16.8	50%
Landfill Gas	≤ 500 kW	17.1	50%

* The FIT Program is available to Projects generally ≤ 500 kW.

**Escalation Percentage based on the Consumer Price Index will be applied to eligible Renewable Fuels as calculated in the FIT Contract. The Base Date is January 1 of the year in which the Project achieves Commercial Operation, unless the Project achieves Commercial Operation in October, November, or December, in which case the Base Date is January 1 of the following year.

FIT PRICE ADDERS

	Aboriginal Participation Project		Community Participation Project		Municipal or Public Sector Entity Participation Project	
Participation Level (Equity)	**> 50%**	**≥ 15% ≤ 50%**	**> 50%**	**≥ 15% ≤ 50%**	**> 50%**	**≥ 15% ≤ 50%**
Price Adder (¢/kWh)	**1.5**	**0.75**	**1.0**	**0.5**	**1.0**	**0.5**

Note: The above table applies to all FIT Project sizes and all Renewable Fuels except Solar (PV) (Rooftop).

microFIT Eligible Participant Schedule

Applicants should consult legal counsel when preparing an Application to confirm that all requirements under this Eligible Participant Schedule are met. Without limiting the generality of the foregoing, the issue of ownership interests and riparian rights for proposed waterpower microFIT Projects can be complex and those Applicants considering such projects are strongly encouraged to seek legal counsel.

1. Unless otherwise defined in this microFIT Eligible Participant Schedule (the "**Schedule**"), all capitalized terms are defined in the microFIT Rules or the microFIT Contract.

2. If the property on which the microFIT Project is located is owned or leased by more than one Eligible Participant, each Eligible Participant that holds title to the property or is a signatory on the lease for the property must be an Applicant. Where property on which the microFIT Project is located is leased by the Eligible Participant, the lease must have been in effect on or before January 1, 2015 and remain in effect for the term of the microFIT Contract.

3. Except as otherwise provided in Section 4 of this Eligible Participant Schedule, all Applicants shall submit a parcel register for property identifier of the land registry system of the Province of Ontario (a "**Parcel Register**") which meets the requirements set out in Section 4.

4. Each of the following constitutes an "Eligible Participant" for the purposes of the microFIT Rules and microFIT Contract:

Eligible Participant	Definition and Supporting Documents Required to Submit an Application
Individual(s)	A natural person who: (a) holds, either solely or together with other natural persons or one or more Eligible Participants, all legal and beneficial title to the property on which the microFIT Project is located; or (b) has been allotted, pursuant to the *Indian Act* (Canada), possession of a parcel of land located within an Indian reserve or special reserve on which the microFIT Project is located. In the case of (a), the Individual(s) shall provide a Parcel Register in support of (a) as part of its Application. In the case of (b), the Individual(s) shall provide a copy of the document(s) evidencing possession of the parcel of land by the Individual(s) pursuant to the *Indian Act* (Canada). Where appropriate, the IESO will accept a band council resolution issued by the relevant band council evidencing such right of possession.
Farmer	A natural person or other entity:

Eligible Participant	Definition and Supporting Documents Required to Submit an Application
	(a) who is registered under the *Farm Registration and Farm Organizations Funding Act*, *1993*, S.O. 1993, c. 21, and who holds a valid Farm Business Registration number in accordance with the Act; or (b) whose requirement to make payment to an accredited farm organization or file a farming business registration form under the *Farm Registration and Farm Organizations Funding Act*, *1993*, S.O. 1993, c. 21 was waived as of the date of the Application pursuant to an order made under s. 22(6) of the Act; provided that the Farmer holds, either solely or together with one or more Eligible Participants, all legal and beneficial title to the property on which the microFIT Project is located. The Farmer shall provide the following information as part of its Application: (i) a Parcel Register in support of (a); and (ii) either a valid Farm Business Registration Number or a copy of the order made under s. 22(6) of the Act.
Farm Co-operative	A co-operative incorporated under the *Co-operative Corporations Act*, R.S.O. 1990, c. C.35, provided that: (a) the membership of the co-operative is at all times restricted to Farmers; (b) the co-operative identifies a member of its co-operative that will host the microFIT Project (the "**Host Member**"); and (c) the Host Member holds, solely or together with one or more Eligible Participants, all legal and beneficial title to the property on which the microFIT Project is located. The Farm Co-operative shall provide the following information as part of its Application: (i) a Parcel Register listing the Host Member as the sole legal owner or, where applicable, the Host Member and one or more Eligible Participants, as the only legal owners of the property on which the microFIT Project is located; (ii) a copy of the current constating documents of the Farm Co-operative, as amended, supplemented or restated, including, the Articles of Incorporation, the Certificate of Incorporation, and any other documentation that may be required to demonstrate that the Farm Co-operative's membership is restricted at all times to Farmers; and (iii) a valid Farm Business Registration number for the Host Member, or a copy of the order made under s. 22(6) of the *Farm Registration and Farm Organizations Funding Act*, *1993* with respect to the Host Member.
Renewable Energy	A renewable energy co-operative incorporated under and in accordance with

Eligible Participant	Definition and Supporting Documents Required to Submit an Application
Co-operative	the *Co-operative Corporations Act*, R.S.O. 1990, c. 35, provided that: (a) the membership of the co-operative is at all times restricted to natural persons; and (b) the renewable energy co-operative holds, solely or together with one or more Eligible Participants, all legal and beneficial title to the property on which the microFIT Project is located. The Renewable Energy Co-operative shall provide the following documents as part of its Application: (i) a Parcel Register in support of (b); and (ii) a copy of the current constating documents of the Renewable Energy Co-operative, as amended, supplemented or restated, including, the Articles of Incorporation, the Certificate of Incorporation, and any other documentation that may be required to demonstrate that its membership is restricted at all times to natural persons.
Municipality	A municipal corporation governed by the *Municipal Act, 2001*, S.O. 2001, c. 25, provided that the municipal corporation either (A) holds, solely or together with one or more Eligible Participants, all legal and beneficial title to the property on which the microFIT Project is located, or (B) leases, solely or together with one or more Eligible Participants, the property on which the microFIT Project is located. Where the Municipality owns the property on which the microFIT Project is located, the Municipality shall provide a Parcel Register in support of (A) as part of its Application. Where the Municipality leases the property on which the microFIT Project is located, the Municipality shall provide, as part of its Application, a written certification from the legal owner(s) of the property in the form prescribed by the IESO.
LDC Participant	A corporation incorporated pursuant to Section 142 of the *Electricity Act, 1998*, S.O. 1998, c.15, Sched. A, and which is licensed by the Ontario Energy Board as an "electricity distributor", provided that the corporation holds, solely or together with one or more Eligible Participants, all legal and beneficial title to the property on which the microFIT Project is located. The LDC Participant shall provide, as part of its Application, a Parcel Register listing the LDC Participant and, if applicable, the other Eligible Participant(s) as the only legal owner(s) of the property.
University	One of the following universities: (a) Algoma University; (b) Brock University;

Eligible Participant	Definition and Supporting Documents Required to Submit an Application
	(c) Carleton University; (d) College of the Dominican or Friar Preachers of Ottawa; (e) University of Guelph; (f) Lakehead University; (g) Laurentian University; (h) McMaster University; (i) Nipissing University; (j) Ontario College of Art & Design University; (k) University of Ontario Institute of Technology; (l) University of Ottawa; (m) Queen's University; (n) Royal Military College of Canada; (o) Ryerson University; (p) University of Toronto; (q) Trent University; (r) University of Waterloo; (s) The University of Western Ontario; (t) Wilfrid Laurier University; (u) University of Windsor; and (v) York University; provided that the university either (A) holds, solely or together with one or more Eligible Participants, all legal and beneficial title to the property on which the microFIT Project is located, or (B) leases, solely or together with one or more Eligible Participants, the property on which the microFIT Project is located. Where the University owns the property on which the microFIT Project is located, the University shall provide a Parcel Register in support of (A) as part of its Application. Where the University leases the property on which the microFIT Project is located, the University shall provide, as part of its Application, a written certification from the legal owner(s) of the property in the form prescribed by the IESO.
School or College	One of the following schools or colleges: (a) an elementary school, secondary school, school board or school authority, each of which is governed by and in accordance with the *Education Act*, R.S.O. 1990, c. E.2; or (b) a college designated under Ontario Regulation 34/03 and which is governed by the *Ontario College of Applied Arts and Technology Act, 2002*, S.O. 2002, c. 8, Schedule F; provided that:

Eligible Participant	Definition and Supporting Documents Required to Submit an Application
	(i) the school or college, as applicable, either (A) holds, solely or together with one or more Eligible Participants, all legal and beneficial title to the property on which the microFIT Project is located, or (B) leases, solely or together with one or more Eligible Participants, the property on which the microFIT Project is located, or (ii)the property on which the microFIT Project is located is held by the Crown in right of Canada or Ontario or by an agency thereof. Where the School or College owns the property on which the microFIT Project is located, the School or College, as applicable, shall provide a Parcel Register in support of (A) as part of its Application. Where the School or College, as applicable, leases the property on which the microFIT Project is located, the School or College, as applicable, shall provide, as part of its Application, a written certification from the legal owner(s) of the property in the form prescribed by the IESO. Where the property on which the microFIT Project is located is held by the Crown in right of Canada or Ontario or by an agency thereof, the School or College shall provide proof thereof to the satisfaction of the IESO.
Hospital or Long-Term Care Home	One of the following: (a) a public hospital, in accordance with the *Public Hospitals Act*, R.S.O. 1990, c. P.40; (b) a private hospital, in accordance with the *Private Hospitals Act*, R.S.O. 1990, c. P.24; or (c) a long-term care home in accordance with the *Long-Term Care Homes Act*, *2007*, S.O. 2007, c. 8; provided that the hospital or long-term care home, as applicable, either (A) holds, solely or together with one or more Eligible Participants, all legal and beneficial title to the property on which the microFIT Project is located, or (B) leases, solely or together with one or more Eligible Participants, the property on which the microFIT Project is located. Where the Hospital or Long-Term Care Home owns the property on which the microFIT Project is located, the Hospital or Long-Term Care Home, as applicable, shall provide the following documents as part of its Application: (i) a Parcel Register in support of (A); and (ii) in the case of a private hospital described in (b) and a long-term care home described in (c), a copy of the license issued to it, which shall be in full force and effect, under the applicable Act. Where the Hospital or Long-Term Care Home leases the property on which the

Eligible Participant	Definition and Supporting Documents Required to Submit an Application
	microFIT Project is located, the Hospital or Long-Term Care Home, as applicable, shall provide the following documents to the IESO as part of its Application: (i) a written certification from the legal owner(s) of the property in the form prescribed by the IESO; and (ii) in the case of a private hospital described in (b) and a long-term care home described in (c), a copy of the license issued to it, which shall be in full force and effect, under the applicable Act.
Aboriginal Community	Aboriginal Community means: (a) a First Nation that is a "band" as defined by the *Indian Act* (Canada); (b) the Métis Nation of Ontario or any of its active Chartered Community Councils; (c) a Person, other than a natural person, that is determined by the Government of Ontario for the purposes of the microFIT Program to represent the collective interests of a community that is composed of Métis or other aboriginal individuals; or (d) a corporation that is wholly-owned by one or more Aboriginal Communities as described in paragraphs (a), (b) or (c), where such Aboriginal Community either: (i) holds, solely or together with one or more Eligible Participants, all legal and beneficial title to the property on which the microFIT Project is located; (ii) leases, solely or together with one or more Eligible Participants, the property on which the microFIT Project is located; or (iii) wishes to submit in respect of a microFIT Project to be located on land that is a reserve or special reserve, as set out in the *Indian Act* (Canada), of such Aboriginal Community. In the case of (i), the Aboriginal Community shall provide, as part of its Application, a Parcel Register in support of (i). In the case of (ii), the Aboriginal Community shall provide, as part of its Application, a written certification from the legal owner(s) of the property in the form prescribed by the IESO. In the case of (iii), the Aboriginal Community shall provide, as part of its Application, a copy of the document(s) evidencing possession of the parcel of land where the microFIT Project is to be located. Where appropriate, the IESO

Eligible Participant	Definition and Supporting Documents Required to Submit an Application
	will accept a band council resolution issued by the relevant band council evidencing such right of possession. In all cases, an Aboriginal Community as described in paragraph (d) shall also provide a copy of its Articles of Incorporation, as amended, and its current shareholders' register.
Social Housing or Affordable Housing	Social Housing means one of the following categories of public housing and non-profit housing that receives funding from a governmental authority: (a) housing projects in Schedules 1 to 47 of O. Reg. 368/11, made under the *Housing Services Act, 2011*, S.O. 2011, c. 6, Sched. 1; (b) housing projects operated or managed by a local housing corporation constituted pursuant to Part IV of the *Housing Services Act, 2011*; (c) non-profit housing operated by a church or religious organization, a philanthropic organization, a house of refuge or charitable institution as set out in subs. 3(1) of the *Assessment Act*, R.S.O. 1990, c. A.31, as amended, or a non-profit corporation established under the *Corporations Act*, R.S.O. 1990, c. C.38; and (d) non-profit housing co-operatives established under the *Co-operative Corporations Act*, R.S.O. 1990, c.35. provided that an Applicant under Social Housing either (A) holds, solely or together with one or more Eligible Participants, all legal and beneficial title to the property on which the microFIT Project is located, or (B) leases, solely or together with one or more Eligible Participants, the property on which the microFIT Project is located. Affordable Housing means projects funded by the Affordable Housing Program pursuant to the Affordable Housing Program Agreement between Canada Mortgage and Housing Corporation and the Province of Ontario dated April 29, 2005, or the Investment in Affordable Housing Program, provided that an Applicant under Affordable Housing either (A) holds, solely or together with one or more Eligible Participants, all legal and beneficial title to the property on which the microFIT Project is located, or (B) leases, solely or together with one or more Eligible Participants, the property on which the microFIT Project is located. Where the Applicant owns the property on which the microFIT Project is located, the Applicant shall provide the following documents as part of its Application: (i) a Parcel Register in support of (A); and (ii) in the case of housing projects not identified in Schedules 1 to 47 of O.

Eligible Participant	Definition and Supporting Documents Required to Submit an Application
	Reg. 368/11, a copy of the relevant funding agreement relating to the delivery of social housing, or a copy of the mortgage charge for the relevant affordable housing program. Where the Applicant leases the property on which the microFIT Project is located, the Applicant shall provide the following documents as part of its Application: (i) a written certification from the legal owner(s) of the property in the form prescribed by the IESO, and (ii) in the case of housing projects not identified in Schedules 1 to 47 of O. Reg. 368/11, a copy of the relevant funding agreement relating to the delivery of social housing, or a copy of the mortgage charge for the relevant affordable housing program.
Faith-based Organization	An organization that is a registered charity for the purposes of the *Income Tax Act* (Canada), and is registered as a religion under "charity type" by the Canada Revenue Agency, provided that the organization holds, solely or together with one or more Eligible Participants, all legal and beneficial title to the property on which the microFIT Project is located. The Faith-based Organization shall provide, as part of its Application, a Parcel Register listing the Faith-based Organization and, if applicable, the other Eligible Participant(s) as the only legal owner(s) of the property.

FIT/microFIT PRICE SCHEDULE
(Effective September 30, 2014 for FIT and January 1, 2015 for microFIT)

Renewable Fuel	Project Size Tranche*	Price (¢/kWh)	Escalation Percentage**
Solar (PV) (Rooftop)	≤ 10 kW	38.4	0%
	> 10 kW ≤ 100 kW	34.3	0%
	> 100 kW ≤ 500 kW	31.6	0%
Solar (PV) (Non-Rooftop)	≤ 10 kW	28.9	0%
	> 10 kW ≤ 500 kW	27.5	0%
On-Shore Wind	≤ 500 kW	12.8	20%
Waterpower	≤ 500 kW	24.6	20%
Renewable Biomass	≤ 500 kW	17.5	50%
On-Farm Biogas	≤ 100 kW	26.3	50%
	> 100 kW ≤ 250 kW	20.4	50%
Biogas	≤ 500 kW	16.8	50%
Landfill Gas	≤ 500 kW	17.1	50%

* The FIT Program is available to Projects generally ≤ 500 kW.

**Escalation Percentage based on the Consumer Price Index will be applied to eligible Renewable Fuels as calculated in the FIT Contract. The Base Date is January 1 of the year in which the Project achieves Commercial Operation, unless the Project achieves Commercial Operation in October, November, or December, in which case the Base Date is January 1 of the following year.

FIT PRICE ADDERS

	Aboriginal Participation Project		Community Participation Project		Municipal or Public Sector Entity Participation Project	
Participation Level (Equity)	**> 50%**	**≥ 15% ≤ 50%**	**> 50%**	**≥ 15% ≤ 50%**	**> 50%**	**≥ 15% ≤ 50%**
Price Adder (¢/kWh)	**1.5**	**0.75**	**1.0**	**0.5**	**1.0**	**0.5**

Note: The above table applies to all FIT Project sizes and all Renewable Fuels except Solar (PV) (Rooftop).

18

REPORT TO
THE PUBLIC UTILITIES BOARD

SURPLUS ENERGY PROGRAM

NOVEMBER 1, 2013 – OCTOBER 31, 2014

JANUARY 2015

Manitoba Hydro

REPORT TO PUBLIC UTILITIES BOARD
SURPLUS ENERGY PROGRAM
NOVEMBER 1, 2013 - OCTOBER 31, 2014

BACKGROUND

The Surplus Energy Program ("SEP") was first approved on June 30, 2000 by Public Utilities Board ("PUB") Order No. 90/00. The program is intended to enable customers to purchase surplus energy at market prices that are determined on a weekly basis for peak, shoulder, and off-peak periods. Customers began accepting service under the Terms and Conditions of this temporary program on December 4, 2000. Manitoba Hydro filed an Application on April 5, 2012 requesting minor modifications to SEP Option 1, as well as to make SEP a permanent rate offering. These proposals were subsequently included in Manitoba Hydro's 2012/13 and 2013/14 General Rate Application ("GRA"). At the conclusion of the GRA hearing, the PUB issued Board Order 43/13 dated April 26, 2013 which approved SEP Option 1 on an interim basis, and approved Options 2 and 3 as a permanent rate offering. Manitoba Hydro is seeking final approval of the changes to SEP Option 1 Terms and Conditions in its 2015/16 and 2016/17 GRA.

As part of the original Board Order which approved SEP, Manitoba Hydro was directed to file annual reports on the status of the program. This is the 14th report which covers the period November 1, 2013 to October 31, 2014. For a brief history of PUB Orders and Manitoba Hydro's applications and reports with respect to the SEP Program, please see Attachment 1.

SUMMARY OF FINDINGS

The SEP Program is a revenue neutral program that offers customers choice and access to surplus energy at prices that reflect Manitoba Hydro's short term marginal cost of energy. To obtain the full benefits of the program customers need to have sufficient flexibility in their operation to take advantage of lower price periods. While the SEP Program is not intended as a rate discount program, market and Manitoba Hydro supply conditions during the past year were such that all SEP customers experienced reduced bills relative to the respective General Service firm rate they would have otherwise billed under.

DESCRIPTION OF PROGRAM

Eligibility:

The Program makes surplus energy available on an interruptible basis to Manitoba Hydro General Service customers. Eligible customers can participate in one of the following three options:

1) Industrial Load - Option 1 - available to industrial loads whose Total Demand is 1,000 kVA or greater. Total Demand is defined as the Reference Level of Demand plus the level of demand associated with SEP. Under this option customers may only designate 25%[1] of their total load as SEP load, with the remaining 75% being their Reference Demand. Manitoba Hydro is proposing changes to the Reference Demand to allow customers to have a different Reference Demand for each of the three pricing periods. The highest designated Reference Demand would be used in determining the customer's monthly billed demand.

2) Heating Load - Option 2 – available to electrical loads of 200 kW or greater. The electricity is to be used for space and/or water heating only and must be separately metered from the customer's firm load. Customers must have an alternate back-up energy source capable of heating the entire load in the event of an interruption.

3) Self-Generation Displacement - Option 3 – available to industrial intermittent loads with total demand between 200 kW to 50,000 kW. Load would not be considered intermittent if the average monthly load factor exceeds 25%. The load must be separately metered from the customer's firm load and must be fully backed up by generating equipment which is leased or owned by the customer and is located on the premises of the SEP load.

Billing:

All SEP customers are billed a monthly Basic Charge, Distribution Charge and an Energy Charge. The Basic Charge is $50.00 per month for customers with connected loads of 1,000 kVA or less, and $100.00 per month for connected loads greater than 1,000 kVA. The Distribution Charge per kilowatt-hour ranges from 0.06¢ to 0.62¢ dependent on customer class. The Energy Charge per kilowatt-hour, applicable to three pricing periods, varies based on

[1] Customers can designate up to 50% of their load as SEP provided they have an alternate back-up source of energy to supply the amount in excess of the 25%.

expected market prices from week-to-week. The three pricing periods are peak, shoulder and off-peak, and are further defined by season as shown in the following table:

	Summer (May 1 – October 31)	Winter (November 1 – April 30)
Peak	12:01 to 20:00 hours Monday to Friday Except Statutory Holidays	07:01 to 11:00 hours and 16:01 to 20:00 hours Monday to Friday Except Statutory Holidays
Shoulder	All hours except Peak, every day from 07:01 to 23:00	
Off-Peak	All night time hours from 23:01 to 07:00 hours	

PROGRAM SUBSCRIPTION

There were 28 customers on the SEP program for this reporting period. Of the 28 customers, 25 are Option 2 (Heating Load) and 3 are Option 3 (Self-Generation Displacement). There are no Option 1 (Industrial Load) customers.

All the Option 2 customers are classed as General Service Medium Demand and fall under the following industry types:

Agricultural and Related Service Industries	7 customers
Educational Service Industries	12 customers
Local Government Service Industries	4 customers
Machinery & Equipment	1 customer
Retail Food, Beverage and Drug Industries	1 customer

All the Option 3 customers are in the General Service Large Demand 750 V – 30 kV class under the following industry types:

Quarry & Sand Pit Industries	2 customers
Paper & Allied Products Industries	1 customers

All customers have signed a waiver ensuring they have appropriate back-up facilities to support their loads in the event of an interruption.

POTENTIAL CUSTOMERS

One customer in the welding industry is currently in the process of contracting for SEP. Customers in the agricultural industry who currently use coal are assessing alternate fuel choices and may consider SEP in the future due to the Manitoba government's ban on the use of coal for space and water heating in 2017.

CUSTOMER EXPERIENCE

Manitoba Hydro is not aware of any customer complaints regarding the SEP Program.

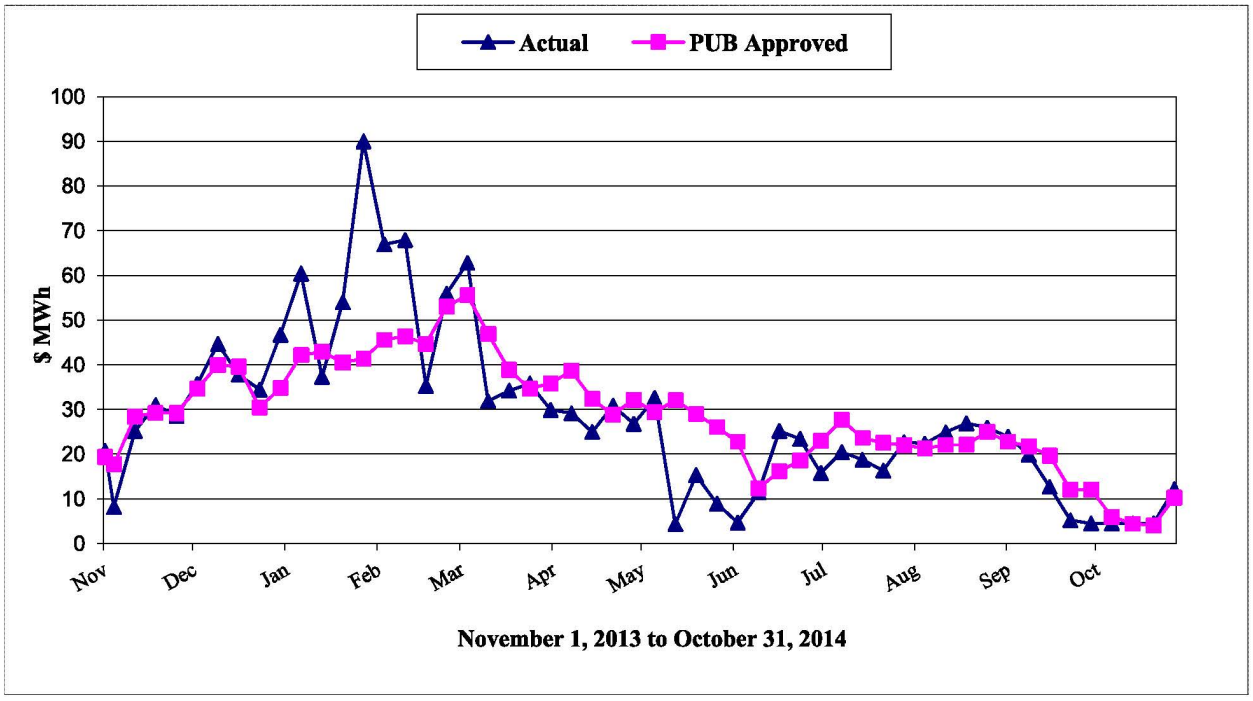
There have been no difficulties encountered with communication of pricing information to customers on a timely basis. This information is faxed or emailed to customers on Wednesday of each week, providing prices that will be in place for the following week beginning Sunday at midnight.

SEP ENERGY PRICES

Each Wednesday Manitoba Hydro applies to the Public Utilities Board for interim *ex parte* approval of the SEP Energy Rates to be in effect the following Monday through Sunday. The following table compares the weekly average prices approved by the PUB with the actual average after-the-fact prices throughout the reporting period. Attachment 2 provides the weekly rates for each pricing period for both Medium and Large 750 V - 30 kV classes. The information is also shown graphically on page 7.

SEP - Average Weekly Rate Per MWh				
Week Beginning	**Actual**	**PUB Approved**	**Difference**	**PUB Order No.**
November 1, 2013	$20.79	$19.39	$1.40	131/13
November 4, 2013	$8.21	$17.71	($9.50)	133/13
November 11, 2013	$25.17	$28.43	($3.26)	135/13
November 18, 2013	$31.01	$29.25	$1.76	137/13
November 25, 2013	$28.55	$29.21	($0.66)	138/13
December 2, 2013	$35.71	$34.62	$1.09	141/13
December 9, 2013	$44.65	$39.96	$4.69	146/13
December 16, 2013	$37.76	$39.60	($1.84)	152/13
December 23, 2013	$34.45	$30.46	$3.99	155/13

SEP - Average Weekly Rate Per MWh				
Week Beginning	**Actual**	**PUB Approved**	**Difference**	**PUB Order No.**
September 8, 2014	$19.88	$21.75	($1.87)	99/14
September 15, 2014	$12.70	$19.70	($7.00)	101/14
September 22, 2014	$5.21	$12.06	($6.85)	105/14
September 29, 2014	$4.48	$12.07	($7.59)	111/14
October 6, 2014	$4.47	$5.98	($1.51)	113/14
October 13, 2014	$4.50	$4.46	$0.04	114/14
October 20, 2014	$4.49	$4.04	$0.45	116/14
October 27, 2014	$12.11	$10.27	$1.84	117/14
Average	**$28.28**	**$28.55**	**($0.27)**	



SOURCE OF SUPPLY FOR SEP ENERGY

As part of its weekly Application to the PUB, Manitoba Hydro is required to indicate the expected source of supply for SEP energy that is used to derive the marginal cost of energy for the weekly SEP energy rates. The following summary table compares the expected source of supply, which was the basis of the weekly Applications, to the actual source of supply as determined after-the-fact. A more detailed analysis by week is provided in Attachment 3.

SEP Energy Supply Source (%)														
November 1, 2013 to October 31, 2014														
	Actual							Forecast						
	Imports			Exports			Avoided Spill	Imports			Exports			Avoided Spill
	Peak	Shoulder	Off-Peak	Peak	Shoulder	Off-Peak		Peak	Shoulder	Off-Peak	Peak	Shoulder	Off-Peak	
Peak	0%	0%	0%	70%	0%	0%	30%	1%	0%	0%	78%	0%	0%	21%
Shoulder	0%	0%	0%	0%	57%	0%	43%	0%	0%	0%	0%	59%	0%	41%
Off-Peak	0%	0%	3%	0%	0%	51%	46%	0%	0%	0%	0%	0%	54%	46%

Water conditions during this reporting period were above average. Hydraulic generation through the winter and early spring was above average because there was significant storage carry forward from the previous year. Inflows were well above average through spring and summer across all basins, and were record high in the Winnipeg River basin, allowing for above average hydraulic generation through the entire reporting period. Spill conditions occurred through the late spring, summer and fall due to high inflows and outages at Manitoba Hydro's interconnection to the United States.

Through-out the reporting period SEP energy was sourced mostly from displaced exports: 70% Peak, 57% Shoulder, and 51% Off-Peak. In January, February and March, 3% of the Off-Peak energy was sourced from imports. Starting in May, the remainder of the energy supply was sourced from avoided spill: 30% Peak, 43% Shoulder, and 46% Off-Peak. Avoided spill occurs during periods when tie-lines to neighboring markets are fully utilized and firm load has been met, combined with unused hydro generation capacity. In general, avoided spill is more frequently experienced during Off-Peak periods due to low over-night Manitoba loads.

ACTUAL SALES

Total energy and revenue of SEP sales over the period November 1, 2013 to October 31, 2014 were 29,371 MWh and $1,230,282 (excluding $19,200 in Basic Charges). The distribution of the energy and revenue by pricing period is shown below. A more detailed analysis by week is provided in Attachments 4, 5 and 6.

Period	SEP Energy Sales MWh	Revenue		
		Distribution Charge	Energy Charge	Total
Peak	6,865	$40,093	$328,178	$368,271
Shoulder	12,812	$76,395	$482,912	$559,307
Off Peak	9,694	$58,692	$244,013	$302,705
Total	**29,371**	**$175,180**	**$1,055,103**	**$1,230,282**

Over the period November 1, 2013 through to October 31, 2014, the value of SEP energy (using after-the-fact prices) was $1,068,652. Revenue from energy sales was $1,055,103 resulting in net revenue loss to Manitoba Hydro of $13,549 for the year. The following table summarizes Manitoba Hydro net revenue for each time-of-use period. A more detailed analysis by week is found in Attachment 7.

SEP Energy Revenues versus Costs				
Period	SEP Energy Sales MWh	SEP Sales*	Value of SEP Energy to Manitoba Hydro	Manitoba Hydro Net Revenue
Peak	6,865	$328,178	$347,343	($19,165)
Shoulder	12,812	$482,912	$451,570	$31,341
Off Peak	9,694	$244,013	$269,738	($25,725)
Total	**29,371**	**$1,055,103**	**$1,068,652**	**($13,549)**

* SEP Sales do not include $175,180 from Distribution Charges or $19,200 from Basic Charges. The value of SEP energy to Manitoba Hydro is calculated by multiplying weekly MWh sales by the actual weekly SEP energy rate at common bus.

YEAR-TO-DATE RESULTS

The following is a summary of the program since its inception on December 4, 2000.

Program Year	Number of Services		
	General Service Medium	GS Large (750 V to 30 kV)	Total
Dec 4, 2000 to Oct 31, 2001	24	4	28
Nov 1, 2001 to Oct 31, 2002	27	6	33
Nov 1, 2002 to Oct 31, 2003	27	6	33
Nov 1, 2003 to Oct 31, 2004	25	6	31
Nov 1, 2004 to Oct 31, 2005	22	6	28
Nov 1, 2005 to Oct 31, 2006	22	6	28
Nov 1, 2006 to Oct 31, 2007	22	5	27
Nov 1, 2007 to Oct 31, 2008	20	5	25
Nov 1, 2008 to Oct 31, 2009	19	5	24
Nov 1, 2009 to Oct 31, 2010	19	5	24
Nov 1, 2010 to Oct 31, 2011	21	5	26
Nov 1, 2011 to Oct 31, 2012	24	5	29
Nov 1, 2012 to Oct 31, 2013	25	3	28
Nov 1, 2013 to Oct 31, 2014	25	3	28

Program Year	SEP Actual Sales			
	Basic Charge	Distribution Charge	Energy Charge	Total Revenue
Dec 4, 2000 to Oct 31, 2001	$15,436	$105,948	$880,033	$1,001,418
Nov 1, 2001 to Oct 31, 2002	$20,169	$164,565	$959,529	$1,144,263
Nov 1, 2002 to Oct 31, 2003	$21,330	$111,347	$1,061,522	$1,194,200
Nov 1, 2003 to Oct 31, 2004	$21,700	$112,572	$1,201,434	$1,335,707
Nov 1, 2004 to Oct 31, 2005	$20,180	$147,530	$1,277,816	$1,445,526
Nov 1, 2005 to Oct 31, 2006	$19,200	$134,445	$1,248,314	$1,401,959
Nov 1, 2006 to Oct 31, 2007	$19,178	$128,724	$1,414,933	$1,562,835
Nov 1, 2007 to Oct 31, 2008	$17,150	$131,068	$1,149,472	$1,297,689
Nov 1, 2008 to Oct 31, 2009	$16,790	$139,021	$932,076	$1,087,887
Nov 1, 2009 to Oct 31, 2010	$16,800	$115,817	$594,374	$726,991
Nov 1, 2010 to Oct 31, 2011	$17,650	$152,400	$672,493	$842,543
Nov 1, 2011 to Oct 31, 2012	$18,927	$154,379	$614,629	$787,935
Nov 1, 2012 to Oct 31, 2013	$19,450	$172,097	$793,148	$984,695
Nov 1, 2013 to Oct 31, 2014	$19,200	$175,180	$1,055,103	$1,249,482
Total	**$263,160**	**$1,945,094**	**$13,854,875**	**$16,063,129**

Program Year	SEP Energy Sales vs. Costs			
	SEP Sales		Marginal Cost to MH	Net Revenue to MH
	MWh	Energy Charge		
Dec 4, 2000 to Oct 31, 2001	18,123	$880,033	$891,308	($11,275)
Nov 1, 2001 to Oct 31, 2002	28,808	$959,529	$994,233	($34,704)
Nov 1, 2002 to Oct 31, 2003	19,473	$1,061,522	$1,056,307	$5,215
Nov 1, 2003 to Oct 31, 2004	19,328	$1,201,434	$992,650	$208,784
Nov 1, 2004 to Oct 31, 2005	25,013	$1,277,816	$1,241,792	$36,024
Nov 1, 2005 to Oct 31, 2006	22,927	$1,248,314	$1,161,379	$86,935
Nov 1, 2006 to Oct 31, 2007	22,152	$1,414,933	$1,392,736	$22,197
Nov 1, 2007 to Oct 31, 2008	22,347	$1,149,472	$1,138,131	$11,340
Nov 1, 2008 to Oct 31, 2009	23,393	$932,076	$842,510	$89,565
Nov 1, 2009 to Oct 31, 2010	19,506	$594,374	$577,384	$16,989
Nov 1, 2010 to Oct 31, 2011	25,568	$672,493	$602,184	$70,309
Nov 1, 2011 to Oct 31, 2012	25,763	$614,629	$560,145	$54,484
Nov 1, 2012 to Oct 31, 2013	28,757	$793,148	$772,778	$20,369
Nov 1, 2013 to Oct 31, 2014	29,371	$1,055,103	$1,068,652	($13,549)
Total	**330,528**	**$13,854,875**	**$13,292,189**	**$562,685**

Attachment 1 - SEP: Chronology of PUB Directives, MH Applications, and Reports

PUB Order	Date	PUB Board Findings & MH Applications and Reports Filings
	Oct 25/99	MH files application for approval of the Surplus Energy Program
90/00	Jun 30/00	PUB approves SEP application to March 31, 2004 and directs MH to file annual reports on SEP by no later than January 31 of each year.
	Jul 20/00	MH letter - in response to Board Order 90/00 MH requests variance of 12 month notice provision to range from 12 to 16 months notice.
132/00	Sep 29/00	The PUB varies BO 90/00 such that an SEP customer who chooses to convert to firm service has various notice period options.
	Oct 26/00	MH files revised Terms & Condition of SEP to be in accordance with Board Order 90/00 and 132/00. MH also advises its intent to waive requirement for a Professional Engineer Certification of back-up facilities
143/01	Sep 13/01	The PUB approves the revised Terms and Conditions as noted in MH's letter of Oct 26/00.
	Sep 21/01	MH files revised SEP Terms and Conditions as required by BO 143/01
	Nov 30/01	MH files Report #1 on SEP for period Dec 4/00 to Oct 31/01
	Mar 12/03	MH files Report #2 on SEP for period Nov 1/01 to Oct 31/02
	Mar 24/03	MH - by correspondence requests SEP be extended to Mar 31/05 on ex parte bases.
153/03	Oct 31/03	PUB approves request for extension of SEP to March 31, 2005 on an interim ex parte basis.
	Jan 29/04	As part of 2004 GRA (Appendix 9.2.2, Volume 3) MH requests SEP program be extended two more years to March 31, 2007. MH files Report #3 on SEP for period Nov 1/02 to Oct 31/03
101/04	Jul 28/04	PUB approves MH's application to extend Terms and Conditions of the SEP, as proposed and amended by MH, until March 31, 2007.
	May 17/05	MH files Report #4 on SEP for period Nov 1/03 to Oct 31/04
	Jan 23/06	MH files Report #5 on SEP for period Nov 1/04 to Oct 31/05
	Apr 20/06	MH applies to extend SEP Terms & Conditions to Mar 31/09
	Sep 7/06	PUB issues letter advising they are prepared to extend SEP to Oct 31/07. Also state their intention to review SEP in upcoming MH GRA.
	Sep 28/06	MH letter requests PUB reconsider their position and extend program, at minimum to October 31, 2008, noting customers need to plan for modifications or elimination of SEP and require minimum 12 months notice period.
173/06	Dec 21/06	PUB approves extension of SEP to the earlier of October 31, 2007 or an application to amend by MH. Advises MH to include a review of SEP in its GRA filing, due no later than August 1, 2007.

PUB Order	Date	PUB Board Findings & MH Applications and Reports Filings
	Jan 12/07	MH files Report #6 on SEP for period Nov 1/05 to Oct 31/06
	Aug 1/07	GRA filing - MH requests immediate approval to extend SEP to October 31/08 with final approval to extend the program to March 31/13 as it is expected hearing will not take place until early 2008.
136/07	Oct 26/07	PUB approves extension of SEP to April 30, 2009 on an interim basis, unless amended or extended by a further Order of the Board.
	Feb 5/08	MH files Report #7 on SEP for period Nov 1/06 to Oct 31/07
90/08	Jun 30/08	PUB approves extension of SEP until October 31, 2008, with the application for a further extension to March 31, 2013 to be dealt with in the subsequent Order.
116/08	Jul 29/08	PUB approves extension of the SEP to October 31, 2008; on condition annual reports continue to be provided. Also raises concern with MH's marketing practices that yield extremely low prices for off-peak exports. MH directed to file a report by January 15, 2009 evaluating SEP, including monthly historical data from 2000 to 2008.
	Sep 18/08	MH files application to vary BO 116/08, requesting PUB extend the date for filing of SEP report to February 28, 2009.
150/08	Nov 7/08	PUB agrees to vary deadline date for the SEP report to February 28, 2009 and approves extension of SEP to April 30, 2009. PUB indicates final approval of SEP to March 31, 2013 will follow once receipt and review of the February 28, 2009 SEP Annual Report is complete.
	Mar 4/09	MH files Report #8 on SEP for period Nov 1/07 to Oct 31/08
57/09	Apr 28/09	PUB approves SEP to March 31, 2013
	Mar 11/10	MH files Report #9 on SEP for period Nov 1/08 to Oct 31/09
	May 11/11	MH files Report #10 on SEP for period Nov 1/09 to Oct 31/10
	April 5/12	MH files an application to vary the Terms and Conditions as well as Report #11 on SEP for period Nov 1/10 to Oct 31/11
111/12	Aug 22/12	PUB approved extension of the SEP to March 31, 2014 to allow time for review of the MH's SEP application during MH's 2012/13 and 2013/14 GRA.
	Mar 11/13	MH files Report #12 on SEP for period Nov 1/11 to Oct 31/12
43/13	Apr 26/13	PUB approves Option 1 Terms and Conditions on an interim basis, to be reviewed at a Cost of Service/Time of Use hearing. PUB approves Option 2 and 3 as a permanent rate offering.
	Jan 31/14	MH files Report #13 on SEP for period Nov 1/12 to Oct 31/13

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REPORT TO

THE PUBLIC UTILITIES BOARD

LIMITED USE OF BILLING DEMAND

2013/14

September 2014

Manitoba Hydro

REPORT TO PUBLIC UTILITIES BOARD
ON THE
LIMITED USE OF BILLING DEMAND RATE OPTION

SUMMARY

This report on the Limited Use of Billing Demand ("LUBD") rate option covers the period April 1, 2013 to March 31, 2014. During this period there were 81 customers on the LUBD rate, of which 59 are classed as General Service Small, 16 are General Service Medium, and 6 are General Service Large.

The LUBD rate option, implemented on July 1, 2000, is a rate option that Manitoba Hydro offers to address the concerns of low load factor customers. These customers, if billed on standard General Service Demand rates, are affected by high demand charges in comparison to relatively low energy use, resulting in a high cost of energy per kilowatt-hour. Customers on LUBD have a lower impact on the system peak compared to the overall General Service class, as is evident by their low winter coincidence factor of 31%.

Billing on LUBD rates as opposed to standard General Service Demand rates has saved LUBD customers approximately $290,000 during the 2013/14 fiscal year. This represents annual savings of approximately $3,600 per LUBD customer or $300 per customer per month.

BACKGROUND

In Order 91/00, dated June 30, 2000, the Public Utilities Board of Manitoba ("PUB") approved Manitoba Hydro's LUBD program, on an interim basis, as a temporary rate offering for a two-year period commencing July 1, 2000. The program became a permanent rate offering in Order 116/08 dated July 29, 2008, when the PUB granted final approval of the terms and conditions of the LUBD and directed Manitoba Hydro to file status reports on the LUBD rate option on an annual basis.

The LUBD rate was introduced to address the high unit energy costs faced by a relatively small number of customers with very low load factors. These customers, who set high demands relative to their overall energy use, were opposed to paying high demand charges when they used little energy. Under the program, customers could opt for a lower demand charge in exchange for a higher energy charge. Demand charges are intended to recover at least a portion of the

utility's costs incurred to meet the peak load that do not vary with a customer's consumption. The LUBD rate option recognizes that low load factor customers, as a group, have a much lower ratio of coincidence with system peak periods than typical General Service customers, and therefore, the cost associated with meeting the peak of low-load factor customers is lower.

DESCRIPTION

The LUBD rate was designed such that demand customers would be indifferent between this rate and the standard General Service rate for which they otherwise qualify at a billing load factor of approximately 18%. At billing load factors less than 18%, customers could reduce their overall bills by paying a higher energy charge in exchange for a lower demand charge.

There is no change in the Basic Charge or determination of the Billing Demand when customers choose LUBD over standard rates.

ELIGIBILITY

All General Service Demand customers are eligible for the LUBD rate but only those customers with low energy use relative to their billing demand will benefit from selecting this option. Customer savings depend on the manner in which the business operates and consumes energy. This means that two customers with the same average annual billing load factor may not see the same results, and a lower annual billing load factor does not necessarily mean more savings. For example, a GS Small Demand customer who exceeds 50 kV.A in only a few months of the year may save little in Demand Charges if they are on LUBD (and pay for all energy at the higher LUBD Energy rate) compared to a customer with an identical billing load factor that exceeds 50 kV.A by a significant margin in most or all months of the year.

LUBD customers who elect to convert back to the standard General Service Rate are not eligible to participate in the LUBD rate option for the next 12 months.

CUSTOMER PARTICIPATION

There were a total of 81 customers that billed on the LUBD rate in the 2013/14 fiscal year, an overall decrease of 2 customers from the 2012/13 fiscal year.

The majority of customers on LUBD continue to be in the General Service Small Demand rate class as shown in Table 1 which provides a summary of the number of customers, by rate class, participating in the LUBD rate option in 2013/14:

Table 1

Rate Class	No. of Customers
General Service Small	59
General Service Medium	16
General Service Large (750 V to 30 kV)	3
General Service Large (> 100 kV)	3
Total	**81**

In the 2013/14 fiscal year, the majority (approximately 85%) of LUBD customers had an annual billing load factor of 20% or less, as shown in Table 2. Customers with a load factor over 20%, or customers not benefiting on LUBD, are referred to their Manitoba Hydro Representative for review.

Table 2:

Billing Load Factor	No. of LUBD Customers
0% - 5%	19
6% - 10%	15
11% - 15%	24
16% - 20%	11
over 20%	12
Total	**81**

The billing load factors for LUBD customers are considerably lower than billing load factors associated with typical General Service customers. Based on 2013/14 billing data, the billing load factor for regular General Service customers was 45% for GS Small Demand, 53% for GS Medium, 59% for GS Large 750 V to 30 kV, and 80% for GS Large > 100 kV.

Load Research data for 2012/13 indicates that the peak coincidence factor for the LUBD class is also lower than the class average peak coincidence factor, as shown in Table 3 below:

Table 3:

Rate Class	Summer Coincidence Factor %	Winter Coincidence Factor %
LUBD	42%	31%
GSS Demand	89%	91%
GSM	91%	92%
GSL 750 V - 30 kV	89%	90%
GSL > 100 kV	57%	77%

Customers participating in LUBD represent 29 different industry types as defined by Statistics Canada and listed in Table 4. The majority of customers fall in the category of "Other Utility Industries" which typically represents water and waste pumping stations. Other major industry types include Amusement/Recreational Services, Agriculture, and Wood industries. These four industries represent 41% of the LUBD customers.

Table 4:

Industry Type	# of Customers
Accommodation	1
Agriculture	8
Amusement and Recreational Services	8
Auto. Vehicles, Parts, Sales & Service	1
Business Services	1
Chemical and Chemical Products	1
Education	3
Electrical and Electronic Products	1
Fabricated Metal Products	4
Furniture and Fixtures	1
Industrial and Heavy Construction	2
Local Government	1
Membership Organizations	2
Metals, Hardware, Plumb, Heat, Wholesale	2
Miscellaneous Government	2
Non-Metallic Mineral Products	1
Other Products, Wholesale	5
Other Service Industries	3
Other Utility Industries	10
Paper and Allied	1
Plastic Products	3

Industry Type	# of Customers
Primary Metals	1
Printing, Publishing & Allied	1
Real Estate Operators	2
Refined Petroleum and Coal Products	1
Storage and Warehousing	5
Transportation	1
Transportation Equipment	2
Wood	7
Total	81

FINANCIAL IMPACTS

For 2013/14, the total savings to customers on the LUBD rate option, compared to the standard General Service rate, was approximately $290,000 ($3,600 per customer or $300 per customer month). Of the 81 customers, 58 benefited during the 12 month period while 23 customers paid more in comparison to the standard General Service rate. These 23 accounts have been referred to their Manitoba Hydro Representative for review. The majority will likely stay on LUBD as the loss for the year was minimal and there is potential for savings in the future given the nature of their usage. Four customers however have switched off LUBD and are now billing under the standard General Service rate, while another service has since been removed.

Table 5 provides a comparison of the revenue billed to LUBD customers versus what they would have been billed had they remained on the standard General Service rate based on the 2013/14 fiscal year. Table 6 provides a distribution of the number and percentage of LUBD customers by average monthly savings (loss) realized through their participation in the LUBD rate offering in 2013/14.

Table 5:

Rate Class	As Billed on LUBD	If Billed as Standard GS	Annual Difference
General Service Small	$ 372,873	$ 447,704	$74,832
General Service Medium	$ 442,035	$ 546,103	$104,068
General Service Large (750 V to 30 kV)	$ 71,283	$ 91,696	$20,412
General Service Large (> 100 kV)	$ 131,304	$ 222,108	$90,804
Total	**$1,017,495**	**$1,307,612**	**$290,116**

Table 6:

Average Monthly Savings (Loss)	No. of LUBD Customers	% of LUBD Customers
Over $1,501	2	2%
$1,001 - $1,500	4	5%
$501 - $1,000	10	12%
$201 - $500	15	19%
$101 - $200	7	9%
$0 - $100	21	26%
$(1) - $(50)	15	19%
$(51) - $(100)	5	6%
Over $(100)	2	2%
Total	**81**	**100%**

CONCLUSION

The LUBD rate was designed to provide an electricity rate option for customers with low billing load factors and it is generally performing as anticipated. The revenue impact to Manitoba Hydro of billing customers under the LUBD instead of the respective General Service Demand rates is modest at approximately $290,000 for the last fiscal year.

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With respect to GSS (D) and GSM customers Manitoba Hydro is of the view that such a rate design is impractical for these customers. Manitoba Hydro does not intend to pursue inverted rates for these customer classes.

b) *GSS and GSM Class consolidation with a view to defining the end-product and the specified timeframe for completion;*

Status

Manitoba Hydro has been consolidating the General Service Small and Medium classes through the past several rate hearings. The consolidation smoothes the transition of customers between the two classes of service and avoids any adverse impacts to customers during this transition. Assuming the Corporation's proposals in this application for rate increases are approved for September 1, 2012 and April 1, 2013 the consolidation will be complete.

c) *Demand/Energy Rate Rebalancing with a view to defining the optimum balance and timeframe to achieve that balance through the allocation of Class Rate increases to the energy component;*

Status

Manitoba Hydro has also been in the process of rebalancing the demand/energy split for all demand billed customers. The primary method to enable this change is by limiting approved rate increases to the energy charge and decreasing the demand charge when rate reductions are implemented such as in 2003. The purpose of rebalancing is intended to reflect that the rates charged to customers are reflective of cost allocation as in the Cost of Service Study ("COS"). The last report to the Board (July 2009) indicated that rebalancing was progressing, with the result based on PCOSS11 showing further progress. Manitoba Hydro will update reporting subsequent to the filing of PCOSS13.

d) *Time-of-Use Rates with a view to applying these in the near future to Top Consumers and industrial customers that already have the necessary metering capability;*

Status

During 2010 and 2011 Manitoba Hydro met on a number of occasions with MIPUG membership and consultants. During this period, the parties reviewed the potential for introduction of mandatory Time of Use ("TOU") rates for large industrial customers. Manitoba Hydro also met with other General Service Large customers who are potentially affected by TOU rates.

Introduction of TOU rates enable Manitoba Hydro to comply with the majority of issues which previous energy intensive rate proposals were intended to address, including broad application to all load growth and time of use pricing for on and off peak usage. Such a rate also partially addresses Manitoba Hydro's concerns about load growth by energy-intensive industries and the potential impact that such growth may have on export sales. It also addresses many of the customers concerns raised with respect to EIIR options that require complex calculations, determination of baselines, and application of two-tier rates.

Manitoba Hydro anticipates that the MHEB will review a TOU proposal at its August 2012 meeting.

e) *Limited-Use Demand billing with an update of the continued need for this rate in light of the elimination of the Winter Ratchet;*

Status

Manitoba Hydro has consistently maintained that the elimination of the winter ratchet does not in any way affect the need to have the LUBD rate available to customers. In fact the majority of customers on this tariff were not affected by the winter ratchet prior to its elimination in November 2009. The LUBD program is useful for customers whose load factor is approximately 18% or lower as it reduces their overall energy bill compared to the applicable class rate. In addition LUBD customers typically have lower coincidence factors than other customers in the class thus reducing the cost to Manitoba Hydro to serve them.

f) *The Energy Intensive Rate, with justification for either abandoning the rate proposal or providing an alternative on-peak rate scenario as directed in Board Order 112/09; and,*

Status

Please see response to item d) above.

g) *The Service Extension Policy, including a proposal for the Board's review and possible acceptance in accordance with Order 112/09.*

Status

Please see response to item d) above.

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Section:	Tab 4	**Page No.:**	Page 10
Topic:	DSM		
Subtopic:	10 Year Cost Flow Update		
Issue:			

PREAMBLE TO IR (IF ANY):

Figure 4.10 on page 10 indicates that $26.3 million is to be spent on "added conservation rates for residential and commercial customers" and that $55.1 million will be spend on "added fuel choice program" during the 10-year period 2015 - 2024.

QUESTION:

Please indicate the status and objectives the Conservation rates initiative, and a breakdown of the proposed spending for residential and commercial customers. Specifically what is the $26.3 million being spent on?

RATIONALE FOR QUESTION:

MIPUG to review DSM programming generally regarding the rate impacts, especially to GSL customers where possible.

RESPONSE:

The program design details of the Energy Conservation Rates initiative which were included as part of Manitoba Hydro's 2014 – 2017 Power Smart Plan – 15 Year Supplemental Report (included as Appendix 8.1 of this Application) are not finalized nor approved at this time. For purposes of planning, a placeholder for the program was included in Corporation's overall Demand Side Management Plan. The placeholder included a high level estimate for costs, energy savings and timing.

The objective of the Energy Conservation Rates initiative would be to optimize the use of all available tools in achieving the Corporation's overall demand side management strategy. In developing the Corporation's 2014 – 2017 Power Smart Plan, an aggressive approach was

contemplated which went much beyond the traditional approach used to date involving primarily incentives, education and codes to influence customers. Under the 2014 – 2017 Power Smart Plan, a strategy was envisioned for leveraging and optimizing the use of all available tools in program designs including the use of incentives, education, conservation rates, service extension policies, etc. For example, alternative program designs for the new home market are being considered which range from one design premised upon significant upstream incentives to another design premised upon a combination of changes to service extension policy and service extension allowances.

Detailed work on these program designs is pending a Government decision on Manitoba Hydro's future role and responsibilities for Demand Side Management.

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Manitoba Hydro

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June 23, 2014

Mr. H. Singh
Executive Director
Public Utilities Board
400-330 Portage Avenue
Winnipeg, Manitoba
R3C 0C4

Dear Mr. Singh:

RE: Manitoba Hydro Roadway Lighting Conversion Program- Application for Interim Light Emitting Diode Rates for the Area and Roadway Lighting Class

Manitoba Hydro's efforts toward pursuing Demand Side Management ("DSM") opportunities were reviewed extensively by the Public Utilities Board ("PUB") and other parties at the recently concluded Needs for and Alternatives To ("NFAT") proceeding. The importance of Manitoba Hydro's investment in DSM to meet Manitoba's future electricity demand in the most economic manner and to assist customers with managing their energy bills was acknowledged by all parties. Manitoba Hydro remains committed to continuing its aggressive pursuit of all economic DSM opportunities to meet these goals.

During the NFAT proceeding, Manitoba Hydro introduced its 2014 to 2017 Power Smart Plan ("the Plan"), which includes aggressive new energy efficiency targets that will see investments in the utility's Power Smart programs more than double over the next three years. One of the commercial initiatives included in the Plan is the Light Emitting Diode ("LED") Roadway Lighting Conversion Program (the "LED Conversion Program"), which Manitoba Hydro will launch in the summer of 2014.

The Corporation is requesting the approval of new LED rates that will allow Manitoba Hydro to effectively introduce this program, and contribute toward the successful attainment of the Power Smart targets outlined in the Plan.

Information with respect to the LED Conversion Program and the achievement of Power Smart energy conservation targets related to the improved efficiency of LED streetlights compared with the current HPS streetlight technology is provided herein for the PUB's consideration in approving new rates for this program.

Manitoba Hydro's LED Roadway Lighting Conversion Program

Manitoba Hydro has been pursuing energy efficient opportunities in the area of lighting for over 20 years, through its Commercial Lighting Program and its past Roadway Lighting Conversion and Residential Compact Fluorescent Lighting programs. As a continuation of these efforts, the LED Conversion Program will retrofit existing High Pressure Sodium ("HPS") roadway lights to LED fixtures over a seven year period. The LED roadway lighting fixtures will consume approximately 40 percent less electricity compared to HPS lighting, and as such, the LED Conversion Program will assist Manitoba Hydro in achieving its Power Smart energy conservation targets.

LED technology produces a more direct white light and has a 20 year product life, while HPS technology produce a yellow/orange light and has only a 5 year product life. In 2013, Manitoba Hydro began conducting pilot replacements with 44 HPS roadway lights being converted to LED on nine streets in Winnipeg and Thompson, which resulted in total annual energy savings of over 9,000 kWh. These pilot projects enabled Manitoba Hydro to monitor the product performance of different LED manufacturers, the light outputs, and general customer feedback. To date, Manitoba Hydro has not experienced any performance issues or issues with public acceptance of the lighting.

In addition to the energy cost savings and efficiencies LEDs will derive for Manitoba Hydro, LED fixtures will also improve the efficiency mandates of a number of municipalities in the Province. To that end, the Association of Manitoba Municipalities ("AMM") recently passed a resolution to lobby Manitoba Hydro for the provision of LED lighting options when replacing and/or installing lighting fixtures. The AMM resolution with respect to LED Street Lighting is provided as Attachment 1 to this Application.

Manitoba Hydro will launch its LED Conversion Program in the summer of 2014, and in working with Manitoba municipalities and local governments, will convert all HPS roadway lighting (less than 1000W) to energy efficient LED technologies over the next 7 years. The program is expected to achieve 35 GWh in electricity savings and 5 MW in winter peak demand savings by 2020/21, and is expected to reduce Manitoba Hydro's street-light maintenance costs of single light out calls by approximately $800,000 annually once the entire conversion program has been fully implemented.

Proposed LED Rates

Manitoba Hydro is requesting PUB approval, on an interim basis, to implement LED rates for the Area and Roadway Lighting Class. Manitoba Hydro does not currently have rates in place for LED roadway lighting fixtures. The new LED rates are required at this time in order to accurately and appropriately charge customers for services provided under Manitoba Hydro's Area and Roadway Lighting rate schedule, given the initiation of the replacement of HPS lighting with LED lighting fixtures beginning in the summer of 2014.

Attachment 2 provides the supporting calculations for the proposed LED rates. Manitoba Hydro derived the proposed LED rates by determining the annual kilowatt hour savings expected to be achieved by converting from HPS lighting to LED and then determining the monthly cost savings using the Area and Roadway Lighting Energy charge from Manitoba Hydro's 2013 Prospective Cost of Service Study (PCOSS 13) updated to reflect actual rate increases for September 1, 2012, May 1, 2013, and May 1, 2014. The monthly cost savings were then deducted from the approved HPS rates effective May 1, 2014, to determine the proposed LED rates.

Attachment 3 provides the proposed rate schedules (pages 18 and 19) for rates effective August 1, 2014, which include proposed LED rates for the Area and Roadway Lighting class. The proposed rates will apply to all LED installations, including new installations and those related to the replacement of existing HPS fixtures.

Manitoba Hydro has also provided a copy of this Application to Area and Roadway Lighting customers that will benefit from the new LED rates, namely the City of Winnipeg and the Association of Manitoba Municipalities.

Should you have any questions with respect to the foregoing, please do not hesitate to contact the writer at 204-360-3257.

Yours truly,

MANITOBA HYDRO LAW DIVISION

Per:

Brent A. Czarnecki
Barrister & Solicitor
BAC/
encl.

Resolutions

AMM Resolution #26-2013

Manitoba Hydro LED Street Lighting

Sponsor(s)
Tache, RM (Eastern)

Department(s)
Manitoba Hydro

THEREFORE BE IT RESOLVED THAT the Association of Manitoba Municipalities lobby Manitoba Hydro to provide LED lighting options to municipalities when replacing and/or installing lighting fixtures.

Manitoba Hydro **Attachment 2**
Application for Interim LED Rates **June 23, 2014**

NEW RATE NAME		HPS Category	HPS Wattage	LED Wattage	Wattage Savings	kW Savings	Annual Hours	Annual kWh Savings	Energy Rate	Annual Energy Savings	Per Month Savings	Approved Monthly HPS Rate	Proposed Monthly LED Rate
10 LED (20w CF Equivalent)	Exclusive	20 W CF	20	12.5	7.5	0.008	4252	31.9	$0.05287	$1.69	$0.14	$2.13	$1.99
60 LED (70w HPS Equivalent)	Shared	70	97	58.2	38.8	0.039	4252	165.0	$0.05287	$8.72	$0.73	$7.60	$6.87
60 LED (70w HPS Equivalent)	Exclusive	70	97	58.2	38.8	0.039	4252	165.0	$0.05287	$8.72	$0.73	$12.48	$11.75
60 24 hrs LED (70w 24 hrs HPS Equivalent)	Exclusive	70	97	58.2	38.8	0.039	4252	165.0	$0.05287	$8.72	$0.73	$14.03	$13.30
80 LED (100w HPS Equivalent)	Shared	100	135	81	54.0	0.054	4252	229.6	$0.05287	$12.14	$1.01	$7.89	$6.88
80 LED (100w HPS Equivalent)	Exclusive	100	135	81	54.0	0.054	4252	229.6	$0.05287	$12.14	$1.01	$13.16	$12.15
110 LED (150w HPS Equivalent)	Shared	150	190	114	76.0	0.076	4252	323.2	$0.05287	$17.09	$1.42	$9.67	$8.25
110 LED (150w HPS Equivalent)	Exclusive	150	190	114	76.0	0.076	4252	323.2	$0.05287	$17.09	$1.42	$14.86	$13.44
180 LED (250w HPS Equivalent)	Shared	250	300	180	120.0	0.120	4252	510.2	$0.05287	$26.98	$2.25	$12.32	$10.07
180 LED (250w HPS Equivalent)	Exclusive	250	300	180	120.0	0.120	4252	510.2	$0.05287	$26.98	$2.25	$17.13	$14.88
280 LED (400w HPS Equivalent)	Shared	400	470	282	188.0	0.188	4252	799.4	$0.05287	$42.26	$3.52	$14.14	$10.62
280 LED (400w HPS Equivalent)	Exclusive	400	470	282	188.0	0.188	4252	799.4	$0.05287	$42.26	$3.52	$23.77	$20.25
280 2/100' LED (400w 2/100' Equiv)	Exclusive	400	470	282	188.0	0.188	4252	799.4	$0.05287	$42.26	$3.52	$36.75	$33.23
280 4/100' LED (400w 4/100' Equiv)	Exclusive	400	470	282	188.0	0.188	4252	799.4	$0.05287	$42.26	$3.52	$26.99	$23.47

	¢/kWh
2.5% Sept 1, 2012 ARL Increase	2.50%
3.5% May 1, 2013 ARL Increase	3.50%
2.75% May 1, 2014 ARL Increase - Approved	2.75%
Projected Cummulative Rate Increases	9.00%
2012/13 ARL Energy Cost (PCOSS13) at April 1, 2012 Rates	4.850
Projected PCOSS Energy Rate	5.287

AREA AND ROADWAY LIGHTING

OUTDOOR LIGHTING

LEGEND

I	Incandescent
F	Fluorescent
CF	Compact Fluorescent
LED	Light Emitting Diode
MH	Metal Halide
MV	Mercury Vapour
HPS	High Pressure Sodium Vapour
Q	Quartz

Exclusive Pole:	A corporate-owned pole for the primary purpose of supporting outdoor lighting devices.
Shared Pole:	A pole of the primary purpose of supporting electrical circuits other than outdoor lighting.

AREA AND ROADWAY LIGHTING

(Incandescent and Mercury Vapour are NOT available for new installations)

OUTDOOR LIGHTING RATE - *TARIFF NO. 2014-80:*

Watts	Rate Per Month	
	Shared	Exclusive
200 F	-	$ 9.93
20 CF	-	$ 2.13
100 I	$ 4.57	$ 9.93
150 I	-	$ 9.93
300 I	-	$ 14.16
500 I	$ 11.96	$ 19.51
400 MH	-	$ 23.77
175 MV	$ 8.84	$ 14.16
250 MV	$ 10.12	$ 16.03
400 MV	$ 13.88	$ 19.17
70 HPS	$ 7.60	$ 12.48
70 HPS 24 hours	-	$ 14.03
100 HPS	$ 7.89	$ 13.16
150 HPS	$ 9.67	$ 14.86
250 HPS	$ 12.32	$ 17.13
400 HPS	$ 14.14	$ 23.77
400 HPS 2/100'	-	$ 36.75
400 HPS 4/100'	-	$ 26.99
750 HPS	$ 21.91	$ 34.76
1 000 HPS	-	$ 40.32
1 000 HPS 1/60'	-	$ 41.25
1 000 HPS 2/100'	-	$ 49.44
1 000 HPS 4/100'	-	$ 42.40
10 LED	-	$ 1.99
60 LED	$ 6.87	$ 11.75
60 LED 24 hours	-	$ 13.30
80 LED	$ 6.88	$ 12.15
110 LED	$ 8.25	$ 13.44
180 LED	$ 10.07	$ 14.88
280 LED	$ 10.62	$ 20.25
280 LED 2/100'	-	$ 33.23
280 LED 4/100'	-	$ 23.47

Applicability: The Area and Roadway rate is available throughout the Province of Manitoba and applies to area and roadway lighting installed by agreement for public authorities.

Manitoba Hydro
June 23, 2014

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Section:	Appendix 10	**Page No.:**	
Topic:	Interim Orders		
Subtopic:			
Issue:	Tentative Diesel Settlement		

PREAMBLE TO IR (IF ANY):

QUESTION:

a) Please confirm whether the proposed rates to be effective April 1, 2014 take into account that commencing May 1, 2014, in accordance with the tentative Diesel Settlement Agreement and subject to PUB approval, a portion of Net Export Revenues will accrue to the benefit of the Diesel Communities and be applied so as to reduce the revenue requirement in the Diesel Communities and that the Diesel Communities will receive such an allocation of Net Export Revenues based on the same principles as applied to the similar Grid Customer class;

b) Please indicate where in the Manitoba Hydro Application the effect of the application of Net Export Revenues to reduce the revenue requirement in the Diesel Communities as described at a), above, is set out;

c) Please provide a table indicating the allocation of Net Export Revenue to each customer class effective May 1, 2014, the resulting reduction in the revenue requirement for each customer class in the Diesel Communities and the effect on the proposed rates for each class of Diesel customers.

RATIONALE FOR QUESTION:

RESPONSE:

In Order 33/15, the PUB accepted Manitoba Hydro's submission, in response to its objection to other Intervenor requests, and found that issues raised in Information Requests related to the Diesel Settlement Agreement should be examined after the Agreement has been filed.

MKO/MH I-1

Subject: **MKO First Nation Accounts - General**

Preamble: **The First Nations affiliated with MKO are the Nisichawayasihk Cree Nation, Tataskweyak Cree Nation, God's Lake First Nation, St. Theresa Point First Nation, Pimicikamak Cree Nation, Mosakahiken Cree Nation, Wasagamack First Nation, War Lake First Nation, Oxford House First Nation, Fox Lake First Nation, York Factory First Nation, Sayisi Dene First Nation, Red Sucker Lake First Nation, Wuskwi Sipihk Cree Nation, Misipawistik Cree Nation, Manto Sipi Cree Nation, Opaskwayak Cree Nation, Norway House First Nation, Mathias Colomb Cree Nation, Shamattawa First Nation, Garden Hill First Nation, Barren Lands First Nation, Sapotaweyak Cree Nation, Northlands Denesuline First Nation, Chemawawin First Nation, Marcel Colomb First Nation, O-Pipon-Na-Piwin Cree Nation, Pickerel Narrows Cree Nation, Sherridon First Nation and the Wapaskokimaw Reserve, Saskatchewan.**

For each of the MKO First Nation communities which receive electricity service from Manitoba Hydro, please indicate, as applicable:

f) the annual electricity consumption for each of a) through e), above, forecast under the current rates and the proposed rates;

ANSWER:

The following tables present the actual non-weather normalized electricity consumption (kW.h) of Residential customers (Total and First Nation) and General Service customers (Total) by First Nation community for 2013/14. For the purpose of this response, First

Nation accounts are defined by having a Band Treaty Number listed on the customer account.

Manitoba Hydro is unable to provide the breakdown for the First Nation General Service and the First Nation Education accounts as, given the number of such customers within each community, providing this information may result in the disclosure of individual customer information.

Manitoba Hydro does not forecast future energy requirements for communities individually.

Residential Electricity Consumption for 2013/14 (kW.h)

First Nation Community	Total	First Nation
Barren Lands First Nation	1,782,235	1,462,857
Chemanwawin Cree Nation	11,159,692	10,622,945
Fox Lake First Nation	1,531,025	1,399,211
Garden Hill First Nation	14,637,831	14,576,089
Gods Lake First Nation	9,096,194	9,066,548
Manto Sipi Cree Nation	4,848,110	4,749,374
Marcel Colomb First Nation	643,299	629,083
Mathias Colomb First Nation	15,379,536	14,565,347
Misipawistik Cree Nation	7,203,604	6,650,800
Mosakahiken Cree Nation	8,389,169	7,205,188
Nischawayaksihk Cree Nation	19,329,295	18,609,703
Northlands Dene First Nation	1,998,641	1,950,655
Norway House Cree Nation	42,282,510	40,162,819
O-PIPON-NA-PIWIN	7,125,945	5,581,919
Opaskwayak Cree Nation	22,937,334	21,186,903
Oxford House First Nation	13,293,801	12,956,292
Pimicikamak Cree Nation	34,876,323	34,515,192
Red Sucker Lake First Nation	6,060,586	5,792,004
Sapotaweyak Cree Nation	7,833,082	7,735,762
Sayisi Dene First Nation	1,375,774	1,351,000
Shamattawa First Nation	3,410,525	3,160,087
St Theresa Point First Nation	18,325,219	17,974,396
Tataskweyak Cree Nation	15,865,100	15,262,865
War Lake First Nation	1,059,031	914,140
Wasagamack First Nation	7,379,793	7,129,918
Wuskwi Sipihk First Nation	1,632,322	1,457,076
York Factory First Nation	4,431,850	3,952,769

General Service Electricity Consumption for 2013/14 (kW.h)

First Nation Community	Total
Barren Lands First Nation	972,744
Chemanwawin Cree Nation	3,428,440
Fox Lake First Nation	2,114,617
Garden Hill First Nation	8,963,350
Gods Lake First Nation	4,947,910
Manto Sipi Cree Nation	3,115,204
Marcel Colomb First Nation	375,983
Mathias Colomb First Nation	6,912,671
Misipawistik Cree Nation	3,175,023
Mosakahiken Cree Nation	2,621,411
Nischawayaksihk Cree Nation	9,563,676
Northlands Dene First Nation	1,224,602
Norway House Cree Nation	17,390,544
O-PIPON-NA-PIWIN	5,236,117
Opaskwayak Cree Nation	19,417,833
Oxford House First Nation	8,184,373
Pimicikamak Cree Nation	9,746,545
Red Sucker Lake First Nation	3,164,103
Sapotaweyak Cree Nation	3,417,892
Sayisi Dene First Nation	979,367
Shamattawa First Nation	1,986,975
St Theresa Point First Nation	9,980,038
Tataskweyak Cree Nation	7,327,442
War Lake First Nation	871,916
Wasagamack First Nation	5,475,011
Wuskwi Sipihk First Nation	604,078
York Factory First Nation	2,789,039

MKO/MH I-3 a+b, f-h

	Residential Accounts				First Nation Residential Accounts			
Community	a) Residential Customers in Arrears	f) % of Accounts in Arrears	g) 2013/14 Billed Consumption in kW.h	h) Value in $ of Accounts in Arrears	b) First Nation Residential Customers in Arrears	f) % of Accounts in Arrears	g) 2013/14 Billed Consumption in kW.h	h) Value in $ of Accounts in Arrears
Barren Lands First Nation	59	43.1%	985,306	$29,468	46	43.4%	759,459	$20,396
Chemanwawin Cree Nation	171	52.1%	5,827,521	$95,584	169	53.8%	5,778,402	$94,974
Fox Lake First Nation	31	59.6%	924,634	$9,223	26	57.8%	810,481	$7,980
Garden Hill First Nation	368	73.9%	10,995,835	$240,616	367	73.8%	10,961,783	$239,816
Gods Lake First Nation	117	40.3%	3,787,909	$55,739	117	40.8%	3,787,909	$55,739
Manto Sipi Cree Nation	98	80.3%	4,028,584	$590,158	97	81.5%	3,989,460	$589,413
Marcel Colomb First Nation	*	*	*	*	*	*	*	*
Mathias Colomb First Nation	105	26.4%	3,857,920	$68,852	104	27.3%	3,825,640	$67,659
Misipawistik Cree Nation	122	55.5%	4,178,105	$53,283	116	56.6%	4,036,285	$50,122
Mosakahiken Cree Nation	146	58.4%	5,297,562	$93,141	139	69.8%	5,104,727	$87,962
Nischawayaksihk Cree Nation	140	27.8%	5,056,997	$76,381	134	27.9%	4,909,583	$71,621
Northlands Dene First Nation	61	40.7%	779,263	$21,734	59	40.1%	750,011	$21,249
Norway House Cree Nation	700	58.4%	25,125,379	$356,018	700	61.8%	25,125,379	$356,018
O-PIPON-NA-PIWIN	148	69.8%	4,694,802	$150,019	130	76.0%	4,171,909	$130,280
Opaskwayak Cree Nation	367	50.3%	11,710,591	$174,316	332	50.1%	10,779,110	$162,238
Oxford House First Nation	224	53.7%	7,664,925	$205,021	223	54.7%	7,629,975	$201,407
Pimicikamak Cree Nation	624	67.7%	25,406,227	$3,594,154	621	68.0%	25,310,574	$3,578,013
Red Sucker Lake First Nation	141	67.1%	4,088,261	$63,252	138	70.1%	3,995,470	$62,564
Sapotaweyak Cree Nation	99	39.4%	2,839,025	$28,483	90	37.3%	2,640,096	$25,209
Sayisi Dene First Nation	78	66.7%	970,815	$19,631	76	66.7%	950,945	$18,668
Shamattawa First Nation	74	41.3%	1,300,931	$27,111	70	42.2%	1,219,920	$26,741
St Theresa Point First Nation	334	58.3%	10,347,583	$185,856	325	58.3%	10,151,931	$178,293
Tataskweyak Cree Nation	185	48.1%	7,810,740	$90,144	181	48.8%	7,678,067	$86,070
War Lake First Nation	14	42.4%	444,435	$10,591	13	44.8%	419,508	$10,196
Wasagamack First Nation	161	60.1%	4,441,460	$64,491	161	61.5%	4,441,460	$64,491
Wuskwi Sipihk First Nation	24	68.6%	920,242	$32,784	23	69.7%	923,788	$32,132
York Factory First Nation	46	35.7%	1,548,329	$32,529	44	36.7%	1,488,789	$30,029

* Denotes an insufficiently large number of customers to ensure the protection of identifiable customer information

MKO/MH I-3 c+d, f-h

	General Service Accounts				First Nation General Service Accounts			
Community	**c) General Service Customers in Arrears**	**f) % of Accounts in Arrears**	**g) 2013/14 Billed Consumption in kW.h**	**h) Value in $ of Accounts in Arrears**	**d) First Nation General Service Accounts in Arrears**	**f) % of Accounts in Arrears**	**g) 2013/14 Billed Consumption in kW.h**	**h) Value in $ of Accounts in Arrears**
Barren Lands First Nation	2	4.3%	7,910	$427	1	5.6%	1,932	$177
Chemanwawin Cree Nation	4	11.1%	564,814	$15,739	3	9.7%	175,174	$13,260
Fox Lake First Nation	0	0.0%	0	$0	0	0.0%	0	$0
Garden Hill First Nation	11	22.9%	803,421	$11,143	10	21.7%	781,116	$10,799
Gods Lake First Nation	2	3.4%	49,510	$2,646	2	3.7%	49,510	$2,646
Manto Sipi Cree Nation	4	10.8%	232,169	$48,693	3	10.0%	125,249	$45,659
Marcel Colomb First Nation	*	*	*	*	*	*	*	*
Mathias Colomb First Nation	1	2.3%	16,333	$39	1	3.2%	16,333	$39
Misipawistik Cree Nation	3	9.7%	339,467	$10,537	3	12.5%	339,262	$10,537
Mosakahiken Cree Nation	2	9.1%	97,694	$246	*	*	*	*
Nischawayaksihk Cree Nation	14	16.1%	1,649,010	$11,298	12	16.7%	1,640,572	$11,014
Northlands Dene First Nation	4	7.4%	8,517	$1,013	4	9.1%	8,517	$1,013
Norway House Cree Nation	12	10.3%	726,428	$11,842	11	12.2%	702,043	$11,270
O-PIPON-NA-PIWIN	9	22.5%	1,488,913	$180,593	*	*	*	*
Opaskwayak Cree Nation	14	15.7%	2,956,316	$26,779	11	18.6%	2,116,412	$19,459
Oxford House First Nation	6	12.0%	1,049,478	$161,799	6	14.0%	1,049,478	$161,799
Pimicikamak Cree Nation	11	12.5%	975,851	$92,606	10	12.0%	957,839	$92,412
Red Sucker Lake First Nation	8	22.9%	269,514	$9,748	8	38.1%	269,514	$9,748
Sapotaweyak Cree Nation	4	14.3%	113,768	$405	3	11.1%	107,163	$300
Sayisi Dene First Nation	4	10.3%	16,701	$3,553	2	6.7%	10,542	$2,708
Shamattawa First Nation	5	11.1%	163,817	$245,304	5	16.7%	163,817	$245,304
St Theresa Point First Nation	3	3.4%	334,345	$998	2	2.7%	297,001	$213
Tataskweyak Cree Nation	18	28.1%	1,893,771	$37,766	18	33.3%	1,893,267	$37,766
War Lake First Nation	*	*	*	*	0	0.0%	504	$0
Wasagamack First Nation	3	6.5%	183,530	$2,404	2	5.0%	163,130	$2,064
Wuskwi Sipihk First Nation	*	*	*	*	3	27.3%	142,258	$13,529
York Factory First Nation	2	7.7%	119,417	$1,473	*	*	*	*

* Denotes an insufficiently large number of customers to ensure the protection of identifiable customer information