

2015 COST OF SERVICE METHODOLOGY REVIEW

Manitoba Hydro Undertaking # 1

Manitoba Hydro to provide all PCOSS schedules (including Schedule B2 & B3, without net export revenue and Schedules D1 & D2) for the scenario Hydro has already run where the marginal weighted energy "capacity adder" is added on for only the winter peak period.

Response:

The following version of PCOSS14-Amended includes a capacity adder of 5.74¢/kWh applied to the 661 Peak Winter hours only. The change in RCC provided is in comparison to PCOSS14-Amended, which included an adder in all annual peak hours.

The Customer Demand Energy Cost Analysis and Functional Breakdown provided have not been reduced by Net Export Revenue.

Schedule B 1

Manitoba Hydro
 Prospective Cost Of Service Study
 March 31, 2014
 Revenue Cost Coverage Analysis
Capacity Adder Applied to Peak Winter Hours Only
S U M M A R Y

Customer Class	Total Cost (\$000)	Class Revenue (\$000)	Net Export Revenue (\$000)	Total Revenue (\$000)	RCC % Current Rates	Cost less NER	Change Cost less NER	Change in RCC	Change in NER
Residential	636,405	588,630	42,307	630,937	99.1%	594,098	4,063.6	-0.7%	
General Service - Small Non Demand	132,953	135,035	8,591	143,626	108.0%	124,362	(86.3)	0.0%	
General Service - Small Demand	138,746	136,080	8,953	145,033	104.5%	129,794	(59.0)	0.0%	
General Service - Medium	199,959	186,797	13,001	199,797	99.9%	186,958	(994.2)	0.5%	
General Service - Large 0 - 30kV	99,231	84,956	6,435	91,391	92.1%	92,796	(852.5)	0.8%	
General Service - Large 30-100kV*	61,395	57,808	4,049	61,857	100.8%	57,346	(459.1)	0.8%	
General Service - Large >100kV*	203,665	189,258	13,301	202,558	99.5%	190,365	(1,658.5)	0.9%	
*Includes Curtailment Customers									
SEP	968	826	-	826	85.4%	968	-	0.0%	
Area & Roadway Lighting	22,122	21,630	456	22,086	99.8%	21,666	88.3	-0.4%	
Total General Consumers	1,495,443	1,401,019	97,092	1,498,111	100.2%	1,398,351	42.3	0.0%	
Diesel	9,948	6,612	668	7,280	73.2%	9,280	(42.3)	0.4%	
Export	247,473	345,233	(97,761)	247,473	100.0%				6,597.2
Total System	1,752,864	1,752,864	-	1,752,864	100.0%				

Schedule B2 (Not reduced by Net Export Revenue)

Manitoba Hydro
 Prospective Cost Of Service Study - March 31, 2014
 Customer, Demand, Energy Cost Analysis
Capacity Adder Applied to Peak Winter Hours Only
SUMMARY

Class	CUSTOMER			DEMAND				ENERGY		
	Cost (\$000)	Number of Customers	Unit Cost \$/Month	Cost (\$000)	% Recovery	Billable Demand MVA	Unit Cost \$/KVA	Cost (\$000)	Metered Energy mWh	Unit Cost ¢/kWh
Residential	128,894	486,987	22.06	190,890	0%	n/a	n/a	316,620	7,404,453	6.85 **
GS Small - Non Demand	25,670	53,778	39.78	36,054	0%	n/a	n/a	71,229	1,605,511	6.68 **
GS Small - Demand	8,722	12,492	58.18	41,843	38%	2,390	6.63	88,181	2,047,715	5.58
General Service - Medium	7,628	1,974	322.01	59,714	87%	7,302	7.15	132,617	3,174,662	4.41
General Service - Large <30kV	3,837	288	n/a	25,800	100%	4,042	7.33 *	69,594	1,702,481	4.09
General Service - Large 30-100kV	2,652	40	n/a	9,637	100%	2,894	4.25 *	49,106	1,327,210	3.70
General Service - Large >100kV	2,450	16	n/a	21,027	100%	8,409	2.79 *	180,188	4,903,742	3.67
SEP	326	29	935.95	132	0%	n/a	n/a	509	26,500	2.42 **
Area & Roadway Lighting	16,655	155,024	8.95	2,255	0%	n/a	n/a	3,211	100,487	5.44 **
Total General Consumers	196,833	710,628		387,353		25,038		911,257	22,292,761	
Diesel	235	755	25.91	352	0%	n/a	n/a	9,361	13,754	70.62 **
Export	n/a	n/a	n/a	21,172	0%	n/a	n/a	226,300	9,013,000	2.75 ***
Total System	197,068	711,383		408,877		25,038		1,146,919	31,319,515	

* - includes recovery of customer costs

** - includes recovery of demand costs

*** -includes recovery of customer and demand costs

Schedule B3 (Not reduced by Net Export Revenue)

Manitoba Hydro
 Prospective Cost Of Service Study - March 31, 2014
 Functional Breakdown
Capacity Adder Applied to Peak Winter Hours Only
S U M M A R Y

Class	Total Cost (\$000)	Generation		Transmission		Subtransmission		Distribution Cust Service		Distribution Plant Cost	
		Cost (\$000)	%	Cost (\$000)	%	Cost (\$000)	%	Cost (\$000)	%	(\$000)	%
Residential	636,405	315,252	49.5%	49,801	7.8%	33,090	5.2%	71,153	11.2%	167,109	26.3%
General Service - Small Non Demand	132,953	70,932	53.4%	10,636	8.0%	5,973	4.5%	18,082	13.6%	27,329	20.6%
General Service - Small Demand	138,746	87,809	63.3%	12,591	9.1%	6,881	5.0%	4,321	3.1%	27,144	19.6%
General Service - Medium	199,959	132,046	66.0%	19,327	9.7%	9,514	4.8%	6,576	3.3%	32,496	16.3%
General Service - Large <30kV	99,231	69,293	69.8%	9,990	10.1%	4,756	4.8%	3,607	3.6%	11,584	11.7%
General Service - Large 30-100kV	61,395	48,888	79.6%	6,222	10.1%	3,632	5.9%	2,581	4.2%	71	0.1%
General Service - Large >100kV	203,665	179,395	88.1%	21,820	10.7%	0	0.0%	2,421	1.2%	29	0.0%
SEP	968	509	52.6%	132	13.7%	0	0.0%	309	31.9%	17	1.7%
Area & Roadway Lighting	22,122	3,198	14.5%	329	1.5%	451	2.0%	547	2.5%	17,598	79.5%
Total General Consumers	1,495,443	907,323	60.7%	130,848	8.7%	64,296	4.3%	109,597	7.3%	283,378	18.9%
Diesel	9,948	9,361	94.1%	0	0.0%	0	0.0%	0	0.0%	587	5.9%
Export	247,473	225,550	91.1%	21,922	8.9%	0	0.0%	0	0.0%	0	0.0%
Total System	1,752,864	1,142,235	65.2%	152,770	8.7%	64,296	3.7%	109,597	6.3%	283,965	16.2%

Schedule D1

2014 Prospective Cost of Service Study
 Prospective Peak Load Responsibility Report
 Seasonal Coincident Peaks (2 CP) at Generation Peak

	Forecast Total Energy @ Generation	Avg % of Yearly Energy	Winter			Avg % of Yearly Energy	SUMMER			D14 2CP Estimated Demand
			Estimated Seasonal Energy	Seasonal CP LF	Estimated Seasonal Demand		Estimated Seasonal Energy	Seasonal CP LF	Estimated Seasonal Demand	
Residential										
Residential	8,541,179,836	63.0%	5,380,943,297	70.1%	1,767,057	37.0%	3,160,236,539	73.0%	980,320	1,373,688
Seasonal	102,206,821	43.6%	44,603,685	162.5%	6,319	56.4%	57,603,136	162.5%	8,027	7,173
Water Heating	16,204,306	49.5%	8,021,131	126.0%	1,465	50.5%	8,183,175	126.0%	1,471	1,468
Total Residential	<u>8,659,590,963</u>		<u>5,433,568,112</u>		<u>1,774,841</u>		<u>3,226,022,850</u>		<u>989,817</u>	<u>1,382,329</u>
GS Small										
Non-Demand	1,854,567,658	57.8%	1,071,940,106	73.9%	333,915	42.2%	782,627,551	69.7%	254,269	294,092
Demand	2,363,968,908	56.1%	1,326,186,557	76.9%	396,998	43.9%	1,037,782,351	78.2%	300,518	348,758
	<u>4,218,536,565</u>		<u>2,398,126,663</u>		<u>730,913</u>		<u>1,820,409,902</u>		<u>554,787</u>	<u>642,850</u>
Seasonal	5,707,215	20.0%	1,141,443	162.5%	162	80.0%	4,565,772	162.5%	636	399
Water Heating	5,558,687	49.7%	2,763,057	106.0%	600	50.3%	2,795,630	106.0%	597	599
Total GSS	<u>4,229,802,467</u>		<u>2,402,031,163</u>		<u>731,675</u>		<u>1,827,771,304</u>		<u>556,020</u>	<u>643,848</u>
General Service - Medium	3,653,690,359	53.0%	1,936,455,890	79.0%	564,275	47.0%	1,717,234,469	76.8%	506,337	535,306
General Service - Large										
0 - 30 Kv	1,942,588,302	50.6%	982,949,681	81.6%	277,301	49.4%	959,638,621	78.8%	275,773	276,537
30 - 100 Kv	1,226,541,957	52.2%	640,254,901	92.2%	159,857	47.8%	586,287,055	105.8%	125,486	142,672
30 - 100 Kv - Curtailed Cust	248,944,081	49.2%	122,480,488	102.3%	27,561	50.8%	126,463,593	95.9%	29,862	28,712
Over 100 Kv	3,111,483,050	52.7%	1,639,751,567	96.9%	389,551	47.3%	1,471,731,483	104.8%	318,008	353,780
Over 100 Kv - Curtailed Cust	2,259,539,507	50.1%	1,132,029,293	105.1%	247,951	49.9%	1,127,510,214	104.3%	244,798	246,374
Total G.S.- Large	<u>8,789,096,897</u>		<u>4,517,465,930</u>		<u>1,102,221</u>		<u>4,271,630,966</u>		<u>993,927</u>	<u>1,048,074</u>
Street Lighting	117,520,773	57.5%	67,618,144	86.7%	17,964	42.5%	49,902,629	0.0%	-	8,982
Total - General Consumers	<u>25,449,701,458</u>		<u>14,357,139,240</u>		<u>4,190,977</u>		<u>11,092,562,218</u>		<u>3,046,102</u>	<u>3,618,539</u>
Dependable Exports	5,010,288,250	37.6%	1,883,868,382	111.6%	388,594	62.4%	3,126,419,868	89.3%	792,806	590,700
Opportunity Exports	4,729,711,750	37.6%	1,778,371,618	111.6%	366,833	62.4%	2,951,340,132	89.3%	748,409	557,621
Total Extra Provincial	<u>9,740,000,000</u>		<u>3,662,240,000</u>		<u>755,428</u>		<u>6,077,760,000</u>		<u>1,541,214</u>	<u>1,148,321</u>
Integrated System	<u>35,189,701,458</u>		<u>18,019,379,240</u>		<u>4,946,404</u>		<u>17,170,322,218</u>		<u>4,587,316</u>	<u>4,766,860</u>
Total Surplus Energy	<u>30,478,903</u>									

Schedule D2

Energy (MWh) Weighted by Marginal Cost (Domestic and Dependable Exports)

	2013/14 Forecast	Energy (MWh) Weighted by Marginal Cost (Domestic and Dependable Exports)												Total	Weighted Energy/1000
		Spring			Summer			Fall			Winter				
		Peak	Shoulder	Off Peak	Peak	Shoulder	Off Peak	Peak	Shoulder	Off Peak	Peak	Shoulder	Off Peak		
Residential	8,541,179,836	272,001,550	530,434,386	341,228,942	532,088,120	973,550,491	502,930,598	356,769,291	648,991,849	410,273,989	972,624,664	1,785,689,267	1,214,596,687	8,541,179,836	31,766,747
Res FRWH	16,204,306	642,320	1,252,599	805,798	1,430,889	2,618,068	1,352,479	680,444	1,237,783	782,491	1,322,348	2,427,763	1,651,325	16,204,306	56,522
Res Seasonal	102,206,821	4,309,005	8,403,057	5,405,695	10,173,061	18,613,436	9,615,594	4,018,892	7,310,685	4,621,605	7,279,742	13,365,234	9,090,814	102,206,821	348,799
GS Small Non Demand	1,854,567,658	68,055,877	124,244,795	73,605,024	156,946,677	231,229,519	131,175,918	80,806,229	138,727,001	84,341,946	195,718,593	345,805,059	223,911,020	1,854,567,658	6,828,589
CSS FRWH	5,558,687	237,115	432,884	256,449	559,940	824,959	467,997	246,360	422,948	257,140	473,778	837,094	542,024	5,558,687	19,682
CSS Seasonal	5,707,215	316,486	577,786	342,292	919,842	1,355,203	768,803	177,060	303,974	184,807	194,575	343,784	222,603	5,707,215	18,161
GS Small Demand	2,363,968,908	86,124,873	155,733,913	96,327,743	188,753,572	305,064,993	181,849,238	104,235,551	181,172,476	113,763,401	239,738,503	427,070,670	284,133,975	2,363,968,908	8,582,249
GS Medium	3,653,690,359	141,740,153	252,393,249	155,128,403	320,769,079	516,218,800	312,884,924	159,104,617	273,969,089	170,260,709	347,898,566	607,136,570	396,186,201	3,653,690,359	13,094,185
GS Large <30KV	1,942,588,302	79,806,628	136,361,704	89,006,729	178,393,889	280,455,280	184,178,767	85,326,837	141,620,048	94,386,474	176,365,574	296,279,849	200,406,525	1,942,588,302	6,864,556
GS Large 30-100KV	1,226,541,957	42,483,526	84,080,143	64,860,909	89,188,612	168,441,583	130,807,980	47,183,522	90,950,046	71,284,343	98,541,523	190,227,458	148,492,313	1,226,541,957	4,149,738
GS Large 30-100KV Curtailable	248,944,081	9,371,552	18,807,944	14,113,883	18,860,229	36,474,691	27,753,963	9,580,132	18,607,888	14,142,156	18,304,418	35,794,965	27,132,262	248,944,081	829,906
GS Large > 100KV	3,111,483,050	116,719,614	230,170,250	178,036,697	218,565,619	405,563,458	319,577,252	121,270,424	233,883,767	182,283,198	251,407,053	480,308,551	373,697,166	3,111,483,050	10,537,657
GS Large > 100KV Curtail	2,259,539,507	82,958,456	165,579,090	126,364,675	168,698,159	324,377,737	250,415,605	83,756,916	163,940,967	125,628,397	172,221,031	337,351,606	258,246,868	2,259,539,507	7,571,383
Streetlights	117,520,773	-	4,465,789	10,988,192	470,083	8,343,975	22,035,145	3,408,102	6,698,684	13,397,368	7,991,413	13,456,129	26,265,893	117,520,773	332,499
Total	25,449,701,458	904,767,156	1,712,937,588	1,156,471,432	1,885,817,767	3,273,132,192	2,075,814,263	1,056,564,378	1,907,837,205	1,285,608,023	2,490,081,780	4,536,094,001	3,164,575,673	25,449,701,458	91,000,674
Exports	5,010,288,250	214,892,366	394,273,751	214,162,497	533,651,385	1,000,120,297	634,300,041	209,648,525	399,109,735	254,530,786	313,318,899	570,134,666	272,145,303	5,010,288,250	16,623,352
Weighting Factor		3.657	3.043	1.739	4.556	3.011	1.000	4.063	3.189	1.813	9.014	3.588	2.691		

Energy (MWh) Weighted by Marginal Cost (Domestic, Dependable and Opportunity Exports)

	2013/14 Forecast	Energy (MWh) Weighted by Marginal Cost (Domestic, Dependable and Opportunity Exports)												Total	Weighted Energy/1000
		Spring			Summer			Fall			Winter				
		Peak	Shoulder	Off Peak	Peak	Shoulder	Off Peak	Peak	Shoulder	Off Peak	Peak	Shoulder	Off Peak		
Thermal Generation	8,541,179,836	272,001,550	530,434,386	341,228,942	532,088,120	973,550,491	502,930,598	356,769,291	648,991,849	410,273,989	972,624,664	1,785,689,267	1,214,596,687	8,541,179,836	31,766,747
Res FRWH	16,204,306	642,320	1,252,599	805,798	1,430,889	2,618,068	1,352,479	680,444	1,237,783	782,491	1,322,348	2,427,763	1,651,325	16,204,306	56,522
Res Seasonal	102,206,821	4,309,005	8,403,057	5,405,695	10,173,061	18,613,436	9,615,594	4,018,892	7,310,685	4,621,605	7,279,742	13,365,234	9,090,814	102,206,821	348,799
GS Small Non Demand	1,854,567,658	68,055,877	124,244,795	73,605,024	156,946,677	231,229,519	131,175,918	80,806,229	138,727,001	84,341,946	195,718,593	345,805,059	223,911,020	1,854,567,658	6,828,589
CSS FRWH	5,558,687	237,115	432,884	256,449	559,940	824,959	467,997	246,360	422,948	257,140	473,778	837,094	542,024	5,558,687	19,682
CSS Seasonal	5,707,215	316,486	577,786	342,292	919,842	1,355,203	768,803	177,060	303,974	184,807	194,575	343,784	222,603	5,707,215	18,161
GS Small Demand	2,363,968,908	86,124,873	155,733,913	96,327,743	188,753,572	305,064,993	181,849,238	104,235,551	181,172,476	113,763,401	239,738,503	427,070,670	284,133,975	2,363,968,908	8,582,249
GS Medium	3,653,690,359	141,740,153	252,393,249	155,128,403	320,769,079	516,218,800	312,884,924	159,104,617	273,969,089	170,260,709	347,898,566	607,136,570	396,186,201	3,653,690,359	13,094,185
GS Large <30KV	1,942,588,302	79,806,628	136,361,704	89,006,729	178,393,889	280,455,280	184,178,767	85,326,837	141,620,048	94,386,474	176,365,574	296,279,849	200,406,525	1,942,588,302	6,864,556
GS Large 30-100KV	1,226,541,957	42,483,526	84,080,143	64,860,909	89,188,612	168,441,583	130,807,980	47,183,522	90,950,046	71,284,343	98,541,523	190,227,458	148,492,313	1,226,541,957	4,149,738
GS Large 30-100KV Curtail	248,944,081	9,371,552	18,807,944	14,113,883	18,860,229	36,474,691	27,753,963	9,580,132	18,607,888	14,142,156	18,304,418	35,794,965	27,132,262	248,944,081	829,906
GS Large > 100KV	3,111,483,050	116,719,614	230,170,250	178,036,697	218,565,619	405,563,458	319,577,252	121,270,424	233,883,767	182,283,198	251,407,053	480,308,551	373,697,166	3,111,483,050	10,537,657
GS Large > 100KV Curtail	2,259,539,507	82,958,456	165,579,090	126,364,675	168,698,159	324,377,737	250,415,605	83,756,916	163,940,967	125,628,397	172,221,031	337,351,606	258,246,868	2,259,539,507	7,571,383
Streetlights	117,520,773	-	4,465,789	10,988,192	470,083	8,343,975	22,035,145	3,408,102	6,698,684	13,397,368	7,991,413	13,456,129	26,265,893	117,520,773	332,499
Total	25,449,701,458	904,767,156	1,712,937,588	1,156,471,432	1,885,817,767	3,273,132,192	2,075,814,263	1,056,564,378	1,907,837,205	1,285,608,023	2,490,081,780	4,536,094,001	3,164,575,673	25,449,701,458	91,000,674
Exports	9,834,000,000	421,782,426	773,865,269	420,349,866	1,047,430,299	1,962,997,438	1,244,979,589	411,490,017	783,357,151	499,583,182	614,970,217	1,119,038,272	534,156,275	9,834,000,000	32,627,673
Weighting Factor		3.657	3.043	1.739	4.556	3.011	1.000	4.063	3.189	1.813	9.014	3.588	2.691		