

CAC/CENTRA I-1

Reference: Tab 2; p. 2 of 8; Line 10 - 13

- a) If not already filed, provide the Integrated Financial Forecast Gas Operations (“CGM10”).**

ANSWER:

Please see below.

GAS OPERATIONS (CGM10)
PROJECTED OPERATING STATEMENT
(In Millions of Dollars)

For the year ended March 31

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
REVENUES										
General Consumers at approved rates	416	455	464	453	452	451	450	449	446	444
additional revenue requirement *	0	0	6	11	15	19	23	23	27	32
	416	455	470	464	467	470	473	472	474	476
Cost of Gas Sold	273	311	320	310	309	309	308	306	304	303
Gross Margin	143	144	150	154	158	162	166	166	170	174
Other	2	2	2	2	2	2	2	2	2	2
	145	146	152	156	159	163	168	167	171	175
EXPENSES										
Operating and Administrative	63	64	65	67	68	69	71	72	74	75
Finance Expense	18	19	20	21	23	23	24	24	24	25
Depreciation and Amortization	26	27	30	32	34	34	36	37	39	39
Capital and Other Taxes	19	20	20	20	20	20	20	21	21	21
Corporate Allocation	12	12	12	12	12	12	12	12	12	12
	138	142	147	151	156	159	163	165	169	171
Net Income	6	4	5	5	3	4	5	2	2	4

*Additional Revenue Requirement
Percent Increase
Cumulative Percent Increase

0.00%	1.50%	1.00%	1.00%	1.00%	1.00%	1.00%	0.00%	1.00%	1.00%
0.00%	1.50%	2.52%	3.54%	4.58%	5.62%	5.62%	5.62%	6.68%	7.74%

**GAS OPERATIONS (CGM10)
PROJECTED BALANCE SHEET
(In Millions of Dollars)**

For the year ended March 31

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ASSETS										
Plant in Service	620	634	656	683	701	715	733	755	780	806
Accumulated Depreciation	(217)	(221)	(230)	(240)	(251)	(257)	(269)	(281)	(293)	(307)
Net Plant in Service	403	413	426	442	450	457	465	475	487	499
Construction in Progress	3	1	1	1	1	1	1	1	1	1
Current and Other Assets	105	105	105	105	104	104	104	104	104	104
Intangible Assets	6	10	9	8	7	6	5	5	4	4
Regulated Assets	75	80	83	84	83	83	80	76	69	62
	593	609	624	639	645	651	656	661	665	671
LIABILITIES AND EQUITY										
Long-Term Debt	327	265	335	310	355	355	355	355	355	355
Current and Other Liabilities	72	147	89	123	81	84	84	88	91	93
Contributions in Aid of Construction	33	32	31	33	32	31	30	30	29	28
Share Capital	121	121	121	121	121	121	121	121	121	121
Retained Earnings	40	43	48	53	56	61	65	67	69	73
	593	609	624	639	645	651	656	661	665	671

GAS OPERATIONS (CGM10)
PROJECTED CASH FLOW STATEMENT
(In Millions of Dollars)

For the year ended March 31

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
OPERATING ACTIVITIES										
Cash Receipts from Customers	482	527	542	536	533	536	539	538	539	541
Cash Paid to Suppliers and Employees	(441)	(478)	(479)	(479)	(477)	(476)	(477)	(477)	(477)	(477)
Interest Paid	(20)	(22)	(23)	(23)	(25)	(25)	(26)	(26)	(26)	(26)
Interest Received	-	-	-	-	-	-	-	-	-	-
	20	28	40	34	31	35	37	34	36	38
FINANCING ACTIVITIES										
Proceeds from Long-Term Debt	30	-	70	10	45	-	-	-	-	-
Retirement of Long-Term Debt	-	-	(63)	-	(35)	-	-	-	-	-
Other	(1)	0	0	0	0	0	0	0	0	0
	29	0	8	10	10	0	0	0	0	0
INVESTING ACTIVITIES										
Property, Plant and Equipment, net of contributions	(40)	(41)	(43)	(45)	(37)	(37)	(37)	(38)	(39)	(40)
Other	-	-	-	-	-	0	0	0	0	0
	(40)	(41)	(43)	(45)	(37)	(37)	(37)	(38)	(39)	(40)
Net Increase (Decrease) in Cash	9	(13)	4	(1)	5	(2)	(0)	(4)	(3)	(2)
Cash at Beginning of Year	(17)	(7)	(21)	(16)	(17)	(13)	(15)	(15)	(19)	(22)
Cash at End of Year*	(7)	(21)	(16)	(17)	(13)	(15)	(15)	(19)	(22)	(23)

CAC/CENTRA I-1

Reference: Tab 2; p. 2 of 8; Line 10 - 13

- b) If not already filed, provide the Integrated Financial Forecast (IFF) for Gas Operations (“CGM11”).**

ANSWER:

Please see the attachment to this response.

13.0 GAS OPERATIONS FINANCIAL FORECAST (CGM11-2)

CONSOLIDATED INTEGRATED FINANCIAL FORECAST (IFF11-2)

GAS OPERATIONS (CGM11-2)
PROJECTED OPERATING STATEMENT
(In Millions of Dollars)

For the year ended March 31

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
REVENUES											
General Consumers											
at approved rates	328	431	400	400	398	397	396	396	395	395	395
additional revenue requirement*	0	7	14	15	16	18	18	20	22	24	26
	328	438	414	415	415	415	414	416	417	419	422
Cost of Gas Sold	197	288	258	254	253	251	250	250	249	249	249
Gross Margin	131	150	157	161	162	164	164	166	168	170	173
Other	1	2	2	2	2	2	2	2	2	2	2
	132	152	159	163	164	166	166	168	170	172	175
EXPENSES											
Operating and Administrative	62	67	84	85	85	85	84	84	85	86	88
Finance Expense	18	19	22	24	25	25	26	26	27	27	28
Depreciation and Amortization	26	28	20	20	21	21	21	22	23	24	25
Capital and Other Taxes	19	20	16	16	16	17	17	17	18	18	18
Corporate Allocation	12	12	12	12	12	12	12	12	12	12	12
	138	147	153	157	159	161	160	162	164	167	171
Net Income	(6)	5	5	5	5	5	6	6	5	5	4

* Additional Revenue Requirement

Percent Increase	2.00%	1.75%	0.00%	0.50%	0.50%	0.00%	0.50%	0.50%	0.50%	0.50%	0.50%
Cumulative Percent Increase	2.00%	3.79%	3.79%	4.30%	4.83%	4.83%	5.35%	5.88%	6.41%	6.94%	

**GAS OPERATIONS (CGM11-2)
PROJECTED BALANCE SHEET
(In Millions of Dollars)**

For the year ended March 31

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
ASSETS											
Plant in Service	636	658	678	692	707	722	741	762	784	807	830
Accumulated Depreciation	(226)	(234)	(238)	(246)	(254)	(261)	(270)	(279)	(289)	(299)	(310)
Net Plant in Service	410	424	440	446	453	461	471	483	495	508	520
Construction in Progress	2	2	2	2	2	2	2	2	2	2	2
Current and Other Assets	112	114	114	115	123	119	123	114	116	116	115
Goodwill and Intangible Assets	10	8	7	5	4	3	3	3	3	3	3
Regulated Assets	80	85	-	-	-	-	-	-	-	-	-
	614	633	562	568	582	585	599	603	616	629	640
LIABILITIES AND EQUITY											
Long-Term Debt	235	335	320	365	375	375	385	385	395	405	415
Current and Other Liabilities	191	104	116	73	71	68	65	62	61	59	58
Contributions in Aid of Construction	33	34	45	44	44	45	46	46	45	45	44
Share Capital	121	121	121	121	121	121	121	121	121	121	121
Retained Earnings	34	39	(40)	(35)	(30)	(25)	(18)	(12)	(7)	(2)	2
	614	633	562	568	582	585	599	603	616	629	640

CONSOLIDATED INTEGRATED FINANCIAL FORECAST (IFF11-2)

GAS OPERATIONS (CGM11-2)
PROJECTED CASH FLOW STATEMENT
(In Millions of Dollars)

For the year ended March 31

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
OPERATING ACTIVITIES											
Cash Receipts from Customers	380	504	481	477	477	477	477	478	480	482	485
Cash Paid to Suppliers and Employees	(394)	(412)	(435)	(434)	(433)	(433)	(431)	(432)	(433)	(435)	(437)
Interest Paid	(20)	(21)	(22)	(23)	(24)	(25)	(25)	(26)	(26)	(27)	(28)
	(34)	71	24	20	20	19	20	20	20	21	20
FINANCING ACTIVITIES											
Proceeds from Long-Term Debt	-	100	20	45	10	-	10	-	10	10	10
Retirement of Long-Term Debt	-	(63)	-	(35)	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-
	-	37	20	10	10	-	10	-	10	10	10
INVESTING ACTIVITIES											
Property, Plant and Equipment, net of contributions	(41)	(42)	(28)	(21)	(22)	(23)	(26)	(29)	(29)	(30)	(31)
Other	(0)	(0)	(1)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
	(41)	(42)	(29)	(21)	(22)	(23)	(26)	(29)	(29)	(31)	(31)
Net Increase (Decrease) in Cash	(75)	65	15	9	8	(4)	4	(8)	1	0	(1)
Cash at Beginning of Year	(19)	(94)	(29)	(14)	(5)	3	(1)	3	(6)	(4)	(4)
Cash at End of Year	(94)	(29)	(14)	(5)	3	(1)	3	(6)	(4)	(4)	(5)

CAC/CENTRA I-1

Reference: Tab 2; p. 2 of 8; Line 10 - 13

c) If not already filed, provide the IFF (“CGM13”).

ANSWER:

CGM13 will be finalized in the fall of 2013. As such, Centra is unable to provide the requested information within the timeframe of this proceeding.

CAC/CENTRA I-2

Reference: Tab 2; p. 3 of 8; Line 16

- a) Provide the summary of financial position of Manitoba Hydro / Centra for Q. 1 2013, when available.**

ANSWER:

Centra will file the Annual Report of the Manitoba Hydro-Electric Board for the year ended March, 31, 2013 when it becomes available for public distribution.

CAC/CENTRA I-2

Reference: Tab 2; p. 3 of 8; Line 16

- b) Provide the fiscal year end financial statements for Centra for the fiscal year ending March 31, 2013; when available.**

ANSWER:

Centra will provide financial statements for the year ended March 31, 2013 when they become available for public distribution.

CAC/CENTRA I-3 (Revised)

Reference: Tab 2; p. 5 of 8

- a) Re-file Table 1 including the years 2004/05 through 2014/15, comparing the forecast to actual for each year.**

ANSWER:

Please see the table below. The forecasts used in the comparison reflect those underpinning the respective General Rate Applications at the time.

Table 1 - Net Income - Centra Gas

	2004/05		2005/06		2006/07		2007/08		2008/09	
	Actual	CGM04 *	Actual	CGM04 *	Actual	CGM04 *	Actual	CGM06 *	Actual	CGM06 * ^A
(in millions of \$)										
General Consumers Revenue										
- at approved rates	\$ 507	\$ 505	\$ 515	\$ 500	\$ 506	\$ 501	\$ 527	\$ 579	\$ 578	\$ 539
Cost of Gas Sold	384	387	397	382	379	383	386	452	431	412
<i>Gross Margin</i>	<u>123</u>	<u>118</u>	<u>118</u>	<u>118</u>	<u>127</u>	<u>118</u>	<u>141</u>	<u>127</u>	<u>147</u>	<u>127</u>
Other Revenue	2	2	2	2	2	2	2	2	2	2
	<u>125</u>	<u>120</u>	<u>120</u>	<u>120</u>	<u>129</u>	<u>120</u>	<u>143</u>	<u>129</u>	<u>149</u>	<u>129</u>
Expenses										
Operating & Administrative	55	53	53	54	54	55	56	57	60	58
Finance Expense	17	19	18	19	22	20	22	21	20	22
Depreciation & Amortization	20	19	19	19	18	20	23	22	25	23
Capital & Other Taxes	23	22	23	23	22	24	23	23	23	23
Corporate Allocation	12	15	12	15	12	15	12	12	12	12
	<u>127</u>	<u>128</u>	<u>125</u>	<u>130</u>	<u>128</u>	<u>134</u>	<u>136</u>	<u>135</u>	<u>140</u>	<u>138</u>
Net Income (loss) before proposed rate increases	\$ (2)	\$ (8)	\$ (5)	\$ (10)	\$ 1	\$ (14)	\$ 6	\$ (6)	\$ 9	\$ (9)
Proposed rate increases	n/a	3	n/a	12	n/a	25	n/a	11	n/a	17
Net Income (loss) after proposed rate increases	<u>(2)</u>	<u>(5)</u>	<u>(5)</u>	<u>2</u>	<u>1</u>	<u>11</u>	<u>6</u>	<u>6</u>	<u>9</u>	<u>7</u>
Retained Earnings before proposed rate increases	25	19	20	12	21	10	27	13	34	15
Retained Earnings after proposed rate increases	25	22	20	24	21	35	27	24	34	32

* - Forecast used are those underpinning the respective GRA's at the time.

^A - 2008/09 has been revised to compare against the forecast underpinning the 2007/08 & 2008/09 GRA.

Centra Gas Manitoba Inc. 2013/14 General Rate Application

	2009/10		2010/11		2011/12		2012/13	2013/14	
	Actual	CGM08 *	Actual	CGM08 *	Actual	CGM11-2	As filed & CGM12	As filed	CGM12
(in millions of \$)									
General Consumers Revenue									
- at approved rates	\$ 452	\$ 594	\$ 403	\$ 607	\$ 328	\$ 328	\$ 319	\$ 312	\$ 312
Cost of Gas Sold	316	451	261	464	197	197	176	168	168
Gross Margin	136	143	142	143	131	131	143	144	144
Other Revenue	2	2	1	2	1	1	2	2	2
	138	145	143	145	132	132	145	146	146
Expenses									
Operating & Administrative	61	59	61	60	62	62	67	69	69
Finance Expense	19	24	18	26	19	18	18	17	17
Depreciation & Amortization	24	29	25	32	26	26	28	30	30
Capital & Other Taxes	23	24	20	24	19	19	18	19	19
Corporate Allocation	12	12	12	12	12	12	12	12	12
	139	148	136	154	138	137	143	147	147
Net Income (loss) before proposed rate increases	\$ (1)	\$ (3)	\$ 7	\$ (9)	\$ (6)	\$ (5)	\$ 2	\$ (1)	\$ (1)
Proposed rate increases	n/a	6	n/a	12	n/a	n/a	-	6	7
Net Income (loss) after proposed rate increases	(1)	3	7	3	(6)	(5)	2	5	6
Retained Earnings before proposed rate increases	33	27	40	24	34	34	36	35	35
Retained Earnings after proposed rate increases	33	33	40	36	34	34	36	41	41

* - Forecast used are those underpinning the respective GRA's at the time.

CAC/CENTRA I-4

Reference: Tab 2; p. 6 of 8; Line 6 - 21

- a) Confirm that there will be no revenue impacts in this application as a result of the delay in the implementation of International Financial Reporting Standards ('IFRS') to 2015/16.**

ANSWER:

Confirmed. Please see Centra's response to PUB/Centra I-7(a).

CAC/CENTRA I-4

Reference: Tab 2; p. 6 of 8; Line 6 - 21

- b) Confirm that there are no adjustments being made in this application for the implementation of the IFRS.**

ANSWER:

Confirmed.

CAC/CENTRA I-4

Reference: Tab 2; p. 6 of 8; Line 6 - 21

- c) If (b) cannot be confirmed, identify the adjustments made and the rationale therefor, in light of the delay in the implementation of IFRS.**

ANSWER:

Please see Centra's response to CAC/Centra I-4(b).

CAC/CENTRA I-5

Reference: Tab 3; p. 12 of 15

- a) If not already filed, provide all Capital Expenditure Forecasts ('CEF') for every year since the last GRA.**

ANSWER:

Please see Centra's response to PUB/Centra I-52(a).

CAC/CENTRA I-6

Reference: Tab 4; p. 2 of 7; Lines 1 - 3

- a) Provide all updated forecasts from the summer of 2012 to the present relating to escalation rates, interest rates and exchange rates that impact the IFF.**

ANSWER:

Please see attached the publicly available source forecasts utilized by the Corporation as part of the summer review of the Economic Outlook. See PUB/Centra I – 6 for the publicly available source forecasts from the fall of 2012. Note that the Economic Outlook also included source forecasts provided by two banks which are proprietary and cannot be disclosed.

MARKET CALL

- Just as it overshot in pricing rate hikes in, so too has the Canadian yield curve overshot the most likely outcome in pricing in a Bank of Canada rate cut later this year. Odds are that Canadian growth will be close enough to potential to make an ease unthinkable, while global conditions will remain troubled enough to forestall rate hikes. That combination should have 2-year rates rise on a gradual path as we move closer to an eventual tightening in 2014.
- Long-term bond yields have plunged on renewed fears surrounding the crisis in Europe and slower growth in China. Glimmers of hope on Europe, if Greece stays in the euro and Spain gets support for bank recapitalization, would reverse some of the flight to safety bid. But we've trimmed our call for a bond market sell-off. Given new US economic doubts, the potential for the Fed to return to long-end buying (most likely sterilized) if yields backed up abruptly should act as a cap on bond yields.
- The C\$ went through the weak end of our forecast range, and there is a risk of a further overshoot. But as Q2 data roll in showing a rebound in growth, the market will price-out the risk of a BoC rate cut. A gradual move in Europe to address its troubles will not only pull the euro back from the depths, but should, alongside Chinese monetary stimulus, support a recovery in the loonie. In the near term, the euro has a lot more downside than our forecast range should developments in Greece and other peripherals turn really ugly.

INTEREST & FOREIGN EXCHANGE RATES

END OF PERIOD:	2012			2013			
	1-Jun	Sep	Dec	Mar	Jun	Sep	Dec
CDA Overnight target rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00
98-Day Treasury Bills	0.91	0.90	0.95	0.95	0.95	0.95	1.20
2-Year Gov't Bond	0.88	1.10	1.20	1.25	1.35	1.40	1.65
10-Year Gov't Bond	1.64	2.00	2.30	2.40	2.45	2.60	2.75
30-Year Gov't Bond	2.21	2.40	2.95	3.00	2.90	3.25	3.35
U.S. Federal Funds Rate	0.16	0.10	0.10	0.10	0.10	0.10	0.10
91-Day Treasury Bills	0.07	0.08	0.10	0.10	0.15	0.15	0.40
2-Year Gov't Note	0.25	0.30	0.30	0.35	0.35	0.40	0.85
10-Year Gov't Note	1.48	1.80	2.00	2.25	2.45	2.65	2.85
30-Year Gov't Bond	2.55	2.85	3.15	3.30	3.35	3.45	3.70
Canada - US T-Bill Spread	0.84	0.82	0.85	0.85	0.80	0.80	0.80
Canada - US 10-Year Bond Spread	0.16	0.20	0.30	0.15	0.00	-0.05	-0.10
Canada Yield Curve (30-Year — 2-Year)	1.32	1.30	1.75	1.75	1.55	1.85	1.70
US Yield Curve (30-Year — 2-Year)	2.30	2.55	2.85	2.95	3.00	3.05	2.85
EXCHANGE RATES							
CADUSD	0.96	0.98	1.00	0.99	0.98	0.99	1.01
USDCAD	1.04	1.02	1.00	1.01	1.02	1.01	0.99
USDJPY	78	79	78	78	77	76	75
EURUSD	1.24	1.23	1.28	1.30	1.31	1.32	1.33
GBPUSD	1.54	1.52	1.61	1.65	1.65	1.65	1.65
AUDUSD	0.97	0.94	0.96	0.99	1.01	1.03	1.05
USDCHF	0.97	0.98	0.95	0.93	0.93	0.92	0.93
USDBRL	2.04	2.00	1.88	1.91	1.94	1.95	2.00
USDMXN	14.32	12.95	12.88	12.86	12.87	12.91	12.96

ECONOMIC UPDATE

CANADA	12Q1A	12Q2F	12Q3F	12Q4F	13Q1F	13Q2F	2011A	2012F	2013F
Real GDP Growth (AR)	1.9	2.7	1.8	1.7	2.1	2.3	2.4	2.1	2.1
Real Final Domestic Demand (AR)	1.3	2.4	2.7	3.2	2.3	2.7	3.0	2.0	2.7
All Items CPI Inflation (Y/Y)	2.3	1.7	1.8	2.0	1.9	1.8	2.9	2.0	1.9
Core CPI Ex Indirect Taxes (Y/Y)	2.1	2.1	2.1	2.1	2.2	2.1	1.7	2.1	2.0
Unemployment Rate (%)	7.4	7.3	7.2	7.1	7.1	7.1	7.5	7.3	7.1
U.S.	12Q1A	12Q2F	12Q3F	12Q4F	13Q1F	13Q2F	2011A	2012F	2013F
Real GDP Growth (AR)	1.9	2.3	2.8	2.5	1.6	1.4	1.7	2.3	1.9
Real Final Sales (AR)	1.7	2.7	3.1	2.6	1.5	1.5	2.0	2.2	2.0
All Items CPI Inflation (Y/Y)	2.8	2.1	2.0	2.3	2.1	1.7	3.2	2.3	2.0
Core CPI Inflation (Y/Y)	2.2	2.3	2.1	2.1	2.1	2.0	1.7	2.2	2.0
Unemployment Rate (%)	8.3	8.2	8.2	8.2	8.2	8.3	9.0	8.2	8.3

CANADA

GDP growth in March came in at a soft 0.1%—marking a weak handoff to the second quarter. However, with temporary resource-sector disruptions accounting for the growth flub, and with robust hiring around the turn of the quarter, we're now expecting to see GDP in Q2 come in at 2.7%. The trajectory for inflation and the jobless rate hasn't changed much, although slightly stickier core inflation saw us nudge up our annual estimate by a tick to a near-target 2.1%.

UNITED STATES

Growth in the US economy has moderated from the heady pace of Q4 2011, with GDP now trending around a 2% annualized rate and job gains significantly weaker than earlier in the year. However, the US consumer still appears to be in good health, and should remain so as fading price pressures (most notably gasoline) and cheaper mortgages act to counter subdued wage growth. As a result, we still see consumer spending supporting US GDP growth of 2.3% this year, before fiscal policy depresses growth in 2013.

This report is issued and approved for distribution by (a) in Canada, CIBC World Markets Inc., a member of the Investment Industry Regulatory Organization of Canada, the Toronto Stock Exchange, the TSX Venture Exchange and a Member of the Canadian Investor Protection Fund, (b) in the United Kingdom, CIBC World Markets plc, which is regulated by the Financial Services Authority, and (c) in Australia, CIBC Australia Limited, a member of the Australian Stock Exchange and regulated by the ASIC (collectively, "CIBC") and (d) in the United States either by (i) CIBC World Markets Inc. for distribution only to U.S. Major Institutional Investors ("MII") (as such term is defined in SEC Rule 15a-6) or (ii) CIBC World Markets Corp., a member of the Financial Industry Regulatory Authority. U.S. MIIs receiving this report from CIBC World Markets Inc. (the Canadian broker-dealer) are required to effect transactions (other than negotiating their terms) in securities discussed in the report through CIBC World Markets Corp. (the U.S. broker-dealer).

This report is provided, for informational purposes only, to institutional investor and retail clients of CIBC World Markets Inc. in Canada, and does not constitute an offer or solicitation to buy or sell any securities discussed herein in any jurisdiction where such offer or solicitation would be prohibited. This document and any of the products and information contained herein are not intended for the use of private investors in the United Kingdom. Such investors will not be able to enter into agreements or purchase products mentioned herein from CIBC World Markets plc. The comments and views expressed in this document are meant for the general interests of wholesale clients of CIBC Australia Limited.

This report does not take into account the investment objectives, financial situation or specific needs of any particular client of CIBC. Before making an investment decision on the basis of any information contained in this report, the recipient should consider whether such information is appropriate given the recipient's particular investment needs, objectives and financial circumstances. CIBC suggests that, prior to acting on any information contained herein, you contact one of our client advisers in your jurisdiction to discuss your particular circumstances. Since the levels and bases of taxation can change, any reference in this report to the impact of taxation should not be construed as offering tax advice; as with any transaction having potential tax implications, clients should consult with their own tax advisors. Past performance is not a guarantee of future results.

The information and any statistical data contained herein were obtained from sources that we believe to be reliable, but we do not represent that they are accurate or complete, and they should not be relied upon as such. All estimates and opinions expressed herein constitute judgments as of the date of this report and are subject to change without notice.

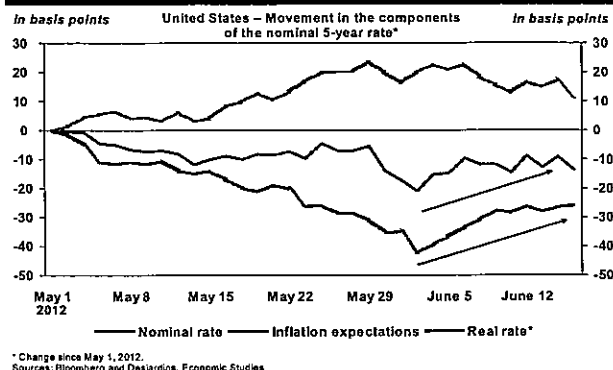
This report may provide addresses of, or contain hyperlinks to, Internet web sites. CIBC has not reviewed the linked Internet web site of any third party and takes no responsibility for the contents thereof. Each such address or hyperlink is provided solely for the recipient's convenience and information, and the content of linked third-party web sites is not in any way incorporated into this document. Recipients who choose to access such third-party web sites or follow such hyperlinks do so at their own risk.

© 2012 CIBC World Markets Inc. All rights reserved. Unauthorized use, distribution, duplication or disclosure without the prior written permission of CIBC World Markets Inc. is prohibited by law and may result in prosecution.

problems afflicting Spain's banks, were known to investors ahead of time. We can even mention some positive developments since the end of last winter: Greece's debt has been restructured, the European Union has set up an expanded firewall, and Spain has been awarded help to restructure its banks. However, investors see these improvements as too small to really ease tensions; a lot remains to be done, quickly, to convince the markets that a collapse of the euro zone is out of question.

Europe is not the only cause for concern. A risk that emerged at the start of the year materialized when the U.S. economy weakened in the spring. Expectations of additional stimulus measures from the Federal Reserve (Fed) snowballed in tandem with the disappointments in the employment market. The drop in commodity prices also affected yields, prompting a decline in short-term inflation expectations, especially in May. Inflation expectations recovered somewhat in June, after a third consecutive disappointment from job creation figures, convincing the markets that the Fed would announce additional easing measures. The rise in nominal rates, after setting a new record at the start of June, is entirely due to the upswing seen in inflation expectations (graph 22). In a context of extensive slack and soft growth, the increase in inflation expectations has been due, first and foremost, to rising anticipations ahead of the Fed's meeting of June 20.

Graph 22 – June's slight rate increase is primarily due to a surge in inflation expectations



Indeed, the Fed validated these beliefs by extending its Operation Twist program.

The outlook for U.S. bond yields has been revised downward somewhat, given the intensification of negative risks to Europe and the United States. Even if the concerns were to dissipate in the next few months, there would be no reason to expect a sustained rise in yields, as the uncertainty surrounding the fiscal cliff will rein in any burst of enthusiasm. Since 2010, the events that prompted the biggest rises in bond yields were associated with decisive action to

Table 11
Canada: fixed income market

End of period in %	2011				2012				2013			
	Q1	Q2	Q3	Q4	Q1	Q2f	Q3f	Q4f	Q1f	Q2f	Q3f	Q4f
Key rate												
Overnight funds	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.50
Treasury bills												
3-month	0.96	0.93	0.81	0.82	0.92	0.90	0.95	1.00	1.05	1.15	1.25	1.60
Federal bonds												
2-year	1.83	1.60	0.88	0.96	1.20	1.05	1.15	1.20	1.20	1.35	1.65	1.90
5-year	2.77	2.33	1.39	1.28	1.57	1.25	1.45	1.55	1.60	1.80	2.00	2.20
10-year	3.35	3.11	2.15	1.94	2.11	1.80	2.10	2.15	2.20	2.35	2.55	2.75
30-year	3.80	3.58	2.77	2.49	2.66	2.35	2.60	2.60	2.60	2.75	2.90	3.10
Yield curve												
5-year - 3-month	1.81	1.40	0.58	0.46	0.65	0.35	0.50	0.55	0.55	0.65	0.75	0.60
10-year - 2-year	1.52	1.51	1.27	0.98	0.91	0.75	0.95	0.95	1.00	1.00	0.90	0.85
30-year - 3-month	2.84	2.65	1.96	1.67	1.74	1.45	1.65	1.60	1.55	1.60	1.65	1.50
Spreads (Canada - U.S.)												
3-month	0.87	0.90	0.79	0.80	0.85	0.80	0.85	0.90	0.90	1.00	1.05	1.40
2-year	1.08	1.16	0.62	0.73	0.85	0.75	0.80	0.85	0.85	0.95	1.15	1.30
5-year	0.58	0.62	0.45	0.47	0.54	0.50	0.50	0.60	0.65	0.75	0.85	0.90
10-year	-0.10	-0.05	0.22	0.06	-0.11	0.15	0.10	0.05	0.10	0.10	0.15	0.15
30-year	-0.71	-0.80	-0.15	-0.40	-0.69	-0.40	-0.40	-0.40	-0.40	-0.40	-0.40	-0.40

f: forecasts

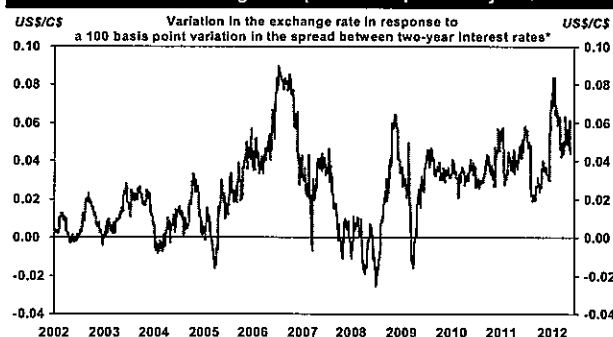
Sources: Datastream and Desjardins, Economic Studies

THE CANADIAN DOLLAR IS SHORT OF SUPPORT

The Canadian dollar did not spend long close to its cyclical peak of US\$1.02, reached at the end of April. Its main supports seem to have dropped out in the last two months; it is currently trading at around US\$0.97. Canada's dollar does not perform as well when risk aversion intensifies. It is being hurt not only by the U.S. dollar's strength, but also by the fact that prices for oil and other commodities tend to decline in uncertain times. Another major change for the loonie was the downward revision to expectations for Canadian interest rate increases. Since the year began, the Canadian dollar has been particularly sensitive to interest rate spreads with the United States (graph 31).

In the near term, the conditions that are sapping the Canadian dollar should persist, and a return above parity seems unlikely. However, the loonie should start trending up to rise above parity when the strains have eased and monetary tightening expectations go up again. Our base scenario does not call for Canada's key interest rate to rise before the fall of 2013, but the Bank of Canada's tone could firm up well before an initial increase and encourage investors to overestimate the potential for monetary tightening.

Graph 31 – The Canadian exchange rate's sensitivity to interest rates remains high compared with previous years



* Cumulative response after four days.
Sources: Datastream and Desjardins, Economic Studies

Table 15
Currency market: history and forecasts

End of period	2011		2012				2013			
	Q3	Q4	Q1	Q2f	Q3f	Q4f	Q1f	Q2f	Q3f	Q4f
American dollar										
Canadian dollar (USD/CAD)	1.0501	1.0197	0.9979	1.0204	1.0101	0.9901	0.9804	0.9804	0.9709	0.9709
Euro (EUR/USD)	1.3417	1.2981	1.3317	1.2600	1.2600	1.2800	1.3000	1.3200	1.3400	1.3500
British pound (GBP/USD)	1.5578	1.5541	1.5978	1.5600	1.5700	1.6000	1.6100	1.6200	1.6400	1.6500
Yen (USD/JPY)	77.07	76.96	82.82	79.00	79.00	80.00	81.00	82.00	84.00	85.00
Australian dollar (AUD/USD)	0.9663	1.0222	1.0346	1.0000	1.0100	1.0200	1.0300	1.0400	1.0500	1.0500
Mexican peso (USD/MXN)	13.90	13.95	12.81	13.80	13.40	13.00	12.70	12.50	12.45	12.40
Chinese yuan (USD/CNY)	6.38	6.29	6.30	6.35	6.30	6.25	6.20	6.10	6.05	6.00
Effective dollar* (1973 = 100)	72.81	73.33	72.74	74.80	74.50	73.50	72.90	72.40	71.90	71.70
Canadian dollar										
American dollar (CAD/USD)	0.9523	0.9807	1.0021	0.9800	0.9900	1.0100	1.0200	1.0200	1.0300	1.0300
Euro (EUR/CAD)	1.4089	1.3237	1.3289	1.2857	1.2727	1.2673	1.2745	1.2941	1.3010	1.3107
British pound (GBP/CAD)	1.6358	1.5846	1.5944	1.5918	1.5859	1.5842	1.5784	1.5882	1.5922	1.6019
Yen (CAD/JPY)	73.39	75.48	82.99	77.42	78.21	80.80	82.62	83.64	86.52	87.55
Australian dollar (AUD/CAD)	1.0147	1.0423	1.0324	1.0204	1.0202	1.0099	1.0098	1.0196	1.0194	1.0194
Mexican peso (CAD/MXN)	13.24	13.69	12.83	13.52	13.27	13.13	12.95	12.75	12.82	12.77
Chinese yuan (CAD/CNY)	6.08	6.17	6.31	6.22	6.24	6.31	6.32	6.22	6.23	6.18

f: forecasts; * Trade-weighted against major U.S. partners.

Sources: Datastream, Federal Reserve Board and Desjardins, Economic Studies



Table 18
Canada: medium-term major economic and financial indicators

In % (except if indicated)	Annual average							Average	
	2010	2011	2012f	2013f	2014f	2015f	2016f	2004-2011	2012-2016f
Real GDP (var. in %)	3.2	2.4	2.1	2.4	2.5	2.5	2.0	1.8	2.3
Inflation rate (var. in %)	1.8	2.9	2.1	1.9	2.0	2.0	2.0	1.9	2.0
Employment (var. in %)	1.4	1.6	1.1	1.3	1.5	1.2	1.0	1.3	1.2
Employment (K)	228	265	188	227	265	213	182	205	215
Unemployment rate	8.0	7.4	7.3	7.1	6.8	6.6	6.5	7.0	6.9
Housing starts (K)	190	194	200	181	190	200	195	207	193
S&P/TSX* index (var. in %)	14.4	-11.1	2.9	9.8	9.0	8.5	8.5	6.9	7.7
Canadian dollar (US\$/C\$)	0.97	1.01	1.00	1.03	1.04	1.05	1.05	0.90	1.03
Overnight funds	0.59	1.00	1.00	1.15	1.70	2.70	3.70	2.29	2.05
Prime rate	2.59	3.00	3.00	3.15	3.70	4.70	5.70	4.14	4.05
Mortgage rate									
1-year	3.49	3.52	3.20	3.40	4.00	4.70	5.70	5.07	4.20
5-year	5.57	5.39	5.30	5.30	5.70	6.40	7.00	6.20	5.94
Treasury bills—3-month	0.57	0.92	0.95	1.25	1.80	2.80	3.75	2.16	2.11
Federal bonds									
2-year	1.55	1.37	1.15	1.55	2.35	3.25	3.95	2.64	2.45
5-year	2.44	2.03	1.45	1.90	2.75	3.60	4.10	3.20	2.76
10-year	3.24	2.78	2.05	2.45	3.30	3.90	4.20	3.75	3.18
30-year	3.77	3.31	2.55	2.85	3.60	4.20	4.50	4.14	3.54
U.S./Canada rate spreads									
Treasury bills—3-month	0.43	0.87	0.85	1.15	1.45	0.90	0.35	0.20	0.94
Federal bonds—10-year	0.04	0.02	0.05	0.10	0.00	-0.10	-0.10	-0.10	-0.01
Federal bonds—30-year	-0.48	-0.59	-0.45	-0.40	-0.40	-0.40	-0.40	-0.33	-0.41

f: forecasts; * The variations are based on observation of the end of period.

Sources: Statistics Canada, Canada Mortgage and Housing Corporation and Desjardins, Economic Studies

Table 19
Québec and Ontario: medium-term major economic indicators

Var. in % (except if indicated)	Annual average							Average	
	2010	2011	2012f	2013f	2014f	2015f	2016f	2004-2011	2012-2016f
Québec									
Real GDP	2.5	1.7	1.4	2.0	2.0	2.0	1.5	1.6	1.8
Inflation rate	1.2	3.0	2.2	2.0	2.0	2.1	2.0	1.8	2.1
Employment	1.7	1.0	0.4	1.1	0.7	0.6	0.5	1.1	0.7
Employment (K)	67	39	15	45	30	25	20	42	27
Unemployment rate (%)	8.0	7.8	7.9	7.5	7.0	6.5	6.0	8.0	7.0
Retail sales	6.2	2.9	2.5	3.5	4.0	3.5	3.5	3.8	3.4
Housing starts (K)	51	48	43	44	40	40	40	50	41
Ontario									
Real GDP	3.0	1.8	1.8	2.1	2.5	2.5	2.0	1.3	2.2
Inflation rate	2.5	3.1	2.0	1.8	2.0	2.0	1.8	2.0	1.9
Employment	1.7	1.8	0.8	1.2	1.5	1.3	1.2	1.0	1.2
Employment (K)	108	121	57	83	103	91	85	65	84
Unemployment rate (%)	8.7	7.8	7.8	7.7	7.3	7.1	7.0	7.3	7.4
Retail sales	5.4	3.6	3.6	3.1	4.0	4.5	4.0	3.2	3.8
Housing starts (K)	60	68	74	61	63	65	60	70	65

f: forecasts

Sources: Statistics Canada, Canada Mortgage and Housing Corporation and Desjardins, Economic Studies



BOND MARKET

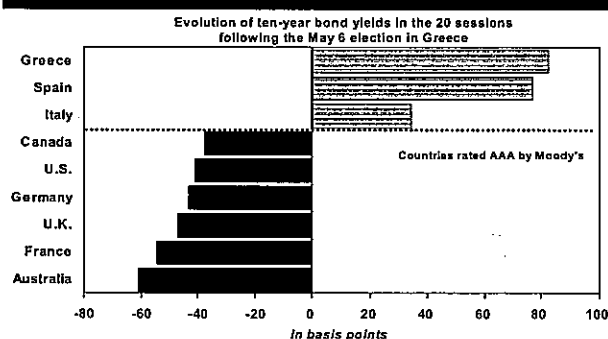
Confidence will not be restored overnight

After a brief lull early in the year, fears about Europe are front and centre again, favouring the bonds of safe-haven countries even though yields are already very low. Additional action by European authorities could cause the tension to slacken a little, but anemic growth in the United States and concerns about a fiscal shock at the end of the year will restrain confidence improvements. Under these circumstances, we can expect bond yields to remain very low for a long time.

THE MARKETS ARE DISREGARDING BONDS' WEAK POTENTIAL

Although it may have seemed like the era of low rates was poised to end early this spring, the U.S. 10-year bond yield fell sharply in May, setting a new historic low of 1.44% on June 1. Thus, Treasuries, which some thought were overvalued after they held the throne in 2011, are once again in high demand. The appeal of quality assets has been even stronger in Europe, where Germany's 10-year yield hit a low of 1.11% on June 1. A number of other AAA rated countries also saw their yields drop substantially (graph 21). It isn't that investors are unaware of how overvalued the bond market is, or of the fact that it can't provide additional return, but, given the downturn in Europe and ongoing strong systemic risks, there is little appetite for risk. Instead, investors are concerned about preserving capital, which is prompting them to buy up safe-haven securities, regardless of the fact that they offer almost no potential for gains.

Graph 21 – Demand for quality bonds has been high



Sources: Bloomberg and Desjardins, Economic Studies

The intensification of the European crisis is the main driver behind the drop in yields, despite the fact that many risks, such as the outcome of the May vote in Greece or the

Table 10
United States: fixed income market

End of period in %	2011				2012				2013			
	Q1	Q2	Q3	Q4	Q1	Q2f	Q3f	Q4f	Q1f	Q2f	Q3f	Q4f
Key rate												
Federal funds	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Treasury bills												
3-month	0.09	0.03	0.02	0.02	0.07	0.10	0.10	0.10	0.15	0.15	0.20	0.20
Federal bonds												
2-year	0.76	0.44	0.26	0.23	0.35	0.30	0.35	0.35	0.35	0.40	0.50	0.60
5-year	2.19	1.72	0.94	0.81	1.03	0.75	0.95	0.95	0.95	1.05	1.15	1.30
10-year	3.45	3.16	1.93	1.88	2.22	1.65	2.00	2.10	2.10	2.25	2.40	2.60
30-year	4.51	4.38	2.92	2.89	3.35	2.75	3.00	3.00	3.00	3.15	3.30	3.50
Yield curve												
5-year - 3-month	2.10	1.69	0.92	0.79	0.96	0.65	0.85	0.85	0.80	0.90	0.95	1.10
10-year - 2-year	2.70	2.72	1.66	1.64	1.87	1.35	1.65	1.75	1.75	1.85	1.90	2.00
30-year - 3-month	4.42	4.35	2.90	2.87	3.28	2.65	2.90	2.90	2.85	3.00	3.10	3.30

f: forecasts

Sources: Datastream and Desjardins, Economic Studies

PRODUCTIVITY: DRIVING LONG-TERM GROWTH

Energy is also a major issue in increasing productivity, a fundamental factor in long-term economic growth. The discovery of abundant sources of cheap energy could substantially increase business competitiveness. As for households, their energy bills could go down and their purchasing power could rise. In the United States, replacing oil with the much cheaper natural gas, abundantly available in the country, could be a major source of growth for the next decade. It may not be the most environmentally friendly solution, but a sound U.S. economy could probably do more to finance research into cleaner energy. That said, more efficient use of energy would also lead to economic growth.

Any innovation or upgrade to production capacities and methods could generate productivity gains and, in turn, growth. Some of the most promising are the latest innovations in information technology, which have certainly not yielded their full potential as yet. Over the next decade, more and more businesses should incorporate these technologies and find new outlets for them.

Governments could also contribute to increasing productivity by incorporating new technologies and approaches. They could also keep financing research and adjust taxation to stimulate corporate innovation. In another vein, governments could power up the economy through structural reforms. For example, in the euro zone, some reforms are called for making the banking sector more efficient and robust. Other reforms could aim the labour market and the environmental protection.

INTEREST RATES WILL GRADUALLY RISE

The global economy will not be short on sources of growth and we can stay optimistic about the future. The United States

is, however, one of a group of countries where adjustments will curb growth for several more years. It will likely be 2016 before the U.S. real GDP posts respectable growth of 3%. In general, the central banks will have to be patient in raising their interest rates. The Federal Reserve (Fed) should wait until the end of 2014 before it announces an initial hike.

In Canada, the output gap should close more quickly, but monetary authorities could still wait until late 2013 before starting to raise the cost of money very gradually. If it were to move too far ahead of the Fed, the Bank of Canada could make the Canadian dollar take off. Our scenario already calls for the loonie to oscillate above parity over the medium term, buoyed by high commodity prices. The Canadian economy should post above-potential growth in 2014 and 2015, and then drop back closer to its long-term pace of about 2%.

Table 17
United States: medium-term major economic and financial indicators

In % (except if indicated)	Annual average							Average	
	2010	2011	2012f	2013f	2014f	2015f	2016f	2004-2011	2012-2016f
Real GDP (var. in %)	3.0	1.7	2.1	2.1	2.5	2.5	3.0	1.5	2.4
Inflation rate (var. in %)	1.6	3.1	2.0	1.9	2.5	2.5	2.5	2.6	2.3
Unemployment rate	9.6	9.0	8.2	7.7	7.5	7.0	6.5	6.7	7.4
S&P 500 index (var. in %)*	12.8	0.0	11.3	7.1	8.0	7.0	7.0	3.4	8.1
Federal funds rate	0.25	0.25	0.25	0.25	0.35	1.80	3.30	2.17	1.19
Prime rate	3.25	3.25	3.25	3.25	3.35	4.80	6.30	5.17	4.19
Treasury bills—3-month	0.14	0.05	0.10	0.10	0.35	1.90	3.40	1.96	1.17
Federal bonds—10-year	3.20	2.76	2.00	2.35	3.30	4.00	4.30	3.85	3.19
Federal bonds—30-year	4.25	3.90	3.00	3.25	4.00	4.60	4.90	4.48	3.95
WTI** oil (US\$/barrel)	80	95	94	96	110	115	120	72	107
Gold (US\$/ounce)	1,226	1,572	1,640	1,575	1,400	1,200	1,100	850	1,383

f: forecasts; * The variations are based on observation of the end of period; ** West Texas Intermediate.
Sources: Datastream and Desjardins, Economic Studies

PRESIDENTIAL ELECTION: THE RACE IS ON

Two political factors will have a huge impact on the economic scenario in the near future. The first is, of course, the vote on November 6. After the election, the second factor is the debate over budget policy, which must conclude prior to the end of the year.

For the first, the options are now clearer, as former Massachusetts Governor Mitt Romney won a majority of delegates during the Republican primaries. For now, the race between Mitt Romney and the incumbent is very close. Of course, the economic situation until the election could influence U.S. voters; if job creation remains weak, it could favour the Republican candidate.

The voters' choice will affect the budget decisions that have to be made this year. According to the Congressional Budget Office, based on existing legislation, about US\$560B will be cut from the budget in 2013. Given the current situation, cuts of this magnitude would be disastrous for the U.S. economy. To prevent what more and more are calling the "fiscal cliff," Congress and the White House must reach an agreement. The two candidates clearly do not have the same vision of what the budget priorities should be. The next president should be able to go ahead with the mandate received from voters. However, it is not clear that Congress

will be very conciliating. Moreover, if Mitt Romney wins, Barack Obama will remain in the White House until mid-January, which could complicate the negotiations that must be done before December 31. Everything is in place to have the melodrama surrounding the debate once again rage until the very last minute, which has the potential to impact consumer and business confidence again, while making the financial markets nervous.

Our scenario calls for most of the 2001, 2003 and 2010 tax cuts to be renewed. Smaller spending cuts than currently planned are also expected. Still, the consequences of the budget cuts, including the increase to the tax rate for the wealthiest households, should reduce growth by about one percentage point next year, wiping out any acceleration from this year. Real GDP should rise by 2.1% in 2012 and 2013.

Table 4
United States: major economic indicators

Quarterly annualized variation in % (except if indicated)	2011		2012				Annual average			
	Q3	Q4	Q1	Q2f	Q3f	Q4f	2010	2011	2012f	2013f
Real gross domestic product*	1.8	3.0	1.9	1.7	2.3	2.0	3.0	1.7	2.1	2.1
Personal cons. expenditures	1.7	2.1	2.7	2.3	2.0	2.4	2.0	2.2	2.1	1.9
Residential construction	1.2	11.7	19.3	13.7	7.2	5.9	-4.3	-1.3	11.1	9.7
Business fixed investment	15.7	5.2	1.9	6.2	10.7	5.0	4.4	8.8	6.8	6.9
Inventory change (\$B)	-2.0	52.2	57.7	50.0	55.0	57.5	58.8	34.6	55.1	66.9
Public expenditures	-0.1	-4.1	-3.9	-0.9	-1.1	-1.4	0.7	-2.1	-2.2	-1.2
Exports	4.7	2.7	7.2	3.0	2.0	3.0	11.3	6.7	4.1	3.2
Imports	1.2	3.7	6.1	4.5	3.0	3.0	12.5	4.9	3.8	2.6
Final domestic demand	2.7	1.3	1.7	2.3	2.4	2.0	1.8	1.8	1.9	2.0
Other indicators										
Real disposable personal income	0.7	0.2	0.4	2.2	2.5	2.0	1.8	1.2	1.0	1.7
Employment (establishments)	0.9	1.4	2.1	1.0	1.1	1.4	-0.7	1.2	1.4	1.3
Unemployment rate (%)	9.1	8.7	8.3	8.2	8.2	8.0	9.6	9.0	8.2	7.7
Housing starts (1)	614	678	712	714	728	745	586	612	725	815
Corporate profits*** (2)	7.5	7.0	6.5	4.0	5.0	5.0	32.2	7.9	5.1	7.0
Personal saving rate (%)	4.6	4.2	3.6	3.7	3.8	3.8	5.3	4.7	3.7	3.7
Total inflation rate (2)	3.8	3.3	2.8	2.0	1.6	1.8	1.6	3.1	2.0	1.9
Core inflation rate** (2)	1.9	2.2	2.2	2.3	2.1	1.9	1.0	1.7	2.1	1.9
Federal gov't balance (\$B) (3)	-1,161	-1,114	-999	-975	-950	-875	-1,274	-1,188	-950	-669
Current account balance (\$B)	-432.6	-474.6	-549.3	-563.1	-572.7	-577.3	-442.0	-465.9	-565.6	-568.6

f: forecasts; * 2005 US\$; ** Excluding food and energy; *** Before taxes; (1) Thousands of units on an annualized basis; (2) Annual change; (3) National accounts.
Sources: Datastream and Desjardins, Economic Studies

investment has been expected for some time, its results remain surprising; it rose 12.3% in the first quarter of 2012. Also, despite May's dip, April's sizable increase in housing starts suggests that residential investment continued to advance in the second quarter.

However, some signs indicate that a slowdown will materialize. First, construction of single-family dwellings in urban areas and construction of housing units in rural areas have already been stagnant for several months. Much of the rise by residential investment is thus now solely based on condos. Second, the annual increase in existing home prices has begun to fall off in several regions. Third, mortgage credit terms could firm up further. Under the *National Housing Act*, loans insured by the Canada Mortgage and Housing Corporation cannot exceed a total amount outstanding of \$600B. However, loans outstanding have grown substantially in recent years, to reach about \$569B on March 31, 2012. Because the legal ceiling is looming, it will be possible to insure fewer loans in the future, which could translate into slowing securitization activity by financial institutions. Financial institutions are thus likely to be more selective, while tightening their financing conditions.

LITTLE CHANGE TO THE GROWTH OUTLOOKS

All in all, Canada's economy should continue to post moderate growth in the coming quarters. Given its very slight carryover, it will be difficult for real GDP growth to exceed 2% in the second quarter. 2012 should still end with an increase of 2.1%, an outlook that is identical to our latest projections. A gain of 2.4% is still expected for 2013.

Table 5
Canada: major economic indicators

Quarterly annualized variation in % (except if indicated)	2011		2012				Annual average			
	Q3	Q4	Q1	Q2f	Q3f	Q4f	2010	2011	2012f	2013f
Real gross domestic product*	4.5	1.9	1.9	1.5	2.4	2.6	3.2	2.4	2.1	2.4
Personal cons. expenditures	2.1	2.8	0.9	1.8	2.6	2.4	3.3	2.4	1.9	2.4
Residential construction	10.5	3.0	12.3	4.3	0.8	-0.2	10.2	2.3	5.9	0.5
Business fixed investment	1.9	4.9	4.9	8.0	7.0	6.0	7.3	13.1	6.0	6.5
Inventory change (\$B)	11.2	5.3	9.4	8.0	9.3	9.5	8.9	12.8	9.0	12.6
Public expenditures	-1.7	-3.2	-2.1	-0.5	-0.6	-0.4	4.7	0.1	-1.7	0.2
Exports	15.5	7.2	2.5	2.0	3.0	4.5	6.4	4.6	4.5	3.1
Imports	-3.9	2.3	4.4	3.0	3.0	2.5	13.1	7.0	3.0	2.9
Final domestic demand	1.7	1.6	1.3	2.1	2.2	1.9	4.5	3.0	1.8	2.2
Other indicators										
Real disposable personal income	-0.3	2.5	-0.3	1.0	1.5	2.0	3.6	1.3	0.9	2.4
Weekly earnings	0.8	4.8	0.7	1.5	1.5	2.0	3.6	2.5	1.8	2.6
Employment	1.2	-0.3	0.9	2.6	0.4	1.6	1.4	1.6	1.1	1.3
Unemployment rate (%)	7.3	7.5	7.4	7.3	7.4	7.2	8.0	7.4	7.3	7.1
Housing starts (1)	204.6	199.3	206.9	220.1	195.0	180.0	189.9	194.0	200.5	180.6
Corporate profits*** (2)	18.4	13.7	5.4	6.0	5.0	4.0	21.2	15.4	5.1	6.0
Personal saving rate (%)	3.3	3.1	2.9	2.3	2.0	1.9	4.8	3.7	2.3	2.9
Total inflation rate (2)	3.0	2.7	2.3	2.0	2.1	2.0	1.8	2.9	2.1	1.9
Core inflation rate** (2)	1.9	2.0	2.1	2.1	1.8	1.7	1.8	1.6	1.9	1.8
Federal gov't balance (\$B) (3)	-36.5	-25.4	-16.1	-25.0	-20.0	-15.0	-42.6	-31.9	-19.0	-11.3
Current account balance (\$B)	-47.8	-38.7	-41.1	-45.0	-47.0	-46.5	-50.9	-48.4	-44.9	-47.6

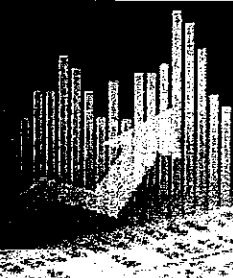
f: forecasts; * 2002 \$; ** Excluding the eight most volatile; *** Before taxes; (1) Thousands of units on an annualized basis; (2) Annual change; (3) National accounts.

Sources: Datastream and Desjardins, Economic Studies



Laurentian Bank Securities - Economic Research

Forecast Tables



May 16, 2012

Canada

	Period-Over-Period Annualized Per Cent Change (Unless Otherwise Indicated)													
	Annual Average								Q4/Q4					
	2011Q2	2011Q3	2011Q4	2012Q1	2012Q2	2012Q3	2012Q4	2010	2011	2012	2013	2011	2012	2013
Real GDP (%)	-0.6	4.2	1.8	2.2	2.0	2.1	2.4	3.2	2.5	2.2	2.0	2.2	2.2	1.9
Consumption	2.0	1.8	2.9	1.6	2.0	2.3	2.1	3.3	2.2	2.1	1.9	1.8	2.0	1.8
Business investment	19.1	-2.5	6.4	8.9	7.9	7.0	5.6	8.5	13.7	6.9	5.4	9.3	7.4	4.6
Non-residential structures	0.9	17.4	13.3	7.0	6.0	5.2	5.0	2.8	13.7	8.4	5.0	11.7	5.8	4.7
Machinery and equipment	30.2	-11.8	2.7	10.0	9.0	8.0	6.0	11.8	13.7	6.1	5.6	8.0	8.2	4.5
Residential construction	0.3	10.6	3.3	1.0	0.0	-3.0	-3.0	10.2	2.3	1.6	-2.2	5.1	-1.3	-1.5
Government spending	-0.4	-1.0	-3.3	-1.4	-1.0	0.0	0.9	4.7	0.5	-1.3	0.8	-1.5	-0.4	1.1
Exports	-6.0	16.0	4.6	4.5	4.2	4.0	4.8	6.4	4.4	5.1	4.8	4.5	4.4	5.0
Imports	13.5	-1.5	2.2	3.5	3.5	3.4	3.6	13.1	6.5	3.2	3.8	5.3	3.5	4.0
Inflation (%)														
Total CPI (y/y)	3.4	3.0	2.7	2.3	1.6	1.9	2.0	1.8	2.9	1.9	2.0	2.7	2.0	2.1
Core CPI (y/y)	1.6	1.9	2.0	2.1	1.8	1.8	1.6	1.7	1.7	1.8	2.0	2.0	1.6	2.3
Unemployment rate (%)*	7.5	7.2	7.4	7.4	7.4	7.4	7.4	8.0	7.5	7.4	7.3	-	-	-
Employment	1.6	1.2	-0.3	0.9	0.7	0.9	0.9	1.4	1.5	0.7	1.0	1.2	0.8	1.0
Housing starts (000s)	192	205	199	208	190	185	182	191	193	191	177	-	-	-
Before-tax Corp. Profits (y/y)	16.0	18.0	13.3	10.7	14.3	11.7	8.5	21.2	15.0	11.2	6.9	13.3	8.5	4.2

*Average rate for the period.

Forecasts as of April 27, 2011

United States

	Quarter-to-Quarter % Change at annual rates (Unless Otherwise Indicated)											
	Annual Average								Q4/Q4			
	2011Q4	2012Q1	2012Q2	2012Q3	2012Q4	2010	2011	2012	2013	2011	2012	2013
Real GDP (%)	3.0	2.2	2.2	2.2	2.0	3.1	1.7	2.2	2.0	1.6	2.2	1.9
Consumption	2.1	2.9	2.6	1.5	1.5	2.0	2.2	2.1	1.8	1.6	2.1	1.9
Private investment	5.5	-1.5	5.8	7.1	9.7	5.7	9.1	5.7	6.2	8.4	5.2	5.6
Non-residential structures	-1.0	-12.0	5.0	5.5	5.0	-15.8	4.6	1.4	4.4	4.4	0.6	4.0
Machinery and equipment	7.5	1.7	6.0	7.5	11.0	14.6	10.4	6.9	6.7	9.6	6.5	6.0
Residential construction	11.7	19.0	3.0	3.0	3.0	-4.3	-1.3	8.3	3.9	3.5	6.8	4.5
Government spending	-4.1	-3.0	-0.5	-0.9	-0.9	0.7	-2.1	-1.9	-0.9	-2.8	-1.3	-1.0
Exports	2.7	5.4	4.5	4.5	4.0	11.3	6.7	4.3	5.0	4.7	4.6	5.9
Imports	3.7	4.3	4.5	4.5	5.0	12.5	4.9	3.7	4.8	3.6	4.6	5.0
Inflation												
Total CPI (y/y %)	3.3	2.8	2.1	1.7	1.8	1.6	3.1	2.1	1.9	3.3	1.8	2.0
Core CPI (y/y %)	2.2	2.2	2.0	1.8	1.8	1.0	1.7	2.0	1.9	2.2	1.8	1.9
Unemployment rate (%)*	8.7	8.3	8.3	8.4	8.4	9.6	9.0	8.3	8.2	-	-	-
Employment	1.4	2.1	1.4	1.7	1.7	-0.7	1.2	1.6	1.7	1.4	1.7	1.8
Housing Starts (in 000s)	678	712	660	660	660	586	612	673	700	-	-	-
Before-tax corporate profits (y/y %)	7.0	5.0	6.0	7.0	8.0	32.2	7.9	6.5	8.5	7.0	8.0	8.5

* Average rate for the period

as of May 2, 2012

North American Forecasts

This Week's Forecasts			
(%)	This Week	Next 4 Weeks	In 3 Months
Canada			
3-Month T-Bills	0.90 - 1.00	0.80 - 1.00	1.00
2-Year Bond	1.00 - 1.10	1.05 - 1.25	1.25
10-Year Bond	1.70 - 1.80	1.80 - 2.00	2.00
Canadian Dollar (CAN\$/US\$)	1.03 - 1.04	1.0 - 1.1	100.0
United States			
3-Month T-Bills	0.05 - 0.10	0.00 - 0.20	0.10
2-Year Bond	0.25 - 0.35	0.15 - 0.35	0.30
10-Year Bond	1.65 - 1.75	1.70 - 1.90	1.90
Yen (Yen/US\$)	79.0 - 81.0	80.0 - 85.0	82.0
Euro (US\$/Euro)	1.23 - 1.25	1.23 - 1.27	1.25

13/06/2012

Interest-Rate and Exchange-Rate Forecasts													
	Historical Data												
	2009	2010	2011	2011Q4	2012Q1	2012Q2	2012Q3	2012Q4	2013Q1	2013Q2	2013Q3	2013Q4	2014Q4
Canada													
Overnight Rate	0.43	0.59	1.00	1.00	1.00	1.00	1.00	1.25	1.50	1.50	1.50	1.50	2.00
3-Month Treasury Bills	0.33	0.56	0.91	0.85	0.91	1.00	1.00	1.30	1.55	1.55	1.55	1.60	2.10
2-Year Bond	1.23	1.54	1.36	0.95	1.20	1.25	1.35	1.55	1.75	1.75	1.75	1.85	2.25
5-Year Bond	2.34	2.48	2.05	1.27	1.57	1.40	1.60	1.70	2.00	2.25	2.45	2.75	3.25
10-Year Bond	3.23	3.24	2.78	1.94	2.11	1.90	2.00	2.10	2.40	2.65	2.85	3.15	3.75
30-Year Bond	3.85	3.77	3.29	2.49	2.66	2.45	2.50	2.60	2.80	2.95	3.15	3.40	4.10
United States													
Federal Funds Rate	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.50
3-Month Treasury Bills	0.15	0.14	0.05	0.02	0.07	0.07	0.07	0.10	0.10	0.10	0.10	0.10	0.60
2-Year Bond	0.96	0.70	0.45	0.25	0.33	0.30	0.30	0.35	0.35	0.45	0.60	0.75	1.25
5-Year Bond	2.19	1.93	1.52	0.83	1.04	0.80	0.90	1.15	1.45	1.50	1.70	1.85	2.50
10-Year Bond	3.26	3.22	2.78	1.89	2.23	1.85	1.95	2.20	2.55	2.70	3.00	3.25	4.10
30-Year Bond	4.08	4.25	3.91	2.89	3.35	2.95	3.05	3.30	3.55	3.60	3.70	3.80	4.50
Canadian Dollar (US\$/C\$)	0.88	0.97	1.02	0.98	0.99	1.00	1.00	1.03	1.03	1.04	1.05	1.05	1.03
Canadian Dollar (Euro/C\$)	0.63	0.73	0.73	0.76	0.74	0.79	0.80	0.84	0.84	0.81	0.79	0.78	0.75
Euro (US\$/Euro)	1.39	1.33	1.39	1.29	1.33	1.27	1.25	1.22	1.22	1.28	1.33	1.35	1.38
Yen (Yen/US\$)	93.7	87.8	79.7	77.0	82.5	82	82	84	84	86	87	88	90

Quarter-end data and annual averages

* May 15, 2012

MONTHLY **ECONOMIC** MONITOR**United States
Economic Forecast**

<i>(Annual % change)*</i>	2009	2010	2011	2012	2013	Q4/Q4	
						2012	2013
Gross domestic product (2005 \$)	(3.5)	3.0	1.7	2.4	2.4	2.6	2.2
Consumption	(1.9)	2.0	2.2	2.4	2.6	2.9	2.4
Residential construction	(22.2)	(4.3)	(1.3)	13.8	22.3	19.2	23.0
Business investment	(17.9)	4.4	8.8	6.5	7.8	6.5	6.8
Government expenditures	1.7	0.7	(2.1)	(2.0)	(2.2)	(1.6)	(3.0)
Exports	(9.4)	11.3	6.7	4.7	4.8	5.4	4.6
Imports	(13.6)	12.5	4.9	3.8	4.6	4.9	3.8
Change in inventories (bil. \$)	(145.0)	58.8	34.6	49.9	40.0	45.0	40.0
Domestic demand	(3.6)	1.8	1.8	2.2	2.6	2.7	2.2
Real disposable income	(2.3)	1.8	1.3	1.5	2.5	2.2	2.5
Household employment	(3.8)	(0.6)	0.6	1.9	1.4	1.9	1.3
Unemployment rate	9.3	9.6	9.0	8.2	7.9	8.1	7.9
Inflation	(0.3)	1.6	3.1	1.9	1.9	1.5	2.2
Before-tax profits	9.1	32.2	7.9	6.8	6.6	7.0	6.5
Federal balance (unified budget, bil. \$)	(1,800.0)	(1,300.0)	(1,350.0)	(1,100.0)	(900.0)
Current account (bil. \$)	(410.0)	(500.0)	(480.0)	(450.0)	(440.0)

* or as noted

Financial Forecast

	Current 5/18/12	Q2	Q3	Q4	Q1/13	2012	2013
Fed Fund Target Rate	0.25	0.25	0.25	0.25	0.25	0.25	0.25
3 month Treasury bills	0.10	0.08	0.08	0.08	0.09	0.08	0.16
Treasury yield curve							
2-Year	0.29	0.31	0.34	0.38	0.43	0.38	0.77
5-Year	0.74	0.83	0.92	1.07	1.21	1.07	1.73
10-Year	1.71	1.82	1.92	2.16	2.41	2.16	2.94
30-Year	2.80	2.89	2.92	3.17	3.39	3.17	3.84
Exchange rates*							
U.S./Euro	1.28	1.25	1.23	1.18	1.20	1.27**	1.21**
YEN/U.S.\$	79	79	78	77	80	79**	82**

National Bank Financial

* end of period

** annual average

MONTHLY **ECONOMIC** MONITOR

**Canada
Economic Forecast**

<i>(Annual % change)*</i>	2009	2010	2011	2012	2013	Q4/Q4	
						2012	2013
Gross domestic product (2002 \$)	(2.8)	3.2	2.5	2.0	2.2	1.9	2.3
Consumption	0.4	3.3	2.2	2.0	2.2	1.9	2.2
Residential construction	(8.0)	10.2	2.3	2.0	(1.0)	(0.3)	(1.0)
Business investment	(20.8)	7.3	13.7	4.3	6.3	3.5	7.0
Government expenditures	4.3	4.7	0.6	(1.0)	(0.1)	(0.4)	0.0
Exports	(13.8)	6.4	4.4	6.1	5.1	5.5	5.1
Imports	(13.4)	13.1	6.5	3.6	3.5	3.8	3.6
Change in inventories (millions \$)	(539)	8,899	12,121	7,183	4,626	6,677	4,251
Domestic demand	(2.1)	4.5	3.0	1.5	1.8	1.4	2.0
Real disposable income	0.8	3.6	1.2	1.6	2.0	1.8	2.1
Employment	(1.6)	1.4	1.5	1.0	1.3	1.3	1.2
Unemployment rate	8.3	8.0	7.5	7.3	7.0	7.2	7.0
Inflation	0.3	1.8	2.9	2.0	2.3	1.9	2.5
Before-tax profits	(32.3)	20.9	17.1	8.9	5.8	5.2	6.0
Federal balance (Public Acc., bil. \$)	(55.6)	(33.4)	(31.7)	(20.2)	(10.4)
Current account (bil. \$)	(45.2)	(50.9)	(48.0)	(40.0)	(33.0)

* or as noted

Financial Forecast*

	Current	Q2	Q3	Q4	Q1/13	2012	2013
	5/18/12						
Overnight rate	1.00	1.00	1.00	1.00	1.00	1.00	2.00
Prime rate	3.00	3.00	3.00	3.00	3.00	3.00	4.00
3 month T-Bills	1.04	0.96	0.96	0.96	1.08	0.96	1.93
Treasury yield curve							
2-Year	1.21	1.17	1.21	1.42	1.59	1.42	2.35
5-Year	1.41	1.47	1.53	1.72	1.88	1.72	2.49
10-Year	1.88	1.97	2.07	2.26	2.48	2.26	3.04
30-Year	2.43	2.49	2.60	2.76	2.91	2.76	3.57
Exchange rates*							
USD per CAD	0.98	0.98	0.97	0.95	0.98	0.98**	1.00**
Oil price (WTI), U.S.\$	92	89	87	90	92	94**	95**

National Bank Financial

* end of period

** annual average



RBC ECONOMICS | RESEARCH

ECONOMIC FORECAST DETAIL – CANADA

June 2012

Real growth in the economy (Quarter-over-quarter annualized % change unless otherwise indicated)

	Actual				Forecast								Actual		Forecast	
	2011				2012			2013					year-over-year % change			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2010	2011	2012	2013
Consumer spending	1.3	2.1	2.1	2.8	0.9	2.1	2.3	2.3	2.5	2.4	2.2	2.2	3.3	2.4	2.0	2.4
Durables	-4.1	3.5	-0.4	9.2	-0.4	1.8	3.8	4.2	5.3	5.4	5.1	4.8	4.4	1.8	2.8	4.7
Semi-Durables	0.6	-0.5	3.3	3.8	4.4	2.3	2.3	2.3	2.5	2.1	1.5	1.5	5.0	1.6	3.0	2.2
Non-durables	1.6	0.3	3.7	0.1	-3.8	2.3	2.3	2.3	2.3	2.1	1.9	2.0	1.8	1.6	0.4	2.2
Services	2.5	2.9	1.7	2.6	2.8	2.1	2.0	2.0	2.0	2.0	1.9	1.9	3.5	3.0	2.3	2.0
Government expenditures	-1.2	-2.1	-1.4	-2.7	-2.3	0.0	0.6	0.6	0.2	0.2	0.2	0.2	4.7	0.1	-1.2	0.3
Residential investment	5.4	2.1	10.5	3.0	12.3	4.6	0.6	-1.3	-0.8	0.4	0.8	0.9	10.2	2.3	5.8	0.1
Business investment	14.6	13.8	1.9	4.9	4.9	8.1	7.3	7.4	7.5	6.8	7.0	6.9	7.3	13.1	6.1	7.2
Non-residential structures	15.8	0.9	17.4	13.4	5.7	8.9	8.1	8.1	8.1	7.5	7.0	7.0	2.8	13.7	9.2	7.8
Machinery & equipment	13.4	28.8	-12.1	-3.7	4.0	7.3	6.4	6.6	6.8	6.0	6.9	6.7	11.8	12.5	2.8	6.6
Final domestic demand	2.3	2.2	1.7	1.6	1.3	2.5	2.3	2.2	2.3	2.2	2.2	2.2	4.5	3.0	1.9	2.3
Exports	4.2	-4.9	15.5	7.2	2.5	9.5	7.4	6.5	5.9	6.7	6.3	5.9	6.4	4.6	6.6	6.6
Imports	10.5	14.3	-3.9	2.3	4.4	5.5	5.1	5.7	4.3	5.5	5.8	5.8	13.1	7.0	3.9	5.3
Inventories (change in \$b)	13.1	21.7	11.2	5.3	9.4	7.6	8.5	10.4	10.3	9.0	8.7	8.8	8.9	12.8	9.0	9.2
Real gross domestic product	3.6	-1.0	4.5	1.9	1.9	3.1	3.2	2.9	2.7	2.2	2.2	2.2	3.2	2.4	2.6	2.6

Other indicators (Year-over-year % change unless otherwise indicated)

Business and labour																
Productivity	0.9	0.6	0.5	1.1	0.6	1.5	1.5	1.2	1.3	1.3	0.9	0.8	1.3	0.8	1.2	1.1
Pre-tax corporate profits	13.3	16.5	18.4	13.7	5.4	11.9	10.0	7.7	12.4	7.7	7.3	5.8	21.2	15.4	8.7	8.2
Unemployment rate (%)*	7.7	7.5	7.3	7.5	7.4	7.3	7.2	7.2	7.1	7.0	6.9	6.9	8.0	7.5	7.3	7.0
Inflation																
Headline CPI	2.6	3.4	3.0	2.7	2.3	1.8	1.8	1.6	1.5	1.7	2.1	2.1	1.8	2.9	1.9	1.9
Core CPI	1.3	1.6	1.9	2.0	2.1	2.1	1.8	1.7	1.9	1.7	2.0	2.0	1.8	1.6	1.9	1.9
External trade																
Current account balance (\$b)	-43.4	-63.7	-47.8	-38.7	-41.1	-39.8	-36.8	-34.2	-30.6	-28.0	-25.9	-24.9	-50.9	-48.4	-38.0	-27.4
% of GDP	-2.6	-3.7	-2.8	-2.2	-2.3	-2.2	-2.0	-1.9	-1.7	-1.5	-1.4	-1.3	-3.1	-2.8	-2.1	-1.5
Housing starts (000s)*	177	192	205	199	206	212	199	197	194	192	191	189	190	194	204	192
Motor vehicle sales (mill, saar)*	1.62	1.60	1.59	1.68	1.76	1.70	1.68	1.69	1.71	1.73	1.75	1.76	1.58	1.62	1.71	1.74

The material contained in this report is the property of Royal Bank of Canada and may not be reproduced in any way, in whole or in part, without express authorization of the copyright holder in writing. The statements and statistics contained herein have been prepared by RBC Economics Research based on information from sources considered to be reliable. We make no representation or warranty, express or implied, as to its accuracy or completeness. This publication is for the information of investors and business persons and does not constitute an offer to sell or a solicitation to buy securities.



RBC ECONOMICS | RESEARCH

ECONOMIC FORECAST DETAIL – UNITED STATES

June 2012

Real growth in the economy (Quarter-over-quarter annualized % change unless otherwise indicated)

	Actual				Forecast								Actual				Forecast			
	2011				2012				2013				year-over-year % change							
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2010	2011	2012	2013	2010	2011	2012	2013
Consumer spending	2.1	0.7	1.7	2.1	2.7	2.7	2.8	2.9	2.5	2.7	3.0	3.2	2.0	2.2	2.4	2.8	2.0	2.2	2.4	2.8
Durables	11.8	-5.3	5.7	16.1	14.2	2.4	6.7	7.2	5.2	5.5	6.0	6.7	7.2	8.2	8.5	5.9	7.2	8.2	8.5	5.9
Non-durables	1.6	0.2	-0.6	0.8	2.4	3.3	2.5	3.0	2.0	2.3	3.5	4.0	2.9	1.7	1.8	2.7	2.9	1.7	1.8	2.7
Services	0.8	1.9	1.9	0.4	1.0	2.6	2.2	2.2	2.2	2.3	2.3	2.4	0.9	1.4	1.6	2.3	0.9	1.4	1.6	2.3
Government spending	-5.9	-0.9	-0.1	-4.1	-3.9	-0.5	-1.2	-1.0	-1.0	-1.0	-0.9	-0.9	0.7	-2.1	-2.1	-1.0	0.7	-2.1	-2.1	-1.0
Residential investment	-2.5	4.2	1.2	11.7	19.3	7.2	6.9	8.6	9.6	10.5	10.1	9.7	-4.3	-1.4	10.0	9.2	-4.3	-1.4	10.0	9.2
Business investment	2.1	10.3	15.7	5.2	1.9	9.0	8.3	8.6	8.5	8.4	8.3	8.4	4.4	8.8	7.2	8.5	4.4	8.8	7.2	8.5
Non-residential structures	-14.4	22.6	14.4	-1.0	-3.3	10.2	9.2	9.0	8.4	7.5	7.5	7.8	-15.8	4.6	5.5	8.4	-15.8	4.6	5.5	8.4
Equipment & software	8.7	6.3	16.2	7.5	3.9	8.5	8.0	8.5	8.6	8.7	8.6	8.6	14.6	10.4	7.8	8.5	14.6	10.4	7.8	8.5
Final domestic demand	0.4	1.3	2.7	1.3	1.7	2.8	2.7	2.9	2.6	2.7	2.9	3.1	1.8	1.8	2.1	2.8	1.8	1.8	2.1	2.8
Exports	7.9	3.6	4.7	2.7	7.2	7.2	9.7	9.8	9.0	9.3	9.8	10.1	11.3	6.7	6.3	9.4	11.3	6.7	6.3	9.4
Imports	8.3	1.4	1.2	3.7	6.1	5.6	7.7	8.0	5.2	6.5	7.5	7.4	12.5	4.9	5.0	6.7	12.5	4.9	5.0	6.7
Inventories (change in \$b)	49.1	39.1	-2.0	52.2	57.7	52.7	44.5	54.7	62.9	63.6	59.3	66.0	58.8	34.6	52.4	62.9	58.8	34.6	52.4	62.9
Real gross domestic product	0.4	1.3	1.8	3.0	1.9	2.8	2.5	3.2	3.2	3.0	3.0	3.5	3.0	1.7	2.5	3.0	3.0	1.7	2.5	3.0

Other indicators (Year-over-year % change unless otherwise indicated)

Business and labour																				
Productivity	0.7	0.4	0.2	0.2	0.4	0.8	0.8	0.9	1.5	1.4	1.4	1.4	4.0	0.2	0.9	1.4	4.0	0.2	0.9	1.4
Pre-tax corporate profits	8.8	8.5	7.5	7.0	6.5	4.2	3.5	3.8	4.4	4.7	4.8	5.3	32.2	7.9	4.5	4.8	32.2	7.9	4.5	4.8
Unemployment rate (%)*	9.0	9.0	9.1	8.7	8.3	8.2	8.2	8.1	8.0	7.9	7.8	7.7	9.6	9.0	8.2	7.9	9.6	9.0	8.2	7.9
Inflation																				
Headline CPI	2.1	3.4	3.8	3.3	2.8	2.0	1.7	1.8	1.7	1.9	1.8	1.9	1.6	3.2	2.1	1.8	1.6	3.2	2.1	1.8
Core CPI	1.1	1.5	1.9	2.2	2.2	2.2	1.9	1.9	1.6	1.7	1.7	1.7	1.0	1.7	2.1	1.7	1.0	1.7	2.1	1.7
External trade																				
Current account balance (\$b)	-473	-494	-431	-496	-528	-522	-521	-524	-514	-509	-507	-500	-471	-473	-524	-508	-471	-473	-524	-508
% of GDP	-3.2	-3.3	-2.8	-3.2	-3.4	-3.3	-3.3	-3.3	-3.2	-3.1	-3.1	-3.0	-3.2	-3.1	-3.3	-3.1	-3.2	-3.1	-3.3	-3.1
Housing starts (000s)*	583	573	614	678	712	712	753	797	849	898	947	996	586	612	744	922	586	612	744	922
Motor vehicle sales (millions, saar)*	13.0	12.1	12.4	13.4	14.5	14.2	14.5	14.7	14.7	14.7	14.8	15.0	11.6	12.7	14.5	14.8	11.6	12.7	14.5	14.8

The material contained in this report is the property of Royal Bank of Canada and may not be reproduced in any way, in whole or in part, without express authorization of the copyright holder in writing. The statements and statistics contained herein have been prepared by RBC Economics Research based on information from sources considered to be reliable. We make no representation or warranty, express or implied, as to its accuracy or completeness. This publication is for the information of investors and business persons and does not constitute an offer to sell or a solicitation to buy securities.

®Registered trademark of Royal Bank of Canada.

©Royal Bank of Canada.



RBC ECONOMICS | RESEARCH

FINANCIAL MARKET FORECASTS

June 2012

Interest rates (% , end of quarter)

	Actual					Forecast								Actual			Forecast	
	11Q1	11Q2	11Q3	11Q4	12Q1	12Q2	12Q3	12Q4	13Q1	13Q2	13Q3	13Q4	2009	2010	2011	2012	2013	
Canada																		
Overnight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.25	1.50	1.75	2.00	2.00	0.25	1.00	1.00	1.25	2.00	
Three-month	1.10	0.90	0.80	1.10	0.92	1.05	1.10	1.30	1.60	1.80	2.05	2.10	0.30	0.97	1.10	1.30	2.10	
Two-year	1.85	1.42	0.88	1.00	1.20	1.10	1.35	1.55	1.80	2.05	2.25	2.40	1.20	1.71	1.00	1.55	2.40	
Five-year	2.65	2.06	1.39	1.50	1.56	1.35	1.60	1.80	2.05	2.35	2.50	2.65	2.77	2.46	1.50	1.80	2.65	
10-year	3.25	2.91	2.15	2.30	2.11	1.90	2.10	2.25	2.45	2.60	2.80	2.90	3.45	3.16	2.30	2.25	2.90	
30-year	3.85	3.42	2.77	3.10	2.64	2.35	2.50	2.65	2.85	3.05	3.30	3.50	4.00	3.55	3.10	2.65	3.50	
Yield curve (10s-2s)	140	149	127	130	91	80	75	70	65	55	55	50	225	145	130	70	50	
United States																		
Fed funds	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	
Three-month	0.15	0.03	0.02	0.05	0.07	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.10	0.12	0.05	0.05	0.05	
Two-year	0.70	0.41	0.25	0.30	0.34	0.25	0.25	0.25	0.40	0.50	0.55	0.75	0.75	0.61	0.30	0.25	0.75	
Five-year	2.10	1.45	0.96	1.10	1.04	0.70	0.80	0.95	1.10	1.25	1.50	1.65	2.69	2.01	1.10	0.95	1.65	
10-year	3.45	2.92	1.92	2.15	2.20	1.60	1.75	2.00	2.15	2.35	2.65	2.75	3.40	3.30	2.15	2.00	2.75	
30-year	4.50	4.27	2.92	3.20	3.32	2.70	2.90	3.25	3.50	3.70	3.95	4.00	4.35	4.34	3.20	3.25	4.00	
Yield curve (10s-2s)	275	251	167	185	186	135	150	175	175	185	210	200	265	269	185	175	200	
Yield spreads																		
Three-month T-bills	0.95	0.87	0.78	1.05	0.85	1.00	1.05	1.25	1.55	1.75	2.00	2.05	0.20	0.85	1.05	1.25	2.05	
Two-year	1.15	1.01	0.63	0.70	0.86	0.85	1.10	1.30	1.40	1.55	1.70	1.65	0.45	1.10	0.70	1.30	1.65	
Five-year	0.55	0.61	0.43	0.40	0.52	0.65	0.80	0.85	0.95	1.10	1.00	1.00	0.08	0.45	0.40	0.85	1.00	
10-year	-0.20	-0.01	0.23	0.15	-0.09	0.30	0.35	0.25	0.30	0.25	0.15	0.15	0.05	-0.14	0.15	0.25	0.15	
30-year	-0.65	-0.85	-0.15	-0.10	-0.68	-0.35	-0.40	-0.60	-0.65	-0.65	-0.65	-0.50	-0.35	-0.79	-0.10	-0.60	-0.50	

Exchange rates (% , end of quarter)

	Actual					Forecast								Actual			Forecast	
	11Q1	11Q2	11Q3	11Q4	12Q1	12Q2	12Q3	12Q4	13Q1	13Q2	13Q3	13Q4	2009	2010	2011	2012	2013	
Australian dollar	1.03	1.07	0.97	1.02	1.03	1.00	1.00	1.03	1.02	1.01	1.00	0.98	0.69	0.92	1.02	1.03	0.98	
Brazilian real	1.63	1.56	1.88	1.86	1.83	2.05	2.00	1.95	1.92	1.90	1.90	1.87	2.32	1.78	1.86	1.95	1.87	
Canadian dollar	0.97	0.96	1.05	1.02	1.00	1.03	1.02	1.00	0.97	0.95	0.95	0.96	1.26	1.02	1.02	1.00	0.96	
Renminbi	6.55	6.46	6.38	6.30	6.29	6.35	6.33	6.30	6.25	6.20	6.15	6.15	6.83	6.83	6.30	6.30	6.15	
Euro	1.42	1.45	1.34	1.30	1.33	1.25	1.24	1.23	1.22	1.20	1.18	1.18	1.33	1.35	1.30	1.23	1.18	
Yen	83	81	77	77	83	78	76	73	70	72	74	76	99	93	77	73	76	
Mexican peso	11.91	11.71	13.90	13.95	12.81	13.75	13.75	13.50	13.25	13.00	12.75	12.75	14.17	12.36	13.95	13.50	12.75	
New Zealand dollar	0.76	0.83	0.76	0.78	0.82	0.77	0.75	0.78	0.79	0.80	0.80	0.79	0.56	0.71	0.78	0.78	0.79	
Swiss franc	0.92	0.84	0.91	0.94	0.90	0.96	0.97	0.98	0.99	1.03	1.06	1.07	1.14	1.05	0.94	0.98	1.07	
U.K. pound sterling	1.60	1.61	1.56	1.55	1.60	1.56	1.57	1.58	1.58	1.56	1.55	1.55	1.43	1.52	1.55	1.58	1.55	

The material contained in this report is the property of Royal Bank of Canada and may not be reproduced in any way, in whole or in part, without express authorization of the copyright holder in writing. The statements and statistics contained herein have been prepared by RBC Economics Research based on information from sources considered to be reliable. We make no representation or warranty, express or implied, as to its accuracy or completeness. This publication is for the information of investors and business persons and does not constitute an offer to sell or a solicitation to buy securities.

®Registered trademark of Royal Bank of Canada.

©Royal Bank of Canada.

North America	2000-10	2011e	2012f	2013f
Canada				
	(annual % change)			
Real GDP	2.2	2.4	2.0	2.1
Consumer Spending	3.2	2.4	1.8	2.1
Residential Investment	4.4	2.3	6.1	2.4
Business Investment	2.5	13.1	5.3	5.5
Government	3.6	0.1	-1.6	-0.6
Exports	0.0	4.6	5.0	4.8
Imports	3.0	7.0	3.4	4.2
Nominal GDP	4.7	5.9	3.8	3.9
GDP Deflator	2.5	3.4	1.8	1.8
Consumer Price Index	2.1	2.9	2.1	2.1
Core CPI	1.8	1.7	2.0	2.0
Pre-Tax Corporate Profits	4.6	15.4	2.5	5.5
Employment	1.5	1.5	1.1	1.1
thousands of jobs	240	262	187	191
Unemployment Rate (%)	7.1	7.5	7.2	7.1
Current Account Balance (C\$ bn.)	7.9	-48.4	-41.6	-39.4
Merchandise Trade Balance (C\$ bn.)	46.2	2.3	9.5	13.0
Federal Budget Balance (C\$ bn.)	-1.2	-23.5	-20.0	-12.5
per cent of GDP	0.0	-1.4	-1.1	-0.7
Housing Starts (thousands)	200	194	204	190
Motor Vehicle Sales (thousands)	1,588	1,589	1,640	1,650
Motor Vehicle Production (thousands)	2,447	2,135	2,500	2,625
Industrial Production	0.0	3.5	2.6	3.0
United States				
Real GDP	1.8	1.7	2.1	2.3
Consumer Spending	2.2	2.2	2.2	2.4
Residential Investment	-4.9	-1.3	9.2	7.4
Business Investment	0.9	8.8	5.5	5.9
Government	2.0	-2.1	-1.9	-1.3
Exports	3.9	6.7	4.7	5.4
Imports	3.4	4.9	3.9	4.4
Nominal GDP	4.1	3.9	3.8	4.0
GDP Deflator	2.3	2.1	1.6	1.7
Consumer Price Index	2.5	3.1	2.3	2.1
Core CPI	2.1	1.7	2.1	1.8
Pre-Tax Corporate Profits	7.0	7.9	5.0	6.0
Employment	0.1	1.2	1.4	1.4
millions of jobs	0.08	1.50	1.82	1.90
Unemployment Rate (%)	5.9	8.9	8.2	7.9
Current Account Balance (US\$ bn.)	-564	-473	-550	-563
Merchandise Trade Balance (US\$ bn.)	-633	-738	-791	-813
Federal Budget Balance (US\$ bn.)	-407	-1,300	-1,130	-960
per cent of GDP	-3.0	-8.6	-7.2	-5.9
Housing Starts (millions)	1.45	0.61	0.74	0.84
Motor Vehicle Sales (millions)	15.4	12.7	14.1	14.5
Motor Vehicle Production (millions)	10.6	8.6	10.0	10.5
Industrial Production	0.1	4.1	4.0	3.1
Mexico				
Real GDP	2.1	4.2	3.7	3.6
Consumer Price Index (year-end)	4.9	3.8	3.9	4.1
Unemployment Rate (%)	3.7	5.5	4.7	4.4
Current Account Balance (US\$ bn.)	-9.7	-9.0	-7.7	-19.0
Merchandise Trade Balance (US\$ bn.)	-8.1	-1.2	1.0	-10.0
Industrial Production	1.4	4.0	3.8	4.4

Forecast Changes

Canada & United States

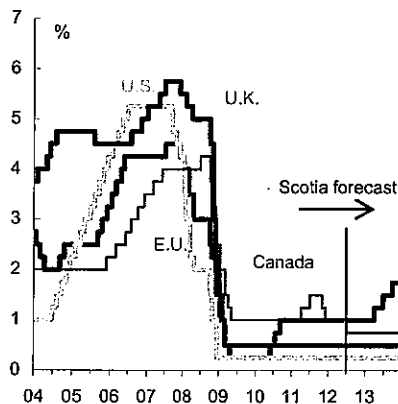
- We have lowered our forecast for Canadian and U.S. GDP growth for both 2012 and 2013. Output growth is now expected to average just over 2.0% in Canada and 2.2% in the United States this year and next. The modest downgrade reflects a slightly weaker-than-expected Q1 performance in both countries as well as a more muted growth trajectory for the second half of the year. Intensifying euro zone debt problems alongside recent signs of softening in emerging market demand is expected to slow the export recovery and add a note of caution to consumer and business spending plans.
- North American auto production has been a key driver of economic growth this year due to stronger-than-expected U.S. demand and low inventories. However, with dealer stocks back at normal levels, output is scheduled to edge down in Q3, even as some automakers take shorter-than-normal downtimes. This moderation, combined with ongoing inventory corrections in several sectors — such as steel and machinery — and some recent weakening in export orders, points to softer manufacturing activity during the summer.
- Barring sizeable negative supplementary period adjustments for the fiscal year just ended, Canada's federal government, with expenditure restraint proceeding, is still expected to better its forecast deficits for fiscal years 2011-12 and 2012-13. Our U.S. federal deficit forecasts for this year and next are unchanged, with current economic uncertainty reinforcing our expectation of compromises to avoid the fiscal cliff entering 2013 that would result from current legislation.

Mexico

- We slightly revised up our 2012 GDP growth for Mexico from 3.6% to 3.7% as a result of improving local economic conditions. Despite recent developments in the foreign exchange market, we expect the Mexican peso to show a modest recovery by the end of the second quarter of the year.

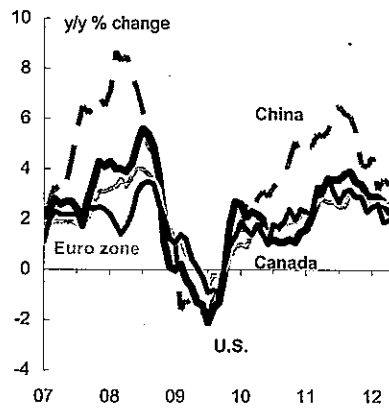
Financial Markets	11Q4	12Q1	12Q2f	12Q3f	12Q4f	13Q1f	13Q2f	13Q3f	13Q4f
Exchange Rates (end of period)									
Americas									
Canadian Dollar (USDCAD)	1.02	1.00	1.05	1.02	0.99	0.98	0.97	0.97	0.96
Canadian Dollar (CADUSD)	0.98	1.00	0.95	0.98	1.01	1.02	1.03	1.03	1.04
Mexican Peso (USDMXN)	13.9	12.8	13.8	13.3	13.1	13.2	13.1	13.1	13.3
Brazilian Real (USDBRL)	1.87	1.83	2.00	1.96	1.95	1.92	1.87	1.88	1.90
Colombian Peso (USDCOP)	1939	1789	1820	1780	1800	1810	1820	1840	1850
Peruvian Nuevo Sol (USDPEN)	2.70	2.67	2.68	2.65	2.61	2.62	2.58	2.58	2.55
Chilean Peso (USDCLP)	520	488	507	502	498	500	503	506	510
Canadian Dollar Cross Rates									
Euro (EURCAD)	1.32	1.33	1.28	1.25	1.22	1.20	1.18	1.17	1.16
U.K. Pound (GBPCAD)	1.59	1.60	1.64	1.62	1.58	1.59	1.58	1.59	1.57
Japanese Yen (CADJPY)	75	83	75	79	84	86	88	89	91
Australian Dollar (AUDCAD)	1.04	1.03	1.01	1.01	1.01	1.02	1.01	1.02	1.01
Mexican Peso (CADMXN)	13.6	12.8	13.1	13.0	13.2	13.5	13.5	13.5	13.9
Europe									
Euro (EURUSD)	1.30	1.33	1.22	1.23	1.23	1.22	1.22	1.21	1.21
U.K. Pound (GBPUSD)	1.55	1.60	1.56	1.59	1.60	1.62	1.63	1.64	1.64
Swiss Franc (USDCHF)	0.94	0.90	0.98	1.02	1.02	1.02	1.02	1.03	1.03
Swedish Krona (USDSEK)	6.88	6.61	7.38	7.24	7.15	7.21	7.17	7.19	7.15
Norwegian Krone (USDNOK)	5.98	5.69	6.10	5.90	5.75	5.60	5.50	5.40	5.30
Asia/Oceania									
Japanese Yen (USDJPY)	77	83	79	81	83	84	85	86	87
Australian Dollar (AUDUSD)	1.02	1.03	0.96	0.99	1.02	1.04	1.04	1.05	1.05
Chinese Yuan (USDCNY)	6.3	6.3	6.4	6.3	6.3	6.3	6.2	6.2	6.1
Indian Rupee (USDINR)	53.1	50.9	57.0	56.0	55.5	55.3	55.0	54.8	54.3
South Korean Won (USDKRW)	1152	1133	1180	1170	1160	1150	1138	1125	1110
Indonesian Rupiah (USDIDR)	9.07	9.15	9.60	9.50	9.40	9.35	9.33	9.25	9.20
Thai Baht (USDTHB)	31.6	30.8	32.0	31.5	31.0	30.8	30.5	30.3	30.0

Central Bank Rates



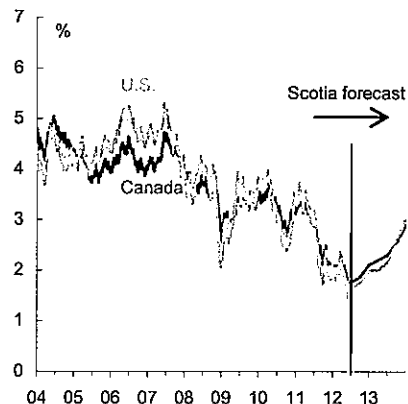
Source: Bloomberg, Scotia Economics.

Global Inflation



Source: Bloomberg, Scotia Economics.

10-Year Yields



Source: Bloomberg, Scotia Economics.

Scotia Economics

Scotia Plaza 40 King Street West, 63rd Floor
 Toronto, Ontario Canada M5H 1H1
 Tel: (416) 866-6253 Fax: (416) 866-2829
 Email: scotia.economics@scotiabank.com

This report has been prepared by Scotia Economics as a resource for the clients of Scotiabank. Opinions, estimates and projections contained herein are our own as of the date hereof and are subject to change without notice. The information and opinions contained herein have been compiled or arrived at from sources believed reliable but no representation or warranty, express or implied, is made as to their accuracy or completeness. Neither Scotiabank nor its affiliates accepts any liability whatsoever for any loss arising from any use of this report or its contents.

™ Trademark of The Bank of Nova Scotia. Used under license, where applicable.

Global Forecast Update

Quarterly Forecasts	11Q4	12Q1	12Q2f	12Q3f	12Q4f	13Q1f	13Q2f	13Q3f	13Q4f
Canada									
Real GDP (q/q, ann. % change)	1.9	1.9	1.7	1.9	1.9	2.1	2.2	2.4	2.4
Real GDP (y/y, % change)	2.2	1.8	2.5	1.8	1.8	1.9	2.0	2.1	2.2
Consumer Prices (y/y, % change)	2.7	2.3	1.9	2.1	2.2	2.2	2.0	2.1	2.1
Core CPI (y/y % change)	2.0	2.1	2.0	2.0	1.9	1.9	1.9	2.0	2.0
United States									
Real GDP (q/q, ann. % change)	3.0	1.9	2.1	2.2	2.2	2.0	2.4	2.5	2.6
Real GDP (y/y, % change)	1.6	2.0	2.2	2.3	2.1	2.1	2.2	2.3	2.4
Consumer Prices (y/y, % change)	3.3	2.8	2.3	2.2	2.0	2.0	2.1	2.1	2.2
Core CPI (y/y % change)	2.2	2.2	2.2	2.0	2.0	1.9	1.8	1.8	1.8
Financial Markets									
Central Bank Rates (% , end of period)									
Americas									
Bank of Canada	1.00	1.00	1.00	1.00	1.00	1.00	1.25	1.50	1.75
U.S. Federal Reserve	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Bank of Mexico	4.50	4.50	4.50	4.50	4.50	4.75	5.00	5.00	5.25
Central Bank of Brazil	11.00	9.75	8.50	8.00	8.00	8.00	8.50	9.00	10.00
Bank of the Republic of Colombia	4.75	5.25	5.25	5.25	5.25	5.25	5.00	5.00	5.00
Central Reserve Bank of Peru	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25
Central Bank of Chile	5.25	5.00	5.00	5.00	5.25	5.25	5.50	5.75	6.00
Europe									
European Central Bank	1.00	1.00	1.00	0.75	0.75	0.75	0.75	0.75	0.75
Bank of England	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Swiss National Bank	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asia/Oceania									
Bank of Japan	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Reserve Bank of Australia	4.25	3.75	3.50	3.25	3.00	3.00	3.00	3.25	3.50
People's Bank of China	6.56	6.56	6.56	6.31	6.31	6.10	6.10	6.10	6.10
Reserve Bank of India	8.50	8.25	8.00	7.50	7.00	6.75	6.75	6.50	6.50
Bank of Korea	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.50	3.50
Bank Indonesia	6.00	6.00	6.00	5.75	5.75	6.00	6.00	6.25	6.25
Bank of Thailand	3.25	3.00	3.00	3.00	3.00	3.00	3.00	3.25	3.25
Canada									
3-month T-bill	0.86	0.91	0.95	0.95	0.95	1.10	1.60	1.85	1.95
2-year Canada	0.97	1.20	1.00	1.15	1.35	1.50	1.70	2.00	2.20
5-year Canada	1.27	1.57	1.15	1.40	1.70	1.85	1.95	2.20	2.35
10-year Canada	1.93	2.21	1.65	1.85	2.10	2.20	2.30	2.55	2.90
30-year Canada	2.54	2.66	2.20	2.25	2.45	2.50	2.70	3.10	3.55
United States									
3-month T-bill	0.05	0.07	0.05	0.05	0.10	0.10	0.15	0.20	0.20
2-year Treasury	0.21	0.33	0.25	0.25	0.25	0.25	0.35	0.50	0.75
5-year Treasury	0.73	1.04	0.65	0.80	0.95	1.00	1.10	1.60	2.00
10-year Treasury	1.83	2.21	1.50	1.75	2.00	2.00	2.15	2.55	3.00
30-year Treasury	2.98	3.34	2.55	2.65	2.85	2.85	3.05	3.45	3.90
Canada-U.S. Spreads									
3-month T-bill	0.81	0.85	0.90	0.90	0.85	1.00	1.45	1.65	1.75
2-year	0.76	0.87	0.75	0.90	1.10	1.25	1.35	1.50	1.45
5-year	0.54	0.53	0.50	0.60	0.75	0.85	0.85	0.60	0.35
10-year	0.10	0.00	0.15	0.10	0.10	0.20	0.15	0.00	-0.10
30-year	-0.44	-0.68	-0.35	-0.40	-0.40	-0.35	-0.35	-0.35	-0.35



FINANCIAL INDICATOR OUTLOOK												
end-of-period level												
	2011				2012				2013			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F
CANADIAN FIXED INCOME												
Overnight Target Rate (%)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.25	1.50	1.50	1.50
3-mth T-Bill Rate (%)	0.96	0.90	0.82	0.80	0.91	0.88	0.95	1.00	1.35	1.55	1.55	1.65
2-yr Govt. Bond Yield (%)	1.83	1.59	0.89	0.96	1.18	1.01	1.20	1.35	1.65	1.95	2.05	2.15
5-yr Govt. Bond Yield (%)	2.77	2.33	1.40	1.28	1.54	1.24	1.45	1.60	1.85	2.00	2.20	2.50
10-yr Govt. Bond Yield (%)	3.35	3.11	2.16	1.94	2.07	1.74	1.95	2.05	2.35	2.55	2.80	3.05
30-yr Govt. Bond Yield (%)	3.76	3.55	2.77	2.49	2.62	2.33	2.50	2.65	2.80	3.00	3.10	3.25
10-yr-2-yr Govt. Spread (%)	1.52	1.52	1.27	0.98	0.89	0.73	0.75	0.70	0.70	0.60	0.75	0.90
GLOBAL CURRENCIES												
USD per CAD	1.03	1.04	0.95	0.98	1.00	0.98	0.97	0.95	0.97	0.98	1.00	1.00
USD per EUR	1.42	1.45	1.34	1.30	1.33	1.25	1.22	1.18	1.18	1.20	1.22	1.25
JPY per USD	83	81	77	77	83	80	84	84	86	88	90	90

F: Forecast by TD Economics as at June 2012
Source: Statistics Canada, Bank of Canada, Bloomberg



U.S. ECONOMIC OUTLOOK																		
<i>Period-Over-Period Annualized Per Cent Change Unless Otherwise Indicated</i>																		
	2011				2012				2013				Annual Average			4th Qtr/4th Qtr		
	Q1	Q2	Q3	Q4	Q1	Q2F	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F	11	12F	13F	11	12F	13F
Real GDP	0.4	1.3	1.8	3.0	1.9	1.8	2.3	2.1	1.6	2.2	2.6	3.1	1.7	2.1	2.1	1.6	2.0	2.4
Consumer Expenditure	2.1	0.7	1.7	2.1	2.7	2.3	2.4	2.1	1.5	2.0	2.4	2.6	2.2	2.2	2.0	1.6	2.4	2.1
Durable Goods	11.8	5.3	5.7	16.1	14.2	2.6	6.7	3.4	2.6	4.3	6.4	6.8	8.2	8.3	4.3	6.8	6.6	5.0
Business Investment	2.1	10.3	15.7	5.2	1.9	3.6	5.7	5.4	5.4	6.6	6.9	8.2	8.8	5.7	5.9	8.2	4.1	6.8
Non-Res. Structures	14.4	22.6	14.4	1.0	-3.3	2.0	4.3	3.9	4.4	5.8	6.6	7.3	4.6	3.1	4.9	4.4	1.7	6.0
Equipment & Software	8.7	6.3	16.2	7.5	3.9	4.3	6.2	5.9	5.8	6.9	7.0	8.5	10.4	6.6	6.3	9.6	5.1	7.0
Residential Construction	2.5	4.2	1.2	11.7	19.3	9.4	7.6	7.4	8.8	12.2	14.4	15.3	-1.3	10.5	10.2	3.5	10.8	12.7
Govt. Consumption & Gross Investment	-5.9	-0.9	-0.1	-4.1	-3.9	-0.6	-1.3	-1.1	-3.6	-2.9	-1.6	-1.4	-2.1	-2.2	-2.2	-2.8	-1.7	-2.4
Final Domestic Demand	0.4	1.3	2.7	1.3	1.7	2.1	2.1	1.9	1.1	1.8	2.5	2.7	1.8	1.9	1.8	1.4	1.9	2.0
Exports	7.9	3.6	4.7	2.7	7.2	3.5	4.7	5.2	5.3	6.2	7.4	8.0	6.7	4.7	5.7	--	--	--
Imports	8.3	11.4	1.2	3.7	6.1	2.7	3.3	3.4	2.2	3.4	4.7	4.8	4.9	3.6	3.3	3.6	3.9	3.8
Change in Non-Farm Inventories	49.1	39.1	2.0	52.2	57.7	55.3	52.7	51.3	53.1	53.2	46.0	43.2	34.6	54.3	48.9	--	--	--
Final Sales	0.0	1.6	3.2	1.1	1.7	2.2	2.3	2.1	1.5	2.2	2.8	3.1	2.0	1.9	2.1	--	--	--
International Current Account Balance (\$Bn)	494	493	442	504	565	-525	-490	-494	-474	-485	-472	-478	-483	-519	-477	--	--	--
% of GDP	-3.3	-3.3	-2.9	-3.3	-3.7	-3.4	-3.1	-3.1	-3.0	-3.0	-2.9	-2.9	-3.2	-3.3	-2.9	--	--	--
Pre-tax Corporate Profits including IVA&CCA	4.2	13.7	6.9	3.5	2.3	6.5	2.9	2.4	1.9	3.0	4.5	4.2	7.9	4.6	3.1	7.0	3.5	3.4
% of GDP	12.6	12.9	13.0	13.0	12.9	13.0	13.0	12.9	12.9	12.8	12.8	12.8	12.9	13.0	12.8	--	--	--
GDP Deflator (Y/Y)	1.8	2.1	2.4	2.1	1.9	1.7	1.5	1.8	1.9	2.0	2.0	2.1	2.1	1.7	2.0	2.1	1.8	2.1
Nominal GDP	3.1	4.0	4.4	3.8	3.6	3.3	4.4	4.2	3.6	4.1	4.8	5.3	3.9	3.8	4.1	3.8	3.9	4.4
Labor Force	1.2	0.5	0.4	0.7	1.8	0.5	0.9	0.9	1.0	1.0	1.1	1.1	-0.2	0.9	1.0	0.1	1.0	1.0
Employment	1.4	1.7	0.9	1.4	2.1	1.0	1.2	1.1	1.0	1.4	1.8	2.1	1.2	1.4	1.3	--	--	--
Change in Empl. ('000s)	459	552	294	454	696	330	397	353	330	460	601	703	1,503	1,857	1,697	1,759	1,777	2,094
Unemployment Rate (%)	9.0	9.0	9.1	8.7	8.3	8.2	8.1	8.1	8.1	8.0	7.9	7.7	9.0	8.2	7.9	--	--	--
Personal Disp. Income	5.2	2.8	3.1	1.3	2.9	2.9	3.9	3.7	-0.3	4.2	4.8	5.4	3.7	2.8	3.0	--	--	--
Pers. Savings Rate (%)	5.0	4.8	4.6	4.2	3.6	3.6	3.7	3.6	2.7	2.8	2.7	2.8	4.7	3.6	2.8	--	--	--
Cons. Price Index (Y/Y)	2.1	3.3	3.8	3.3	2.8	1.9	1.4	1.6	1.4	1.8	2.1	2.1	3.1	1.9	1.6	3.3	1.6	1.4
Core CPI (Y/Y)	1.1	1.5	1.9	2.2	2.2	2.3	2.2	2.2	2.2	2.1	2.1	2.1	1.7	2.2	2.2	2.2	2.2	2.2
Housing Starts (mns)	0.58	0.57	0.61	0.68	0.71	0.73	0.76	0.78	0.82	0.87	0.93	0.99	0.61	0.75	0.91	--	--	--
Productivity:																		
Real Output per hour (y/y)	0.9	0.6	0.5	0.4	0.5	1.1	1.0	1.0	1.3	1.1	1.0	1.1	0.6	0.9	1.2	0.4	1.0	1.1

F: Forecast by TD Economics as at June 2012

Source: U.S. Bureau of Labor Statistics, U.S. Bureau of Economic Analysis, TD Economics



INTEREST RATE OUTLOOK												
	2011				2012				2013			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F
Fed Funds Target Rate (%)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
3-mth T-Bill Rate (%)	0.09	0.01	0.02	0.09	0.10	0.08	0.10	0.10	0.15	0.20	0.20	0.20
2-yr Govt. Bond Yield (%)	0.82	0.20	0.25	0.30	0.33	0.31	0.35	0.40	0.65	0.70	0.80	1.00
5-yr Govt. Bond Yield (%)	2.27	0.94	0.95	0.90	1.04	0.72	0.90	1.05	1.10	1.15	1.35	1.90
10-yr Govt. Bond Yield (%)	3.47	2.18	1.75	2.05	2.21	1.63	1.95	2.10	2.25	2.50	2.75	3.00
30-yr Govt. Bond Yield (%)	4.51	3.53	2.91	3.19	3.34	2.70	2.90	3.15	3.40	3.65	3.80	3.95
10-yr-2-yr Govt. Spread (%)	2.65	1.98	1.50	1.75	1.88	1.32	1.60	1.70	1.60	1.80	1.95	2.00

f: Forecast by TD Economics as at June 2012; All forecasts are for end of period; Source: Bloomberg, TD Economics

FOREIGN EXCHANGE OUTLOOK													
Currency	Exchange Rate	2011				2012				2013			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F
Canadian dollar	CAD per USD	0.97	0.96	1.05	1.02	1.00	1.03	1.03	1.05	1.03	1.02	1.00	1.00
Japanese yen	JPY per USD	83	81	77	77	83	80	84	84	86	88	90	90
Euro	USD per EUR	1.42	1.45	1.34	1.30	1.33	1.25	1.22	1.18	1.18	1.20	1.22	1.25
U.K. pound	USD per GBP	1.60	1.61	1.56	1.55	1.60	1.56	1.54	1.51	1.51	1.56	1.63	1.67
Swiss franc	CHF per USD	0.92	0.84	0.91	0.94	0.90	0.96	0.98	1.03	1.06	1.04	1.07	1.04
Australian dollar	USD per AUD	1.03	1.07	0.97	1.02	1.03	1.01	1.00	0.98	0.99	1.00	1.03	1.03
NZ dollar	USD per NZD	0.76	0.83	0.76	0.78	0.82	0.79	0.78	0.79	0.82	0.82	0.82	0.82

f: Forecast by TD Economics as at June 2012; All forecasts are for end of period; Source: Federal Reserve, Bloomberg, TD Economics



CANADIAN ECONOMIC OUTLOOK																		
Period-Over-Period Annualized Per Cent Change Unless Otherwise Indicated																		
	2011				2012				2013				Annual Average			4th Qtr/4th Qtr		
	Q1	Q2	Q3	Q4	Q1	Q2F	Q3F	Q4F	Q1F	Q2F	Q3F	Q4F	11	12F	13F	11	12F	13F
Real GDP	3.6	-1.0	4.5	-1.9	-1.9	2.3	2.1	1.8	1.7	2.0	2.4	2.5	2.4	2.1	2.0	2.2	2.0	2.1
Consumer Expenditure	1.3	2.1	2.1	-2.8	0.9	2.2	2.3	2.1	2.1	2.0	2.0	1.8	2.4	2.0	2.1	2.1	1.9	2.0
Durable Goods	-4.1	3.5	-0.4	9.2	-0.4	3.0	2.2	1.7	1.6	1.2	1.0	-0.8	1.8	2.7	1.5	1.9	1.6	0.7
Business Investment	14.6	13.8	1.9	4.9	4.9	3.3	3.6	3.3	6.4	7.0	7.7	8.3	13.1	4.5	5.7	8.7	3.8	7.3
Non-Res. Structures	15.8	-0.9	17.4	13.4	5.7	3.1	4.2	3.8	5.0	5.5	6.5	7.5	13.7	7.3	5.0	11.7	4.2	6.1
Machinery & Equipment	13.4	28.8	-12.1	-3.7	4.0	3.5	3.0	2.8	8.0	8.8	9.0	9.2	12.5	1.4	6.5	5.4	3.3	8.7
Residential Investment	5.4	2.1	10.5	3.0	12.3	7.2	2.0	1.0	0.5	-0.2	-4.5	-5.5	2.3	6.7	0.0	5.2	5.5	-2.5
Government Expenditures	3.9	-2.2	-1.7	-3.2	-2.1	-1.1	-0.9	-0.7	-0.7	-0.8	-0.7	-0.7	0.1	-1.8	-0.8	0.2	-1.0	-0.7
Final Domestic Demand	2.3	2.2	1.7	1.6	1.3	1.9	1.7	1.5	1.8	1.8	1.6	1.5	3.0	1.6	1.7	2.0	1.6	1.6
Exports	4.2	4.9	15.5	7.2	2.5	4.2	4.3	3.9	4.1	2.8	5.2	7.1	4.6	5.0	4.2	5.3	3.7	4.8
Imports	10.5	14.3	3.9	2.3	4.4	2.8	3.1	3.1	4.5	2.5	2.6	3.4	7.0	3.0	3.3	5.6	3.4	3.3
Change in Non-Farm Inventories (\$2002 Bn)	10.0	18.5	8.0	3.4	8.0	0.5	1.0	1.2	1.8	2.5	2.7	2.2	10.0	2.7	2.3	--	--	--
Final Sales	-0.4	-4.5	8.2	3.2	0.4	2.3	2.0	1.7	1.6	2.1	2.7	2.9	1.9	2.2	2.0	1.5	1.6	2.3
International Current Account Balance (\$Bn)	-43.4	-63.7	-47.8	-38.7	-41.1	-41.5	-45.4	-45.9	-45.6	-43.0	-37.8	-31.2	-48.4	-43.5	-39.4	--	--	--
% of GDP	-2.6	-3.7	-2.3	-2.2	-2.3	-2.3	-2.5	-2.5	-2.5	-2.3	-2.0	-1.6	-2.8	-2.4	-2.1	--	--	--
Pre-tax Corp. Profits	21.7	4.3	18.2	21.4	-10.0	3.6	3.1	7.2	7.3	7.7	8.0	8.2	15.4	4.3	6.7	13.7	0.7	7.8
% of GDP	12.0	11.8	12.1	12.5	12.1	12.1	12.1	12.2	12.3	12.4	12.5	12.6	12.1	12.1	12.5	--	--	--
GDP Deflator (Y/Y)	3.0	3.7	3.7	3.2	2.2	2.2	2.2	1.6	2.0	1.8	2.1	2.2	3.4	2.0	2.0	3.2	1.6	2.2
Nominal GDP	8.3	2.2	5.8	6.1	2.5	5.2	3.1	3.7	3.9	4.3	4.6	4.8	5.9	4.2	4.1	5.6	3.6	4.4
Labour Force	2.2	0.5	0.3	0.5	0.8	2.4	1.2	1.1	0.9	0.8	0.8	0.8	1.0	1.0	1.0	0.9	1.4	0.8
Employment	2.2	1.6	1.2	-0.3	0.9	2.8	1.0	1.1	1.2	1.3	1.2	1.2	1.5	1.1	1.3	1.2	1.5	1.2
Employment ('000s)	94	69	53	14	41	120	44	48	53	57	53	53	262	198	223	203	253	216
Unemployment Rate (%)	7.7	7.5	7.3	7.5	7.4	7.3	7.3	7.3	7.3	7.2	7.1	7.0	7.5	7.4	7.1	--	--	--
Personal Disp. Income	3.4	2.4	1.1	4.7	1.1	4.6	3.6	4.1	4.4	4.3	4.2	4.1	3.3	3.0	4.2	2.9	3.4	4.2
Pers. Savings Rate (%)	4.3	3.9	3.3	3.1	2.9	3.1	3.1	3.2	3.3	3.4	3.4	3.5	3.7	3.1	3.4	--	--	--
Cons. Price Index (Y/Y)	2.6	3.4	3.0	2.7	2.3	1.7	1.3	1.5	1.8	1.9	2.0	2.1	2.9	1.7	2.0	2.7	1.5	2.1
Core CPI (Y/Y)	1.3	1.6	1.9	2.0	2.1	2.1	1.8	1.6	1.8	1.8	1.9	2.0	1.7	1.9	1.9	2.0	1.6	2.0
Housing Starts ('000s)	177	192	205	199	206	225	211	203	191	186	186	185	193	211	187	--	--	--
Productivity:																		
Real GDP / worker (Y/Y)	0.9	0.5	1.0	1.0	0.9	1.4	0.9	0.5	0.4	0.7	0.7	0.9	0.9	1.0	0.7	1.0	0.5	0.9

F: Forecast by TD Economics as at June 2012

Source: Statistics Canada, Bank of Canada, Canada Mortgage and Housing Corporation, Haver Analytics

Global Insight June 12 2012 Quarterly Forecast

Table 24																												
Interest Rates																												
(Percent)																												
	11Q2	11Q3	11Q4	12Q1	12Q2	12Q3	12Q4	13Q1	13Q2	13Q3	13Q4	14Q1	14Q2	14Q3	14Q4	15Q1	15Q2	15Q3	15Q4	16Q1	16Q2	16Q3	16Q4	17Q1	17Q2	17Q3	17Q4	
Government of Canada																												
Treasury Bills																												
3 Months	0.95	0.91	0.86	0.91	1.02	1.04	1.07	1.26	1.56	1.75	2.02	2.24	2.54	2.75	3.06	3.25	3.50	3.75	4.00	4.25	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.75
6 Months	1.08	0.95	0.91	0.98	1.10	1.15	1.18	1.37	1.67	1.86	2.13	2.35	2.65	2.86	3.17	3.36	3.61	3.86	4.11	4.36	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.86
Bonds																												
1-3 Years	1.62	1.18	1.02	1.11	1.29	1.37	1.42	1.52	1.79	2.09	2.36	2.52	2.74	2.95	3.26	3.48	3.68	3.93	4.16	4.40	4.67	4.74	4.74	4.74	4.74	4.74	4.74	4.89
3-5 Years	2.18	1.57	1.32	1.35	1.50	1.60	1.67	1.70	1.95	2.33	2.59	2.73	2.89	3.09	3.40	3.64	3.82	4.05	4.28	4.51	4.79	4.91	4.91	4.91	4.91	4.91	4.91	4.99
5 Years	2.45	1.76	1.45	1.46	1.56	1.63	1.69	1.72	1.96	2.35	2.62	2.75	2.90	3.11	3.42	3.66	3.83	4.07	4.29	4.52	4.81	4.92	4.93	4.93	4.93	4.93	4.93	5.00
5-10 Years	2.81	2.20	1.86	1.77	1.72	1.79	1.87	1.85	2.07	2.52	2.78	2.89	3.01	3.21	3.52	3.77	3.92	4.16	4.37	4.60	4.89	5.04	5.05	5.05	5.05	5.05	5.05	5.07
10 Years	3.15	2.52	2.16	2.05	1.95	1.86	1.94	1.90	2.12	2.60	2.85	2.95	3.05	3.25	3.56	3.82	3.96	4.19	4.40	4.63	4.93	5.09	5.10	5.10	5.10	5.10	5.10	5.10
10+ Years	3.52	3.01	2.65	2.53	2.40	2.30	2.36	2.31	2.52	2.98	3.23	3.32	3.40	3.60	3.90	4.15	4.29	4.52	4.72	4.95	5.24	5.40	5.41	5.40	5.40	5.40	5.40	5.40
30 Years	3.59	3.09	2.74	2.64	2.51	2.41	2.47	2.41	2.61	3.07	3.32	3.41	3.49	3.69	3.99	4.24	4.37	4.60	4.80	5.03	5.32	5.48	5.48	5.48	5.48	5.48	5.48	5.47

Global Insight - June 12 2012 Quarterly Forecast

Table 25																											
Financial Aggregates and US Interest Rates																											
	11Q2	11Q3	11Q4	12Q1	12Q2	12Q3	12Q4	13Q1	13Q2	13Q3	13Q4	14Q1	14Q2	14Q3	14Q4	15Q1	15Q2	15Q3	15Q4	16Q1	16Q2	16Q3	16Q4	17Q1	17Q2	17Q3	17Q4
US Interest Rates (Percent)																											
Federal Funds	0.09	0.08	0.07	0.10	0.14	0.09	0.09	0.14	0.15	0.15	0.15	0.15	0.15	0.17	0.52	1.03	1.52	2.06	2.60	3.12	3.57	4.00	4.00	4.00	4.00	4.00	4.00
3-Month T-Bills	0.05	0.02	0.01	0.07	0.07	0.05	0.06	0.09	0.09	0.09	0.09	0.09	0.09	0.20	0.59	1.05	1.54	2.06	2.59	3.07	3.48	3.77	3.80	3.80	3.80	3.80	3.80
3-Month Comm. Paper	0.17	0.15	0.14	0.16	0.19	0.16	0.19	0.23	0.24	0.24	0.24	0.24	0.24	0.31	0.70	1.18	1.68	2.21	2.74	3.26	3.68	4.04	4.07	4.07	4.07	4.07	4.07
3-Month Euro Deposit Rate	0.26	0.30	0.48	0.51	0.48	0.51	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.52	0.91	1.29	1.81	2.35	2.90	3.43	3.87	4.24	4.28	4.28	4.28	4.28	4.28
Bank Prime Rate	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.52	4.04	4.52	5.06	5.60	6.12	6.57	7.00	7.05	7.05	7.05	7.05	7.05
5-year Treasury Notes	1.86	1.15	0.95	0.90	0.77	0.71	0.76	0.80	1.00	1.21	1.39	1.49	1.59	1.81	2.21	2.52	2.83	3.26	3.67	4.08	4.41	4.55	4.56	4.56	4.56	4.56	4.56
10-Year Treasury Notes	3.21	2.43	2.05	2.04	1.84	1.71	1.79	1.75	1.97	2.45	2.70	2.80	2.90	3.10	3.41	3.67	3.81	4.04	4.25	4.48	4.78	4.94	4.95	4.95	4.95	4.95	4.95
30-year Treasury Bonds	4.34	3.69	3.04	3.14	2.95	2.88	2.90	2.83	3.02	3.46	3.77	3.88	3.99	4.12	4.32	4.46	4.50	4.64	4.83	5.05	5.32	5.45	5.44	5.44	5.44	5.44	5.44
Moody Aaa Seas Bonds	5.04	4.46	3.93	3.90	3.81	3.72	3.79	3.73	3.85	4.21	4.41	4.50	4.58	4.76	5.06	5.27	5.40	5.60	5.76	5.96	6.16	6.31	6.31	6.31	6.31	6.31	6.31

Global Insight - June 12 2012 Quarterly Forecast

Table 1																												
Selected Economic Indicators																												
	11Q2	11Q3	11Q4	12Q1	12Q2	12Q3	12Q4	13Q1	13Q2	13Q3	13Q4	14Q1	14Q2	14Q3	14Q4	15Q1	15Q2	15Q3	15Q4	16Q1	16Q2	16Q3	16Q4	17Q1	17Q2	17Q3	17Q4	
Canada																												
GDP Deflator	126.5	126.9	128.2	128.4	129.4	130.1	130.7	131.6	132.5	133.3	134.0	134.7	135.5	136.3	137.1	137.8	138.5	139.3	140.0	140.8	141.5	142.2	143.0	143.8	144.6	145.3	146.0	
Annual % Ch.	2.9	1.3	4.2	0.6	3.2	2.2	1.7	3.0	2.6	2.4	2.3	2.2	2.2	2.4	2.3	2.2	2.1	2.2	2.2	2.1	2.2	2.0	2.2	2.2	2.2	2.0	2.1	
CPI	120.1	120.3	120.6	121.2	122.5	122.9	123.3	123.6	125.2	125.9	126.4	126.0	127.7	128.5	129.0	128.5	130.3	131.0	131.6	131.1	132.9	133.7	134.2	133.7	135.5	136.3	136.9	
% Ch. Year Ago	3.4	3.0	2.7	2.3	2.1	2.1	2.2	2.0	2.2	2.5	2.5	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
ExCh. Rate (US-Can.)	103.3	102.0	97.7	99.9	98.7	96.8	96.7	96.2	96.2	95.9	95.7	95.5	94.4	93.9	93.6	92.7	92.1	91.3	90.9	90.8	91.1	91.0	90.7	90.5	90.0	89.6	89.6	

Conference Board - June 21 2012

	2011.4	2012.1	2012.2	2012.3	2012.4	2013.1	2013.2	2013.3	2013.4	2014.1	2014.2	2014.3	2014.4	2015.1	2015.2	2015.3	2015.4	2016.1	2016.2	2016.3	2016.4
Cdn GDP Price Deflator	1.28	1.28	1.29	1.29	1.30	1.31	1.31	1.32	1.33	1.33	1.34	1.35	1.36	1.36	1.37	1.38	1.38	1.39	1.40	1.41	1.41
% chge	3.3	2.3	1.6	1.6	1.4	1.8	2.1	2.4	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2
Cdn CPI	1.21	1.21	1.22	1.23	1.23	1.24	1.25	1.25	1.26	1.27	1.27	1.28	1.29	1.29	1.30	1.31	1.31	1.32	1.33	1.33	1.34
% chge	2.7	2.3	1.7	2.0	2.2	2.3	2.0	2.1	2.2	2.1	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0
Cdn Long Bond rate	2.74	2.64	2.44	2.35	2.27	2.20	2.23	2.28	2.35	2.44	2.54	2.66	2.82	3.06	3.29	3.47	3.58	3.68	3.76	3.85	3.92
Cdn T-Bill Rate	0.86	0.91	0.99	0.92	0.91	0.90	1.10	1.34	1.58	1.82	2.06	2.31	2.64	3.13	3.54	3.79	3.83	3.83	3.84	3.84	3.85
Cdn\$/US\$	1.02	1.00	1.01	1.01	1.00	1.00	0.99	0.98	0.98	0.98	0.98	0.97	0.97	0.97	0.97	0.98	0.98	0.98	0.98	0.98	0.98
US T-Bill Rate %	0.01	0.11	0.14	0.10	0.07	0.04	0.04	0.04	0.04	0.04	0.13	0.31	0.50	0.70	0.91	1.15	1.57	2.00	2.43	2.88	3.33
US Long Bond Rate	3.04	2.98	3.07	2.98	2.89	2.80	2.72	2.64	2.57	2.50	2.48	2.49	2.51	2.55	2.60	2.67	2.81	2.97	3.15	3.34	3.55
US GDP Price Deflator	114.1	114.7	115.1	115.6	116.1	116.7	117.3	117.9	118.5	119.0	119.6	120.3	121.0	121.7	122.4	123.0	123.7	124.4	125.0	125.7	126.3
% chge	2.1	2.1	1.7	1.6	1.8	1.7	1.9	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.1
Cdn 10 Yr Bond rate	2.16	2.05	1.90	1.80	1.77	1.74	1.81	1.91	2.02	2.15	2.29	2.44	2.64	2.92	3.19	3.39	3.51	3.61	3.70	3.78	3.85

CAC/CENTRA I-7

Reference: Tab 4; p. 4 of 7; Table 4.1.1

a) Re-file Table 4.1.1 to include CG11 together with the variances.

ANSWER:

Please see attached a revised Table 4.1.1 that reflects CGM11-2.

The following variance explanations pertain to **CGM12** and **CGM11-2**:

Gross Margin is lower in the 2012/13 to 2013/14 period, primarily due to a reduction in the additional revenue requirement resulting from lower projected rate increases in CGM12. This decrease to the forecast is slightly offset by an increase in volumes.

OM&A is lower in the 2012/13 to 2013/14 period, because of the one year deferral of IFRS in CGM12 from CGM11-2. CGM11-2 assumed the transition to IFRS would occur in 2013/14 and as a result, spending on the rate-regulated account balances would be expensed to OM&A. OM&A expenditures are lower in CGM12 over the longer term because of projected reductions in DSM spending in CGM12, and meter compliance related expenditures assumed to be capitalized upon transition to IFRS. These reductions in OM&A in CGM12 are partially offset by projected increases in Pension expense due to a discount rate revision from 6.5% to 5.25%.

Higher depreciation and amortization expense in the 2012/13 to 2013/14 period for CGM12 is due to the additional one year deferral of IFRS implementation in CGM12 to 2014/15.

Rate-regulated balances continue to be amortized in 2013/14 in CGM12 as compared to CGM11-2 where such balances are adjusted to retained earnings in 2013/14 and amortization ceases. The \$10 million 2013/14 variance makes up the majority of the total forecast variance of \$13 million.

The lower finance expense in CGM12 in the early years is due to lower projected levels of long-term debt under CGM12 as compared to projected 2013 and 2014 levels in CGM11-2. Over the forecast period, the lower finance expense under CGM12 is primarily the result of a reduction in projected interest rates as compared to CGM11-2.

Capital and other taxes are higher in the 2012/13 to 2013/14 period under CGM12 due to the additional one year deferral of the transition to IFRS and the continued amortization of the Deferred Tax balance in 2013/14. Over the forecast period, the \$7 million variance is due to a decrease in estimated property taxes in CGM12 compared to CGM11-2. In CGM11-2 the expectation was that the province wide reassessment of property values scheduled to occur in 2012 would result in a significant increase to Centra's total property taxes. Once available, the actual impact was much smaller than anticipated and estimates of property taxes for fiscal 2013 and beyond were reduced accordingly in CGM12.

Table 4.1.1 - Comparison of Centra Gas CGM12 to CGM11-2 and CGM10
Increase/(Decrease)
(millions of \$)

	2013-2014					2013 - 2022				
	CG12	CG11-2	Variance (CG12 -CG11)	CG10	Variance (CG12 -CG10)	CG12	CG11-2	Variance (CG12 -CG11)	CG10	Variance (CG12 -CG10)
Revenue at projected rates	638	853	(215)	934	(297)	3 526	4 185	(660)	4 723	(1 198)
Cost of Gas	344	546	(202)	630	(286)	1 965	2 552	(587)	3 071	(1 106)
Gross Margin	294	307	(13)	304	(11)	1 561	1 634	(73)	1 653	(92)
Other	4	4	(0)	4	-	19	20	(1)	18	1
Total Revenues	297	310	(13)	308	(11)	1 579	1 654	(74)	1 671	(91)
Operating, Maintenance and Administrative	136	151	(15)	132	4	768	834	(66)	715	53
Finance Expense	35	42	(6)	41	(6)	232	250	(18)	234	(2)
Depreciation and Amortization	58	48	10	62	(4)	238	224	13	358	(120)
Capital and Other Taxes	37	35	2	40	(2)	165	172	(7)	205	(39)
Corporate Allocation	24	24	-	24	-	120	120	-	120	-
	290	300	(10)	298	(8)	1 523	1 601	(78)	1 632	(109)
			-				-	-		
Net Income	7	10	(3)	10	(3)	56	53	3	39	17

CAC/CENTRA I-7

Reference: Tab 4; p. 4 of 7; Table 4.1.1

- b) If not already included in PUB/Centra 1-7, provide a re-filed Table 4.1.1 removing all adjustments related to IFRS.**

ANSWER:

Please find table 4.1.1 re-filed with IFRS adjustments attached.

Please note CGM10 assumed rate regulated accounting would continue throughout the forecast and included a \$1.5 million annual provision in OM&A (10% of the total IFF10 IFRS provision of \$15 million) for the impact of IFRS excluding the partial offset for corresponding reductions in annual depreciation.

Table 4.1.1 - Comparison of Centra Gas CGM12 to CGM11-2 and CGM10
Increase/(Decrease)
(millions of \$)

	2013-2014					2013 - 2022				
	CG12	CG11-2	Variance (CG12-CG11)	CG10	Variance (CG12 -CG10)	CG12	CG11-2	Variance (CG12 -CG11)	CG10	Variance (CG12 -CG10)
Revenue at projected rates	638	853	(215)	934	(297)	3 526	4 185	(660)	4 723	(1 198)
Cost of Gas	344	546	(202)	630	(286)	1 965	2 552	(587)	3 071	(1 106)
Gross Margin	294	307	(13)	304	(11)	1 561	1 634	(73)	1 653	(92)
Other	4	4	(0)	4	-	19	20	(1)	18	1
Total Revenues	297	310	(13)	308	(11)	1 579	1 654	(74)	1 671	(91)
Operating, Maintenance and Administrative	136	136	0	129	7	749	733	16	700	49
IFRS Accounting Change	-	15	(15)	3	(3)	19	101	(82)	15	4
Finance Expense	35	39	(4)	41	(6)	220	236	(17)	234	(14)
IFRS Accounting Change	-	2	(2)	-	-	12	14	(1)	-	12
Depreciation and Amortization	58	60	(2)	62	(4)	328	344	(16)	361	(33)
IFRS Accounting Change	-	(12)	12	-	-	(90)	(120)	30	(3)	(87)
Capital and Other Taxes	37	40	(3)	40	(2)	193	207	(14)	205	(12)
IFRS Accounting Change	-	(4)	4	-	-	(27)	(35)	8	-	(27)
Corporate Allocation	24	24	-	24	-	120	120	-	120	-
	290	300	(10)	298	(8)	1 524	1 601	(77)	1 632	(108)
Net Income	7	10	(3)	10	(3)	56	53	3	39	17

CAC/CENTRA I-8

Reference: Tab 5; p. 17 – 30; App. 5.7, p. 2 of 23

a) Are the CGAAP Changes / Reclassification required in this application?

ANSWER:

As documented on pages 2 and 3 of Appendix 5.7 of this Application, the CGAAP changes to OM&A for interest on common assets and motor vehicles, IT infrastructure, building depreciation and operating costs, and general & administrative costs recognize industry trends to move away from full cost accounting and are designed to make the Corporation's practices consistent with those of other utilities in Canada.

The changes implemented with respect to costs ineligible for inclusion in intangible assets were required for compliance with CGAAP section 3064 *Goodwill and Intangible Assets* which was harmonized with IFRS and effective for Manitoba Hydro April 1, 2009 (retrospective application was required). Section 3064 requires research and promotional related charges to be expensed as incurred. As per section 3064:

.37 No intangible asset arising from research (or from the research phase of an internal project) should be recognized. Expenditure on research (or on the research phase of an internal project) should be recognized as an expense when it is incurred. [OCT. 2008]

.52 In some cases, expenditure is incurred to provide future economic benefits to an entity, but no intangible asset or other asset is acquired or created that can be recognized,..., Other examples of expenditure that is recognized as an expense when it is incurred include expenditure on:

- (a) *start-up activities (i.e., start-up costs)*
- (b) *training activities*
- (c) *advertising and promotional activities.*

Changes in the discount rate were required to be compliant with CGAAP standard section 3461 Employee Future Benefits. Section 3461 requires the discount rate be reviewed annually and adjusted if necessary to reflect changes in market interest rates. As per Section 3461:

.50 For a defined benefit plan, the discount rate used to determine the accrued benefit obligation should be an interest rate determined by reference to:

- (a) market interest rates at the measurement date on high-quality debt instruments with cash flows that match the timing and amount of expected benefit payments; or*
- (b) the interest rate inherent in the amount at which the accrued benefit obligation could be settled. [JAN. 2000]*

.54. The discount rate is re-evaluated at each measurement date. When long-term interest rates rise or decline, the discount rate changes in a similar manner.

These changes are acceptable under CGAAP and were fully supported by Manitoba Hydro's external auditors Ernst & Young.

Lastly, the reclassifications have no impact on net income as the increase in OM&A is completely offset by the increase in other revenue.

CAC/CENTRA I-8

Reference: Tab 5; p. 17 – 30; App. 5.7, p. 2 of 23

- b) If the answer to (a) above is no, then calculate the net impact to ratepayers of keeping these amounts in capital.**

ANSWER:

Please see Centra's response to CAC/Centra I-8(a).

CAC/CENTRA I-9

Reference: Tab 5; p. 30 of 30

- a) Provide the location of the source of the reference to the \$12.0 million allocation to Centra.**

ANSWER:

When Manitoba Hydro acquired Centra in 1999, one of the stated objectives was to achieve cost savings of at least \$12 million per year. Centra departments and personnel were integrated into the Manitoba Hydro organization and operating budget targets were reduced to recognize the savings potential. Actions designed to achieve these savings were also taken within each affected department. The results of these actions were measured and reported periodically until Manitoba Hydro was satisfied that the integration was substantially completed and appropriate savings had been achieved.

At September 30th, 2001 when savings flowing directly from integration activities were last fully measured, it was determined that the annualized savings totaling approximately \$13 million had been realized. This amount and the methodology used to calculate it was reviewed extensively at the Status Update hearing held in 2002. As a result of this hearing, the PUB accepted the methods used to calculate savings, and endorsed the method of allocating costs between the utilities.

At the subsequent general rate hearing in 2003, Centra indicated that a total of \$15.3 million of integration-related savings had been incorporated into the consolidated operating cost forecast for 2003/04 of which \$9.9 million would serve to reduce Centra's operating costs

2013 04 16 Page 1 of 3

from what they otherwise would have been absent acquisition. In Order 118/03, the PUB provided that temporarily \$3 million of the savings embedded in Centra could be transferred to Manitoba Hydro and that this amount, along with the income generated from Centra in the range of \$14 to \$16 million annually plus the savings realized in Manitoba Hydro operations should be sufficient to offset the acquisition and integration costs in Manitoba Hydro.

In accordance with Order 118/03, Manitoba Hydro established a corporate allocation charge to Centra of \$15.1 million which was equivalent to the amount of net income Centra would have been allowed at acquisition plus the \$3 million synergy transfer.

At the 2005/06 & 2006/07 General Rate hearing held in 2005, Centra proposed to reduce the corporate allocation from \$15.1 million to \$12 million. This reduction was based upon a review and assessment of the total synergies that had been achieved and represented in each of the utilities which indicated that the \$3 million temporary synergy transfer that the PUB had previously allowed was no longer required.

As well, further discussions were held at this hearing with regards to the increasing difficulty there was in quantifying further synergy savings. This difficulty recognized that synergy savings represent the difference between the current costs and what the costs would otherwise have been absent acquisition and that assessing what costs would otherwise have been with any certainty becomes more difficult as time progresses from the point of acquisition.

In its Orders 103/05 and 135/05, the PUB approved the \$12 million corporate allocation and indicated that “there is no merit in pursuing the elusive issue of estimating realized synergistic benefits and projecting what would have been Centra’s operating costs if the former private ownership had continued in future applications”.

In Order 99/07, the PUB reaffirmed that:

“The Board continues to accept the annual Corporate Allocation of \$12 million, the premise that synergies have been sufficient to uphold the “no harm” principle and that, as now to be reviewed, an annual Net Income of \$3 million does not represent an unwarranted return on investment for MH.” (p. 114)

And in Order 128/09 the PUB noted that:

“Consistent with the position of the Board presented in prior Orders, the Board will continue to restrict MH’s return from Centra to \$15 million, on a weather-normalized basis, with \$12 million of that being paid to MH annually in the form of a Corporate Allocation and the other approximately \$3 million being in the form of annual Net Income to be retained within Centra.” (p. 95)

CAC/CENTRA I-9

Reference: Tab 5; p. 30 of 30

- b) Explain the rationale and/or Board Order which allows for this allocation to Centra for Manitoba Hydro's acquisition in 1999.**

ANSWER:

Please see Centra's response to CAC/Centra I-9(a).

CAC/CENTRA I-10

Reference: Board Order 128/09; p. 136 and 137 of 139; Directive No. 9

- a) Provide the status of the above Directive in the same format as found in Tab 15, Appendix 15.2.**

ANSWER:

In Order 128/09 Directive No. 9, the PUB directed:

Centra to file for the Board's approval, by its next GRA, a revised interest rate forecasting methodology for rate setting purposes incorporating changes recommended by CAC/MSOS' witness Mr. McCormick, as follows:

- a. The use of all forecasts based on comparable average period data basis;
- b. The use and alignment of current date forecasts, excluding stale dated and superseded forecasts;
- c. Utilization of forecasted long term interest rates which align with the period in which Centra intends on issuing new or refinancing existing long term debt;
- d. A process to retrospectively test the accuracy of forecasters to assess their inclusion in future forecasts;
- e. The use of only statistically independent forecasts; and
- f. A proposed process to update the forecast in advance of the hearing if warranted.

Status

Complete.

Background Information and Chronology

- 1) On September 16, 2009, in the midst of a significant economic crisis, and following a lengthy deliberation of the Corporation's interest rate forecasting methodology during the 2009/10 & 2010/11 Centra GRA, the PUB issued Order 128/09. This Order included Directive No. 9 regarding Centra's interest rate forecasting methodology.

As the interest rate forecasting for Centra and Manitoba Hydro follow the same methodology, during the fall the Corporation began to integrate the interest rate forecasting revisions into IFF09 (which was approved by the Corporation in November 2009, and filed with the PUB as Appendix 5.2 at the 2010/11 & 2011/12 Electric GRA).

- 2) On December 18, 2009 Centra provided the following status update to the PUB on Directive No. 9:

“Work has progressed on enhancing the interest rate forecasting methodology and Centra plans to file a report on this matter in advance of its next General Rate Application.”¹

Thereafter, building on the work that it had started with IFF09, the Corporation fully adopted the Directive No. 9 interest rate forecasting adjustments into IFF10 (which was approved by the Corporation in November 2010, and filed with the PUB as Appendix 76 at the 2010/11 & 2011/12 Electric GRA).

¹ As filed with the PUB on December 18, 2009 as part of the Centra 2010/11 Cost of Gas Application; Tab 9 - Confirmation of Interim Orders and Response to PUB Directives.

- 3) In its letter to the PUB dated December 10, 2010 regarding the status of PUB directives, found as attachment 1 to this response, Centra provided the following report to the PUB on Directive No. 9:

“Complete. The Corporation continues to review and enhance its forecasting methodology. Accordingly, the Corporation has made several refinements to its interest rate forecasting process since the conclusion of Centra’s 2009/10 and 2010/11 GRA in June 2009. The Corporation now undertakes an adjustment to third party forecast data to reference comparable average period data, interest rate forecasts are based upon statistically independent source forecasts, and current forecasts are used.”

- 4) During Manitoba Hydro's 2010/11 & 2011/12 Electric GRA, the Corporation's interest rate and finance expense forecasting methodology, including the subject matter of Directive No. 9, was extensively canvassed, including a description of its revised interest rate forecasting process filed in response to PUB/MH I – 46 (b).

In its Rebuttal Evidence filed December 31, 2010, Manitoba Hydro summarized its position regarding interest rate forecast adjustments:

“The Corporation continues to enhance its forecasting methodology. Accordingly, Manitoba Hydro has implemented methodological enhancements to its interest rate forecasting process since the receipt of Order 128/09. The Corporation now utilizes current date forecasts, interest rate forecasts are based upon statistically independent forecast inputs, and Manitoba Hydro undertakes an adjustment to third party forecast data to reference comparable time periods.” (p. 37)

The status of Directive No. 9 was also the subject of cross-examination during the oral hearing on January 7, 2011.² As indicated in the testimony, all of the interest rate forecasting adjustments described in Directive No. 9 (a, b, c and e) had been fully adopted. In response to Directive No. 9 (d) on the retrospective testing of forecasters, Manitoba Hydro testified:

“It’s of interest and importance for us to determine -- to see if there’s one forecaster that might be better than another but how do you assess that? For instance, if you have a bear forecaster in a bull market, or vice versa, it’s helpful actually to have some of that because if you look over a short period of time, you may prune someone out by virtue of a short experience period when history may show them to be -- in the future to have been correct, although in the short period of time they may be an outlier.” (p. 1105)

And further, on page 1107 of the transcript Manitoba Hydro testified that:

“we still see the consensus perspective as being beneficial, particularly in a period of volatility, to know what is the range out there of professional, credible opinion. And right now we’re, I think, seeing a pretty broad range of opinion. And so, for us, in that volatile period, as a business and risk mitigation matter, it’s important for us to have that broad opinion so that we can better shape our -- our viewpoints in terms of mitigating the risk that still may be out there.”

During this GRA, Manitoba Hydro also indicated that the Corporation had taken the initiative to implement additional IFF modeling enhancements for the forecasting of

² See transcript pages 1099 – 1108 from the Manitoba Hydro 2010/11 & 2011/12 GRA; January 7, 2011; (see attachment 2 to this response).

interest expense (commencing with IFF10); for example to have 20% of forecasted new debt issuance be floating rate debt (the mid-point of the Corporation's 15-25% targeted floating rate debt range).

- 5) On January 21, 2011 Centra provided the PUB with a status update on outstanding Centra directives as part of the Centra 2011/12 Cost of Gas Application. As the Corporation had already reported its response to Directive No. 9 as complete in earlier reporting to the PUB, no further update was provided regarding this directive.
- 6) On January 17, 2012 the PUB issued Order 5/12 pertaining to the Manitoba Hydro 2010/11 & 2011/12 GRA. Although the matter of retrospective testing of interest rate forecasters was canvassed during the proceeding, the PUB did not recommend or direct the Corporation to undertake retrospective testing of its forecasters. As such, and further to the Corporation's previous reporting of a completed status of Directive No. 9, the Corporation considered that Directive No. 9 had been settled.
- 7) On June 15, 2012, the Corporation filed its 2012/13 & 2013/14 Electric GRA, which included IFF11 in Appendix 4.2 (IFF12 was also subsequently filed as part of the evidentiary portion of the proceedings which concluded on February 28, 2013). With these IFFs, the Corporation had continued with its established interest forecasting methodology.
- 8) On February 22, 2013, Centra filed its 2013/14 General Rate Application. As Centra had already reported its response to Order 128/09 Directive No. 9 as complete in

earlier reporting to the PUB, no further update was provided regarding this directive in Appendix 15.2 of the Application.



PO Box 815 • Winnipeg Manitoba Canada • R3C 2P4
Street Location for DELIVERY: 22nd floor 360 Portage Ave
Telephone / N° de téléphone : (204) 360-3468 • Fax / N° de télécopieur : (204) 360-6147
mboyd@hydro.mb.ca

December 10, 2010

PUBLIC UTILITIES BOARD OF MANITOBA
400-330 Portage Avenue
Winnipeg, Manitoba
R3C 0C4

ATTENTION: Mr. G. Gaudreau, Executive Director

Dear Mr. Gaudreau:

**RE: Centra Gas Manitoba Inc. (“Centra”)
Status of the Directives Contained in Orders 128/09, 55/10 and 93/10**

Centra acknowledges the receipt of a letter from The Public Utilities Board of Manitoba (“PUB”) dated November 1, 2010, in which the PUB requested an update as to the status of various Directives and Recommendations to Centra arising from Board Orders 128/09, 55/10 and 93/10.

Centra has reviewed the list of Directives and Recommendations and provides its update on the status on each, in a report attached to this letter.

If you have any questions with respect to this submission or require paper copies, please contact the writer at 360-3468, or Greg Barnlund at 360-5243.

Yours truly,
MANITOBA HYDRO LAW DEPARTMENT

Per:

A handwritten signature in cursive script that reads 'M Boyd'.

Marla D. Boyd
Barrister and Solicitor
Att.

**STATUS OF PUBLIC UTILITIES BOARD DIRECTIVES AND RECOMMENDATIONS
TO CENTRA GAS MANITOBA INC.**

December 10, 2010

Order #	Order 128/09 - Directives	Status	Comment
128/09 5	The Board directs Centra to file a semi-annual status update report on the FRP to begin with a report by December 31, 2009.	Ongoing	Semi-annual reports for the periods ending September 30, 2009 and March 31, 2010 were filed with the PUB on February 19, 2010 and July 8, 2010, respectively. The semi-annual report for the period ending September 30, 2010 is expected to be filed with the PUB on December 10, 2010.
128/09 6	Centra to develop and file with the Board a revised marketing and promotional plan for the LIEEP and FRP, designed to educate and encourage lower income consumers to participate.	Complete	A response was filed with the PUB on February 3, 2010.
128/09 7	Centra is to undertake and file with the Board by December 31, 2009 a demographic study that will assist it in reaching the target demographic for its lower income programs.	Complete	A response was filed with the PUB on May 28, 2010.
128/09 8	The Board confirms that Centra is to continue pricing its Fixed Rate Offerings according to the pricing formula approved in Order 156/08, excepting that the Program Cost Rate for all new offerings from this date shall be \$0.0262/m3.	Complete	Centra is in compliance with this Directive.
128/09 9	Centra to file for the Board's approval, by its next GRA, a revised interest rate forecasting methodology for rate setting purposes incorporating changes recommended by CAC/MSOS' witness Mr. McCormick, as follows: a. The use of all forecasts based on comparable average period data basis; b. The use and alignment of current date forecasts, excluding stale dated and superseded forecasts; c. Utilization of forecasted long term interest rates which align with the period in which Centra intends on issuing new or refinancing existing long term debt; d. A process to retrospectively test the accuracy of forecasters to assess their inclusion in future forecasts; e. The use of only statistically independent forecasts; and f. A proposed process to update the forecasts in advance of the hearing if warranted.	Complete	The Corporation continues to review and enhance its forecasting methodology. Accordingly, the Corporation has made several refinements to its interest rate forecasting process since the conclusion of Centra's 2009/10 and 2010/11 GRA in June 2009. The Corporation now undertakes an adjustment to third party forecast data to reference comparable average period data, interest rate forecasts are based upon statistically independent source forecasts, and current forecasts are used.
128/09 10	Centra to perform a true-up and adjustment on a quarterly basis to ensure there has been no over- or under-recovery of short term finance costs charged to Centra from MH.	Outstanding	Interest rates for short term intercompany advances to Centra are based on the associated cost of financing by Manitoba Hydro. Manitoba Hydro will respond further to this Directive by March 31, 2011.

**STATUS OF PUBLIC UTILITIES BOARD DIRECTIVES AND RECOMMENDATIONS
TO CENTRA GAS MANITOBA INC.**

Order #	Order 128/09 - Directives	Status	Comment
128/09 11	Centra to file on or before March 1, 2010 a terms of reference for a study to review the Integrated Cost Allocation Methodology. The study is to be completed in sufficient time to be incorporated within the corporation's next MH or Centra GRA.	Outstanding	As noted in a letter to the PUB dated September 30, 2010, the implementation of this Directive is impacted by the implementation of International Financial Reporting Standards ("IFRS"). Given the industry wide delays in confirming the nature of the changes required under IFRS, the response to this Directive will be delayed until post-IFRS implementation.
128/09 13	Centra to file a business plan with respect to the AMI project with the Board for its approval by January 15, 2010, and prior to proceeding beyond the pilot project expenditures. The business plan should include an assessment of the economic and noneconomic benefits of AMI, including safety-related matters, for both the meter reader and for Centra's customers.	Outstanding	A Status Report on AMI was filed with the PUB on February 2, 2010. A business plan will be filed with the PUB prior to proceeding with AMI implementation.
128/09 21	Centra is to prepare and file with the Board a discussion paper by December 1, 2010 advising whether Centra or MH should direct or mandate a specific energy source, such as natural gas, be made available to consumers, and whether Centra and MH should publish recommendations for the most economic and environmental fuel source.	Outstanding	A report has been prepared and is currently under review by senior management.
128/09 26	If and when Centra becomes aware of any material change in its financial circumstances, including but not limited to significant changes to accounting, gas supply, or operations, Centra must inform the Board of the change and the resulting impact or anticipated impact on Centra's financial position.	Complete	Centra will comply with this Directive should a material change in financial circumstance occur.
Order #	Order 55/10 - Directives	Status	Comment
55/10 1	The Board directs Centra to inform ConocoPhillips of the Board's intention to release the Primary Gas supply contract to the Consumers' Association of Canada and Manitoba Society of Seniors (CAC/MSOS), interveners in the recent proceeding, including their counsel and external consultant. The disclosure would take place in the Board's office, and the Board will require the intervener and its counsel and advisor to sign nondisclosure agreements.	Ongoing	On October 15, 2010, CAC/MSOS counsel notified Centra of its concerns with the form of the Non-Disclosure and Confidentiality Agreement provided by ConocoPhillips and Centra. ConocoPhillips was advised of the concerns and a modified form of the Non-Disclosure and Confidentiality Agreement was provided to CAC/MSOS counsel on November 8, 2010. Centra is awaiting a response from CAC/MSOS counsel.
55/10 2	Centra is to prepare and file by November 1, 2010 a timeline of the process for replacing its American Storage and Transportation assets, and that timeline is to include milestones.	Complete	A response was filed with the PUB on October 28, 2010.

**STATUS OF PUBLIC UTILITIES BOARD DIRECTIVES AND RECOMMENDATIONS
TO CENTRA GAS MANITOBA INC.**

Order #	Order 55/10 - Directives	Status	Comment
55/10 3	Centra is to file with the Board a discussion paper reviewing and addressing the issue of the possible future replacement of Centra's current American Storage and Transportation assets, prior to Centra holding a technical conference on the topic.	Outstanding	A discussion paper is expected to be provided to the PUB and interested parties in 2011 as per the timelines filed with the PUB on October 28, 2010.
55/10 4	Centra is to consult with its higher volume customers and alert them to opportunities to lock in gas supply prices, either through Centra or marketer fixed term contracts, or by self-directed futures contract acquisition, and provide the Board with the results of these consultations.	Outstanding	The minutes of the Customer Advisory Group Meeting were provided to the PUB on September 30, 2010. The Corporation is currently undertaking market research with large volume customers. Once this work is complete and the results have been analyzed, Centra will update the PUB on its findings.
55/10 5	Centra is to execute its Affordable Energy Program Marketing Plan, and report back to the Board by December 31, 2010 with an update on the Utility's marketing efforts.	Outstanding	Program delivery is currently underway.
55/10 6	Centra is to file quarterly updates on the participation rate and the order book for the Lower Income Energy Efficiency Program (LIEEP) that specifically details the number of customers participating in each facet of the LIEEP – low-cost measures, insulation, and furnace replacements, with commentary. This information is to supplement the more detailed semi-annual Furnace Replacement Program Status report (directed to be filed with the Board by Order 128/09). If there are changes in the number of contractors used by Centra or with Centra's marketing efforts of LIEEP, these changes should be included in this report to the Board.	Ongoing	The reporting format has been established and the report for the first quarter of FY 2010 was filed October 14, 2010. The report on the second quarter of FY 2010 is expected to be filed on December 10, 2010.
55/10 7	Centra is to consult with stakeholders, including the Board, prior to amending its current Furnace Replacement Program.	Outstanding	Consultation complete. Centra to advise the PUB of its proposed changes by December 31, 2010.
55/10 8	Centra is to continue to offer one, three, and five year Fixed Rate Primary Gas Service (FRPGS) offerings to residential and commercial consumers on a regular basis, and consider offering FRPGS to its larger customers (that consideration is to include consultation with larger customers).	Complete	Centra is providing new FRPGS offerings on a quarterly basis, to follow the implementation of Primary Gas Rate changes at each Gas Year quarter.
55/10 9	Centra is to review its load forecasting methodology for all customer classes and make any necessary changes it concludes is required to reduce or avoid any systemic bias that may now be contributing to either under- or over-estimating demand requirements prior to filing its next General Rate Application or Cost of Gas Application.	Complete	Centra expects to file evidence regarding its load forecasting methodology in conjunction with its next General Rate Application or Cost of Gas Application.

**STATUS OF PUBLIC UTILITIES BOARD DIRECTIVES AND RECOMMENDATIONS
TO CENTRA GAS MANITOBA INC.**

Order #	Order 55/10 - Directives	Status	Comment
55/10	10	Outstanding	Centra is to provide an analysis comparing Centra's Primary gas or commodity rates with other Canadian utilities, and explain reasons for the differences. This comparison should be filed with the next General Rate Application or Cost of Gas Application.
55/10	11	Outstanding	Centra is to file its next General Rate Application utilizing a revenue to cost ratio of unity in its Cost Allocation Model.
Order #	Order 93/10 - Directives	Status	Comment
93/10	1	Complete	Centra's Application to Review and Vary Order 170/09, and to allow Centra to hedge 50% its Primary Gas system supply volumes, be and is hereby denied.
93/10	2	Outstanding	Centra report to the Board within 90 days of the date of this Order, with new proposals for alternative business models / options to allow for the continuous availability of FRPGS options for gas customers.
93/10	3	Outstanding	Centra report to the Board as to options for hedging its FRPGS offerings, in the event that current counterparties discontinue to provide hedges and new counterparties cannot be involved (Board staff and Advisors remain available for discussion with Centra representatives to explore options).
93/10	4	Complete	Centra immediately inform the Board if it is unable to hedge its FRPGS offerings.
Order #	Order 128/09 - Recommendations	Status	Comment
128/09	1	Complete	Centra continue to be cognizant of the costs for DSM that are built into rates for the various rate classes, and ensure that the incentive for Power Smart programs are properly allocated to the customer classes that are receiving them.
128/09	2	Complete	Centra favour expenditures from the AEF that are directed or at least prioritized towards non-government owned properties.

**STATUS OF PUBLIC UTILITIES BOARD DIRECTIVES AND RECOMMENDATIONS
TO CENTRA GAS MANITOBA INC.**

Order	#	Order 128/09 - Recommendations	Status	Comment
128/09	3	Centra prepare and release more Fixed Rate Offerings, with adequate volumes so to disappoint as low a number of prospective customers as possible, as soon as possible to provide choice for consumers when purchasing Primary Gas, and that Centra aggressively advertise the availability of its offerings.	Complete	Centra is providing new FRPGS offerings on a quarterly basis, to follow the implementation of Primary Gas Rate changes at each Gas Year quarter.
128/09	4	MH review its current operational practices to ensure that Centra is provided sufficient short-term debt to meet its seasonal operational needs.	Complete	Manitoba Hydro, as the parent corporation to Centra, will ensure that Centra is provided with sufficient financing to meet its operating and capital needs.
128/09	5	Regarding discussions Centra has had with counterparties who expressed interest in managing Centra's supply, storage, and transportation assets, Centra provide detailed information, in confidence if necessary, on any of these counterparties over the past five years.	Complete	Centra views that this matter has been superseded by the requirement to replace its expiring American gas transportation and storage arrangements. Centra is currently engaged in a comprehensive review of reliable and cost-effective storage and transportation alternatives and expects to report its findings as outlined in the timeline provided in the response to Directive 2 of Order 55/10.
128/09	6	Centra improve the marketing and reach of its FRP, but failing any demonstrable improvement in the take-up and participation in the FRP, Centra and MH should consider the formation of a separate energy efficiency agency that would be dedicated to the delivery of Centra's DSM and LIEEP programming.	Ongoing	Centra continues to place a priority on marketing and promoting the FRP. Establishment of a separate DSM entity is not seen as a solution to customer participation and uptake issues.

Page 1096

1 course, recognizing that there -- there will also be
2 offsetting revenues.
3 MR. BOB PETERS: That's certainly the
4 plan.
5 MR. VINCE WARDEN: That is the plan, yes.
6 MR. BOB PETERS: Yeah. Okay. And some
7 of that revenue will come from export customers?
8 MR. VINCE WARDEN: Well, the vast
9 majority of it will come from export customers in the
10 early years of those generating stations going into
11 service.
12 MR. BOB PETERS: And some will probably
13 have to come from Manitoba consumers?
14 MR. VINCE WARDEN: Well, as the load
15 grows in Manitoba, it's appropriate that some of the
16 revenue should come from Manitoba consumers. But the
17 rates would be lower than they would otherwise be absent
18 those stations.
19 MR. BOB PETERS: We'll talk next week on
20 some of those specifics, I think, Mr. Warden.
21 But the total interest expense, it
22 appears, is increasing -- from 2010 to 2029, it's go --
23 it's increasing two and a half (2 1/2) times?
24 MR. VINCE WARDEN: Yes.
25 MR. BOB PETERS: And that will go into

Page 1097

1 consumers' rates in approximately 2029?
2 MR. VINCE WARDEN: Well, again, to the
3 extent that it's not recouped through export sales. In
4 the -- in the cost of service study that we will have in
5 place at that time, there'll be an allocation of export
6 revenues to offset those -- those costs, so it -- the
7 extent that it makes its way into rates will be depending
8 on how those costs and revenues are allocated.
9
10 (BRIEF PAUSE)
11
12 MR. BOB PETERS: I'm not sure if we're
13 into semantics or not, Mr. Warden, but the suggestion
14 that a cost of service study is going to allocate export
15 revenues to finance expense, that's now how it's -- it's
16 done. There's no direct allocation to the expense items.
17 MR. VINCE WARDEN: Well, no, but the
18 export revenues are allocated -- allocated to offset all
19 costs incurred, not just the finance expense.
20 MR. BOB PETERS: When the Corporation
21 built Limestone, what was the debt-equity ratio back in
22 1992? And I'm just flipping to it as we speak, and I
23 have that as PUB Manitoba Hydro First Round 69B, page 129
24 of the book of documents, in Tab 20.
25 MR. VINCE WARDEN: Yeah, it was -- as the

Page 1098

1 schedule indicates, it was ninety-four-o-six (9406).
2 MR. BOB PETERS: Can you tell the Board
3 why the balance sheet is required to be so much stronger
4 now for generation and transmission in the next fifteen
5 (15) years than it was back in 1992?
6 MR. VINCE WARDEN: I think there's a
7 whole different attitude towards debt and the financial -
8 - financial strength of the Utility than there was back
9 in 1992.
10 However, there -- there was an expectation
11 through our financial forecast that with -- with the in
12 service of -- placing limestone in service there would be
13 sufficient revenues generated such that the debt-equity
14 ratio at that time wasn't a huge concern.
15 Similar to where we are today, 75:25 is a
16 much stronger debt-equity ratio, but we still, and the
17 credit rating agency, still look to the future to see
18 whether that will be going up or down, and the direction
19 we -- whether we're going to be as strong as we are today
20 in the future.
21 So -- and that's sort of the -- some of
22 the logic that went into accepting a debt-equity ratio as
23 -- as high as it was back in 1992.
24 There was -- there was a plan to improve
25 it, recognizing that there wasn't an urgency, and it

Page 1099

1 should be done over a number of years, and that's the
2 plan that was put in place.
3
4 (BRIEF PAUSE)
5
6 MR. BOB PETERS: I want to turn to
7 interest rate forecast methodology, and in PUB Order 128
8 of '09 that, Mr. Wiens will recall, was on the gas side
9 of the business. And Centra's interest rate forecasting
10 methodology was reviewed.
11 Do you recall that, Mr. Wiens?
12 MR. ROBIN WIENS: I do recall that, yes.
13 MR. BOB PETERS: And as a result of Board
14 Order 128 of '09, extracts of which are found at Tab 21
15 of the book of documents, the Board's directives on that
16 matter were provided, sir?
17 MR. ROBIN WIENS: That's correct.
18 MR. BOB PETERS: When we look at these
19 directives, Mr. Schulz, and I'm specifically looking at
20 directive number 9 found on page 136 of a total of 139
21 pages -- I'm sorry, it's on -- on the Board Order page
22 136, it's page 133 of the book of documents.
23 Can you tell the Board whether Manitoba
24 Hydro's forecast of future interest rates incorporated
25 all of the Board's directives?

Page 1100

1 MR. MANFRED SCHULZ: With respect to
2 Directive 9A, are you pref -- are you referring to all of
3 nine (9)?
4 MR. BOB PETERS: Well, let's -- let's run
5 through them. Let's -- 9A, did Manitoba Hydro in
6 preparing this case use the forecast based on a
7 comparative average period data basis?
8 MR. MANFRED SCHULZ: So IFF-09 adjusted
9 all of the forecaster information to be in accordance
10 with 9A. So to the effect that we had end of period
11 data, we made them equivalent to average period data by
12 taking the average between the two (2) of them. For IFF-
13 10, of course, it would be completely in compliance with
14 that, as well.
15 MR. BOB PETERS: And then in terms of 9B,
16 the use and alignment of current date forecasts excluding
17 what they've called stale data and superceded forecasts?
18 MR. MANFRED SCHULZ: Manitoba Hydro uses
19 current dated forecasts for all of its forecasts.
20 MR. BOB PETERS: Was that used in IFF-09
21 as well?
22 MR. MANFRED SCHULZ: In IFF-09, it's my
23 understanding that the only ones that were not updated
24 were the ones for the forecast for which we were no
25 longer going to be using.

Page 1101

1 So for instance, BC Finance, Fed Finance,
2 and those, but for all of the ones that were short-term
3 that were in -- part of the Application all the way out
4 to 2012/'13, I believe, we had the -- the entire IFF-09
5 refreshed for that.
6 I recall that the Board directive, I
7 believe, came out in September of 2009, and so that in
8 order to make the IFF, which came out shortly thereafter,
9 make it current, we made those adjustments as quickly
10 possible for the application years; for IFF-10,
11 completely and totally using current dated information.
12 MR. BOB PETERS: I just wasn't quite
13 clear on the reasons that some of the forecasts weren't
14 aligned or had the stale dated or superceded data removed
15 in IFF-09. I didn't understand your explanation.
16 MR. MANFRED SCHULZ: So for IFF-09 for
17 the -- the years of the application, so my understanding
18 is to the end of 2012/'13, all of the -- the years that -
19 - all of the forecasters that were pertaining to the
20 period of time; that would be the BMOs, the RBCs, all of
21 those, all of those we took the current year data. We
22 still had some residual pieces on the -- the forecasters
23 that were annualized data for the longer dated periods of
24 time.
25 Those we kept in place. They only provide

Page 1102

1 annual updates in forecast, unlike some of the -- the
2 financial institutions which provide more frequent
3 updates. And so for those portions of it, considered to
4 be a bit of pragmatics; for the longer dated piece of it,
5 we -- we kept those in place. However, for IFF-09 we are
6 now totally and completely in accordance with this.
7 MR. BOB PETERS: You meant IFF-10.
8 MR. MANFRED SCHULZ: IFF-10, sorry.
9 MR. BOB PETERS: Yeah. Your -- your last
10 reference was to IFF -- meant to be to IFF-10.
11 MR. MANFRED SCHULZ: Correct.
12 MR. BOB PETERS: And then, in terms of
13 the directive 9C, the utilization of forecasted long-term
14 interest rates which align with the period in which
15 Centra, in this case, Manitoba Hydro, intends on issuing
16 new or refinancing existing long-term debt. Did you --
17 MR. MANFRED SCHULZ: Well, we understood
18 this to be that in the context of, for instance, Manitoba
19 Hydro, we issue debt on -- you know, within a fiscal year
20 period, so all of the forecasts that we do are now
21 aligned. So that -- so if we're anticipating to take out
22 a piece of debt next year, we do forecast that or align
23 to that period of time. So, yes, we are in alignment
24 with that.
25

Page 1103

1 (BRIEF PAUSE)
2
3 MR. BOB PETERS: Just to be clear on that
4 last point, Mr. Schulz, the forecast for the interest
5 rate would correspond with the term of the debt.
6 MR. MANFRED SCHULZ: Our Canadian long-
7 term debt forecasts are based on a term of ten (10) plus
8 years, which is based on the average of tens and
9 thirties. So that is what we do for the forecasting for
10 our long-term debt.
11 The issuance of that debt -- so if we're
12 planning on taking out debt this year or next year, the
13 forecast that we gather for the period, so, for instance,
14 next year, would be based on the forecaster forecast for
15 that period, and so whatever the rate would be is what we
16 already have forecasted and put in place for that year.
17 MR. BOB PETERS: All right. And turning
18 to directive 9D, a process to retrospectively test the
19 accuracy of forecasters to assess their inclusion in
20 future forecasts. Is that something that Manitoba Hydro
21 has done in IFF-09?
22 MR. MANFRED SCHULZ: Well, this is one
23 that we have put a fair amount of significant thought to
24 and have had a fair amount of internal debate on this,
25 and as recently as just in the last number of weeks we

Page 1104

1 were reflecting even more deeply on this in terms of how
2 best to forecast and -- and how best to assess the
3 accuracy of these forecasters.
4 For instance, when you take the
5 perspective of virtually no one saw the economic downturn
6 coming. So if I was to look at the forecasters and did
7 an evaluation of what they had forecast in 2007 and look
8 at it from the perspective of 2009 with the occurrence of
9 the foreca -- the downturn happening in-between, since
10 none of them would have forecasted it, what I should --
11 or should I prune them all by virtue of the fact that
12 none of them had accurately seen that?
13 It's a difficult thing to undertake. For
14 us, when we're looking at this, and we're still
15 deliberating seriously on this issue, is to say since the
16 recovery period that we're currently in we don't have
17 enough data points, I don't think yet to make an
18 ascertainment to say that one (1) person or one (1)
19 forecaster might be better than the others, such that we
20 would eliminate one or the other.
21 So it's still something -- we're working
22 with our economic analysis folks where we're still
23 looking to see what would be the best path forward on
24 this, so it's something that we're certainly taking
25 seriously but at this point in time we haven't done the

Page 1105

1 ascertainment to determine which forecaster might
2 specifically be better than the other.
3 MR. BOB PETERS: So I take your answer to
4 say that you haven't complied with the Board's Order
5 128/09 in your IFF-09 or IFF-10, but you are still
6 looking at that issue. Would that be fair?
7 MR. MANFRED SCHULZ: I think, just
8 conceptually, it's of interest and importance for us to
9 determine -- to see if there's one forecaster that might
10 be better than another but how do you pragmatically
11 assess that? For instance, if you have a bear forecaster
12 in a bull market, or vice versa, it's helpful actually to
13 have some of that because if you look over a short period
14 of time, you may prune someone out by virtue of a short
15 experience period when history may show them to be -- in
16 the future to have been correct, although in the short
17 period of time they may be an outlier.
18 So based on the short period of time since
19 the apex of the economic downturn, it's our view that we
20 would need a little bit more time to sort of sort some of
21 this thing through.
22 MR. BOB PETERS: And how much more time
23 do you think that would take to get an accurate data set?
24 MR. MANFRED SCHULZ: Again, I think
25 that's a bit uncertain. I mean, I recall it was

Page 1106

1 yesterday or two (2) days ago, at the end of Wednesday, I
2 believe, when you asked the question about credit spreads
3 on -- on the long-term debt, and I think we -- as part of
4 our rebuttal, we filed the short-term credit spreads.
5 You asked the question in terms of long-term credit
6 spreads, but what's interesting, if you look at any of
7 those charts for short-term or long-term credit spreads,
8 is that you still see tremendous volatility in the credit
9 spreads, you still see tremendous volatility in the
10 benchmark rates.
11 How much more time do we need? I still
12 see lots of volatility, and so I think you may need a bit
13 more time. I wouldn't be able to quantify that by
14 saying, We'll have this thing done in one (1) month's
15 time or two (2) months' time. It's something that we're
16 working towards certainly and taking very seriously.
17 MR. BOB PETERS: It strikes me, Mr.
18 Schulz, that if a group of forecasters all miss the mark
19 that doesn't by -- in and of itself, result in any of
20 them getting pruned off because they've all missed the
21 mark by a similar amount, so to speak. Wouldn't that be
22 how the Corporation sees it?
23 MR. MANFRED SCHULZ: I guess it's still
24 uncertain. I mean, in conversations, for instance, that
25 I've had with economic forecasters I've posed that very

Page 1107

1 same question to them: How do you provide your own
2 ascertainment of your own accuracy? A forecast is a
3 forecast, and I think it's still very uncertain from our
4 perspective.
5 When we're looking at it, we still see the
6 consensus perspective as being extremely beneficial,
7 particularly in a period of volatility, to know what is
8 the range out there of professional, credible opinion.
9 And right now we're, I think, seeing a pretty broad range
10 of opinion. And so, for us, in that volatile period, as
11 a business and risk mitigation matter, it's important for
12 us to have that broad opinion so that we can better shape
13 our -- our viewpoints in terms of mitigating the risk
14 that still may out there -- may be out there.
15 MR. BOB PETERS: Mr. Schulz, did Manitoba
16 Hydro use only statistically independent forecasts in the
17 IFF-09?
18 MR. MANFRED SCHULZ: Again, with respect
19 to the same answer, really, in terms of the information
20 with respect to BC Hydro, Fed Finance, those kind of
21 things, the -- the application of the Board -- or the
22 Board Order came out in September, so for the years that
23 we had for IFF to 2012/'13, all of those statistically
24 independent. So we're in compliance with that for IFF-09
25 up to 2012/'13, and for IFF-10 we are completely in

Page 1108

1 compliance with this.
2
3 (BRIEF PAUSE)
4
5 MR. BOB PETERS: At Tab 22 of the book of
6 documents is a question posed to the Corporation that
7 what would be the test year impacts if Hydro adopted the
8 interest rate forecasting methodology from one-twenty-
9 eight-o-nine (12809) and in response to a PUB First Round
10 question 35B, Hydro provided some information, and --
11 you're familiar with that information, Mr. Schulz?
12 MR. MANFRED SCHULZ: Yes.
13 MR. BOB PETERS: And for the 2011 year,
14 when I go down to the bottom of the page, does the answer
15 suggest that the total interest on short-term and long-
16 term debt would have been about \$7 million lower if all
17 of the directives from Board Order 120 -- 129 had been
18 followed?
19 MR. MANFRED SCHULZ: Had the Board
20 prescribed interest rates been placed into effect for
21 Manitoba Hydro for those periods of time?
22 That would have had an impact because they
23 were generally lower, they would have had a reduction in
24 our total interest in short and long-term debt. In this
25 case, in the 2010/'11 year, by approximately \$7 million.

Page 1109

1 MR. BOB PETERS: And can you explain to
2 the Board why though when the bottom line comes around,
3 total finance expense would have actually gone up by \$3.6
4 million?
5 MR. MANFRED SCHULZ: It seems
6 counterintuitive. There's the normal counterbalancing
7 impact associated with capitalized interest, and you see
8 that's where the -- the line item that is pertaining to
9 it.
10 A portion of this, subject to check, I
11 believe, also has to do with the methodology used for
12 Wuskwatim in terms of the timing of these impacts, and so
13 the timing for Wuskwatim comes into play in the year in
14 question whereas normally our capitalized interest for
15 the rest of it balances for one (1) year forward.
16 And so in the one (1) year in question in
17 2010/'11, there you see it all coming to -- to head in
18 one (1) immediate year, Wuskwatim shortly -- going into
19 service shortly thereafter.
20 More typical might be the experience that
21 you would be seeing reflected in the 2011/'12 year once
22 the -- the anomalies, or the sort of the peculiarities of
23 the Wuskwatim capitalization methodology is flowed
24 through.
25 MR. BOB PETERS: Not to get too deep in

Page 1110

1 that, but was there anything done differently on
2 Wuskwatim that's done on your other capitalization
3 projects?
4 MR. MANFRED SCHULZ: Again subject to
5 check, but it's my understanding that for Wuskwatim it's
6 the interest incurred in the year -- it's capitalized in
7 that year, whereas for interest capitalization there is a
8 one (1) year time lag.
9 So the interest capitalization rate that
10 we put into play for IFF -- the interest capitalization
11 rates that are in one (1) year actually flow through --
12 through the system in the subsequent year.
13 MR. BOB PETERS: Would you expect then
14 that the 2012 forecast year would be the typical results
15 going forward in terms of interest rate forecast
16 methodology?
17 MR. MANFRED SCHULZ: Yes, that's correct.
18
19 (BRIEF PAUSE)
20
21 MR. BOB PETERS: Mr. Schulz -- oh, I'm
22 sorry.
23
24 (BRIEF PAUSE)
25

Page 1111

1 MR. BOB PETERS: Mr. Schulz, the answer
2 you just gave on page 146 at Tab 22 of the book of
3 documents related to IFF-09, and you're running through
4 the -- the different interest rates -- finance rates,
5 correct?
6 MR. MANFRED SCHULZ: Sorry, can you just
7 rephrase the question?
8 MR. BOB PETERS: Sure. When IFF --
9 sorry, when PUB First Round 35B was answered, that was
10 based on IFF-09 information.
11 MR. MANFRED SCHULZ: Correct.
12 MR. BOB PETERS: Can you conceptually
13 indicate to the Board how would your answers change if
14 you utilized IFF-10 for the -- for the two (2) test
15 years.
16 MR. MANFRED SCHULZ: And flowed through
17 the Board-ordered rates through IFF-10?
18 MR. BOB PETERS: Yes, that's what I was
19 trying to get at. Can you conceptually indicate whether
20 the results would be comparable, greater, less?
21 MR. MANFRED SCHULZ: Subject to check
22 because the interest rates would be slightly different
23 but conceptually would be the same for the same period of
24 time.
25

CAC/CENTRA I-11

Reference: PUB Board Order 128/09; page 137 of 139; Directive No. 10; Appendix 15.2, p. 1 of 5

- a) **Provide the details of the true-up and adjustments on a quarterly basis as required in Board Directive No. 10.**

ANSWER:

On September 16, 2009 the PUB issued Board Order 128/09 Directive No. 10 directing:

“Centra to perform a true-up and adjustment on a quarterly basis to ensure there has been no over- or under-recovery of short-term finance costs charged to Centra from Manitoba Hydro.”

Status

The quarterly true-ups have been implemented, commencing April 1, 2009 and up to the most recent quarter ending March 31, 2013. The summary of the true-up amounts are as follows:

(\$000s)	2009/10	2010/11	2011/12	2012/13
Q1: April 1 - June 30	(37.45)	4.25	0.44	1.61
Q2: July 1 - September	(1.14)	(18.40)	(0.17)	0.41
Q3: October 1 – December 31	(21.77)	(35.41)	(0.30)	(0.07)
Q4: January 1 – March 31	0.78	(15.25)	(0.50)	-
	(59.58)	(64.81)	(0.53)	1.95

During the past two fiscal years, the cumulative true-ups have increased Centra’s finance expense by \$1,425 (\$1,950 - \$525).

Comment

In order to support Centra's operations and capital programs, Manitoba Hydro provides cash advances as needed and on a cost recovery basis. Interest rates for intercompany short term advances to Centra are based on the approximate associated cost of short term Canadian dollar financing for Manitoba Hydro.

From the time of Manitoba Hydro's acquisition of Centra in 1999 through to March 31, 2011 the intercompany short term advances to Centra utilized the 1 month Bloomberg banker's acceptance rates (Bloomberg index CDOR01). A meaningful over or under recovery of short term finance costs charged to Centra could occur if Manitoba Hydro's actual short term borrowing rates varied significantly from the CDOR01 rates.

Commencing April 1, 2009 a true-up calculation has been performed to adjust for rate variances from the index short term interest rate. The true-up methodology for Centra's short term debt interest costs utilizes Manitoba Hydro's actual short term debt interest rate where applicable. When Centra's short term debt balances exceeds Manitoba Hydro's short term debt balances, the weighted average index rate is utilized to calculate the adjusted interest cost.

In light of the economic downturn and with the aim of reducing the rate variance, the Corporation took the initiative to determine if another readily available short term interest rate would provide a closer alignment with Manitoba Hydro's short term borrowing experience. Based on analysis utilizing data from April 1, 2004 to April 25, 2011 both the 1 month Bloomberg bankers' acceptance rate (CDOR01) and the Canadian 3 month T-Bill rate (C1033M) provided an excellent approximation of Manitoba Hydro short term debt rate prior to the financial crisis. However, since December 2007, statistical correlations and

variances indicated that Manitoba Hydro's actual borrowing rates were more closely aligned with the 3 month Canadian T-Bill rate (C1033M) than with the 1 month Bloomberg banker's acceptance rate (CDOR03).

The 3 month Canadian T-Bill rate:

- 1) has an excellent alignment with Manitoba Hydro's actual short term interest rate experience;
- 2) is a readily available measure for short term interest rates; and
- 3) is a standard benchmark rate utilized by interest rate forecasters.

Therefore, effective April 1, 2011 the 3 month Canadian T-Bill rate (C1033M) was utilized for Centra's intercompany short term interest rate. With the adoption of this enhancement, the true-up amounts have decreased such that the amount of the variance is now negligible (averaging less than \$200 per quarter over the past two fiscal years) and ought not to be required in the future.

CAC/CENTRA I-12

Reference: Tab 4, Integrated Financial Forecast & Economic Outlook, page 2 of 7, lines 18 to 21 and the table on page 3 of 7.

Appendix 4.1 Economic Outlook, Spring 2012, EO12-1.

The Economic Outlook, 2011-32 filed as Appendix 4.1 of the 2012/13 & 2013/14 General Rate Application for Manitoba Hydro [“MH”].

PUB/MH I-28 (c), from the 2012/13 & 2013/14 Hydro GRA

Preamble: The Table in Tab 4, Section 4.1 Economic Outlook on page 3 of 7 indicates a forecast short term interest rate of 2% for 2012/13 and a forecast long term interest rate of 4.15%, showing a 2.15% forecast interest saving to consumers for each dollar of incremental short term or floating rate debt.

The Economic Outlook forecasts a 2012/13 “90 day T-bill rate” of 1.00% and a “Cdn LT Bond Rate 10 yr+” of 2.65%.

The Table in Tab 4, Section 4.1 Economic Outlook on page 3 of 7 indicates a forecast short term interest rate of 2.3% for 2013/14 and a forecast long term interest rate of 4.3%, showing a 2% forecast interest saving to consumers for each dollar of incremental short term or floating rate debt.

The Economic Outlook forecasts a 2013/14 “90 day T-bill rate” of 1.45% and provides a “Cdn LT Bond Rate 10 yr+” of 3.00%.

Tab 4, Economic Outlook, pages 2 of 7, lines 18 to 21 states “The short-term and long-term interest rates (including the relevant spreads and the provincial guarantee fee) shown below are applicable to Centra’s business planning for 2012/13 – 2014/15, and reflect the latest

Centra Gas Manitoba Inc. 2013/14 General Rate Application
consensus of source forecasts for the near term as of October 2012”
[Emphasis added].

The Economic Outlook, 2011-32 filed as Appendix 4.1 of the 2012/13 & 2013/14 General Rate Application for MH, contained a page entitled “Fall 2011 Update to Appendix A of the 2011 Economic Outlook, 2011-2032”, but there is no similar page in the Economic Outlook, 2012-33 filed as Appendix 4.1 in this application.

CAC wishes to understand the continuity between these rates and the changing views on forecast interest rates and spreads.

In the few months between the Spring and October update, Centra observed, in Tab 4, page 2 of 7 at line11, “continued falling forecasts of near term interest rates” CAC notes that there have been changes in forecasts since October 2012 and wishes to understand the impact of these further changes on the forecast interest rates.

- a) Provide a page similar to the page entitled “Fall 2011 Update to Appendix A of the 2011 Economic Outlook, 2011-2032”, to better indicate the changes, if any, in base interest rates and spreads which were developed from the October 2012 forecasts.
- b) If Appendix 4.1 filed in this application has been amended, provide the un-amended Economic Outlook, unaffected by the adjustments made “as of October 2012”.
- c) If not already supplied in reply to PUB/Centra I-6, provide the Spring 2012 “source forecasts” used to develop the un-amended Economic Outlook, unaffected by the adjustments made “as of October 2012” to arrive at the forecast “90 day T-bill rate” and “Cdn LT Bond Rate 10 yr+”, and a hard copy of the calculation model, in sufficient detail to allow confirmation of the

Centra Gas Manitoba Inc. 2013/14 General Rate Application methodology employed to determine the annual and financial year forecast interest rates, from the quarterly “end of period” or “period average” independent forecasts.

- d) If not already supplied in reply to PUB/Centra I-6, provide the “source forecasts” used “for the near term as of October 2012” to arrive at the forecast “90 day T-bill rate” and “Cdn LT Bond Rate 10 yr+”, and a hard copy of the calculation model, in sufficient detail to allow confirmation of the methodology employed to determine the annual and financial year forecast interest rates, from the quarterly “end of period” or “period average” independent forecasts.
- e) If not already supplied in reply to PUB/Centra I-6, provide the most currently available “source forecasts” that could be used to arrive at the forecast “90 day T-bill rate” and “Cdn LT Bond Rate 10 yr+”, and a hard copy of the calculation model, in sufficient detail to allow confirmation of the methodology employed to determine the annual and financial year forecast interest rates, from the quarterly “end of period” or “period average” independent forecasts.
- f) As Centra does not issue Canadian T-bills, provide a step by step reconciliation of the 2012/13 forecast “90 day T-bill rate” of 1% [as found on page A-1 of Appendix 4.1, or such other rate as was derived in the fall 2012 update], through to the “Short term Interest Rate” of 2.0% (including the relevant spreads and the provincial guarantee fee) at which Centra would borrow [using BAs, or other basis terms].
- g) As Centra does not issue Canada Bonds, provide a step by step reconciliation of the 2012/13 forecast “Cdn LT Bond Rate 10 yr+” of 2.65% [as found on page A-1 of Appendix 4.1, or such other rate as was derived in the fall 2012 update], through to the “Long term Interest Rate” of 4.15% (including the relevant spreads and the provincial guarantee fee) at which Centra is forecast to borrow.

- h) CAC observes that the term sheets supplied by Centra generally lack spread information and do not identify the most comparable Canada bond of proximate term from which spread would be determined, nor its then yield. If the spread and comparable Canada bond information is not already supplied in reply to PUB/Centra 1-43, provide a table showing, for each of the issues for which term sheets are provided in reply to PUB/Centra 1-43 among other things, the most comparable Canada bond of proximate term, its coupon, its yield at date of pricing and the spread between that bond and the Centra issue.**
- i) As Centra does not issue Canadian T-bills, provide a step by step reconciliation of the 2013/14 forecast “90 day T-bill rate” of 1.45% [as found on page A-1 of Appendix 4.1, or such other rate as was derived in the fall 2012 update], through to the “Short term Interest Rate” of 2.3% (including the relevant spreads and the provincial guarantee fee) at which Centra is forecast to borrow [using BAs, or other basis terms].**
- j) As Centra does not issue Canada Bonds, provide a step by step reconciliation of the 2013/14 forecast “Cdn LT Bond Rate 10 yr+” of 3.00% [as found on page A-1 of Appendix 4.1, or such other rate as was derived in the fall 2012 update], through to the “Long term Interest Rate” of 4.30% (including the relevant spreads and the provincial guarantee fee) at which Centra is forecast to borrow.**
- k) As Manitoba Hydro indicated, in PUB/MH I-28(c), from the 2012/13 & 2013/14 Hydro GRA, 10 Year + Credit spreads of 90 basis points for 2011/12, 75 basis points for 2012/13, and 65 basis points for 2013/14, provide a list of MH long term financings from April 1, 2011 to date showing the date of placement, maturity, term in years, coupon yield, comparable Canada bond, comparable Canada bond yield and resulting spread.**

ANSWER:

Response to part (a), (b), (c), (d), (e), (f), (g), (i), and (j):

The Economic Outlook is prepared in the spring of each year, which is the start of the Corporation's annual forecasting cycle, and is based on what was known and could reasonably be foreseen at the time of its preparation. Due to continued uncertainty and volatility of the current economic environment, the forecasts of key variables such as interest rates are reviewed in the summer and fall. As IFF12, which is the basis for the 2013/14 Centra General Rate Application, was produced in late fall/ early winter, the fall interest rate forecast was utilized. See Attachment 1 for a fall 2012 update to Appendix A of the 2012 Economic Outlook, 2012-2033.¹ Note that the 2012 spring and summer interest rate forecasts did not form the basis of Centra's 2013/14 General Rate Application. Centra will file the spring 2013 Economic Outlook when it is finalized.

For a description of the methodology employed to determine the combined interest rate forecast from end of period or period average independent forecasts, as well as the step by step process to derive Centra's short term and long term interest rates, please see Centra's response to PUB/Centra I-6.

Response to part (h) and (k):

Treasury operations are performed on a consolidated basis for the Corporation, including Centra. The Corporation does not execute financings specifically for Centra. As indicated in the long term debt term sheets provided in the response to PUB/Centra I-43(b), the interest assigned to Centra's long term advances are based on actual MHEB financings.

¹ Although interest rate forecasts were refreshed during the year for IFF12, the full Economic Outlook 2012-2033 (which was prepared in spring 2012 and filed as Appendix 4.1) was not amended or republished after the fall review.

For example, the interest rate assigned to CG13 was based on MHEB Debt Series C109 which has the same yield rate of 4.638%.² No additional intercompany spread is attached to the advances from Manitoba Hydro to Centra.

For historical information regarding the actual 10 year+ benchmark Government of Canada yields and the associated credit spreads to the Province of Manitoba, please see Charts 2-4 from the Manitoba Hydro Debt Management Strategy 2012/13 & 2013/14 (filed as Attachment 1 in response to CAC/Centra I-14).³

² Centra's long term debt advances from Manitoba Hydro are on an all-in basis and are therefore inclusive of Government of Canada benchmark yields, applicable credit spreads to the Province of Manitoba, and associated transaction costs. Debt Series C109 was issued November 13, 2009. As per the financial market conditions at that time, the benchmark Government of Canada bond yield was 4.020% (based on GOC 5.00% 2037), and the credit spread to the Province of Manitoba including transaction costs was 0.618%. The resultant yield rate was 4.638% (excluding the 1.000% provincial debt guarantee fee).

³ Centra observes that the preamble to CAC/Centra I-12 describes a simple subtraction between forecasted short term and long term interest rates to arrive at a conclusion for the 2013/14 fiscal year that there would be a "2% forecast interest savings to consumers for each dollar of incremental short term or floating rate debt." This conclusion is both factually incorrect and conceptually flawed.

While the intercompany charge for Centra's short term debt is equivalent to the short term interest rate (defined as the 3 month Canadian T-Bill rate or C1033M), floating rate debt is long term debt and has a higher contract rate than the short term interest rate. For example, Centra's existing floating rate long term debt CG10 has a contract rate of CDOR03 + 0.484%, while the forecasted floating rate long term debt tranche in March 2014 has a forecasted contract rate of CDOR03 + 0.45%. As at May 15, 2013 the CDOR03 rate is approximately 0.30% higher than the 3 month Canadian T-Bill rate. It is therefore factually incorrect to simply subtract the short and long term interest rates for any point in time and ascribe that difference as an incremental interest savings to consumers for floating rate debt versus fixed rate debt.

It is also conceptually flawed to represent floating rate debt as having less cost to the consumer than fixed rate debt. At the date of debt origination, the Corporation is economically indifferent between either fixed or floating rate debt for the same term to maturity. For example, for the forecasted long term debt issuance in March 2014, while floating rate long term debt interest rates are projected to be less than the fixed rates in the early years of the debt stream, at the back end of the debt stream, the interest payments on the floating rate long term debt are projected to exceed those of the fixed rate long term debt. While there are cash flow timing differences between the streams of interest payments, at the date of debt origination, the interest yield rates on an effective interest rate basis are equivalent. It is a misrepresentation to only consider the first year rate differential to assess the relative performance between fixed and floating rate long term debt. Please see Centra's response to CAC/Centra I-16 for a discussion of the effective interest rate method used to measure the floating rate debt yield rate for financial reporting purposes.

The preamble also suggests that coupon rate differentials would be fully realized as a benefit or cost to the consumer. This is an incomplete representation as one also needs to consider the partially counterbalancing impact associated with capitalized interest when arriving at total finance expense and Centra's revenue requirement.

MANITOBA / CANADA ECONOMIC STATISTICS

Fiscal Year Basis

Fall 2012 Update to Appendix A of the 2012 Economic Outlook, 2012-2033

Year	Man. Real GDP % chge	Man. CPI % chge	Man. Popu- lation '000s	Man. Residential Customers '000s	Cdn. Real GDP % chge	Cdn. CPI % chge	90 Day T-Bill Rate %	Cdn LT Bond Rate 10 Yr+ %	C\$/ US\$
1987/88	1.0	4.1	1,099	378	5.0	4.4	8.47	9.90	1.31
1988/89	0.3	4.4	1,103	383	4.4	4.1	10.29	10.11	1.21
1989/90	2.6	4.7	1,104	386	2.2	5.2	12.37	9.77	1.18
1990/91	1.0	5.0	1,106	389	-1.0	5.0	12.07	10.59	1.16
1991/92	-2.3	3.8	1,110	391	-1.0	4.4	8.03	9.29	1.15
1992/93	0.9	1.9	1,114	393	1.1	1.6	6.25	8.18	1.23
1993/94	1.3	2.4	1,119	396	2.8	1.5	4.46	7.39	1.31
1994/95	3.0	1.6	1,125	398	5.1	0.4	6.46	8.95	1.38
1995/96	1.0	2.5	1,130	400	1.8	2.1	6.17	7.93	1.36
1996/97	3.2	2.5	1,135	402	2.4	1.7	3.67	7.28	1.36
1997/98	3.9	1.5	1,136	405	4.5	1.4	3.63	6.06	1.40
1998/99	3.6	1.5	1,139	406	4.1	0.9	4.81	5.35	1.50
1999/00	2.3	2.2	1,144	408	5.8	2.2	4.82	5.69	1.47
2000/01	3.4	2.5	1,148	410	4.6	2.7	5.42	5.66	1.50
2001/02	1.0	2.1	1,153	413	1.5	2.2	3.09	5.91	1.57
2002/03	1.5	2.3	1,158	415	3.1	3.0	2.79	5.41	1.55
2003/04	1.6	0.9	1,166	419	1.7	1.9	2.67	4.97	1.35
2004/05	2.3	2.7	1,175	422	3.5	2.2	2.31	4.81	1.28
2005/06	2.8	2.4	1,180	426	3.2	2.3	3.02	4.17	1.19
2006/07	3.1	2.0	1,186	430	2.2	1.9	4.16	4.23	1.14
2007/08	2.7	1.9	1,197	434	2.3	2.1	3.83	4.24	1.03
2008/09	2.8	2.2	1,209	440	-0.5	2.2	1.84	3.66	1.13
2009/10	0.2	0.6	1,223	444	-1.3	0.4	0.22	3.89	1.09
2010/11	2.3	1.0	1,239	448	3.0	2.0	0.78	3.48	1.02
2011/12	2.2	2.8	1,255	453	2.4	2.8	0.91	2.79	0.99
Forecast									
2012/13	2.3	1.7	1,272	459	2.1	1.8	1.00	2.15	1.00
2013/14	2.4	1.8	1,289	465	2.3	2.1	1.30	2.55	0.99
2014/15	2.4	1.8	1,306	472	2.3	2.1	2.10	3.20	1.02
2015/16	2.5	1.8	1,323	478	2.4	1.9	2.95	3.90	1.03
2016/17	2.4	1.8	1,340	484	2.3	1.9	3.65	4.30	1.04
2017/18	2.1	1.9	1,358	491	2.3	1.9	3.75	4.50	1.04
2018/19	1.8	1.9	1,375	497	2.1	1.9	3.80	4.65	1.04
2019/20	1.7	1.9	1,393	504	1.9	1.9	3.80	4.65	1.04
2020/21	1.7	1.9	1,411	510	1.9	1.9	3.80	4.65	1.04
2021/22	1.7	1.9	1,428	517	1.9	1.9	3.80	4.65	1.04
2022/23	1.7	1.9	1,446	523	1.9	1.9	3.80	4.65	1.04
2023/24	1.7	1.9	1,463	530	1.9	1.9	3.80	4.65	1.04
2024/25	1.7	1.9	1,480	536	1.9	1.9	3.80	4.65	1.04
2025/26	1.7	1.9	1,497	542	1.9	1.9	3.80	4.65	1.04
2026/27	1.7	1.9	1,514	549	1.9	1.9	3.80	4.65	1.04
2027/28	1.7	1.9	1,531	555	1.9	1.9	3.80	4.65	1.04
2028/29	1.7	1.9	1,547	561	1.9	1.9	3.80	4.65	1.04
2029/30	1.7	1.9	1,564	567	1.9	1.9	3.80	4.65	1.04
2030/31	1.7	1.9	1,580	573	1.9	1.9	3.80	4.65	1.04
2031/32	1.7	1.9	1,596	579	1.9	1.9	3.80	4.65	1.04
2032/33	1.7	1.9	1,612	585	1.9	1.9	3.80	4.65	1.04

CAC/CENTRA I-13

**Reference: PUB/MH I-28(a) Attachment 1, from the 2012/13 & 2013/14 Manitoba Hydro GRA,
Evidence of John D. McCormick in the Manitoba Hydro 2010/11 & 2011/12 GRA at Q.21
Evidence of John D. McCormick in the Centra 2009/10 & 2010/11 GRA
PUB/CAC/MSOS 1-17 in the Centra 2009/10 & 2010/11 GRA**

Preamble: In PUB/Centra 1-6, Centra is requested to update PUB/MH I-28(a) through (c).

In PUB/MH I-28(a) Attachment 1, page 3 of 5, in the 2012/13 & 2013/14 Manitoba Hydro GRA, MH indicated “It should be noted that adjusting end of period forecasts to average forecasts may or may not result in a better consolidated forecast. The result is still a forecast which will be updated in subsequent periods and will ultimately be updated to actual borrowing rates. The adjustments which put all of the independent forecasts on an equivalent basis have the potential to qualify, to some extent, the independence of externally derived forecasts. Further, the use of end of period versus average is normally immaterial in the overall scheme of the financial forecast which has many moving parts. Nevertheless, such adjustments may have some value during extreme volatility in rates” [Emphasis added]

Hydro admits it is uncertain as to whether “a better consolidated forecast” is the result of “adjusting end of period forecasts to average forecasts”. Regrettably Hydro has not provided an analysis of this point.

In Mr. McCormick's reply to PUB/CAC/MSOS 1-17 in the Centra 2009/10 & 2010/11 GRA, he explains, among other things, the rationale for these adjustments to make "end of period forecasts" comparable with "period average" forecasts.

Hydro suggests that these "adjustments ... have the potential to qualify" to some un-quantified and unspecified degree, "the independence of the forecasts". Regrettably Hydro has not provided an analysis of this point, nor identified how this would result in a less robust forecast.

In Mr. McCormick's evidence in the 2010/11 MH GRA, he observed that "there seems to be no proof that the sample selected has provided the company, the consumers and the regulator with the most robust forecast." He also noted that average forecast error of the Scotia and National Bank forecasts was about 2 basis points, less than that of other forecasters for the brief period studied. In Mr. McCormick's evidence in the 2010/11 MH GRA, at page 69, he recommended testing "the predictions of forecasters as part of a process to develop a robust methodology". In Mr. McCormick's evidence in the Centra 2009/10 GRA at page 15, recommended reviewing the relative success of the forecasters.

In Mr. McCormick's evidence in the 2010/11 MH GRA, he quoted the KM Report Manitoba Hydro Risk: An Independent Review, which observed "The eclectic approach, if it is the only alternative, should be based not on a large number of forecasters but only on those that meet the accuracy criterion that MH must establish. Averaging their forecasts assumes that they are equally accurate, but they are not."

- a) **Does Centra wish to return to its prior methodology, and if so, what advantages to consumers and to its operational efficiency does it see in its prior methodology?**
- b) **What if any analysis has Centra or Hydro undertaken to improve the methodology currently employed and arrive at a “better consolidated forecast”?**
- c) **Has Centra or Hydro considered or tested including additional forecasters, perhaps including some of those other forecasters that contribute to the Consensus Economics Forecast, as recommended by Mr. McCormick evidence in the 2010/11 MH GRA?**
- d) **Has Centra or Hydro considered or tested excluding any of the currently included forecasters which have relatively larger error factors when their forecasts are compared to actual interest rates and those of the remaining sample of forecasters?**
- e) **Provide copies of that analysis, undertaken by Hydro or Centra, considering improving the methodology currently employed, or excluding or including forecasters in the group of contributors.**
- f) **Explain how “The adjustments which put all of the independent forecasts on an equivalent basis” are problematic in arriving at a meaningful and robust forecast.**
- g) **Explain how an adjustment to put data points “on an equivalent basis” raises a qualification to “the independence of externally derived forecasts”, and identify the qualification.**
- h) **Does Centra fully agree with the view from the KM report quoted in the Preamble, and if not, discuss any aspects with which Centra disagrees?**

ANSWER:

Response to parts (a), (f) and (g):

For the interest rate forecast, the Corporation continues to convert end of period source forecasts to average period data by taking the simple average between the two end points.

Converting end of period forecasts to average forecasts is considered by the Corporation to be a computational adjustment and not a correction. The underlying assumption with these revisions is that a simple averaging of two end points is reasonable. As a practical matter, the Corporation considers the impact of these computational adjustments to be normally immaterial in the overall financial forecast. The Corporation did not indicate that these conversion adjustments are “problematic in arriving at a meaningful and robust forecast.” Under all but the most extreme financial market circumstances, it is the Corporation’s position that the arithmetic adjustments are relatively innocuous within the context of the overall forecast and that there is little value in performing detailed analysis on any computational variances.

Given the circumstance where the external forecaster provided end of period information and did not specifically provide their average over the period, it is technically imprecise to indicate that the average calculated by the Corporation with this process represents the view of the external forecaster. The Corporation has made computational adjustments that act to qualify the original information sourced from these forecasters.

Response to parts (b), (c), (d), (e) and (h):

For the purpose of the 2012 Economic Outlook, the forecasting sources include IHS Global Insight, the Conference Board of Canada, Informetrica, Spatial Economics, BMO Nesbitt

Burns, CIBC, Desjardins, Laurentian, Royal Bank of Canada, Scotiabank, National Bank of Canada, and TD Bank.¹ It is important to recognize that the Corporation utilizes the forecasts produced by Canada's primary financial institutions in addition to several other independent sources, all of which are well known and respected. All of the forecasters utilize professionally trained and experienced economists who have their own proprietary processes and perspectives. These differing processes and perspectives may lead, in many circumstances, to differing recommendations and professional judgments. Having a large sample size of respected forecasters is beneficial to the forecasting process, both statistically as well from a risk management perspective.

With the 2012 Economic Outlook, the Corporation also took the initiative to deepen the information provided by its forecasters by obtaining extended interest rate forecasts from some of the financial institutions where available. Consequently, the Corporation received extended forecasts from BMO, Desjardins, Royal Bank of Canada (RBC), and TD Bank.

It is true that forecasters are not all equal. If all views were equal, then it would be redundant to consider more than one perspective.² The rationale for a broad consensus approach is further reinforced when one considers, as stated in the report by Professors Kubursi and

¹ The listing of these forecasters was provided in Appendix 4.1 on page 5 of the 2012 Economic Outlook (Spring). The Corporation does not have a view regarding the optimal number of sources within its pool of independent forecasters. The number of source forecasters was increased in the 2012 Economic Outlook with the addition of Desjardins and Laurentian (both are established Canadian financial institutions that provide near term macro-economic updates). Other forecasters considered at this time, but not added to the pool, included UBS Warburg, J.P. Morgan, Merrill Lynch, Deutsche Bank and Economap Strategic Economic Advisors. As the forecast for Spatial Economics is only produced in the spring, it was not utilized for the fall review due to the staledatedness of the information. No forecasters have been removed from the pool since the 2010 Economic Outlook (when Consensus Economics, Federal Finance and the Province of British Columbia were removed as their forecasts were not considered to be statistically independent).

² The use of averages seeks to normalize source information for the establishment of a base case. The source information also provides beneficial insight into the expressed range and distribution of potential interest rates. For example, as depicted in Chart 4 of the *Debt Management Strategy* showing the historical and forecast interest rates (see CAC/Centra I-14, Attachment 1), from a risk management perspective it is important to consider both the forecasted average interest rates and the range of professional opinion.

Magee on page xxv³, that it is “impossible to perfectly predict outcomes from complex systems such as weather, economics, or financial markets. Not only is it difficult to predict accurately, it is also very difficult to decide which prediction method is best.”

The Bank of Canada has considered the topic of interest rate forecasting and has published a working paper entitled “*Combining Canadian Interest-Rate Forecasts.*”⁴ On page 2 of the paper the authors state:

“The concept of model averaging has a relatively long history in the forecasting literature. Indeed, there is evidence dating back to Bates and Granger (1969) and Newbold and Granger (1974) suggesting that combination forecasts often outperform individual forecasts. Possible reasons for this are that the models may be incomplete, they may employ different information sets, and they may be biased. Combining forecasts, therefore, acts to offset this incompleteness, biasedness, and variation in information sets. Combined forecasts may also be enhanced by the covariances between individual forecasts. Thus, even if misspecified models are combined, the combination may, and often will, improve the forecasts (Kapetanios, Labhard and Price (2006).”

On page 24 of the paper the authors state in their Final Remarks section that:

“The principal observation is that we find evidence of model combinations outperforming the best individual forecasts over the evaluation period. ... It is also

³ Kubursi and Magee, *Manitoba Hydro Risks: An Independent Review*. This report is available online at http://www.pub.gov.mb.ca/pdf/misc/risk_redacted.pdf.

⁴ “*Combining Canadian Interest-Rate Forecasts*” by David Jamieson Bolder and Yuliya Romanyuk; Bank of Canada Working Paper 2008-34; September 2008. This working paper is available online at <http://www.bankofcanada.ca/2008/09/research/working-paper-2008-34/>. Manitoba Hydro/ Centra also conducted a telephone conference call with one of the authors of the working paper in spring 2011 in order: a) to review the research paper findings; b) to discuss the Corporation’s view on the retrospective testing of its forecasters, and; c) to seek enhancements to the Corporation’s interest rate forecasting methodology.

clear that the simpler model combination approaches tend to outperform their more complex counterparts.”

It is the Corporation’s view that:

- a) forecaster modeling algorithms are evolving since the financial crisis and that sufficient time through a full business cycle has not transpired to appropriately test the accuracy of these algorithms;
- b) the established forecasting methodology, along with cost of service regulation mitigates the need for retrospective testing for rate setting purposes;
- c) it is important for the Corporation to consider the broad range of respected forecaster opinion; and
- d) retrospective testing, with the aim of pruning or weighting forecaster opinions could potentially weaken or bias the Corporation’s viewpoints in terms of understanding the spectrum of possibilities and mitigating the risk.

It is the Corporation’s view that the collective economic opinion that currently exists within the established portfolio of respected forecasters provides a valuable strength of diversity. For further discussion regarding the background and chronology of this topic, please see Centra’s response to CAC/Centra I-10(a).

CAC/CENTRA I-14

Reference: Tab 9, Cost of Long Term Debt, page 59 of 63 and 60 of 63

The Manitoba Hydro Debt Strategy 2012/13 and 2013/14, dated April 12, filed as Appendix 17 to the 2012/13 & 2013/14 Hydro GRA

CAC/MSOS/Centra 1-5 and 1-6, dated March 31, 2009 filed in respect to the 2009/10 & 2010/11 Centra GRA

Preamble: Tab 9, Cost of Long Term Debt, page 59 of 63 and 60 of 63 indicate a forecast \$30 million fixed rate issue, and a forecast \$15 million floating rate issue, each of which may be undertaken in March 2014 at an unspecified term to maturity.

The Manitoba Hydro Debt Strategy document indicates, in Chart 2, the Benchmark Canada 10 Year + Bond Yields, in Chart 3, the 10 Year + Credit Spreads, in Chart 4, the Short Term and Long Term Interest Rates, in Chart 5, the Weighted Average Interest Rate Yields, in Chart 6, the Weighted Average Term to Maturity of Long Term Debt, and, in Chart 7, a Summary Debt Structure.

In CAC/MSOS/Centra 1-5, dated March 31, 2009, Centra provided information on the weighted average term to maturity of long term debt for Centra and other comparable utilities, the concentration of refinancing risk in Centra, the distribution of maturities in Centra and then current Manitoba yield curve featuring Bloomberg series C302 data.

In CAC/MSOS/Centra 1-5 (g), dated March 31, 2009, Centra indicated its belief that “The maturity of a financing instrument should be similar to the useful life of the asset being financed. A company can minimize its

risk from financing and maximize its capacity to use borrowed funds if it can match up the cash flows on the debt to those on the assets being financed. Accordingly, long lived fixed assets should be financed with long term debt.”

In CAC/MSOS/Centra 1-6 (d), dated March 31, 2009, Centra indicated its intention to “continue to deliver the economic benefits of floating rate debt by the revolving line of credit and ensure that a prudent level of interest rate stability is maintained for debt servicing costs through long-term fixed rate financing debt.”

CAC observes that as at March 2006 the weighted average term to maturity of long term debt was 3.494 years, which more than doubled to over 11 years by March 2008, and has increased significantly since that time.

CAC wishes to better understand the material changes in the structure of the Centa debt portfolio over recent years, in particular the increase in weighted average term to maturity, changes in use of short term, floating rate, and long term debt, and concentration of refinancing risk, and how these changes relate to policy changes or changes in assets.

- a) **Extend the data and update Charts 2, 3 and 4 to March 2013.**
- b) **Indicate whether the data supporting Charts 5, 6 and 7, are inclusive of financings allocated to Centra.**
- c) **Update Chart 6 as at March 31, 2013.**
- d) **If Chart 6 in Manitoba Hydro Debt Strategy 2012/13 and 2013/14, was prepared on a basis which included both Hydro and Centra issues, provide two**

additional similar charts one for each Hydro and Centra, OR, if the chart was prepared on a basis which included only Hydro issues, please provide a similar chart for Centra issues.

- e) Provide the original table, and, an updated table provided in response to CAC/MSOS/Centra 1-5 (a) dated March 31, 2009, extending the updated table to include recent actual and forecast March 2014 data, and, enhancing the updated table by providing for each “Weighted Average Term to Maturity in Years” March value [e.g. March 2004 @ 5.393 years], the comparable value for Manitoba Hydro debt (excluding Centra debt).**
- f) Provide an explanation in changes in asset mix or average asset life, policies or other factors which would have made the significant increase in weighted average term to maturity over the explain why the weighted average term to maturity fell to approximately 3 years in 2006, and has now risen substantially.**
- g) Did Centra hold the belief in the “asset and liability matching” principle espoused in CAC/MSOS/Centra 1-5 (g), and quoted in the Preamble, during March 2004, and, 2006 when the weighted average term to maturity for long term debt was less than 6 years, and if so, discuss the potential harm inflicted on consumers as a result of the shorter life of debt and lower interest stability, and, any potential benefit enjoyed by those consumers, perhaps in the form of lower interest costs.**
- h) Did Centra in 2004, subsequent thereto, or currently have, any targets, guidelines or policies as to the optimal weighted average term to maturity for long term debt, or the proportion of its long term debt maturing in any one year, or period of a group of years?**

- i) Explain the degree to which Centra was maintaining “a prudent level of interest rate stability” in March 2004 with its then level of floating rate debt, large pending refinancing calendar, due to the relatively short weighted average term to maturity for long term debt, and, concentrated refinancing risk with over 36% of the then debt maturing in one year, and, contrast those levels of prudence with those that existed in March 2006, and those that will exist in March 2013.**
- j) To assist the discussion of market interest rate conditions at various times, supply a table similar to that provided in response to CAC/MSOS/Centra 1-5 (i) dated March 31, 2009, showing the then Bloomberg sourced yields for Manitoba for March 31, 2006, and enhanced to include yields as at March 31 2008 and a current date, for each of the various maturity terms therein set out, and further enhance the table with the then comparable Canada yield or current Canada Yield, for each of those various maturity terms, and provide the applicable spread.**
- k) Provide a table enhancing the original table provided in response to CAC/MSOS/Centra 1-5 (g) dated March 31, 2009, by extending the table to provide the most recently available data for Centra and the 4 entities “Weighted Average Term to Maturity of LTD” value.**
- l) Update Chart 5 as at March 31 2013.**
- m) If Chart 5 in Manitoba Hydro Debt Strategy 2012/13 and 2013/14, was prepared on a basis which included both Hydro and Centra issues, provide two additional similar charts one for each Hydro and Centra, OR, if the chart was prepared on a basis which included only Hydro issues, provide a similar chart for Centra issues.**

- n) **Use update Chart 7 as at March 31 2013, in that chart, segmenting the STD and the Floating Rate LTD.**
- o) **If Chart 7 in Manitoba Hydro Debt Strategy 2012/13 and 2013/14, was prepared on a basis which included both Hydro and Centra issues, provide two additional similar charts one for each Hydro and Centra, OR, if the chart was prepared on a basis which included only Hydro issues, provide a similar chart for Centra issues, in either case segmenting the STD and the Floating Rate LTD.**
- p) **Tab 9, at page 60 of 63 indicate a \$15 million floating rate issue may be undertaken for an unspecified term to maturity, in March 2014, and specifies a 45 basis point spread. As CAC understands that spreads are often term specific, it requests the estimated spread for such a floating rate issue for each of the terms, 3 months, 6 months, 1 year, 5 years, 10 years and 20 years.**
- q) **If, for concerns related to premature disclosure of financial information, the analysis and any of the charts or tables requested above cannot be released with March 31, 2013 data, with respect to that chart or table, consider the request above to be amended to reflect the December 31, 2012 date.**
- r) **Place the Manitoba Hydro Debt Strategy 2012/13 and 2013/14, dated April 12, was filed as Appendix 17 to the 2012/13 & 2013/14 GRA for Hydro, on the record for this proceeding.**
- s) **Place the Manitoba Hydro Debt Strategy 2013/14 and 2014/15, when available in April 2013, on the record for this proceeding.**

ANSWER:

Response to parts (a), (b), (c), (d), (l), (m), (n), (o), (q), (r), and (s):

Attachment 1 to this information request is the Manitoba Hydro Debt Management Strategy 2012/13 & 2013/14.¹ The information provided in this document pertains to the Corporation's consolidated debt portfolio and is not segmented into electric and gas operations.²

Attachment 2 to this information provides an abridged update to the previously published *Debt Management Strategy* document, along with supplementary information pertaining to Centra's debt portfolio. In order to maintain continuity with the originating Debt Management Strategy document, updated charts retained their previous chart number.

Response to parts (e), (f), (g), (h), (i), (j), and (k):

Attachment 3 to this information request provides a schedule of Centra's long term debt weighted average term to maturity for the years ending March 31, 2004 to March 31, 2014 as well as the comparable values for Manitoba Hydro's consolidated debt.

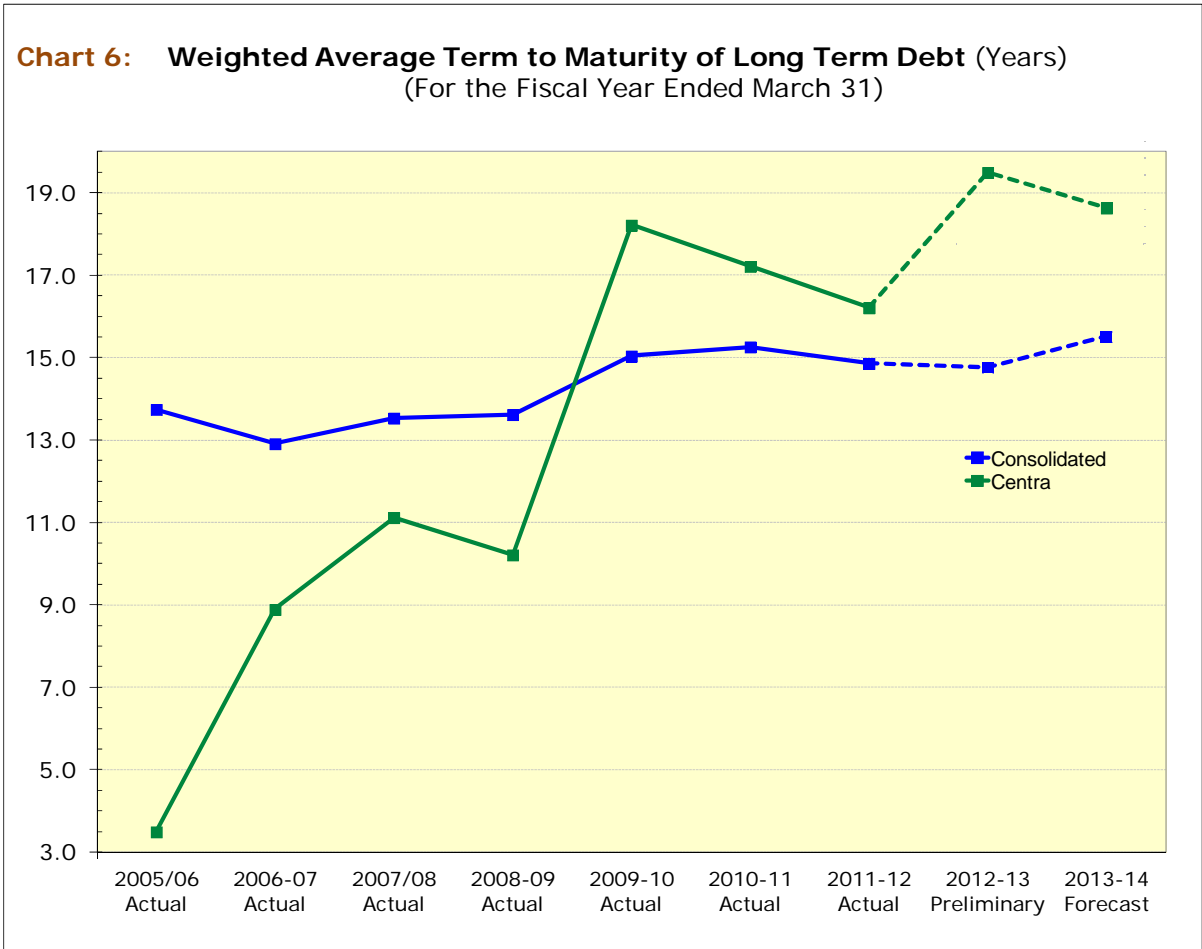
The Corporation's debt management strategies and practices are applicable to Centra, recognizing that Centra has seasonal working capital requirements for short term debt. Centra debt issues CG1 through CG4, representing 58% of the debt portfolio at March 31, 2004 was legacy debt which Centra had on its books at the time of acquisition. Since the acquisition of Centra in 1999, Centra's debt portfolio has been in transition as the principles

¹ This document was previously filed as Appendix 17 at the 2012/13 & 2013/14 Electric GRA. The next iteration of the Debt Management Strategy is scheduled to be published later in the year and will not be available during the 2013/14 Centra GRA.

² Treasury operations are performed on a consolidated basis for the Corporation, including Centra. The Corporation's debt management strategies and practices are applicable to Centra, recognizing that Centra has seasonal working capital requirements for short term debt in support of its annual gas inventory purchases. As Centra's debt portfolio represents approximately 3% of the consolidated debt portfolio, charts exclusively depicting electric operations would not be materially different than those shown for the consolidated entity.

of Manitoba Hydro’s Debt Management Strategy (including those to reduce the concentration of interest rate refinancing risk and to enhance the stability of the debt portfolio by extending the term to maturity) have been applied to manage its debt.

Given the shorter term to maturity of the legacy debt issues CG1 through CG4 and the large amount of debt in current portion at that time, the weighted average term to maturity of long term debt dropped to approximately 3.5 years at March 2006. On November 26, 2006, Series CG3 (\$48.5 million) was refinanced with Series CG7 which has a maturity date of March 5, 2037. This issue extended the weighted average term to maturity of Centra’s long debt portfolio to 8.9 years from 3.5 years, providing Centra with low cost financing and increased stability. In keeping with the concept of matching the Corporation’s long-lived



assets with long term debt and to enhance the stability of the debt portfolio, Centra continued to issue new long term debt and refinance its legacy debt portfolio. By advantageously extending its term to maturity during these financings, Centra has been able to significantly enhance the structural stability of its debt portfolio.³

The Corporation does not have a targeted weighted average term to maturity for long term debt. The debt management strategy guidance is to have less than 15% of the long term debt portfolio maturing within a fiscal year. Please see Centra's response to CAC/Centra I-19 for a discussion regarding Centra's conversion of short term debt to long term debt, its reduced exposure to short term debt, and the introduction of floating rate long term debt within the Centra debt portfolio.

To assist in the discussion of market interest rate conditions at various times, please refer to Attachment 2 to this information request (Chart 2 shows historical market data on Benchmark Canada 10 Year+ Bond Yields; Chart 3 shows Manitoba 10 Year+ Credit Spreads; and Chart 4 depicts historical market interest rates dating back to January 1948, as well as a range of forecasted interest rates to 2032).

Response to part (p):

The interest reset rate for Manitoba Hydro's portfolio of Canadian long term floating rate debt is typically the 3 month Bloomberg Bankers' Acceptance rate (CDOR03). In addition, to

³ The Province of Manitoba has also increased the weighted average term to maturity of their long term debt portfolio from 9.2 years in 2008 to 11.3 years in 2013. The other two companies cited in Centra's response to CAC/MSOS/Centra 1-5 (g) dated March 31, 2009 no longer exist as they were in 2009.

the variable CDOR03 interest rate, the capital market pricing for these long term floating rate debt issues adds a fixed rate margin in order to structure an equivalent effective yield rate between fixed and floating rate long term debt issues of the same term to maturity.⁴

Centra's new long term debt forecasted for March 2014 has a term to maturity of 20 years.⁵

This \$30 million long term debt financing is forecasted to have two tranches:

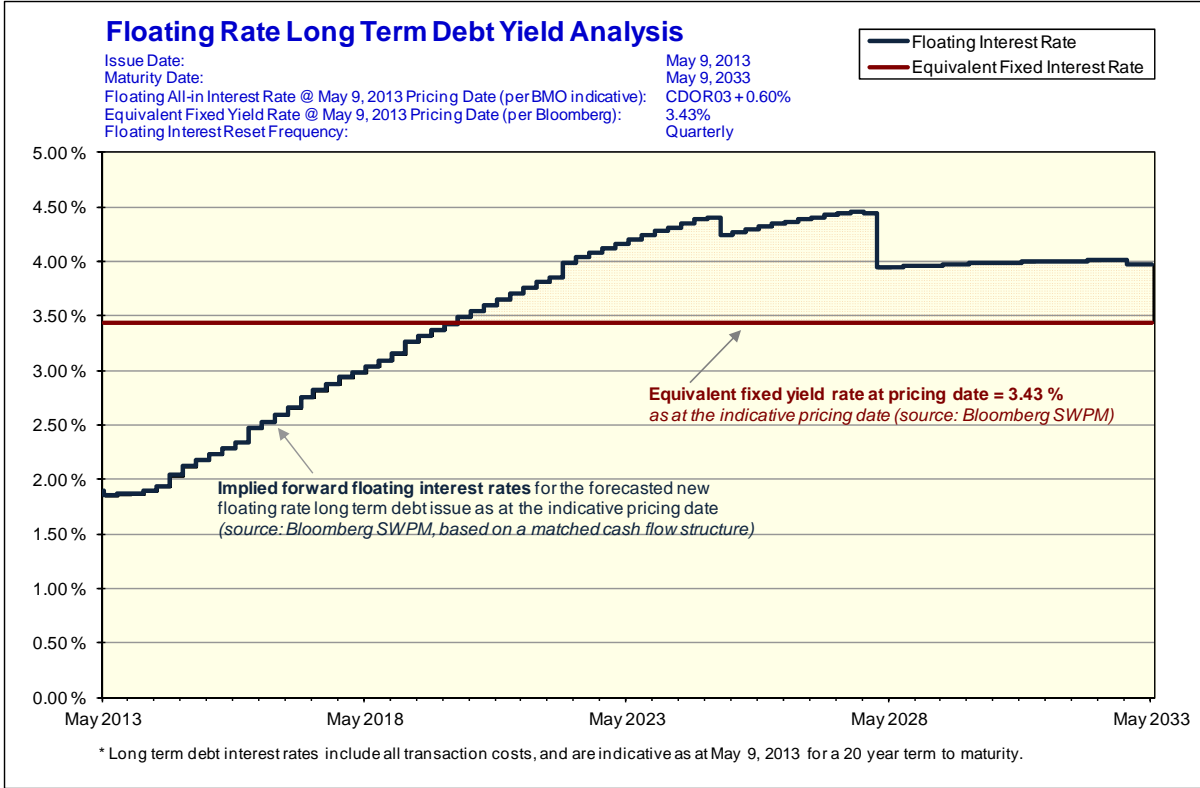
1. \$15 million fixed rate long term debt (forecast at 3.30%, excluding PGF); and
2. \$15 million floating rate long term debt (with a forecasted pricing of CDOR03 + 45 basis points, excluding PGF).

Utilizing current indicative market pricing (as at May 9, 2013) for new long term debt issuance, the 20 year fixed long term debt interest rate was 3.43% and the 20 year floating rate long term debt financing had an indicative asset swap price of CDOR03 + ~60 basis points.⁶ The following chart depicts the interest rate equivalencies associated between these two forecasted debt streams.

⁴ For example, intercompany long term debt CG10 in the amount of \$35,000,000 was issued February 22, 2010 for a five year term maturing February 22, 2015 with a coupon and yield rate of CDOR03 + 0.484%. This issue originated as Manitoba Hydro FM-4 (\$100 million principal, issued September 1, 2009 with a September 1, 2014 maturity). At the original issue date, using implied forward interest rates within the capital markets, the floating rate long term debt price of CDOR03 + 0.484% had an equivalent all-in yield rate of 3.14%. The floating rate long term debt interest rates are reset quarterly. Over the past 10 years, the CDOR03 rate has been higher than the 3 month Canadian T-Bill rate (C1033M) by an average of nearly 30 basis points (with an average of approximately 15 basis points prior to the financial crisis, peaking at over 250 basis points at the apex of the crisis in 2008, and currently at approximately 30 basis points in May 2013 which approximately aligns with the 35 basis point spread forecasted in IFF12 for 2013/14.

⁵ Centra's forecasted new long term debt financings have a 20 year term to maturity. This forecasted 20 year term to maturity is now aligned with the 10 year+ Canadian interest rate forecast which utilizes the average of 10 and 30 year information. Actual financings will vary from forecast. During the past number of years, the Corporation's actual long term financing has included issuance in various terms throughout the yield curve and it is the Corporation's intention to continue with this flexible practice.

⁶ The Corporation's short term debt, defined as financing with a term to maturity of less than one year, are all fixed rate financings and therefore do not have a floating rate contract price. As at May 9, 2013 the indicative asset swap pricing for 5, 10 and 30 year floating rate long term debt is approximately CDOR03 + 23 basis points; CDOR03 + 45 basis points; and CDOR03 + 76 basis points respectively.



At the date of debt origination, the Corporation is economically indifferent between fixed or floating rate long term debt for the same term to maturity. While floating rate long term debt interest rates are projected to be less than the 3.43% fixed rate in the early years of the debt stream (as shaded in green), at the back end of the debt stream the interest payments on the floating rate long term debt will exceed those of the fixed rate long term debt (as shaded in orange). While there are cash flow timing differences between the streams of interest payments, the interest yield rates on an effective interest rate basis are equivalent. It is conceptually flawed to represent floating rate long term debt as having less cost to the consumer than fixed rate long term debt and it is a misrepresentation to only consider the first year rate differential to assess the relative performance between fixed and floating rate long term debt. Please see Centra’s response to CAC/Centra I-16 for a discussion of the effective interest rate method used to measure the floating rate debt yield rate for financial reporting purposes.

Floating rate debt has higher interest rate risk than fixed rate debt due to its inherent exposure to interest rate fluctuations at the quarterly interest rate reset dates. Depending upon subsequent financial market movements, actual interest reset rates for floating rate debt may be higher or lower than the original implied forward interest rates.

MANITOBA HYDRO

DEBT MANAGEMENT STRATEGY

2012/13 AND 2013/14



Finance & Administration
Treasury Division
April 2012

Table of Contents

1.0 Purpose of this Document	3
2.0 Overview of Manitoba Hydro’s Capital Financing Program	3
3.0 Borrowing Authority of Manitoba Hydro	4
3.1 The Manitoba Hydro Act	4
3.2 The Loan Act	5
3.3 The Financial Administration Act	5
4.0 Debt Management Objectives	5
5.0 Analysis and Commentary	6
6.0 Debt Management Activities for 2012/13 and 2013/14	11
7.0 2012 Loan Act Authority	13

1.0 Purpose of this Document

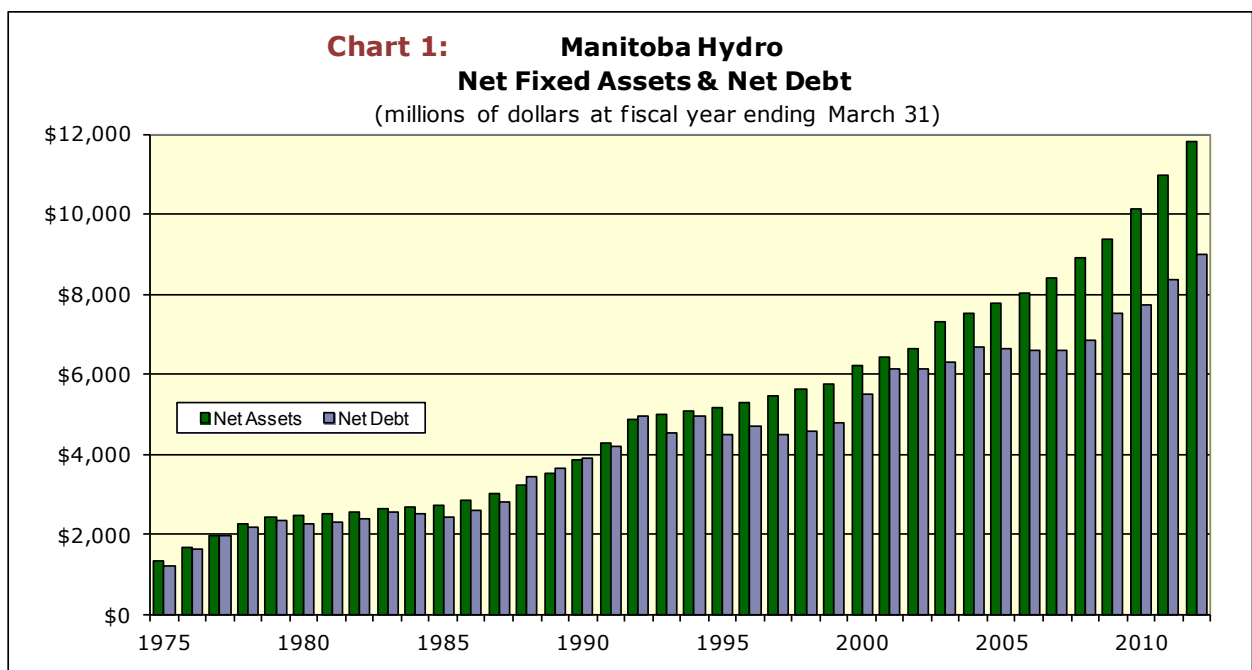
The *Debt Management Strategy* document provides information on the historical growth of the Corporation's investment in fixed assets and the corresponding increase in Manitoba Hydro's long term debt. The document also summarizes the statutes that govern the Corporation's financing programs, and outlines the debt management strategies that will address the Corporation's financing requirements for the 2012/13 and 2013/14 fiscal years.

2.0 Overview of Manitoba Hydro's Capital Financing Program

As with most energy utilities, debt is an essential component of Manitoba Hydro's corporate capital structure. As a Crown Corporation owned by the Province of Manitoba, Manitoba Hydro does not have access to share capital as a source of funds. Therefore, in order to adequately provide for the long term energy requirements of the province, Manitoba Hydro must rely on debt as its primary source of external financing.

Debt financing has been very beneficial for Manitoba Hydro and its ratepayers. It has fueled the growth of the Corporation from the early days of farm electrification and the development of the Winnipeg River generation system, through the years of development of the Nelson River generation and transmission system, right up to the current development and construction of the Wuskwatim Generating station in northern Manitoba. None of this would have been possible without debt financing.

Chart 1 illustrates the growth in net fixed assets and net long term debt that has occurred since 1975. While net debt has grown to approximately \$9.0 billion as at March 31, 2012, the corresponding investment in generation, transmission, distribution and other assets has grown at a much greater pace to a net book value of approximately \$11.8 billion at March 31, 2012. The current market or replacement value of Manitoba Hydro's assets is many multiples of the net book value.



The *Capital Expenditure Forecast* (CEF11) is a projection of Manitoba Hydro's capital expenditures for new and replacement facilities to meet the electricity and natural gas service requirements in the Province of Manitoba, as well as expenditures required to meet firm sale commitments outside the province. The CEF11 totals \$18.3 billion for the ten year period from 2012/13 to 2021/22. Expenditures for Major New Generation & Transmission total \$13.5 billion, with the balance of \$4.8 billion comprised of expenditures for infrastructure renewal, system safety and security, new and increasing load requirements, and ongoing efficiency improvements.

While debt financing provides the majority of funding necessary for investment in long term assets, Manitoba Hydro also funds a significant portion of its capital requirements from cash generated from operations. Utilizing funds from operations reduces the amount that would otherwise need to be borrowed each year by the Corporation. The net cash flow from operations for the next 10 years is forecast to be in excess of \$5 billion, with an average during this timeframe of over \$500 million per fiscal year. Therefore, on average, Manitoba Hydro derives close to 30% of its financing for capital assets from internal sources.

3.0 Borrowing Authority of Manitoba Hydro

Manitoba Hydro's authority to issue debt is provided through The Manitoba Hydro Act, The Loan Act, and The Financial Administration Act. The following sections provide a synopsis of the authority received by Manitoba Hydro through this legislation.

3.1 The Manitoba Hydro Act

The Manitoba Hydro Act grants the following powers to the Corporation for issuing debt in the name of the Manitoba Hydro-Electric Board:

- 1. Temporary Borrowing Authority**
The principal amount of short term promissory notes outstanding at any one time shall not exceed in the aggregate the sum of \$500 million of principal outstanding at any one time, upon such terms, for such periods, and upon such other conditions, as the Corporation may determine.
- 2. Government Guarantee**
The Government may, on such terms as may be approved by the Lieutenant Governor in Council, guarantee the payment of the principal and interest on any borrowings of the Corporation under this section.
- 3. Power of the Corporation to Borrow and Issue Securities**
The Corporation may raise money by way of loan, notes, bonds, debentures or other securities in the name of The Manitoba Hydro-Electric Board subject to the approval of the Lieutenant Governor in Council for purposes provided in the Manitoba Hydro Act or to refund any loan or advance previously made by the Corporation.

Borrowing authority, under Section 35 of the Manitoba Hydro Act, will treat Canadian and US borrowings on a one for one par value basis. The borrowing authority will be abated for the Canadian dollar equivalent using the nominal rate of exchange when the loan is denominated in a currency other than Canadian or US dollars.

3.2 The Loan Act

The Loan Act is approved each year and grants Manitoba Hydro borrowing authority to meet the Corporation's projected financing requirements. Authority granted under the Loan Act is for purposes other than to refinance debt, including new investment requirements. Refunding authority to refinance maturing long term debt is provided through the Financial Administration Act.

3.3 The Financial Administration Act

The Financial Administration Act authorizes the Minister of Finance to borrow money for any purpose authorized by any Act of the Legislature or for the payment, refunding, refinancing or renewal, from time to time, of the whole or any part of any loan made or provincial securities issued under any Act.

4.0 Debt Management Objectives

Manitoba Hydro's fundamental debt management objective is to provide stable, low cost funding to meet the financial obligations and liquidity needs of the Corporation. Manitoba Hydro continually monitors the interest rate environment and acts to secure stable, low-cost financing with terms to maturity that meet investor appetite and fit the Corporation's debt maturity schedule.

Manitoba Hydro's debt is viewed to be self-supporting as evidenced by the investment grade credit ratings that the Corporation and Province receive on their short and long term debt from the various rating agencies such as Dominion Bond Rating Service, Moody's Investors Service, and Standard & Poor's.

In order to maintain the self-supporting nature of the Corporation's debt obligations and the attractive financing rates associated with the Corporation's debt, Manitoba Hydro places significant emphasis on the following financial targets:

Interest Coverage – Maintain an annual gross interest coverage ratio greater than 1.20. The interest coverage ratio indicates the extent to which net income is sufficient to pay gross interest on debt. It is calculated by dividing net income plus gross interest on debt by gross interest on debt.

Capital Coverage – Maintain a capital coverage ratio of greater than 1.20. The capital coverage ratio indicates the extent to which cash generated internally is sufficient to fund capital construction expenditures without additional external financing. It is calculated by dividing cash generated from operations by capital construction expenditures (excluding major new generation & transmission projects).

Debt/Equity – Maintain a minimum debt/equity ratio of 75:25. The debt to equity ratio indicates the relative percentage of assets financed through debt versus equity. It is calculated by dividing debt by debt plus equity.

Note: During the next several years of large capital investments in major new generation and transmission facilities, financial targets may not be met in all years. However, all ratios are projected to strongly recover following the in-service of Keeyask and Conawapa generating stations.

5.0 Analysis and Commentary

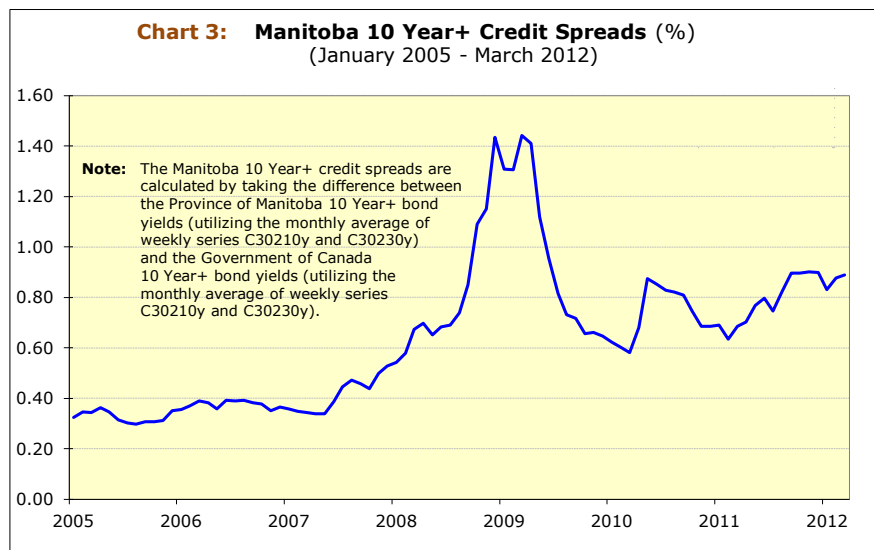
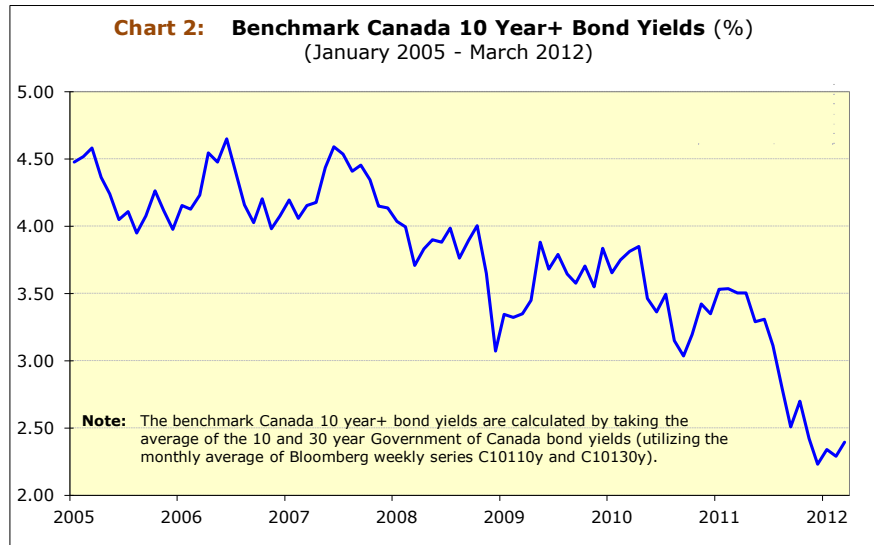
The extended period of financial market uncertainty continues to impact the debt capital markets and investor decision-making.

Investor appetite within the capital markets will have a significant effect on the cost, availability and timing of Manitoba Hydro’s financing. Investor appetite is affected by a variety of factors including their views of the macroeconomy. As noted by the Bank of Canada in April 2012, “The heightened uncertainty around the global outlook has eased from very high levels, but volatility can be expected to persist.”¹

In response to these economic challenges, many investors have continued to seek safety in liquid, high quality, government financial instruments. As a result, **benchmark bond yields** for Government of Canada long bonds have experienced ongoing downward pressure since 2008 (Chart 2).

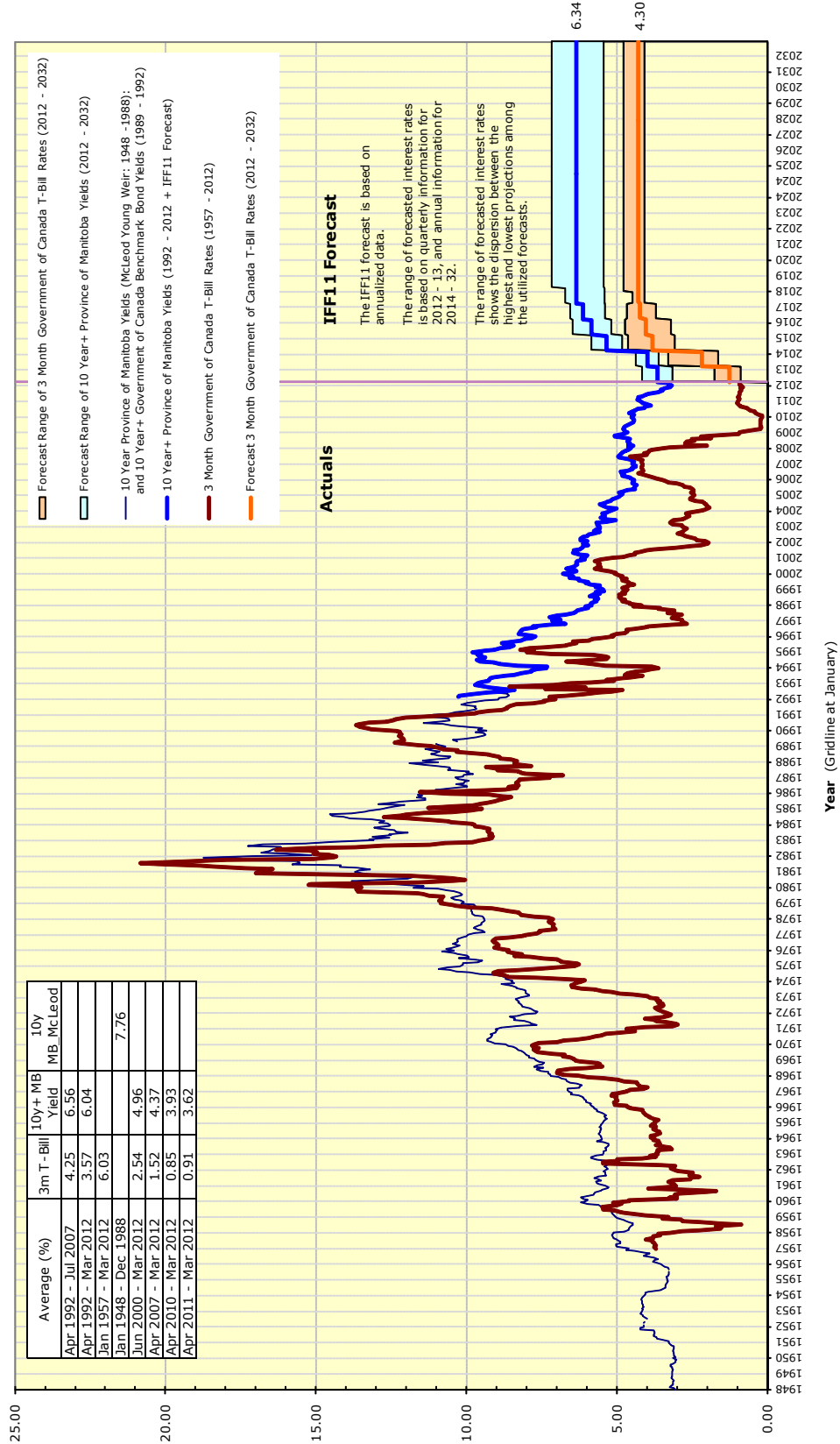
Partially counterbalancing this reduction in the benchmark interest rates, the **credit spreads** between benchmark Government of Canada bonds and the all-in cost to the Province of Manitoba have remained elevated as compared to pre-2008 levels (Chart 3).

The net impact of these movements is that Manitoba Hydro’s current interest rate environment continues to exhibit **exceptionally low rates** across the entire spectrum of the yield curve. This situation is demonstrated on the interest rate chart on page 7 that depicts historical interest rates dating back to January 1948, as well as a range of forecasted interest rates to 2032 (Chart 4).



¹ Bank of Canada, *Monetary Policy Report*, April 2012, page 3.

Chart 4: Short Term and Long Term Interest Rates (%)
 Actuals January 1948 - March 2012; Forecast to 2032
 (excluding PGF and transaction costs)



Note 1: The 10 Year Province of Manitoba (McLeod Young Weir) data is per Bank of Canada. The 3 Month Government of Canada T-Bill data is per Bank of Canada. The 10 Year+ Province of Manitoba data is calculated as the average of the Bloomberg 10 Year Manitoba yields and the Bloomberg 30 Year Manitoba yields.

Note 2: The 10 Year+ Government of Canada Benchmark Bond Yields have been used as an indicative proxy for the data gap for period Jan 1989 - Feb 1992 where no data was available for the Province of Manitoba bond yields.

Note 3: The forecasted long term debt credit spreads between the Government of Canada and the Province of Manitoba has been added to each of the forecasters' Government of Canada long term debt forecasts, so that all of the long interest rate projections illustrate Province of Manitoba yields.

Note 4: The forecasted long term interest rates exclude the Provincial Debt Guarantee Fee and transaction costs (the estimated transaction cost for Manitoba Hydro's long term borrowing is 6 basis points or 0.06%).

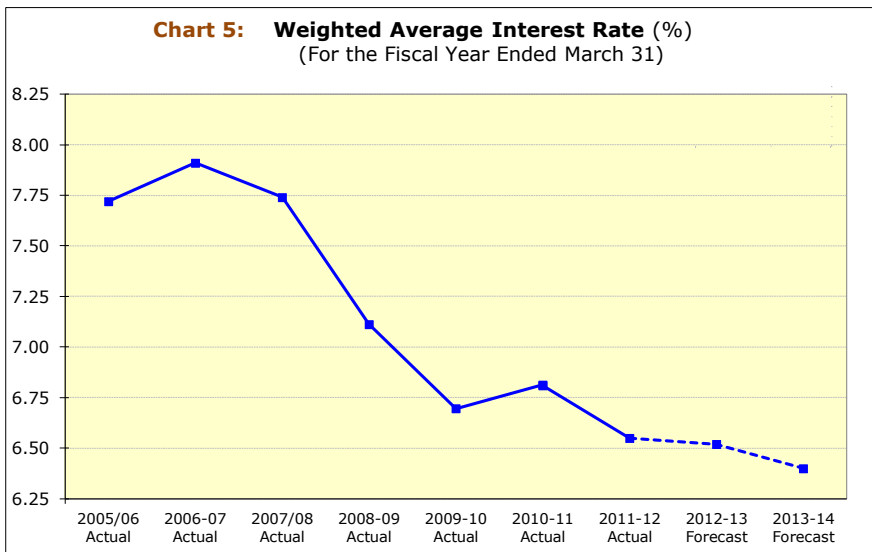
Chart 4 illustrates that for a prolonged period of time from the mid-1970's to the early 1990's, the long term interest rates for the Province of Manitoba were in excess of 10%, and in 1981 the long term interest rate exceeded 18%. The average 10 year long term fixed debt rate from 1948 – 1988 was 7.76%, and the average 10 year+ rate from April 1992 – July 2007 was 6.56%. In contrast, the average interest rate for 10 year+ debt from April 2007 to March 2012 was 4.37%. Looking forward, by 2017/18 the long term fixed interest rates are forecast to return to higher levels (average consensus forecast of 6.34% with emerging projections suggesting rates of ~5.85%), although remaining lower than the 15 year average experience prior to the economic downturn (1992 - 2007 = 6.56%).

With respect to the interest rate environment for Manitoba Hydro's Canadian long term floating rate debt, historically there has been significant volatility in interest reset rates. The average 3 month Canadian T-Bill interest rate (as a proxy for the variable interest reset rates on Manitoba Hydro's portfolio of Canadian long term floating rate debt) from January 1957 – March 2012 was 6.03%; and during 1974 - 1992 the 3 month T-Bill interest rate averaged over 10% with a high of over 20% in 1981.² Over the past two years, short term interest rates have risen from their historical lows in 2009/10. Looking forward, by 2017/18 the 3 month T-Bill rates (average consensus forecast of 4.30%) are projected to return to levels that existed prior to the economic downturn (1992 – 2007 = 4.25%).

When comparing the short and long term interest rates, it is evident that Manitoba's **yield curve has flattened** since early 2010 as the interest rate differential between the short and long term rates has narrowed. Moving forward, interest rates are forecast to rise for the entire yield curve. Therefore, a debt management strategy favouring fixed long term debt versus floating rate debt or shorter dated debt maturities will reduce the risk that the Corporation's future gross interest expense will be higher upon refinancing the debt stream.

The low interest rate environment over the past few years has also provided the opportunity for Manitoba Hydro to **reduce the debt portfolio's weighted average interest rates** (Chart 5). This opportunity to secure *low cost* financing is balanced alongside the debt management objective to provide *stability*.

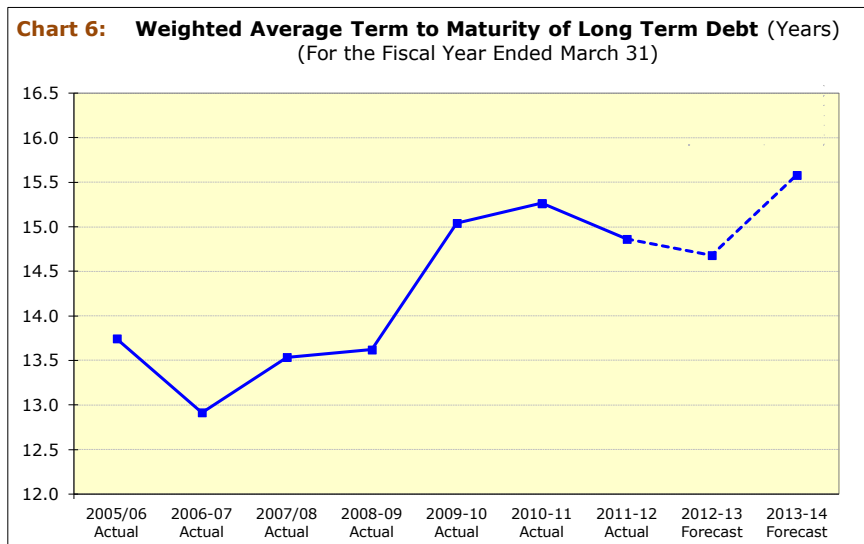
The importance of stability was recently underscored by Moody's Investors Service when they observed in their special commentary on provincial financings



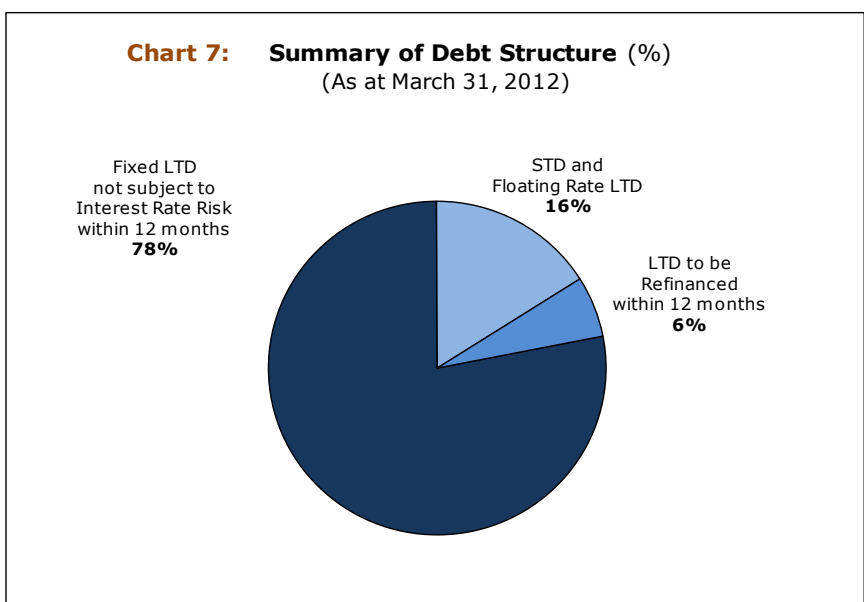
² The interest reset rate for Manitoba Hydro's portfolio of Canadian long term floating rate debt is typically the 3 month Bloomberg Bankers' Acceptance rate (CDOR03). In addition, the pricing for these long term floating rate debt issues have a fixed rate margin that is added to the variable bankers' acceptance (BA) component. For example, on May 4, 2010, Manitoba Hydro secured long term debt series C115 for CAD \$50 million and a May 4, 2015 maturity date. C115 bears a floating coupon rate of CDOR03 + 23 basis points. The coupon payment rate is reset on a quarterly basis to add the variable BA component to the 23 basis point fixed rate margin. Over the past 10 years, the CDOR03 rate has been higher than the 3 month Canadian T-Bill rate (C1033M) by an average of nearly 30 basis points (with an average of ~15 basis points prior to the financial crisis, peaking at over 250 basis points at the apex of the crisis in 2008, and currently at ~35 basis points in April 2012).

that “debt affordability has remained manageable, owing to the persistently low interest rate environment and the demand for Canadian government debt. ... As the global economy recovers, we expect interest rates and government funding costs will rise. ... Those provinces with higher debt burdens and greater reliance on short-term or variable rate debt financing will be particularly vulnerable.”³

During the past number of years, Manitoba Hydro’s actual long term financing has included issuance in various terms throughout the curve, including the issuance of floating rate notes. When selecting terms for its new borrowings, Manitoba Hydro gives careful consideration to the debt maturity schedule and the total level of annual financing requirements. In order to mitigate refinancing risk, to maintain financing flexibility during the upcoming decade, and in keeping with the concept of matching the Corporation’s long-lived assets with long term debt, Manitoba Hydro will continue to favour long term financings with maturities of 10 years+, while maintaining floating rate debt within policy limits. To further enhance the stability of the debt portfolio, Manitoba Hydro has **increased the weighted average term to maturity** of its long term debt portfolio by over one year since 2008/09 (Chart 6).



Stability is also reinforced by carefully managing the aggregate level of refinancing and interest rate reset risk within the debt portfolio. Manitoba Hydro’s **interest rate policy** on its existing debt portfolio is to limit the aggregate of short term debt and floating rate long term debt to a maximum of 30% of the total debt portfolio, and to maintain a target range between 15 - 25%. A graphical depiction of Manitoba Hydro’s debt structure as at March 31, 2012 is as shown in Chart 7.



³ Moody’s Investors Service, *Special Comment: Canadian Provinces Consolidating Finances in 2012*, March 8, 2012, page 5.

Liquidity risk refers to the risk that Manitoba Hydro will not have sufficient cash or cash equivalents to meet its financial obligations as they come due. Manitoba Hydro will meet its financial obligations when due through cash generated from operations, short term borrowings, long term borrowings advanced from the Province of Manitoba, and where applicable, sinking fund withdrawals. Overall financing requirements of Manitoba Hydro and its subsidiaries are managed on a consolidated basis. The Corporation closely monitors its cash receipts and disbursements on a daily basis as part of regular cash balancing activities. The Corporation also monitors short term debt balances and forecasted cash requirements to ensure that it has sufficient cash to meet near term financial obligations as they come due. During periods of elevated liquidity risk, the Corporation may increase its available liquidity and maintain positive cash and/or investment balances.

The Manitoba Hydro Act grants the Corporation the power to issue short term borrowings in the name of the Manitoba Hydro-Electric Board up to a limit of \$500 million and to have this debt unconditionally guaranteed as to principal and interest by the Province of Manitoba. Short term borrowings are considered to have terms to maturity of less than one year. The short term borrowing program is a credit facility with a primary objective to safeguard the Corporation from liquidity risk by providing sufficient liquidity for the Corporation's temporary cash requirements. Manitoba Hydro uses its short term debt line to fund its working capital requirements and to bridge the timing between long term debt issues. As Manitoba Hydro can issue promissory notes payable within its Commercial Paper Program at rates lower than the Prime or Base Rates, Manitoba Hydro typically issues promissory notes instead of relying on bank overdrafts to meet its temporary cash requirements.

Manitoba Hydro is legislated under the Manitoba Hydro Act to make sinking fund payments to the Province of Manitoba of not less than 1% of the principal amount of the outstanding debt on the preceding March 31, and 4% of the balance in the sinking fund at such date. Sinking funds are invested in government bonds and the bonds of highly rated corporations and financial institutions. Sinking fund withdrawals are applied towards the repayment of advances made to, and moneys borrowed by, the Corporation.

Manitoba Hydro has significant export revenues denominated in US dollars. As part of the Corporation's **foreign exchange exposure management program**, in order to mitigate the foreign currency exchange risk on these revenues, Manitoba Hydro maintains a natural hedge with US dollar cash flows, including outflows from US denominated debt. At March 31, 2012 the portion of Manitoba Hydro's debt portfolio that was made up of US denominated debt was 22%. The US debt portfolio may occasionally be rebalanced in accordance with US dollar cash flows. In addition to the mitigation of foreign exchange risk, Manitoba Hydro considers a number of factors when determining whether it will seek US dollar versus Canadian dollar debt, including the cost effectiveness of executing a US dollar versus a Canadian dollar issuance for available terms, and the liquidity and interest rate benefits associated with broadened access to capital within a diversified investor base. Although provincial borrowers frequently issue long bonds in the Canadian capital markets, due to financial market conditions, provincial issuance of US dollar debt with terms greater than 10 years is unusual because the long end of the US curve has not been cost effective compared to Canada for many years.

6.0 Debt Management Activities for 2012/13 and 2013/14

The following section provides an overview of Manitoba Hydro's forecasted financing requirements for 2012/13 and 2013/14.

Actual financings will vary from forecast. Actual financings will consider the timing, dollar value, denomination, and fixed versus floating nature of the issue depending on a number of factors including: the cash and liquidity requirements in existence at the time of financing; refinancing requirements on maturing debt and interest rate swaps; the term dependent on the current maturity schedule and forecasted borrowing requirements; interest rate expectations and the mitigation of interest rate risk; the management of foreign exchange risk; and the market appetite and economic environment.

2012/13

During 2012/13, the forecasted financing requirement is \$1,513 million composed of the following:

- \$947 million of long term debt for new cash requirements.
- \$557 million to refinance \$53 million of maturing debt and \$504 million to refinance maturing underlying debt issues which have associated interest rate swaps in place.
- \$9 million of short term debt at fiscal year end to provide temporary bridge financing of new cash requirements.

The long term debt financings forecasted for this fiscal year are as follows:

Quarter 1 It is forecasted that \$200 million of long term debt will be issued during this quarter for new cash requirements.

Quarter 2 It is forecasted that \$200 million of long term debt will be issued during this quarter for new cash requirements.

Quarter 3 It is forecasted that \$357 million of long term debt will be issued during this quarter for new cash requirements. In addition, the following refinancings are forecasted to occur in this quarter: a \$200 million refinancing of ER-1 (an underlying debt issue maturing December 3, 2012 which has an associated interest rate swap maturing September 3, 2017); a \$41.8 million residual refinancing of ER-2 (maturing December 3, 2012); and a \$1.2 million cumulative refinancing of 5B (maturing December 31, 2012).

Quarter 4 It is forecasted that \$190 million of long term debt will be issued during this quarter for new cash requirements. In addition, the following refinancings are forecasted to occur in this quarter: a \$104 million refinancing for C125 (an underlying debt issue maturing February 1, 2013 which has an associated interest rate swap maturing November 1, 2038); a \$10 million refinancing of 4I (maturing February 11, 2013); and a \$200 million refinancing of C112-1 &

C112-2 (underlying debt issues maturing March 15, 2013 which have associated interest rate swaps maturing September 16, 2013).

Sinking fund contributions for the 2012/13 fiscal year will be equal to the legislated minimum requirement of 1% of the long term debt outstanding at the end of the previous year plus 4% of the balance in the sinking fund at that date. For 2012/13, this amount is forecasted to be \$117 million. Manitoba Hydro has the equivalent of \$128.9 million CAD maturities during 2012/13 that are forecast to be fully retired through sinking fund withdrawals as follows:

Debt Series	Principal	Maturity Date
Hydro Bond, Series 10	CAD \$ 20.7 million	June 15, 2012
C107	CAD \$ 100.0 million	September 4, 2012
ER-2 (partial)	CAD \$ 8.2 million	December 3, 2012

2013/14

During 2013/14, the forecasted financing requirement is \$2,219 million composed of the following:

- \$1,236.5 million of long term debt for new cash requirements.
- \$909.5 million to refinance \$413.5 million of maturing debt and \$496 million to refinance maturing underlying debt issues which have associated interest rate swaps in place.
- \$73 million of short term debt at fiscal year end to provide temporary bridge financing of new cash requirements.

The long term debt financings forecasted for this fiscal year are as follows:

Quarter 1 It is forecasted that \$400 million of long term debt will be issued during this quarter for new cash requirements. In addition, the following USD refinancings (totaling a CAD equivalent value of \$396 million) are forecasted to occur in this quarter: a USD \$400 million refinancing of FO-1, FO-2 & FO-3 (underlying debt issues maturing April 22, 2013 which have associated interest rate swaps maturing March 15, 2020 for FO-1 and October 2, 2020 for FO-2 & FO-3).

Quarter 2 It is forecasted that \$269.3 million of long term debt will be issued during this quarter for new cash requirements. In addition, a \$180.7 million residual refinancing of C112-1 & C112-2 (maturing September 16, 2013) is forecasted to occur in this quarter.

Quarter 3 It is forecasted that \$382.2 million of long term debt will be issued during this quarter for new cash requirements. In addition, the following refinancing are forecasted to occur in this quarter: a \$217.8 million refinancing of EZ-3 & EZ-4 (maturing December 3, 2013); and a \$100 million refinancing of EZ-2 & EZ-5 (underlying debt issues maturing December 3, 2013 which have associated interest rate swaps maturing December 3, 2035).

Quarter 4 It is forecasted that \$185 million of long term debt will be issued during this quarter for new cash requirements. In addition, a \$15 million refinancing of 4J (maturing January 20, 2014) is forecasted to occur in this quarter.

Sinking fund contributions for the 2013/14 fiscal year is forecasted to be \$208.0 million. Manitoba Hydro has the equivalent of \$395.0 million CAD maturities during 2013/14 that are forecast to be fully retired through sinking fund withdrawals as follows:

Debt Series	Principal	Maturity Date
DE	USD \$ 188.4 million	July 22, 2013
EZ	USD \$ 150.0 million	January 21, 2014
5A	CAD \$ 40.0 million	June 30, 2013
5B	CAD \$.7 million	June 30, 2013
C112-1 (partial)	CAD \$ 19.3 million	September 16, 2013

7.0 2012 Loan Act Authority

The Loan Act is approved each year by the Province of Manitoba and grants Manitoba Hydro borrowing authority to meet the Corporation's projected new financing requirements. The Province of Manitoba secures long term debt on behalf of Manitoba Hydro and advances long term borrowings to the Corporation. Manitoba Hydro's long term debt is guaranteed by the Province of Manitoba, with the exception of Manitoba Hydro-Electric Board Bonds issued for mitigation purposes. The incremental Loan Act Authority of \$1,490 million to December 31, 2013 is as follows:

	(millions)
Projected Capital Expenditures in 2012/13	\$1,195
Sinking Fund Requirement in 2012/13	117
Bridge Financing Requirements to December 31, 2013 (net)	<u>929</u>
	<u>\$2,241</u>
Deduct: 2011 Loan Act Authority Available at March 31, 2012	\$420
Projected Internally Generated Funds in 2012/13 (net)	<u>331</u>
	<u>\$751</u>
New Incremental Loan Act Authority Required	<u>\$1,490</u>

MANITOBA HYDRO

DEBT MANAGEMENT STRATEGY

2013/14

Update, including Centra Gas information



Finance & Administration
Treasury Division
May 2013

Table of Contents

1.0 Purpose of this Document	2
2.0 Debt Management Objectives	2
3.0 Analysis and Commentary	3

1.0 Purpose of this Document

This document provides an abridged update to the previously published *Debt Management Strategy* document, along with supplementary information pertaining to the Centra Gas debt portfolio. In order to maintain continuity with the originating Debt Management Strategy document, updated charts will retain their previous chart number.

2.0 Debt Management Objectives

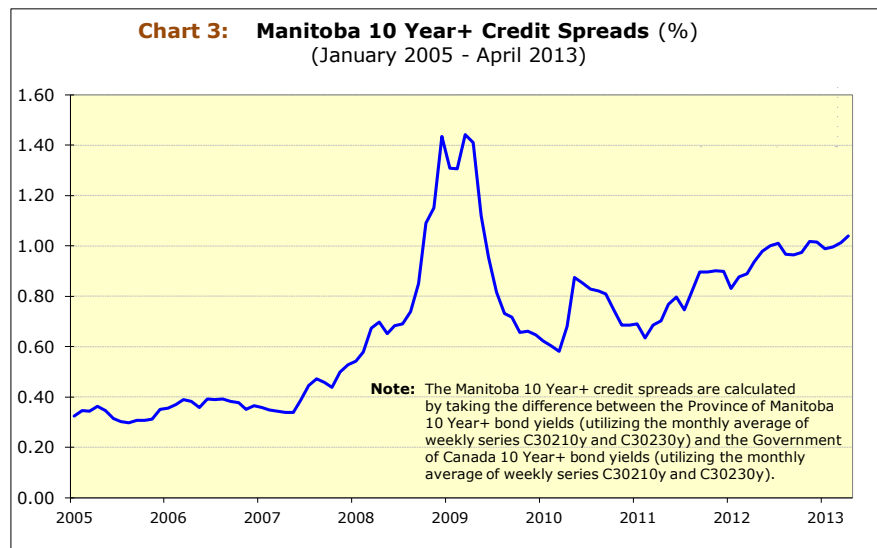
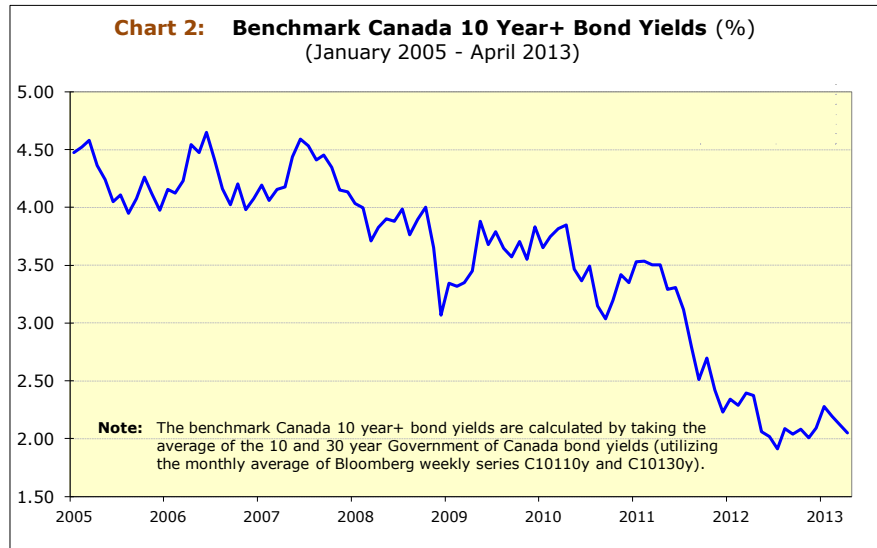
The Corporation’s fundamental debt management objective is to provide stable, low cost funding to meet the financial obligations and liquidity needs of the Corporation. Manitoba Hydro continually monitors the interest rate environment and acts to secure stable, low-cost financing with terms to maturity that meet investor appetite and fit the Corporation’s debt maturity schedule.

3.0 Analysis and Commentary

The extended period of financial market uncertainty continues to impact the debt capital markets and investor decision-making. Investor appetite within the capital markets will have a significant effect on the cost, availability and timing of Manitoba Hydro’s financing. Investor appetite is affected by a variety of factors including their views of the macroeconomy.

In response to these economic challenges, many investors have continued to seek safety in liquid, high quality, government financial instruments. As a result, **benchmark bond yields** for Government of Canada long bonds have continued to experience ongoing downward pressure since 2008 (Chart 2). Over the past year, the benchmark bond yields continued to show volatility, dropping to their lowest levels during the summer of 2012 before rising again into the early part of 2013. As at May 23, 2013 the benchmark Canada 10 year+ rate was 2.25% with forecasts suggesting increases up to 2.50% by the end of 2013 and into 2014.

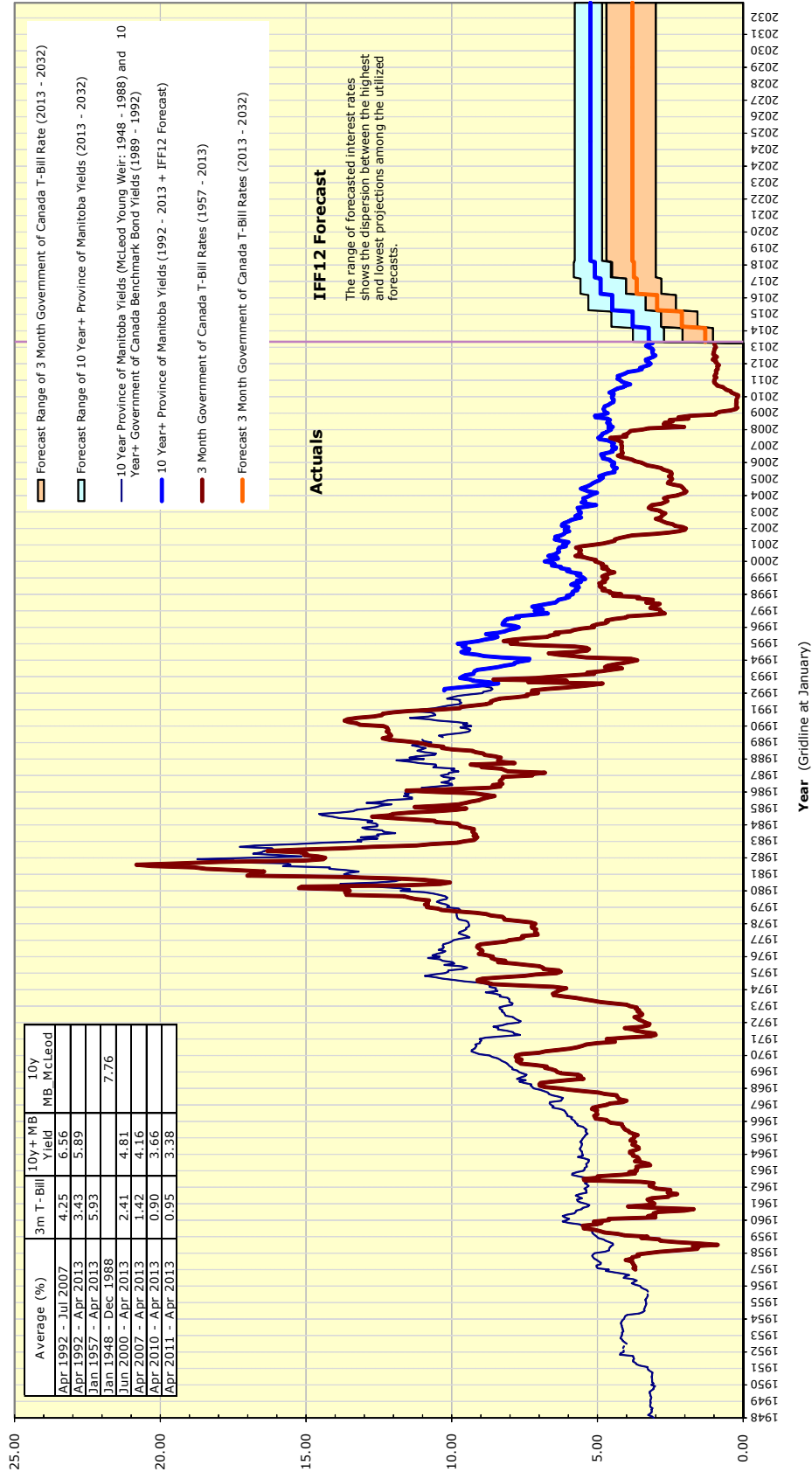
Partially counterbalancing this change in the benchmark interest rates, the **credit spreads** between benchmark



Government of Canada bonds and the all-in cost to the Province of Manitoba have remained elevated as compared to pre-2008 levels (Chart 3). The Manitoba 10 Year+ credit spreads have trended upward since 2011 and had recently been ranging near the 1.00% level. As at May 23, 2013 the credit spread was approximately 0.90%.

The net impact of these movements is that Manitoba Hydro’s current interest rate environment continues to exhibit **exceptionally low rates** across the entire spectrum of the yield curve. This situation is demonstrated on the interest rate chart on page 4 that depicts historical interest rates dating back to January 1948, as well as a range of forecasted interest rates to 2032 (Chart 4).

Chart 4: Short Term and Long Term Interest Rates (%)
 Actuals January 1948 - April 2013; Forecast to 2032
 (excluding PGF and transaction costs)



Note 1: The 10 Year Province of Manitoba (McLeod Young Weir) data is per Bank of Canada. The 3 Month Government of Canada T-Bill data is per Bank of Canada. The 10 Year+ Province of Manitoba data is calculated as the average of the Bloomberg 10 Year Manitoba yields and the Bloomberg 30 Year Manitoba yields.

Note 2: The 10 Year+ Government of Canada Benchmark Bond Yields have been used as an indicative proxy for the data gap for period Jan 1989 - Feb 1992 where no data was available for the Province of Manitoba bond yields.

Note 3: The forecasted long term debt credit spreads between the Government of Canada and the Province of Manitoba has been added to each of the forecasters' Government of Canada long term debt forecasts, so that all of the long interest rate projections illustrate Province of Manitoba yields.

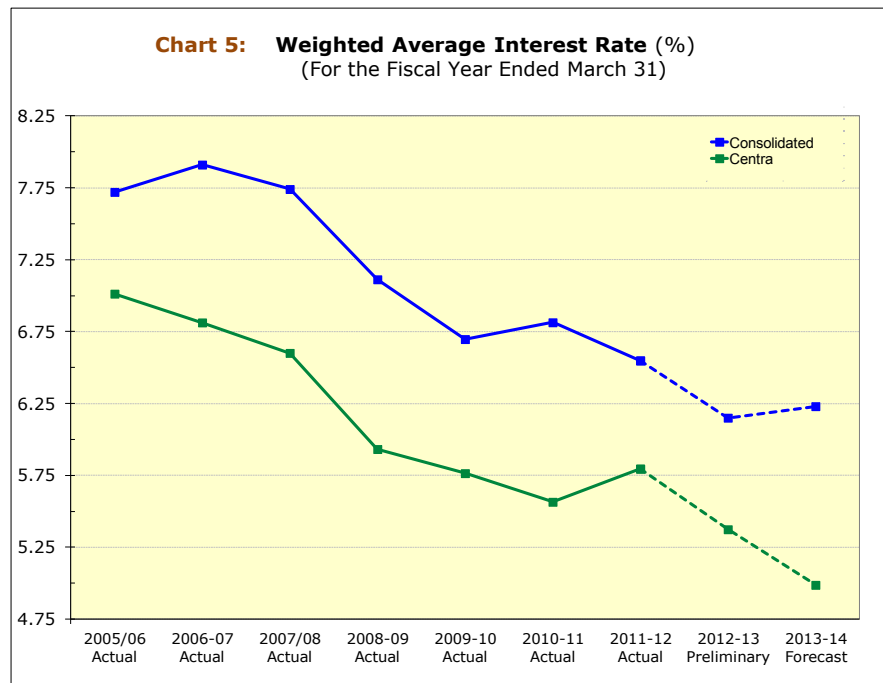
Note 4: The forecasted long term interest rates exclude the Provincial Debt Guarantee Fee and transaction costs (the estimated transaction cost for Manitoba Hydro's long term borrowing is 6 basis points or 0.06%).

Chart 4 illustrates that for a prolonged period of time from the mid-1970's to the early 1990's, the long term interest rates for the Province of Manitoba were in excess of 10%, and in 1981 the long term interest rate exceeded 18%. The average 10 year long term fixed debt rate from 1948 – 1988 was 7.76%, and the average 10 year+ rate from April 1992 – July 2007 was 6.56%. In contrast, the average interest rate for 10 year+ debt from April 2007 to April 2013 was 4.16%. Looking forward, by 2018/19 the long term fixed interest rates are forecasted to return to higher levels (with an average consensus forecast of 5.24%, and emerging projections suggesting rates of ~5.70%).

With respect to the interest rate environment for Manitoba Hydro's Canadian long term floating rate debt, historically there has been significant volatility in interest reset rates. The average 3 month Canadian T-Bill interest rate (as a proxy for the variable interest reset rates on Manitoba Hydro's portfolio of Canadian long term floating rate debt) from January 1957 – April 2013 was 5.93%; and during 1974 - 1992 the 3 month T-Bill interest rate averaged over 10% with a high of over 20% in 1981.¹ Over the past three years, short term interest rates have risen from their historical lows in 2009/10. Looking forward, by 2018/19 the 3 month T-Bill rates are forecasted to rise (with an average consensus forecast of 3.80%, and emerging projections suggesting rates of ~ 3.90%).

When comparing the short and long term interest rates, it is evident that Manitoba's **yield curve has flattened** since early 2010 as the interest rate differential between the short and long term rates has narrowed. Moving forward, interest rates are forecasted to rise for the entire yield curve. Therefore, a debt management strategy favouring long term debt versus shorter dated debt maturities will reduce the risk that the Corporation's future gross interest expense will be higher upon refinancing the debt stream.

The low interest rate environment over the past few years has also provided the opportunity for Manitoba Hydro and Centra to **reduce the debt portfolio's weighted average interest rates** (Chart 5). This opportunity to secure *low cost* financing is balanced alongside the debt management objective to provide *stability*.

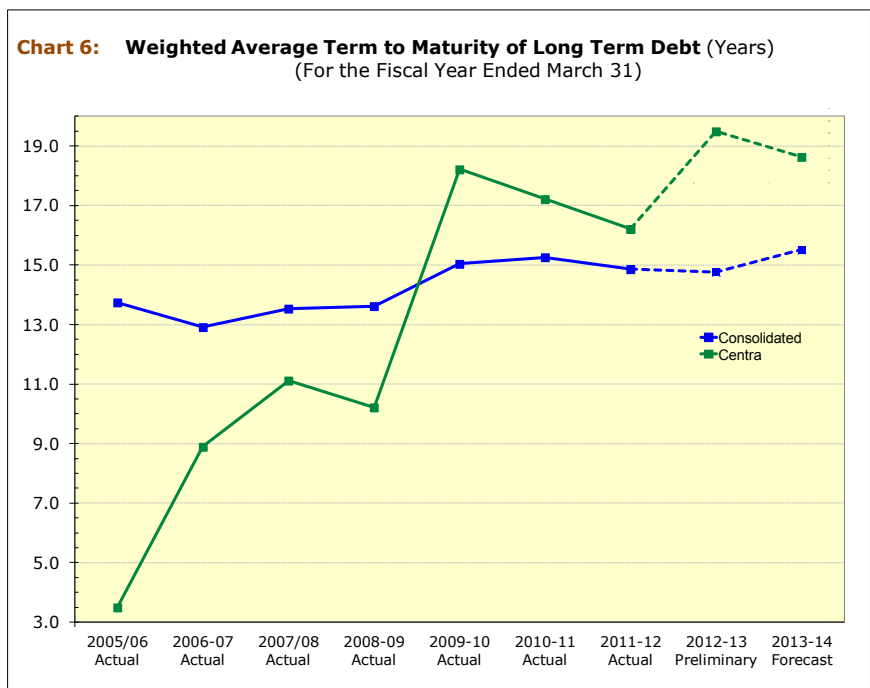


¹ The interest reset rate for Manitoba Hydro's portfolio of Canadian long term floating rate debt is typically the 3 month Bloomberg Bankers' Acceptance rate (CDOR03). In addition, the pricing for these long term floating rate debt issues have a fixed rate margin that is added to the variable bankers' acceptance (BA) component. For example, on May 4, 2010, Manitoba Hydro secured long term debt series C115 for CAD \$50 million and a May 4, 2015 maturity date. C115 bears a floating coupon rate of CDOR03 + 23 basis points. The coupon payment rate is reset on a quarterly basis to add the variable BA component to the 23 basis point fixed rate margin. Over the past 10 years, the CDOR03 rate has been higher than the 3 month Canadian T-Bill rate (C1033M) by an average of nearly 30 basis points (with an average of approximately 15 basis points prior to the financial crisis, peaking at over 250 basis points at the apex of the crisis in 2008, and currently at approximately 30 basis points in May 2013).

The importance of stability was underscored by Moody’s Investors Service when they observed in their special commentary on provincial financings that “debt affordability has remained manageable, owing to the persistently low interest rate environment and the demand for Canadian government debt. ... As the global economy recovers, we expect interest rates and government funding costs will rise. ... Those provinces with higher debt burdens and greater reliance on short-term or variable rate debt financing will be particularly vulnerable.”²

During the past number of years, Manitoba Hydro’s actual long term financing has included issuance in various terms throughout the curve, including the issuance of floating rate notes. When selecting terms for its new borrowings, Manitoba Hydro gives careful consideration to the debt maturity schedule and the total level of annual financing requirements. The debt management strategy guidance is to have less than 15% of the long term debt portfolio maturing within a fiscal year. In order to mitigate refinancing risk, to maintain financing flexibility during the upcoming decade, and in keeping with the concept of matching the Corporation’s long-lived assets with long term debt, Manitoba Hydro will continue to favour long term financings with maturities of 10 years+, while maintaining floating rate debt within policy limits.

To further enhance the stability of the debt portfolio, Manitoba Hydro has **increased the weighted average term to maturity** of its long term debt portfolio by nearly two years since 2008/09 (Chart 6). During the past few years, Centra has issued new long term debt financings and refinanced a relatively large proportion of its legacy debt portfolio. By advantageously extending its term to maturity during these financings, Centra has been able to significantly enhance the structural stability of its debt portfolio.



Stability is also reinforced by carefully managing the aggregate level of refinancing and interest rate reset risk within the debt portfolio. Manitoba Hydro’s **interest rate policy** on its existing debt portfolio is to limit the aggregate of short term debt and floating rate long term debt to a maximum of 30% of the total debt portfolio, and to maintain a target range between 15 - 25%.

² Moody’s Investors Service, *Special Comment: Canadian Provinces Consolidating Finances in 2012*, March 8, 2012, page 5.

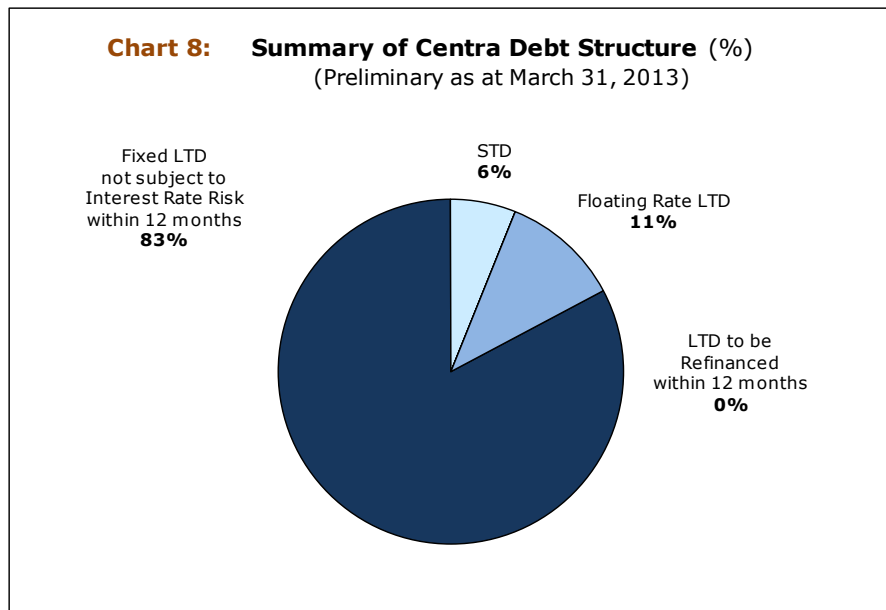
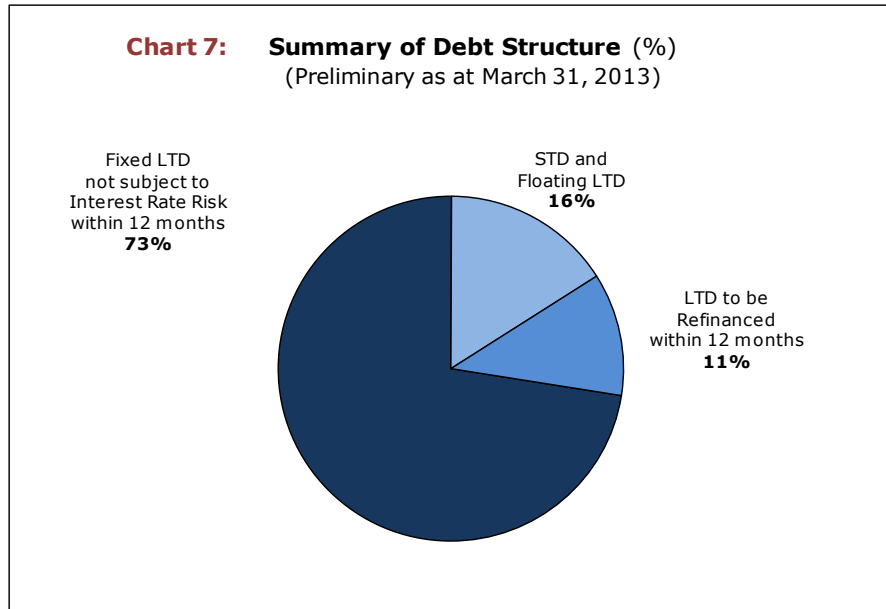
A graphical depiction of Manitoba Hydro's debt structure as at March 31, 2013 is as shown in Chart 7. As compared to March 31, 2012 while the percentage of short term debt and floating rate long term debt has remained the same at 16%, the interest rate risk profile has increased as the long term debt to be refinanced within 12 months has increased from 6% to 11% (Manitoba Hydro had no short term debt at March 31, 2012 or March 31, 2013). At March 31, 2013 Manitoba Hydro's combined interest rate risk has therefore moved from 22% to 27%.

As shown in Chart 8, Centra had 17% of its total debt portfolio in short term debt (6%) and floating rate long term debt (11%). At March 31, 2013, Centra did not have any long term debt to be refinanced within the next 12 months.

Liquidity risk refers to

the risk that Manitoba Hydro will not have sufficient cash or cash equivalents to meet its financial obligations as they come due. Manitoba Hydro will meet its financial obligations when due through cash generated from operations, short term borrowings, long term borrowings advanced from the Province of Manitoba, and where applicable, sinking fund withdrawals. Overall financing requirements of Manitoba Hydro and its subsidiaries are managed on a consolidated basis. The Corporation closely monitors its cash receipts and disbursements on a daily basis as part of regular cash balancing activities. The Corporation also monitors short term debt balances and forecasted cash requirements to ensure that it has sufficient cash to meet near term financial obligations as they come due. During periods of elevated liquidity risk, the Corporation may increase its available liquidity and maintain positive cash and/or investment balances.

The Manitoba Hydro Act grants the Corporation the power to issue short term borrowings in the name of the Manitoba Hydro-Electric Board up to a limit of \$500 million and to have this debt unconditionally guaranteed as to principal and interest by the Province of Manitoba.



Short term borrowings are considered to have terms to maturity of less than one year. The short term borrowing program is a credit facility with a primary objective to safeguard the Corporation from liquidity risk by providing sufficient liquidity for the Corporation's temporary cash requirements. Manitoba Hydro uses its short term debt line to fund its working capital requirements and to bridge the timing between long term debt issues. As Manitoba Hydro can issue promissory notes payable within its Commercial Paper Program at rates lower than the Prime or Base Rates, Manitoba Hydro typically issues promissory notes instead of relying on bank overdrafts to meet its temporary cash requirements.

Manitoba Hydro is legislated under the Manitoba Hydro Act to make sinking fund payments to the Province of Manitoba of not less than 1% of the principal amount of the outstanding debt on the preceding March 31, and 4% of the balance in the sinking fund at such date. Sinking funds are invested in government bonds and the bonds of highly rated corporations and financial institutions. Sinking fund withdrawals are applied towards the repayment of advances made to, and moneys borrowed by, the Corporation.

Manitoba Hydro has significant export revenues denominated in US dollars. As part of the Corporation's **foreign exchange exposure management program**, in order to mitigate the foreign currency exchange risk on these revenues, Manitoba Hydro maintains a natural hedge with US dollar cash flows, including outflows from US denominated debt. At March 31, 2013 the portion of Manitoba Hydro's debt portfolio that was made up of US denominated debt was 21%. The US debt portfolio may occasionally be rebalanced in accordance with US dollar cash flows. In addition to the mitigation of foreign exchange risk, Manitoba Hydro considers a number of factors when determining whether it will seek US dollar versus Canadian dollar debt, including the cost effectiveness of executing a US dollar versus a Canadian dollar issuance for available terms, and the liquidity and interest rate benefits associated with broadened access to capital within a diversified investor base. Although provincial borrowers frequently issue long bonds in the Canadian capital markets, due to financial market conditions, provincial issuance of US dollar debt with terms greater than 10 years is unusual because the long end of the US curve has not been cost effective compared to Canada for many years.

As At March 31, 2004		2004	Maturing	Maturing	Maturing	Maturing	Total
		Ending	< 1 Year	1 - 10 Years	11 - 20 Years	> 20 Years	
MH Advances	Maturity Date	Balance					
CG 1 - Maturity	18-Sep-2012	62,671		62,671			62,671
CG 2 - Maturity	15-Jul-2006	6,520		6,520			6,520
CG 2 - Serial Maturity	15-Jul-2004	800	800				800
CG 2 - Serial Maturity	15-Jul-2005	800		800			800
CG 3 - Maturity	22-Nov-2006	48,525		48,525			48,525
CG 4 - Maturity	31-Mar-2010	18,077		18,077			18,077
CG 4 - Serial Maturity	31-Mar-2005	2,260	2,260				2,260
CG 4 - Serial Maturity	31-Mar-2006	2,260		2,260			2,260
CG 4 - Serial Maturity	31-Mar-2007	2,260		2,260			2,260
CG 4 - Serial Maturity	31-Mar-2008	2,260		2,260			2,260
CG 4 - Serial Maturity	31-Mar-2009	2,260		2,260			2,260
CG 5 - Maturity	22-Feb-2010	75,000		75,000			75,000
CG 6 - Initial Maturity	29-Oct-2007	30,000		30,000			30,000
Total		253,691	3,060	250,632	-	-	253,691

Centra Weighted Average Term to Maturity in Years **5.4**
Manitoba Hydro Weighted Average Term to Maturity in Years 13.8
Percentage Maturing within Specific Time Period 1.2% 98.8% 0.0% 0.0%

Largest Maturity Amount in Fiscal Year Ended 2009/2010 **93,077**
Percentage Maturing in Largest Maturity Year **36.7%**

As At March 31, 2005		2005	Maturing	Maturing	Maturing	Maturing	Total
		Ending	< 1 Year	1 - 10 Years	11 - 20 Years	> 20 Years	
MH Advances	Maturity Date	Balance					
CG 1 - Maturity	18-Sep-2012	62,671		62,671			62,671
CG 2 - Maturity	15-Jul-2006	6,520		6,520			6,520
CG 2 - Serial Maturity	15-Jul-2005	800	800				800
CG 3 - Maturity	22-Nov-2006	48,525		48,525			48,525
CG 4 - Maturity	31-Mar-2010	18,077		18,077			18,077
CG 4 - Serial Maturity	31-Mar-2006	2,260	2,260				2,260
CG 4 - Serial Maturity	31-Mar-2007	2,260		2,260			2,260
CG 4 - Serial Maturity	31-Mar-2008	2,260		2,260			2,260
CG 4 - Serial Maturity	31-Mar-2009	2,260		2,260			2,260
CG 5 - Maturity	22-Feb-2010	75,000		75,000			75,000
CG 6 - Initial Maturity	29-Oct-2007	30,000		30,000			30,000
Total		250,632	3,060	247,572	-	-	250,632

Centra Weighted Average Term to Maturity in Years **4.4**
Manitoba Hydro Weighted Average Term to Maturity in Years 13.8
Percentage Maturing within Specific Time Period 1.2% 98.8% 0.0% 0.0%

Largest Maturity Amount in Fiscal Year Ended 2009/2010 **93,077**
Percentage Maturing in Largest Maturity Year **37.1%**

As At March 31, 2006		2006	Maturing	Maturing	Maturing	Maturing	Total
		Ending	< 1 Year	1 - 10 Years	11 - 20 Years	> 20 Years	
MH Advances	Maturity Date	Balance					
CG 1 - Maturity	18-Sep-2012	62,671		62,671			62,671
CG 2 - Maturity	15-Jul-2006	6,520	6,520				6,520
CG 3 - Maturity	22-Nov-2006	48,525	48,525				48,525
CG 4 - Maturity	31-Mar-2010	18,077		18,077			18,077
CG 4 - Serial Maturity	31-Mar-2007	2,260	2,260				2,260
CG 4 - Serial Maturity	31-Mar-2008	2,260		2,260			2,260
CG 4 - Serial Maturity	31-Mar-2009	2,260		2,260			2,260
CG 5 - Maturity	22-Feb-2010	75,000		75,000			75,000
CG 6 - Initial Maturity	29-Oct-2007	30,000		30,000			30,000
Total		247,572	57,305	190,267	-	-	247,572

Centra Weighted Average Term to Maturity in Years **3.5**
Manitoba Hydro Weighted Average Term to Maturity in Years 13.7
Percentage Maturing within Specific Time Period 23.1% 76.9% 0.0% 0.0%

Largest Maturity Amount in Fiscal Year Ended 2009/2010 **93,077**
Percentage Maturing in Largest Maturity Year **37.6%**

As At March 31, 2007		2007	Maturing	Maturing	Maturing	Maturing	Total
		Ending	< 1 Year	1 - 10 Years	11 - 20 Years	> 20 Years	
MH Advances	Maturity Date	Balance					
CG 1 - Maturity	18-Sep-2012	62,671		62,671			62,671
CG 4 - Maturity	31-Mar-2010	18,077		18,077			18,077
CG 4 - Serial Maturity	31-Mar-2008	2,260	2,260				2,260
CG 4 - Serial Maturity	31-Mar-2009	2,260		2,260			2,260
CG 5 - Maturity	22-Feb-2010	75,000		75,000			75,000
CG 6 - Initial Maturity	29-Oct-2007	30,000	30,000				30,000
CG 7 - Maturity	05-Mar-2037	50,000				50,000	50,000
Total		240,267	32,260	158,007	-	50,000	240,267

Centra Weighted Average Term to Maturity in Years 8.9
 Manitoba Hydro Weighted Average Term to Maturity in Years 12.9
 Percentage Maturing within Specific Time Period 13.4% 65.8% 0.0% 20.8%

Largest Maturity Amount in Fiscal Year Ended 2009/2010 93,077
Percentage Maturing in Largest Maturity Year 38.7%

As At March 31, 2008		2008	Maturing	Maturing	Maturing	Maturing	Total
		Ending	< 1 Year	1 - 10 Years	11 - 20 Years	> 20 Years	
MH Advances	Maturity Date	Balance					
CG 1 - Maturity	18-Sep-2012	62,671		62,671			62,671
CG 4 - Maturity	31-Mar-2010	18,077		18,077			18,077
CG 4 - Serial Maturity	31-Mar-2009	2,260	2,260				2,260
CG 5 - Maturity	22-Feb-2010	75,000		75,000			75,000
CG 8 - CG 6 Extension	29-Oct-2032	30,000				30,000	30,000
CG 7 - Maturity	05-Mar-2037	50,000				50,000	50,000
Total		238,007	2,260	155,748	-	80,000	238,007

Centra Weighted Average Term to Maturity in Years 11.1
 Manitoba Hydro Weighted Average Term to Maturity in Years 13.5
 Percentage Maturing within Specific Time Period 0.9% 65.4% 0.0% 33.6%

Largest Maturity Amount in Fiscal Year Ended 2009/2010 93,077
Percentage Maturing in Largest Maturity Year 39.1%

As At March 31, 2009		2009	Maturing	Maturing	Maturing	Maturing	Total
		Ending	< 1 Year	1 - 10 Years	11 - 20 Years	> 20 Years	
MH Advances	Maturity Date	Balance					
CG 1 - Maturity	18-Sep-2012	62,671		62,671			62,671
CG 4 - Maturity	31-Mar-2010	18,077	18,077				18,077
CG 5 - Maturity	22-Feb-2010	75,000	75,000				75,000
CG 8 - CG 6 Extension	29-Oct-2032	30,000				30,000	30,000
CG 7 - Maturity	05-Mar-2037	50,000				50,000	50,000
Total		235,748	93,077	62,671	-	80,000	235,748

Centra Weighted Average Term to Maturity in Years 10.2
 Manitoba Hydro Weighted Average Term to Maturity in Years 13.6
 Percentage Maturing within Specific Time Period 39.5% 26.6% 0.0% 33.9%

Largest Maturity Amount in Fiscal Year Ended 2009/2010 93,077
Percentage Maturing in Largest Maturity Year 39.5%

As At March 31, 2010		2010	Maturing	Maturing	Maturing	Maturing	Total
MH Advances	Maturity Date	Ending	< 1 Year	1 - 10 Years	11 - 20 Years	> 20 Years	
		Balance					
CG 1 - Maturity	18-Sep-2012	62,671		62,671			62,671
CG 8 - CG 6 Extension	29-Oct-2032	30,000				30,000	30,000
CG 7 - Maturity	05-Mar-2037	50,000				50,000	50,000
CG 9 - Maturity	05-Mar-2040	30,000				30,000	30,000
CG 10 - Maturity	22-Feb-2015	35,000		35,000			35,000
CG 11 - Maturity	22-Feb-2030	30,000			30,000		30,000
CG 12 - Maturity	22-Aug-2037	10,000				10,000	10,000
CG 13 - Maturity	30-Sep-2037	20,000				20,000	20,000
CG 14 - Maturity	31-Mar-2035	30,000				30,000	30,000
Total		297,671	-	97,671	30,000	170,000	297,671

Centra Weighted Average Term to Maturity in Years	18.2				
Manitoba Hydro Weighted Average Term to Maturity in Years	15.0				
Percentage Maturing within Specific Time Period		0.0%	32.8%	10.1%	57.1%
Largest Maturity Amount in Fiscal Year Ended 2012/13	62,671				
Percentage Maturing in Largest Maturity Year	21.1%				

As At March 31, 2011		2011	Maturing	Maturing	Maturing	Maturing	Total
MH Advances	Maturity Date	Ending	< 1 Year	1 - 10 Years	11 - 20 Years	> 20 Years	
		Balance					
CG 1 - Maturity	18-Sep-2012	62,671		62,671			62,671
CG 8 - CG 6 Extension	29-Oct-2032	30,000				30,000	30,000
CG 7 - Maturity	05-Mar-2037	50,000				50,000	50,000
CG 9 - Maturity	05-Mar-2040	30,000				30,000	30,000
CG 10 - Maturity	22-Feb-2015	35,000		35,000			35,000
CG 11 - Maturity	22-Feb-2030	30,000			30,000		30,000
CG 12 - Maturity	22-Aug-2037	10,000				10,000	10,000
CG 13 - Maturity	30-Sep-2037	20,000				20,000	20,000
CG 14 - Maturity	31-Mar-2035	30,000				30,000	30,000
Total		297,671	-	97,671	30,000	170,000	297,671

Centra Weighted Average Term to Maturity in Years	17.2				
Manitoba Hydro Weighted Average Term to Maturity in Years	15.3				
Percentage Maturing within Specific Time Period		0.0%	32.8%	10.1%	57.1%
Largest Maturity Amount in Fiscal Year Ended 2012/13	62,671				
Percentage Maturing in Largest Maturity Year	21.1%				

As At March 31, 2012		2012	Maturing	Maturing	Maturing	Maturing	Total
MH Advances	Maturity Date	Ending	< 1 Year	1 - 10 Years	11 - 20 Years	> 20 Years	
		Balance					
CG 1 - Maturity	18-Sep-2012	62,671	62,671				62,671
CG 8 - CG 6 Extension	29-Oct-2032	30,000				30,000	30,000
CG 7 - Maturity	05-Mar-2037	50,000				50,000	50,000
CG 9 - Maturity	05-Mar-2040	30,000				30,000	30,000
CG 10 - Maturity	22-Feb-2015	35,000		35,000			35,000
CG 11 - Maturity	22-Feb-2030	30,000			30,000		30,000
CG 12 - Maturity	22-Aug-2037	10,000				10,000	10,000
CG 13 - Maturity	30-Sep-2037	20,000				20,000	20,000
CG 14 - Maturity	31-Mar-2035	30,000				30,000	30,000
Total		297,671	62,671	35,000	30,000	170,000	297,671

Centra Weighted Average Term to Maturity in Years	16.2				
Manitoba Hydro Weighted Average Term to Maturity in Years	14.9				
Percentage Maturing within Specific Time Period		21.1%	11.8%	10.1%	57.1%
Largest Maturity Amount in Fiscal Year Ended 2012/13	62,671				
Percentage Maturing in Largest Maturity Year	21.1%				

As At March 31, 2013		2013	Maturing	Maturing	Maturing	Maturing	Total
MH Advances	Maturity Date	Ending	< 1 Year	1 - 10 Years	11 - 20 Years	> 20 Years	
		Balance					
CG 8 - CG 6 Extension	29-Oct-2032	30,000			30,000		30,000
CG 7 - Maturity	05-Mar-2037	50,000				50,000	50,000
CG 9 - Maturity	05-Mar-2040	30,000				30,000	30,000
CG 10 - Maturity	22-Feb-2015	35,000		35,000			35,000
CG 11 - Maturity	22-Feb-2030	30,000			30,000		30,000
CG 12 - Maturity	22-Aug-2037	10,000				10,000	10,000
CG 13 - Maturity	30-Sep-2037	20,000				20,000	20,000
CG 14 - Maturity	31-Mar-2035	30,000				30,000	30,000
CG 15 - Maturity	18-Sep-2022	20,000		20,000			20,000
CG 16 - Maturity	18-Sep-2033	20,000				20,000	20,000
CG 17 - Maturity	18-Sep-2042	20,000				20,000	20,000
Total		295,000	-	55,000	60,000	180,000	295,000

Centra Weighted Average Term to Maturity in Years	19.5				
Manitoba Hydro Weighted Average Term to Maturity in Years	14.8				
Percentage Maturing within Specific Time Period		0.0%	18.6%	20.3%	61.0%

Largest Maturity Amount in Fiscal Year Ended 2036/37	50,000
Percentage Maturing in Largest Maturity Year	16.9%

As At March 31, 2014		2014	Maturing	Maturing	Maturing	Maturing	Total
MH Advances	Maturity Date	Ending	< 1 Year	1 - 10 Years	11 - 20 Years	> 20 Years	
		Balance					
CG 8 - CG 6 Extension	29-Oct-2032	30,000			30,000		30,000
CG 7 - Maturity	05-Mar-2037	50,000				50,000	50,000
CG 9 - Maturity	05-Mar-2040	30,000				30,000	30,000
CG 10 - Maturity	22-Feb-2015	35,000	35,000				35,000
CG 11 - Maturity	22-Feb-2030	30,000			30,000		30,000
CG 12 - Maturity	22-Aug-2037	10,000				10,000	10,000
CG 13 - Maturity	30-Sep-2037	20,000				20,000	20,000
CG 14 - Maturity	31-Mar-2035	30,000				30,000	30,000
CG 15 - Maturity	18-Sep-2022	20,000		20,000			20,000
CG 16 - Maturity	18-Sep-2033	20,000			20,000		20,000
CG 17 - Maturity	18-Sep-2042	20,000				20,000	20,000
New Issue March 2014 - Maturity	31-Mar-2034	30,000				30,000	30,000
Total		325,000	35,000	20,000	80,000	190,000	325,000

Centra Weighted Average Term to Maturity in Years	18.6				
Manitoba Hydro Weighted Average Term to Maturity in Years	15.5				
Percentage Maturing within Specific Time Period		10.8%	6.2%	24.6%	58.5%

Largest Maturity Amount in Fiscal Year Ended 2036/37	50,000
Percentage Maturing in Largest Maturity Year	15.4%

CAC/CENTRA I-15

Reference: Appendix 5.5, Appendix 5.6 and Appendix 5.7

Preamble: CAC observes that the appendices 5.5 to 5.7 are for the Manitoba Hydro-Electric Board and are not Centra specific.

a) Supply Centra specific financial statements for periods ended June 2012, September 2012, and December 2012.

ANSWER:

The Manitoba Hydro-Electric Board (“MHEB”) does not prepare Centra-specific quarterly reports. The MHEB consolidated quarterly reports provide financial results for gas operations as part of the segmented information. Please refer to Appendix 5.5 and 5.6 for the MHEB quarterly reports for June and September 2012 respectively. Please find attached to this response the Quarterly Report of the MHEB for the period ending December 31, 2012.

The Manitoba Hydro-Electric Board

Q U A R T E R L Y R E P O R T

for the nine months ended December 31, 2012



Comments by
THE CHAIRMAN OF THE BOARD
and by
THE PRESIDENT AND CHIEF EXECUTIVE OFFICER

FINANCIAL OVERVIEW

Manitoba Hydro incurred a net loss on consolidated electricity and natural gas operations of \$38 million for the first nine months of the 2012-13 fiscal year compared to net income of \$29 million for the same period last year. The net loss was comprised of a \$24 million loss in the electricity sector and a \$14 million loss in the natural gas sector. The loss in the electricity sector was attributable to decreased revenues from electricity spot market sales and higher operating expenses mainly due to accounting changes and pension-related cost increases. The placing in-service of Wuskwatim Generating Station also contributed to cost increases over the nine-month period. The reduced electricity sector revenues and higher expenses were consistent with expectations for the third quarter. The loss in the natural gas sector is the result of seasonal variations in the demand for natural gas and is expected to be recouped over the winter heating season.

Manitoba Hydro is forecasting that financial results will improve over the balance of the fiscal year and net income should reach \$30 million by March 31, 2013. The achievement of this level of net income is dependent on the approval of a rate increase application currently before the Public Utilities Board of Manitoba.

Electricity Operations

Revenues from electricity sales within Manitoba totaled \$906 million for the nine-month period, an increase of 3.2% or \$28 million compared to the same nine-month period last year. The increase in domestic revenue was attributable to electricity rate increases, which are subject to final approval by the Public Utilities Board, and colder weather resulting in a higher heating load. Extraprovincial revenues of \$280 million were \$22 million or 7% lower than the same period last year reflecting decreased sales volumes partially offset by marginally increased prices. Energy sold in the export market was 7.6 billion kilowatt-hours compared to 8.8 billion kilowatt-hours sold in the same period last year.

Expenses attributable to electricity operations totaled \$1 218 million for the nine-month period, an increase of \$86 million or 8% higher than the previous year. The increase was the net result of a \$27 million increase in operating and administrative expenses, a \$45 million increase in finance expense and a \$28 million increase in depreciation and amortization partially offset by a \$14 million decrease in power purchases. The increase in operating and administrative expenses was mainly attributable to IFRS-related accounting changes and higher pension and benefit costs resulting from a change in discount rate. Finance expense increased primarily due to higher volumes of long-term debt and the financing costs associated with Wuskwatim Generating Station coming into service during the year. Depreciation and amortization increased primarily as a result of additions to plant and equipment coming into service, including the Wuskwatim Generating Station. Power purchases decreased primarily as a result of lower system merchant purchases due to lower arbitrage opportunities between markets.

Capital expenditures for the nine-month period amounted to \$733 million compared to \$738 million for the same period last year. Expenditures during the current period included \$120 million related to future Keeyask and Conawapa generation, \$77 million for Bipole projects, \$63 million related to Wuskwatim generation, \$58 million for Pointe du Bois projects, \$60 million for the Riel Station and \$20 million for demand-side management programs. The remaining capital expenditures were incurred for ongoing system additions and modifications necessary to meet the electrical service requirements of customers throughout the province.

Natural Gas Operations

In the natural gas sector, a net loss of \$14 million was incurred for the nine-month period compared to a \$19 million net loss for the same period last year. Revenue, net of cost of gas sold, was \$91 million which was \$7 million higher than the same period last year. The increase in revenues was primarily attributable to higher weather-related demand over the current nine-month period. Delivered gas volumes were 1 207 million cubic metres compared to 1 169 million cubic metres in the prior period.

Expenses attributable to natural gas operations amounted to \$105 million compared to \$103 million for the same period last year. The \$2 million increase was due to higher depreciation and amortization costs.

Capital expenditures in the natural gas sector were \$29 million for the current nine-month period compared to \$26 million for the same period last year. Capital expenditures included \$23 million related to system improvements and other expenditures necessary to meet the natural gas service requirements of customers throughout the province and \$6 million for demand-side management programs.

Final Unit Producing Power at Wuskwatim

A major milestone was achieved at the Wuskwatim Generating Station on October 6, 2012 when the last of three generators entered commercial operation. The 200-megawatt Wuskwatim Generation Station on the Burntwood River was constructed over a six-year period. Wuskwatim is the first generation station to be built in Manitoba in nearly two decades and the first formal partnership agreement in Canada involving a First Nation and an electric utility for development of a major generation station.

Manitoba Hydro Wins Urban Land Institute Global Award

Manitoba Hydro Place was one of fourteen real estate developments from around the world selected as a winner of the 2012 Urban Land Institute Global Awards for Excellence. Selected from nearly 200 entries throughout the world, Manitoba Hydro Place was recognized as a state-of-the-art energy efficient, cost-effective structure exemplar of sustainable development.

Riel Station Transformers

Three giant transformers were moved from their Winnipeg factory to their new home at Manitoba Hydro's Riel Station. The transformers were transported using a special 320-tire transporter similar to the unit used to recently move the space shuttle Endeavour through the streets of Los Angeles. The transformers are being installed as part of the reliability improvements on Manitoba Hydro's 500 000-volt transmission line linking Manitoba to Minnesota.

PAYS Financing Program Makes Energy Efficiency More Accessible

Manitoba Hydro's new financing program, launched in early November 2012, makes energy efficiency accessible to more Manitoba homeowners or tenants who rent a home. The Power Smart® Pay as You Save (PAYS) Financing Program provides

*Manitoba Hydro is a licensee of the Trademark and Official Mark.

Manitoba Hydro residential customers a convenient option for completing energy efficiency upgrades to their homes while keeping upfront costs and future monthly finance payments as small as possible. PAYS financing allows a customer to use their estimated annual utility savings gained from installing energy efficiency measures, such as a high-efficiency furnace or attic insulation, to pay for those measures. Manitoba Hydro's new PAYS program is the first of its kind in Canada.

Power Smart Neighbourhood Program

In late November 2012, Manitoba Hydro launched its Power Smart Neighbourhood Program to help lower income neighbourhoods become more energy efficient. Through this program, Manitoba Hydro will work with community organizations and groups to bring the benefits of energy efficiency and sustainability to residents of lower income neighbourhoods on a block-by-block project basis. The program includes free in-home energy reviews, improvements to sealing, caulking and weatherstripping, the installation of pipe wrapping and water efficiency devices, new high-efficiency furnaces and boilers and performing insulation upgrades.



William Fraser, FCA
Chairman of the Board

A handwritten signature in black ink, appearing to read "W. Fraser".



Scott Thomson, CA
President and
Chief Executive Officer
February 14, 2013

A handwritten signature in black ink, appearing to read "Scott Thomson".

Consolidated Statement of Income

In Millions of Dollars (Unaudited)

Revenues

- Electric - Manitoba
- Extraprovincial
- Gas - Commodity
- Distribution

Cost of gas sold

Expenses

- Operating and administrative
- Finance expense
- Depreciation and amortization
- Water rentals and assessments
- Fuel and power purchased
- Capital and other taxes

Net (Loss) Income before non-controlling interest

Net Loss attributable to non-controlling interest

Net (Loss) Income

Consolidated Balance Sheet

In Millions of Dollars (Unaudited)

Assets

- Capital assets
- Current assets
- Other assets

Liabilities and Equity

- Long-term debt (net)
- Current liabilities
- Other liabilities
- Non-controlling interest
- Contributions in aid of construction
- Retained earnings
- Accumulated other comprehensive income

*Nine Months Ended
December 31*

*Three Months Ended
December 31*

2012	2011	2012	2011
906	878	331	304
280	302	73	76
98	119	64	69
91	84	46	38
<u>1 375</u>	<u>1 383</u>	<u>514</u>	<u>487</u>
98	119	64	69
<u>1 277</u>	<u>1 264</u>	<u>450</u>	<u>418</u>
384	357	118	115
361	316	131	106
316	286	109	93
87	90	30	29
96	110	37	34
79	76	26	25
<u>1 323</u>	<u>1 235</u>	<u>451</u>	<u>402</u>
(46)	29	(1)	16
8	-	6	-
<u>(38)</u>	<u>29</u>	<u>5</u>	<u>16</u>

*As at
December 31*

*As at
December 31*

2012	2011
12 297	11 500
614	649
1 130	1 129
<u>14 041</u>	<u>13 278</u>
8 886	8 774
1 227	711
750	668
99	98
328	312
2 412	2 418
339	297
<u>14 041</u>	<u>13 278</u>

Consolidated Cash Flow Statement

In Millions of Dollars (Unaudited)

Operating Activities

Cash receipts from customers
Cash paid to suppliers and employees
Net interest

Financing Activities

Investing Activities

Net increase (decrease) in cash

Cash at beginning of period

Cash at end of period

Consolidated Statement of Comprehensive Income

In Millions of Dollars (Unaudited)

Net (Loss) Income

Other Comprehensive Income (Loss)

Unrealized foreign exchange gains (losses) on debt
in cash flow hedges

Realized foreign exchange losses on debt in cash flow
hedges reclassified to income

Unrealized fair value gains on available-for-sale
U.S. sinking fund investments

Comprehensive (Loss) Income

*Nine Months Ended
December 31*

*Three Months Ended
December 31*

2012	2011	2012	2011
1 384	1 469	459	463
(741)	(796)	(246)	(240)
(299)	(270)	(48)	(26)
<u>344</u>	<u>403</u>	<u>165</u>	<u>197</u>
581	531	(53)	(210)
<u>(838)</u>	<u>(807)</u>	<u>(302)</u>	<u>(285)</u>
87	127	(190)	(298)
<u>50</u>	<u>69</u>	<u>327</u>	<u>494</u>
<u>137</u>	<u>196</u>	<u>137</u>	<u>196</u>

*Nine Months Ended
December 31*

*Three Months Ended
December 31*

2012	2011	2012	2011
<u>(38)</u>	<u>29</u>	<u>5</u>	<u>16</u>
8	(89)	(21)	42
1	-	1	-
<u>3</u>	<u>18</u>	<u>-</u>	<u>(1)</u>
<u>12</u>	<u>(71)</u>	<u>(20)</u>	<u>41</u>
<u>(26)</u>	<u>(42)</u>	<u>(15)</u>	<u>57</u>

Segmented Information

In Millions of Dollars (Unaudited)

<i>Nine Months Ended</i>	Electricity	
	2012	2011
<i>December 31</i>		
Revenue (net of cost of gas sold)	1 186	1 180
Expenses	1 218	1 132
Net (Loss) Income before non-controlling interest	(32)	48
Net Loss attributable to non-controlling interest	8	-
Net (Loss) Income	(24)	48
<i>Three Months Ended</i>		
<i>December 31</i>		
Revenue (net of cost of gas sold)	404	380
Expenses	416	369
Net (Loss) Income before non-controlling interest	(12)	11
Net Loss attributable to non-controlling interest	6	-
Net (Loss) Income	(6)	11
Total Assets	13 425	12 677

Generation and Delivery Statistics

Electricity in gigawatt-hours

- Hydraulic generation
- Thermal generation
- Scheduled energy imports
- Wind purchases (MB)
- Total system supply

Gas in millions of cubic metres

- Gas sales
- Gas transportation

Gas		Total	
2012	2011	2012	2011
91	84	1 277	1 264
105	103	1 323	1 235
<hr/>	<hr/>	<hr/>	<hr/>
(14)	(19)	(46)	29
-	-	8	-
<hr/>	<hr/>	<hr/>	<hr/>
(14)	(19)	(38)	29
<hr/>	<hr/>	<hr/>	<hr/>
46	38	450	418
35	33	451	402
<hr/>	<hr/>	<hr/>	<hr/>
11	5	(1)	16
-	-	6	-
<hr/>	<hr/>	<hr/>	<hr/>
11	5	5	16
<hr/>	<hr/>	<hr/>	<hr/>
616	601	14 041	13 278

*Nine Months Ended
December 31*

*Three Months Ended
December 31*

2012	2011	2012	2011
24 421	25 292	8 135	8 213
72	69	40	26
335	111	207	80
622	654	222	270
<hr/>	<hr/>	<hr/>	<hr/>
25 450	26 126	8 604	8 589
<hr/>	<hr/>	<hr/>	<hr/>
680	595	449	358
527	574	224	219
<hr/>	<hr/>	<hr/>	<hr/>
1 207	1 169	673	577
<hr/>	<hr/>	<hr/>	<hr/>

For further information contact:

Public Affairs
Manitoba Hydro
PO Box 815 STN Main
Winnipeg, Manitoba, Canada
R3C 2P4
Telephone: 1-204-360-3233



*Cover: Workers erecting steel work at the new
Riel Station located east of Winnipeg.*

CAC/CENTRA I-16

Reference: Appendix 5.4, Centra 2012 Financial Statements, note 9, 2015 Maturity Tab 9, Section 9.8.2 page 59 of 63 at line 2,

Preamble: CAC observes that the average of daily data series “V39071 Bankers’ acceptances -3 month” for the period April 1, 2011 through March 31, 2012 is 1.18%. The high for that year was 1.23% occurring on April 20, 2011, and the low for that year was 1.15% occurring on December 5, 2011. The indicated rate on page 59 of 63 for the February 22, 2015 maturity is “3 month Banker’s Acceptance Rate plus 0.484% coupon”, suggesting an interest rate in the 1.66% range.

Note 9 of the Centra financial statements for March 31, 2011, indicate a “Weighted average yield rate” of 1.90% for an unspecified \$35 million 2015 maturity.

The difference, between the “Weighted average yield rate” of 1.90% and the sum of the spread and Bank of Canada average, 1.66%, is about 24 basis points.

- a) Explain the apparent discontinuity between the coupon rate and the “Weighted average yield rate” showing the step by step calculation.

ANSWER:

The weighted average yield rates in the Notes to the audited financial statements show the effective interest rate over the entire term of the debt issue and not just the coupon rates within the fiscal year. Although fixed rate financing will have the same yield rate from the 2013 04 12

date of issue through to maturity, floating rate debt will be subject to periodic interest rate resetting. Therefore, in order to appropriately disclose the weighted average yield rate on floating rate debt, the calculation for floating rate debt in the audited financial statements combines actual interest rates to the balance sheet date plus forecasted interest rates for the remainder of the time to the maturity date (utilizing the Corporation's forecasted interest rates for the variable component of the coupon payments).¹

¹ The interest reset rate for Centra's long term floating rate debt is the 3 month Bloomberg Bankers' Acceptance rate (utilizing Bloomberg index CDOR03), and not the Bank of Canada interest rates described in the preamble to the information request.

The coupon payments for long term floating rate debt issues have a fixed rate margin that is added to the variable bankers' acceptance (BA) component. For example, intercompany long term debt CG10 in the amount of \$35,000,000 was issued February 22, 2010 for a five year term maturing February 22, 2015 with a coupon and yield rate of CDOR03 + 0.484%. The interest rates are reset quarterly and the interest is paid semi-annually.

The weighted average yield rate of 1.90% for CG10 at March 31, 2012 was calculated using the effective interest rate method, with actual quarterly interest rates for the semi-annual interest payments to March 1, 2012 and forecasted interest rates for the remainder of the interest payments to February 22, 2015.

For example, on June 1, 2010 the actual CDOR03 rate of 0.8071% was added to the 0.4840% fixed rate margin to derive a quarterly floating interest rate to September 1, 2010 of **1.2911%**. By December 1, 2011 the actual CDOR03 rate had risen to 1.2793%, which when added to the 0.4840% fixed rate margin derived a quarterly floating interest rate to March 1, 2012 of **1.7633%**. As CDOR03 interest rates are forecasted to rise, the estimated future interest reset rates for CG10 will be higher than those derived to March 2012. For example, the forecasted CDOR03 rate for December 2013 of 1.7500% was added to the 0.4840% fixed rate margin to derive a forecasted quarterly floating interest rate to March 1, 2014 of **2.2340%**. By combining the cash flows for the entire stream of actual and forecasted coupon payments for debt series CG10, as per the Note 9 to Centra's audited financial statements for the year ending March 31, 2012 the weighted average yield rate for the \$35 million debt issue CG10 was **1.90%**.

CAC/CENTRA I-17

Reference: Tab 4, Economic Outlook, page 3 of 7, table before line 1
Tab 5, Financial Results and Forecast, 5.6 Finance Expense, page 20 of 30, table following line 1
Tab 9, Section 9.8.2 and Schedules, 9.7.0 to 9.9.5
The July 16, 2009 report of National Bank Financial (“NBF”) entitled “Independent Assessment of Corporate Policy Fixed vs. floating Rate Debt”.

Preamble: The Table in Tab 4, Economic Outlook on page 3 of 7 indicates a short term interest rate of 2% for 2012/13 and a long term interest rate of 4.15%, showing a 2.15% forecast interest saving to consumers for each dollar of incremental short term or floating rate debt.

The Table in Tab 4, Economic Outlook on page 3 of 7 indicates a short term interest rate of 2.3% for 2013/14 and a long term interest rate of 4.3%, showing a 2% forecast interest saving to consumers for each dollar of incremental short term or floating rate debt.

The percentage weight of Short Term Debt in the capital structure was, or is forecast to be:

20.8% in 2008/09,	\$102,164,000.
16.4% in 2009/10,	\$80,145,000.
4.5% in 2010/11,	\$21,600,000.
3.5% in 2011/12,	\$16,696,000.
1.8% in 2012/13,	\$8,494,000 (forecast), and
4.3% in 2013/14,	\$20,340,000 (forecast).

The Table Tab 5, Financial Results and Forecast, 5.6 Finance Expense, page 20 of 30, indicates that “Provincial Guarantee Fee on Long Term

Debt” for fiscal year 2008/09 through forecast 2013/14 range from \$2.357 million to \$2.997 million. The table also indicates that “Provincial Guarantee Fee on Short Term Debt” for fiscal year 2008/09 through forecast 2013/14 range from \$1.025 million to \$0.025 million.

Tab 9, section 9.8.2 indicated only one floating rate Long Term Debt issue of \$35 million of a total of \$315 million of Long Term Debt, being about 11% of the long term debt. As such it appears that with the inclusion of approximately \$8 million of forecast short term debt, there may be only approximately 13% short term and floating rate debt.

The July 16, 2009 report of NBF entitled “Independent Assessment of Corporate Policy Fixed vs. floating Rate Debt”, identified an optimal floating rate debt range of 14% to 27% of total debt at pages 6, 7, 36 and 41.

From this data from 2008/09, CAC infers that the proportion of the more expensive long term debt has been and is proposed to increase due to the reduction of lower cost short term and floating rate debt. CAC also observes that these lower proportions of short term debt in the capital structure are increasingly out of step with the recommendations of NBF, the MH or Centra expert.

- a) To facilitate discussion of the NBF conclusion of the optimal fixed and floating debt range, place a copy of that report on the record of this proceeding.**
- b) Has Centra found value in this report and adopted any policies reflecting its recommendations?**
- c) Discuss the changing exposure to short term debt, in terms of each of the recommendations of NBF and the various Hydro policies applicable to Centra.**

ANSWER:

Response to parts (a), (b), and (c):¹

Attachment 1 to this information request is the July 16, 2009 report of National Bank Financial (“NBF”) entitled *“Independent Assessment of Corporate Policy Fixed vs. Floating Rate Debt.”*

NBF conducted an analysis using an asset liability approach that drew upon their conclusion that floating rate long term debt could act as a partial hedge against export price changes due to a statistical correlation between short term interest rates and export pricing in the MISO market. Using a monte carlo simulation methodology, NBF derived a range of 14 to 27%, with 14% representing the maximum hedging capability. On a consolidated basis, the Corporation has found value in this report as NBF introduced an insightful hedging relationship. Given that Centra does not have extraprovincial revenues, it does not directly benefit from the interest rate/ export price hedge.

Given that long term interest rates remain near historic lows and the yield curve has flattened since the last Gas GRA, and in keeping with NBF’s recommendation on page 7 for the Corporation to take advantage of the low interest rate environment to “lower risk at relatively inexpensive levels by increasing the proportion of fixed rate debt,” it is the Corporation’s view that increasing the proportion of fixed rate long term debt is prudent interest rate risk management. Manitoba Hydro plans to continue this approach on both a consolidated basis, as well as for Centra.

¹ The short term debt values and percentages shown in the preamble are from Schedules 9.7.0 – 9.7.5 in Tab 9 and follow the PUB methodology for Centra’s rate base rate of return capitalization calculation. As described on page 61 of Tab 9, the short term debt balances derived with this methodology are calculated values. For actual and forecasted quarter-end short term debt balances and percentages, please see the schedule filed in response to CAC/Centra I-18.

Please see Centra's response to CAC/Centra I-19 for a discussion regarding Centra's conversion of short term debt to long term debt, its reduced exposure to short term debt, and the introduction of floating rate long term debt within the Centra debt portfolio.

PUB ORDER NO. 150/08

DIRECTIVE NO. 4

**INDEPENDENT ASSESSMENT OF FIXED
VS. FLOATING RATE DEBT**



July 24, 2009

Manitoba Hydro Independent Assessment of Fixed Vs. Floating Rate Debt

Introduction

Order 150/08, Directive No. 4 directed MH to undertake the following:

MH to provide the Board an independent assessment of the Corporation's relative weighting of fixed vs. floating debt and file a report with the Board on or before June 30, 2009.

Manitoba Hydro response

A Request for Tender was sent to six financial institutions. The low bid was received from National Bank Financial (NBF) in the amount of \$200 000.

In summary, NBF concluded that, "Manitoba Hydro's fixed vs. floating rate debt policy of 15% to 25% floating rate debt is inside of the identified optimal range of 14% to 27% floating rate debt, and is therefore both reasonable and appropriate in the context of an asset/liability management framework."

A copy of the NBF Report entitled, "Independent Assessment of Corporate Policy Fixed vs. Floating Rate Debt" is attached.



**Independent Assessment of Corporate Policy
Fixed vs. Floating Rate Debt**

National Bank Financial

July 16, 2009



Table of Contents

1. EXECUTIVE SUMMARY	1
2. PORTFOLIO THEORY OVERVIEW	8
2.1. MODERN PORTFOLIO THEORY	8
2.1.1. Diversification Risk.....	9
2.1.2. The Efficient Frontier – Theory	9
2.1.3. The Efficient Frontier – Application	10
2.1.4. Advantages	11
2.1.5. Limitations	12
2.2. ALTERNATIVE THEORIES	13
2.2.1. Post Modern Portfolio Theory.....	13
2.2.2. Market Timing Theory	14
2.2.3. Asset/Liability Management	15
2.3. CONCLUSION	17
3. IDENTIFICATION OF KEY FACTORS	18
3.1. ASSETS	18
3.1.1. Domestic Utility Rates	18
3.1.2. Extraprovincial Revenues.....	19
3.1.3. Potential Hydraulic Generation/Reserves.....	20
3.2. LIABILITIES.....	20
3.2.1. Purchased Power	20
3.2.2. Operation and Maintenance Expenses.....	21
3.2.3. Water Rental Fees	21
3.2.4. Debt and Interest Expenses	21
3.3. HYDROLOGY RISK	21
3.4. CONCLUSION	22
4. PEER GROUP ANALYSIS	23
4.1. MARKET TIMING EVIDENCE	23
4.2. ASSET/LIABILITY MANAGEMENT EVIDENCE	25
4.2.1. Assets	25
4.2.2. Liabilities.....	27
4.2.3. Asset/Liability Management Evidence.....	27
4.3. CONCLUSION	28
5. TECHNICAL ANALYSIS	30
5.1. ASSUMPTIONS.....	30
5.1.1. US Assets and Liabilities	30
5.1.2. Debt Maturity Schedule.....	31
5.2. VOLATILITY AND CORRELATION ANALYSIS	31
6. SCENARIO ANALYSIS.....	34
6.1. EFFICIENT FRONTIER	34
7. SOLUTION FORMULATION	36
7.1. ASSET/LIABILITY MANAGEMENT FRAMEWORK	36
7.2. MARKET TIMING	36
8. IMPACT ANALYSIS.....	39
8.1. IMPACT ON MANITOBA HYDRO	39
8.2. CONCLUSION	39
9. CONCLUSIONS	40
10. APPENDICES	A-1

List of Figures and Tables

Figures

Figure 1: Volatility Impact Model Efficient Frontier	6
Figure 2: MPT Efficient Frontier, 1999-2009.....	11
Figure 3: Historical Interest Rates	13
Figure 4: Term Spread – 3 Month BA vs. 15 Year Province of Manitoba.....	15
Figure 5: Term Spread vs. Average Peer Group Floating Rate Debt %.....	24
Figure 6: 20 Year Government of Canada vs. Average Peer Group Floating Rate Debt %.....	25
Figure 7: Historical ISO Electricity Spot Prices	26
Figure 8: Peer Group Floating Rate Debt % (2008) vs. Export Revenue % (Crown Utilities)....	28
Figure 9: Correlation Impact on Net Income.....	33
Figure 10: Volatility Impact Model Efficient Frontier	35
Figure 11: Bank of Canada Overnight Rate.....	37
Figure 12: 20 Year Government of Canada Interest Rates	37
Figure 13: Canadian Swap Curve and Forward Curves.....	38
Figure 14: MPT Efficient Frontier, 1999-2003.....	A-1
Figure 15: MPT Efficient Frontier, 2004-2009.....	A-2

Tables

Table 1: Key Factor Volatility Metrics.....	4
Table 2: Portfolio Risk/Return Matrix.....	6
Table 3: Yield Correlation, 1999-2009.....	10
Table 4: Yield Correlation, 1999-2003 vs. 2004-2009.....	12
Table 5: Domestic vs. Extraprovincial Electric Revenues and Volumes	19
Table 6: Domestic vs. Extraprovincial Revenues.....	20
Table 7: Hydrology Risk Analysis.....	22
Table 8: Peer Group List.....	23
Table 9: Historical Proportion of US Dollar Denominated Debt	31
Table 10: Historical Average Maturity Terms.....	31
Table 11: Variable Volatilities, 2005-2009	32
Table 12: Variable Correlation Matrix, 2005-2009	32
Table 13: Portfolio Risk/Return Matrix.....	34
Table 14: Impact of changes in Floating Rate Debt Mix.....	39
Table 15: Peer Group – Crown Utility Corporations.....	A-3
Table 16: Peer Group – Publicly Traded Corporations	A-4
Table 17: Peer Group – Historical Floating Rate Debt.....	A-5

1. EXECUTIVE SUMMARY

1.1. INTRODUCTION

It is National Bank Financial Inc.'s ("NBF") understanding that Manitoba Hydro was instructed by the Public Utilities Board of Manitoba ("Board") to obtain an independent assessment of its fixed vs. floating rate debt policy as a result of arguments put forward by a coalition of intervenors in the 2008/09 General Rate Application hearings.

Following a submission in response to a Request for Tender ("RFT") dated January 16, 2009, Manitoba Hydro engaged NBF to provide this independent assessment of its fixed vs. floating rate debt policy.

Although a substantial portion of the data required to complete the assessment was sourced from Manitoba Hydro, NBF worked independently of management and derived its conclusions by way of interpretation of analysis conducted and its institutional knowledge base.

1.2. OBJECTIVE

In order to address the specific requirements outlined in the RFT and complete its independent assessment of Manitoba Hydro's fixed vs. floating rate debt policy, NBF's objective was to provide the following:

1. A body of knowledge regarding the theory of portfolio optimization and advantages and disadvantages of each portfolio optimization methodology;
2. Identification of key factors associated with achieving an optimal weighting of fixed vs. floating rate debt;
3. An in-depth analysis of the fixed vs. floating rate debt policies of Manitoba Hydro's peers;
4. The definition of an optimal floating rate debt range through a variety of scenarios based on different yield curves, interest rate expectations and other factors, that can be supported by historical analysis;
5. An implementation plan to assist Manitoba Hydro on an ongoing basis to ensure its portfolio mix is at an optimal level given different possible economic scenarios; and
6. A financial impact analysis, comparing the optimal fixed vs. floating rate debt mix against Manitoba Hydro's current policy.

NBF has considered and assessed the specific requirements outlined in the RFT and provided an overall recommendation with respect to an optimal fixed vs. floating rate debt policy for Manitoba Hydro, as well as supporting analysis herein.

1.3. ASSUMPTIONS AND LIMITATIONS

NBF's mandate is to provide an independent assessment of Manitoba Hydro's fixed vs. floating rate debt mix. In order to strictly adhere to this mandate, NBF did not evaluate other aspects of Manitoba Hydro's debt policy that may have impacted the result of this assessment. Specifically, NBF's analysis did not include an assessment of Manitoba Hydro's choice of debt maturities and the proportion of US Dollar denominated debt in its debt portfolio, as these issues were deemed to be outside of the scope of this assignment.

In addition, given that Manitoba Hydro's debt is issued and guaranteed by the Province of Manitoba, Manitoba Hydro's cost of debt is dependent on the Province of Manitoba's credit rating. NBF's assessment is therefore premised on the maintenance of the current credit rating of the Province of Manitoba.

1.4. THE NBF APPROACH

In order to assess the situation and recommend an optimal debt policy for Manitoba Hydro, NBF formulated its approach based on a comprehensive analysis of the issues relevant to this assignment. Specifically, the components of the approach were:

1.4.1. Portfolio Theory Overview

NBF began with a comprehensive review of the available academic literature on alternative approaches to fixed vs. floating rate debt management. The review included modern portfolio theory, post modern portfolio theory, market timing and asset/liability management, and their respective advantages and limitations.

In the debt management context, both modern portfolio theory and post modern portfolio theory only seek to minimize a company's cost of debt and its volatility. As a result, these approaches ignore operational cash flow volatility, which may be correlated with movements in interest rates and therefore affect net income. Given that profit is the measure of financial performance, these methods result in incomplete analyses.

The market timing theory also ignores the asset volatility factors of the business and relies on a view on the future direction of interest rates. Furthermore, the framework is unable to quantify

the risks associated with issuing floating rate debt; analysis suggests that a debt portfolio with a high proportion of floating rate debt will result in higher interest expense volatility.

The asset/liability approach examines both revenues and expenses simultaneously and formulates an optimal mix of fixed and floating rate debt based on reducing the volatility factors affecting the company. Given that the asset/liability management approach is the only approach that matches a company's assets and liabilities, thereby allowing for optimization of net income, NBF decided that this was the appropriate framework to determine the optimal fixed vs. floating rate debt policy for Manitoba Hydro.

1.4.2. Identification of Key Factors

As the first step in the asset/liability management approach, NBF identified the sources of Manitoba Hydro's cash inflow and outflow volatility. This qualitative process of identifying key factors provided the basis for the quantitative historical analysis of the volatility and correlation of these factors conducted by NBF in its technical analysis.

NBF found that key factors affecting assets were domestic utility rates (subject to Canadian inflation risk) and extraprovincial revenues (primarily subject to US inflation risk for long-term contracts, and fluctuations in spot electricity prices in the MISO grid for short-term contracts and spot transactions).

The key factors affecting liabilities were purchased power (subject to spot electricity prices in the MISO grid), operation and maintenance expenses (subject to Canadian inflation risk), and interest expenses (subject to interest rate fluctuations).

While hydrology is a source of Manitoba Hydro's cash flow volatility, there is no causal relationship between weather patterns and macroeconomic indicators. As a result, it is not possible to lower exposure to hydrology risk through determining a debt policy, and therefore hydrology was not considered a key factor in the asset/liability management framework.

Another source of cash flow volatility excluded from the asset/liability management framework was foreign currency exchange rate fluctuation, which impacts extraprovincial power sales and purchases. Given that Manitoba Hydro already has an Exposure Management Program in place to effectively manage currency risk, evaluation of this risk factor was considered to be outside the scope of this assessment.

1.4.3. Peer Group Analysis

NBF examined the fixed vs. floating rate debt policies of Manitoba Hydro’s peer group, which consisted of both crown utility and publicly-traded corporations considered to be vertically integrated electric utilities (i.e. owning energy generation, transmission and distribution infrastructure). The purpose of this analysis was not to provide an assessment of the peer group’s fixed vs. floating rate debt policies, but rather to attain insight into a relevant peer group’s choice of floating rate debt mix.

The first component of this analysis examined the historical floating rate debt proportions of each of the peers over the past 10 years. When combined with historical yield curves and interest level analyses, NBF found evidence that those peers with a floating rate debt component utilized market timing strategies. In particular, peers tended to increase their portion of floating rate debt during periods of rising term spreads (indicating higher discrepancies between short and long-term interest rates), and lowered the proportion during contracting term spread periods. Moreover, in low interest rate environments this analysis provided evidence that these companies fixed a higher portion of their debt in order to lower their risk at a cheaper cost.

NBF then extended the key factor identification process to the peer group, qualitatively assessing the sources of volatility present in each of the peer group’s business models. This analysis yielded a statistically significant correlation between the crown utility peers’ proportion of export revenues and their levels of floating rate debt. The analysis demonstrated that Manitoba Hydro’s fixed vs. floating rate debt policy was consistent with that of its peer group.

1.4.4. Technical Analysis

A historical analysis was conducted for each of the identified key volatility factors. These factors and their respective volatility metrics were:

Table 1: Key Factor Volatility Metrics

Asset Variables		Volatility Metric
A	Domestic Utility Rates	Change in Canadian CPI
B	Extraprovincial Power (Short-Term Contracts and Spot)	MISO Power Price
C	Extraprovincial Power (Long-Term Contracts)	Change in US CPI
Liability Variables		Volatility Metric
D	Canadian Short-Term Interest Rates	3 Month BA
E	US Short Term-Interest Rates	3 Month LIBOR

Each factor's volatility, as measured by the standard deviation from the mean, and its correlation with the other factors, were calculated from historical data.

This analysis proved that short-term export power contracts and spot market sales were the most volatile factors, being driven by power prices in the MISO grid. Also, these factors exhibited higher correlation with short-term interest rates compared to domestic utility rates or long-term export contracts.

As a result, this analysis indicated that Manitoba Hydro's fixed vs. floating rate debt policy should incorporate an element of floating rate debt in order to lower net income volatility under the asset/liability management framework.

1.4.5. Scenario Analysis

Following the results of the technical analysis, a scenario analysis was conducted in order to identify the range of floating rate debt mixes that would lower net income volatility.

NBF's volatility impact model generated 10,000 scenarios, reflecting volatility and correlation metrics derived from the aforementioned technical analysis. Each scenario was then applied to a set of 100 portfolios of varying fixed vs. floating rate debt mixes. The mean net income impact and its volatility, as measured by standard deviation from the mean, were calculated for each one of these 100 different portfolios.

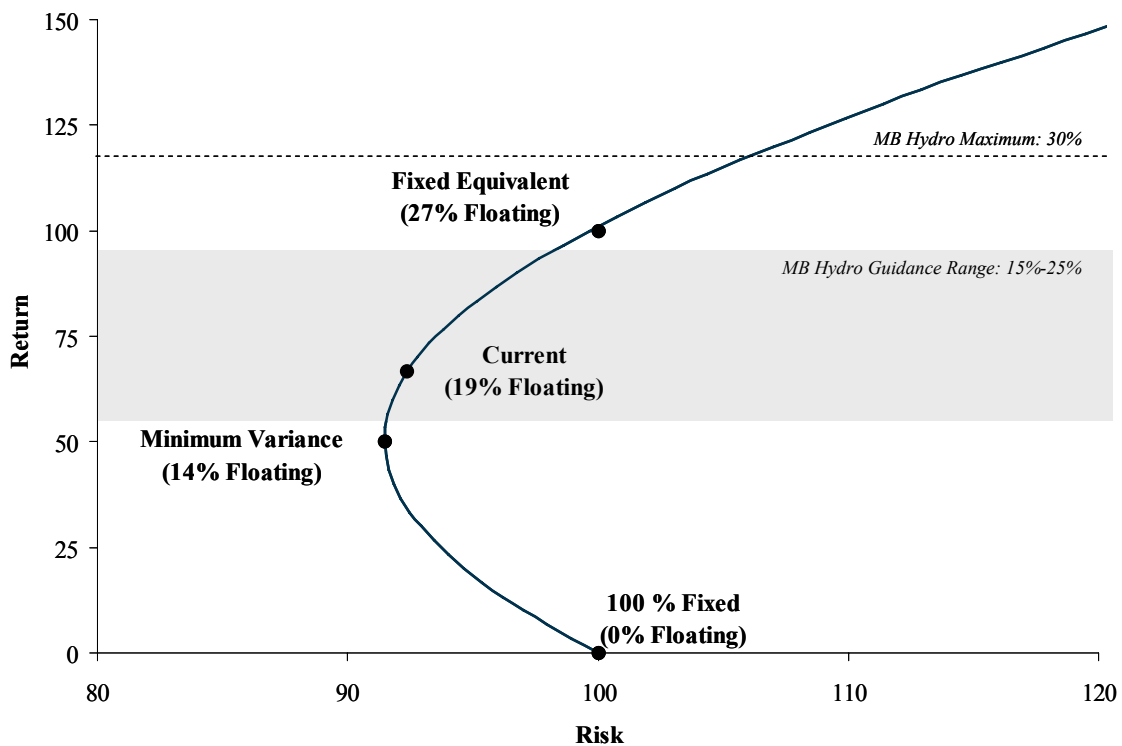
This analysis resulted in the identification of two key metrics: the fixed equivalent and the minimum variance portfolios. The fixed equivalent portfolio, defined as the mix that results in the same amount of volatility as a portfolio comprised of 100% fixed debt, was determined to have a 27% floating rate debt component.

The minimum variance portfolio was defined as the fixed vs. floating rate mix that yielded the lowest variance in net income, and was achieved by incorporating 14% floating rate debt into the debt portfolio. Increasing the proportion of floating rate debt can lead to lower risk because the analysis shows that interest expense and revenues are somewhat correlated. The analysis implied that risk could be lowered by 7% by increasing the floating rate debt mix to 14% (from a 100% fixed portfolio) while making positive gains in net income since floating interest rates tend to be lower than fixed interest rates.

Table 2: Portfolio Risk/Return Matrix

	Floating (%)	Adjusted Risk	Adjusted Return
1. Fixed	0%	100	0
2. Minimum Variance	14%	93	50
3. Current (March 31, 2008)	19%	94	69
4. Fixed Equivalent	27%	100	100
5. Floating	100%	253	370

Figure 1: Volatility Impact Model Efficient Frontier



The range between the minimum variance and the fixed equivalent portfolios represents an optimal range of mixes that allow Manitoba Hydro to minimize its interest rate volatility (Risk) and maximize its net income (Return) through lower interest rates, by way of a floating rate component in its debt portfolio.

1.5. SOLUTION FORMULATION

NBF’s scenario analysis demonstrated that Manitoba Hydro’s guidance range of 15% to 25% floating rate debt was inside of this optimal floating rate debt range of 14% to 27%.

Having also analyzed the risk profile of Manitoba Hydro's business, namely the high exposure to hydrology risk, NBF believes that Manitoba Hydro's current guidance range is reasonable in the context of an asset/liability management framework, as it seeks to lower risk in an efficient, return maximizing manner.

Furthermore, NBF recommends that Manitoba Hydro complement this asset/liability management framework with a market timing component that allows the company to adjust its floating rate debt proportion within the identified optimal range in order to take advantage of the prevailing interest rate environment. This adjustment should take into account both the level and the slope of the yield curve.

Steeper yield curves generally allow for greater cost savings by switching to floating rate debt, but also result in higher net income volatility. Given that interest rates are currently at historical lows, there exists an opportunity to lower risk at relatively inexpensive levels by increasing the proportion of fixed rate debt.

1.6. IMPACT ANALYSIS

Having established an optimal range of fixed vs. floating rate debt mixes as prescribed by the asset/liability management framework, NBF analyzed the impact of this range of portfolios on Manitoba Hydro's historical financial results. This analysis demonstrated that historically, Manitoba Hydro has kept its floating rate debt mix within the optimal risk reduction range of 14% to 27%.

1.7. CONCLUSIONS

NBF's independent assessment of Manitoba Hydro's fixed vs. floating rate debt policy concludes that its current policy of 15% to 25% floating rate debt is inside of the identified optimal range of 14% to 27% floating rate debt, and is therefore both reasonable and appropriate in the context of an asset/liability management framework.

2. PORTFOLIO THEORY OVERVIEW

In order to determine the appropriate framework for an optimal fixed vs. floating rate policy, NBF conducted a comprehensive review of portfolio theory alternatives, and the advantages and limitations of each alternative.

While asset allocation decisions have been thoroughly debated and explored in academic literature, research on liability management has been more sparse, and was generally limited to high level capital structure decisions such as equity versus debt allocations.

Early capital structure literature has stated that the choice of liability structure is irrelevant in the absence of contracting costs and taxes.¹ The introduction of frictions, such as taxes and bankruptcy costs, provides one possible justification for a non-trivial capital structure choice that is based on the trade-off between the tax benefit of debt and the bankruptcy costs of debt. The first quantitative analysis of this trade-off theory was provided by Leland² and subsequently by Leland and Toft.³

This section provides an overview of the different theories of debt management as they apply to fixed vs. floating rate debt, and their respective advantages and limitations.

2.1. MODERN PORTFOLIO THEORY

Modern portfolio theory (MPT) describes how rational, risk averse entities optimize their portfolio of securities through diversification. It measures the risk/return profiles of portfolios comprised of different individual securities, and plots a set of efficient investment portfolios (the efficient frontier) that maximize return for a given level of risk.

This approach was first formulated by Markowitz in 1952, who proposed that simply picking assets that yield the highest net present value leads to an inefficient portfolio. Instead, a more efficient mix of assets can lower risk for any given level of return.⁴ MPT has traditionally been used as a framework to examine portfolio returns and risks, and its application was limited in the context of analyzing liabilities.

¹ Modigliani, F., Miller, M., 1958, The Cost of Capital, Corporation Finance and the Theory of Investment, American Economic Review, 48 (3), 261–297.

² Leland, H., 1994. Corporate Debt Value, Bond Covenants, and Optimal Capital Structure, Journal of Finance, American Finance Association, 49 (4), 1213-1252.

³ Leland, H., Toft, K., 1996, Optimal Capital Structure, Endogenous Bankruptcy, and the Term Structure of Credit Spreads, Journal of Finance, 51 (3), 987-1019.

⁴ Markowitz, H., 1952, Portfolio Selection, The Journal of Finance, 7 (1), 77-91.

While this concept provides a useful framework to underline the benefits of holding a diversified portfolio of securities, it is an incomplete analytical tool for a precise formulation of risk management for several reasons.

2.1.1. Diversification Risk

There are two types of risks associated with securities: systematic and non-systematic risk. The former is driven by the market-wide risk that affects all securities to varying degrees, such as a global recession. As a result, this type of risk cannot be reduced through portfolio diversification.

Conversely, non-systematic risk is specific to each security, and therefore can be reduced with appropriate diversification by adding uncorrelated securities to the portfolio. Empirical studies have shown that the average portfolio standard deviation could be reduced to less than 20% by incrementally increasing the number of securities in a portfolio.⁵

The limitation of this approach is that it is based on simplistic diversification, where each security in the portfolio is weighted equally. Theoretically, it is possible to construct a more efficient set of portfolios through a more judicious diversification procedure that leads to an efficient portfolio, one that maximizes return for a given level of risk. Furthermore, this analysis seems to imply that the best results are attained with an infinite number of securities in the portfolio to minimize risk. However, diversification and constant portfolio adjustments can be a costly process. Therefore, marginal returns resulting from diversification decrease eventually, implying that there is an optimal level of diversification to be attained.⁶

2.1.2. The Efficient Frontier – Theory

In constructing an efficient portfolio, the first step is to derive the total return of the portfolio, which is simply the arithmetic mean of the returns of each of the securities comprising the portfolio. Mathematically, the portfolio return can be expressed as follows:

$$E(R_p) = \sum_i^n w_i E(R_i) \quad (1)$$

Where $E(R_p)$ and $E(R_i)$ denote the expected return of the portfolio and the individual securities, respectively, and w_i the relative weighting of each security in the portfolio. As a result, an

⁵ Statman, M., 1987, How Many Stocks Make a Diversified Portfolio, *Journal of Financial and Quantitative Analysis*, 22, 353-363.

⁶ Lubatkin, M., Chatterjee, S., 1994, Extending Modern Portfolio Theory into the Domain of Corporate Diversification: Does It Apply?, *Academy of Management Journal*, 37 (1), 109-136.

investor can achieve any level of return that lies in the range of the portfolio simply by changing the relative weighting of the individual securities.

The second step is to determine the risk level of the overall portfolio. Under MPT, risk is defined as the standard deviation (σ) from the mean. At this point, the concept of correlation among the securities (denoted by ρ_{ij} , which represents the correlation factor between security i and j) is introduced. Mathematically, portfolio risk can be represented as follows:

$$\sigma_p^2 = \sum_i^n w_i^2 \sigma_i^2 + \sum_i^n \sum_{j, j \neq i}^n w_i w_j \sigma_i \sigma_j \rho_{ij} \quad (2)$$

For any given set of two distinct securities, the correlation between the two is likely to be less than perfect and hence ρ_{ij} will be less than 1. As a result, it is conceivable that a mix of relative weighting options exist that would lead to risk levels that are below those of the lowest risk asset in the portfolio.

2.1.3. The Efficient Frontier – Application

In theory, the construction of an efficient frontier can be easily formulated with equations (1) and (2) above. However, the application of theory to real market data presents several challenges, such as transaction costs, changing risk/return profiles, limitations to active portfolio management, and, in the case of debt portfolios, refinancing risk.⁷

For illustration purposes, this section of the analysis will focus on a simple two liability portfolio with constant risk/reward relationships as a base case. Under the base case scenario, it is assumed that a debt portfolio consists of just two elements: a fixed rate debt component and a floating rate component. As a proxy for returns and volatility, 3 month Banker’s Acceptance (“BA”) and 15 year Province of Manitoba debt yields were analyzed.

Table 3: Yield Correlation, 1999-2009⁸

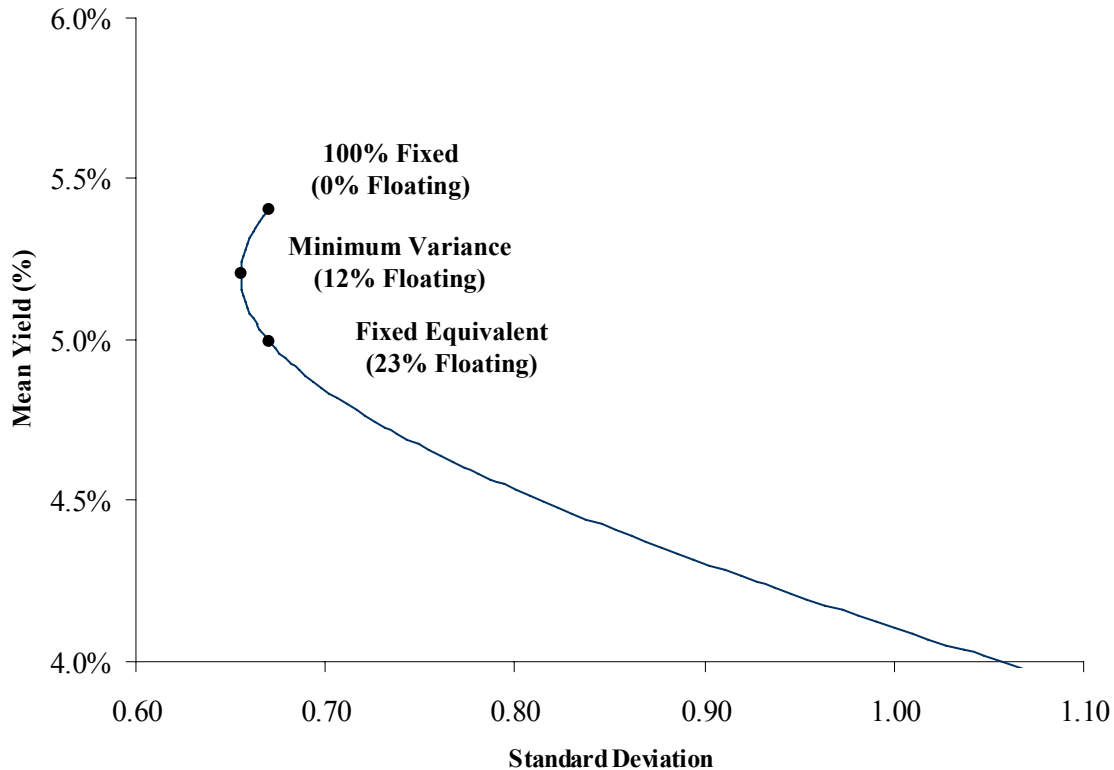
	3 Month BA	15 Year Prov. of Man.
Mean Yield (%)	3.63%	5.40%
Standard Deviation (%)	1.27%	0.67%
Correlation		0.33

⁷ Fisher, L., 1975, Using Modern Portfolio Theory to Maintain an Efficiently Diversified Portfolio, Financial Analysts Journal, 31 (3), 73-85.

⁸ Historical interest rate data as per Bloomberg.

An analysis using historical 10 year data yields the following efficiency frontier:

Figure 2: MPT Efficient Frontier, 1999-2009



According to this analysis, minimum volatility is achieved with a 12% floating rate debt component. With a 23% floating rate debt component, the same volatility can be achieved as 100% fixed, but at a lower cost of debt.

A company's appropriate mix of fixed and floating rate debt is ultimately a function of its risk appetite. However, this analysis demonstrates that regardless of a company's risk profile, a more efficient risk/cost equilibrium can be attained by introducing a floating rate element to the company's debt portfolio.

2.1.4. Advantages

MPT is a simple, straight-forward analysis that provides a broad context for understanding the interactions of systematic risk and reward. The theory concludes that an appropriate diversification of debt instruments may help lower the cost of debt.

2.1.5. Limitations

MPT relies on the assumption that the correlation between short and long-term interest rates stays constant over time. Historically there has been no evidence to support this assumption, given that yield curve slopes have shown high levels of volatility over the past ten years.

While on average, over the past decade, there has been a positive relationship between short and long-term rates, it is apparent that correlation factors change depending on the specific timeframe chosen.

Table 4: Yield Correlation, 1999-2003 vs. 2004-2009⁹

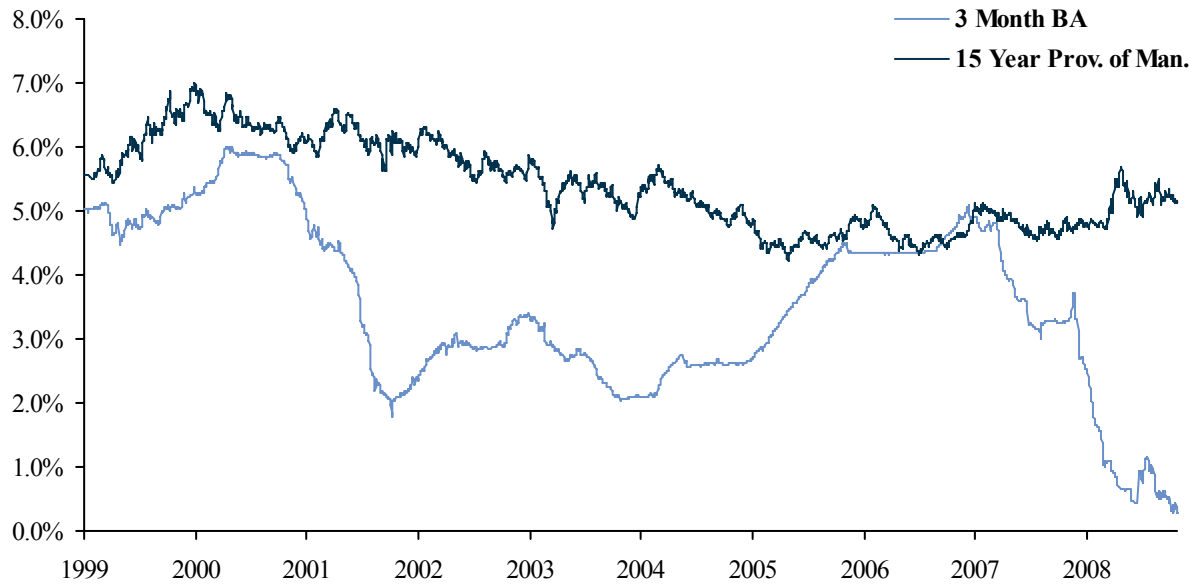
1999-2003	3 Month BA	15 Year Prov. of Man.
Mean Yield (%)	4.05%	5.99%
Standard Deviation (%)	1.27%	0.42%
Correlation		0.58

2004-2009	3 Month BA	15 Year Prov. of Man.
Mean (%)	3.23%	4.87%
Standard Deviation (%)	1.14%	0.31%
Correlation		-0.56

Figure 3 illustrates this point graphically. It is apparent that during the first five years, both rates move together, leading to a strong positive correlation of 0.58. However, from 2004 onwards, interest rates move in opposite directions, leading to a negative correlation of -0.56.

⁹ Historical interest rate data as per Bloomberg.

Figure 3: Historical Interest Rates¹⁰



As a result, MPT yields two separate efficiency frontiers for the two time periods. In the 1999-2003 timeframe, minimum variance is achieved at a 100% fixed portfolio, whereas for 2004-2009, a 16% floating mix yields the lowest volatility.

Furthermore, in the debt management context, MPT's only objective is to minimize a company's cost of debt and its volatility. However, this is an incomplete analysis because it ignores operational cash flow volatility, which may be correlated with movements in interest costs. Given that profit is the measure of financial performance, MPT results in an incomplete analysis.

Despite these limitations, MPT does present itself as a useful tool to evaluate the appropriate mix of fixed and floating rate debt. One generic conclusion that can be derived from this exercise is that depending on the correlation of fixed and floating rates, an appropriate diversification of different debt instruments may help lower the cost of debt for a given level of risk.

2.2. ALTERNATIVE THEORIES

2.2.1. Post Modern Portfolio Theory

The Post Modern Portfolio Theory (PMPT) was developed to address some of the limitations of the MPT, namely the symmetrical distribution of returns. To address this, Rom and Ferguson introduced the concept of volatility skewness, which denotes the ratio of a distribution's

¹⁰ Historical interest rate data as per Bloomberg.

percentage of total variance from returns above the mean, to the percentage of the distribution's total variance from returns below the mean.¹¹

One way to address some of the major shortcomings of MPT, namely the symmetrical distribution of returns, is to introduce a three-parameter lognormal distribution of returns to account for the skew in the volatility of returns. The lognormal distribution assumes that the natural logarithm of the returns follow a normal distribution.

PMPT refines the MPT model to account for asymmetric expected returns, and reduces skewed volatility. However one of the limitations of PMPT is that it ignores the asset-side volatility factors of the business, and while it is considered a useful academic tool to analyze portfolio performance, it is an incomplete approach to corporate risk management decisions.

2.2.2. Market Timing Theory

The market timing approach dictates that companies should determine their fixed vs. floating rate debt policy according to the expectations of changes in future interest rates.

Steeper yield curves imply greater difference between short and long-term interest rates, and would entail a higher proportion of floating rate debt in the short term to lower interest expense. If companies believe they can effectively time the market, thereby reducing their cost of capital, then the interest rate exposure selection should be driven by movements in interest rates.¹²

The concern associated with this approach is that market timing is macroeconomic focused and may be considered speculative in nature. Market timing seeks to adjust the cost of debt based on current and expected yields, but does not aim to reduce other volatility factors correlated with interest rate movements. The cost of debt is only one component of financial performance.

Figure 4 depicts the term spread of the 3 month and 15 year Province of Manitoba bonds, illustrating the current steepness of the yield curve, implying that practicing a higher proportion of floating rate debt would result in a lower interest expense.

¹¹ Rom, B., Ferguson, K.. Post-Modern Portfolio Theory Comes of Age, 1993, *Journal of Investing*, 1, 349-364.

¹² Faulkender, M., 2005, Hedging or Market Timing, *Journal of Finance*, 60 (2), 931-962.

Figure 4: Term Spread – 3 Month BA vs. 15 Year Province of Manitoba¹³

The market timing approach seeks to take advantage of a steep yield curve. This strategy is particularly relevant in the current economic environment where interest rates, especially short-term ones, are at historical lows. The market timing approach reflects economic factors that management should take into account when seeking to minimize interest expense, which has a direct impact on the profitability of the company. However, this approach has traditionally focused on yield curve slopes, without taking into account the overall level of interest rates, which should be reflected in debt structuring decisions.

Other pitfalls associated with market timing theory are that it ignores the asset volatility factors of the business and relies on a view on the future direction of interest rates, which could be interpreted as speculation. Also, the framework is unable to quantify the risks associated with issuing floating rate debt; analysis suggests that a debt portfolio with a high proportion of floating rate debt will result in higher interest expense volatility.

2.2.3. Asset/Liability Management

The asset/liability approach examines both revenues and expenses simultaneously and formulates an optimal mix of fixed and floating rate debt based on reducing the volatility factors affecting the company. Taking an asset/liability management approach considers interest expense management in the context of the overall business, not as a standalone item. The approach seeks

¹³ Historical interest rate data from Bloomberg.

to optimize net income, which is the key metric of relevance for Manitoba Hydro. Carrying more floating rate debt can have a volatility-decreasing effect by offsetting changes in interest rates.¹⁴ Hedging strategy impacts a company's ability to pay interest, and meet its debt costs on a regular basis.¹⁵ High variability in cash flows negatively impacts capital expenditure plans because debt cannot be used as a supplement to internally generated cash flows to fund capital requirements.¹⁶

In Hackbarth et al., the authors examine the optimal mixture of bank and market debt to explore dynamic capital structures in the context of realistic macroeconomic settings with interest rate and inflation risks. However, all market debt is assumed to be in the form of fixed rate bonds.¹⁷

In most academic research papers, corporate debt is only represented by fixed coupon bonds and does not take into consideration interest rate movements and inflation risks. Hence, limited analytical results relevant to the scope of this assessment are available.

Other hedging theories stipulate that by matching the interest rate exposure of the liabilities to that of their assets, firms can reduce variability of their cash flows and, as a result, lower their expected cost of financial distress and capture greater tax shield benefits.¹⁸ Hedging also allows firms to minimize how often they have to raise external capital.¹⁹ These academic papers have not provided any quantitative estimate of the optimal breakdown between various types of debt instruments.

Martellini and Milhau tie together these two separated strands of the corporate finance literature by providing the first quantitative analysis of capital structure and debt management choices in a unified framework. This research shows that risk management motives can be quantitatively analyzed in the context of a formal capital structure model. To do that, it considers the optimal allocation to various competing forms of liabilities in a more realistic stochastic environment. In the presence of interest rate and inflation risks, they obtain analytical expressions for the price of, and optimal allocation to, various forms of liabilities classes (fixed rate bonds, floating rate bonds and inflation indexed bonds, in addition to equity).²⁰

¹⁴ Chava, S., Purnanandam, A., 2007, Determinants of the Floating-to-Fixed Rate Debt Structure of Firms, *Journal of Finance*, 50 (3), 789-819.

¹⁵ Smith, C., Stulz, R., 1985, The Determinants of Firms' Hedging Policies, *Journal of Financial and Quantitative Analysis*, 20 (4), 391-405.

¹⁶ Froot, K., Scharfstein, D., Stein, J., 1993, Risk Management: Coordinating Corporate Investment and Financing Policies, *Journal of Finance*, 48 (5), 1629-1658.

¹⁷ Hackbarth, D., Hennessy, C., Leland, H., 2007, Can the Trade-off Theory Explain Debt Structure?, *Review of Financial Studies*, 20 (5), 1389-1428.

¹⁸ Smith, C., Stulz, R., 1985, The Determinants of Firms' Hedging Policies, *Journal of Financial and Quantitative Analysis*, 20 (4), 391-405.

¹⁹ Froot, K., Scharfstein, D., Stein, J., 1993, Risk Management: Coordinating Corporate Investment and Financing Policies, *Journal of Finance*, 48 (5), 1629-1658.

²⁰ Martellini, L., Milhau, V., 2008, Capital Structure Choices and the Optimal Design of Corporate Market Debt Programs, Second Singapore International Conference on Finance 2008.

This analysis shows that debt management decisions have an impact on capital structure decisions. The optimal allocation depends on the correlation between interest rates and the firm's asset value. The volatility of the interest rate and the speed of mean reversions also play an important role in the determination of the debt structure.

The limitation associated with taking an asset/liability management approach to formulating an optimal debt mix is that it is often difficult to segregate both the factors that impact operating cash flow and analyze their correlation with interest rates.

2.3. CONCLUSION

NBF's comprehensive review of academic literature on alternative debt portfolio frameworks and their respective advantages and limitations established that the asset/liability management approach is the most appropriate framework for assessing Manitoba Hydro's fixed vs. floating rate debt policy.

In NBF's opinion, the asset/liability model is the only alternative that allows for the optimization of net income as it seeks to match the assets and liabilities of a company.

3. IDENTIFICATION OF KEY FACTORS

Having identified the asset/liability management framework as the appropriate approach for this analysis, NBF examined the sources of volatility of the assets and liabilities affecting the historical financial performance of Manitoba Hydro.

The asset analysis identified the volatility factors affecting the drivers of Manitoba Hydro's revenue, and likewise, the liabilities analysis identified the volatility factors affecting Manitoba Hydro's costs. The key factors identified in this analysis were used as the drivers of the technical analysis and scenario testing.

3.1. ASSETS

Assets are defined as the stream of cash inflows that result from operational assets. These include both domestic and extraprovincial electricity sales revenue.

3.1.1. Domestic Utility Rates

The prices charged for the sale of electricity and natural gas within Manitoba are subject to review and approval by the Public Utilities Board of Manitoba ("Board"). The Board is the provincial government's regulatory body through which all of Manitoba Hydro's electricity and natural gas rate applications must be approved before rate increases or decreases can become effective.

Table 5: Domestic vs. Extraprovincial Electric Revenues and Volumes²¹

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Electric Revenue (\$mm)	\$1,122	\$1,212	\$1,362	\$1,243	\$1,218	\$1,458	\$1,753	\$1,558	\$1,633	\$1,675
Domestic Revenue (\$mm)	\$748	\$737	\$781	\$786	\$875	\$918	\$939	\$984	\$1,024	\$1,074
GWh	16,331	15,820	16,698	16,958	18,953	19,323	19,781	19,976	20,555	21,109
\$/MWh	\$34.26	\$39.09	\$47.24	\$46.97	\$49.22	\$50.03	\$53.00	\$50.75	\$49.33	\$51.29
Export Revenue (\$mm)	\$374	\$475	\$581	\$457	\$343	\$540	\$814	\$574	\$609	\$601
Import Costs (\$mm)	\$19	\$30	\$56	\$126	\$506	\$101	\$86	\$186	\$99	\$136
Net Export Rev. (\$mm)	\$355	\$445	\$525	\$331	(\$163)	\$439	\$728	\$387	\$510	\$465
Export GWh	10,911	12,154	12,298	9,735	6,976	10,789	15,360	11,305	12,348	11,720
Export \$/MWh	\$34.26	\$39.09	\$47.24	\$46.97	\$49.22	\$50.03	\$53.00	\$50.75	\$49.33	\$51.29
Import GWh	978	916	1,458	3,043	9,627	2,278	1,787	3,454	2,098	2,579
Import \$/MWh	\$18.97	\$32.43	\$38.36	\$41.41	\$52.58	\$44.19	\$48.28	\$53.94	\$47.09	\$52.91

3.1.2. Extraprovincial Revenues

Extraprovincial revenues are subject to two main macroeconomic volatility factors: spot/forward rate risk in the Mid-West Independent Operating (MISO) system and foreign currency exchange exposure. MISO is an open-market, US electrical grid. Manitoba Hydro sells excess electricity to this grid through contracts or at the prevailing spot price. Constant fluctuations in spot prices affect forward contract prices and total extraprovincial revenue. Due to extraprovincial revenues generated from sales into the MISO grid, Manitoba Hydro is exposed to fluctuations in foreign currency exchange rates.

Manitoba Hydro engages in two types of export sales: contracted export sales and spot price export sales. Export contracts account for most of Manitoba Hydro's exported electricity being sold on-peak capacity. Current long-term export contracts produce export sales of about 2,500 GWh/year at prices above \$50.00/MWh (average of \$55.00/MWh for fiscal 2007/08). Other contracts are short-term market based agreements, and pricing is below \$40.00/MWh for sales volumes of 1,500 GWh/year.

Opportunity export sales are spot price sales that attempt to capture the remainder of on-peak availability, and rely on shoulder and off-peak periods to maximize total electrical sales. These

²¹ Data as per Manitoba Hydro.

off-peak sales in fiscal 2007/08 accounted for an additional 8,000 GWh in 2007/08, however brought the export average price below \$50.00/MWh.

Historically, export revenues have accounted for a significant proportion of total revenues, accounting for an average of 37% over the past 10 years with a standard deviation of 4.9% over the same period.

Table 6: Domestic vs. Extraprovincial Revenues²²

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Domestic Rev. (\$mm)	\$748	\$737	\$781	\$786	\$875	\$918	\$939	\$984	\$1,024	\$1,074
Extraprov. Rev. (\$mm)	\$374	\$475	\$581	\$457	\$343	\$540	\$814	\$574	\$609	\$601
Total Electric Revenue	\$1,122	\$1,212	\$1,362	\$1,243	\$1,218	\$1,458	\$1,753	\$1,558	\$1,633	\$1,675
Extraprovincial (%)	33%	39%	43%	37%	28%	37%	46%	37%	37%	36%
<i>Standard Deviation of Proportion of Extraprovincial Revenue:</i>										4.9%

3.1.3. Potential Hydraulic Generation/Reserves

Reservoirs within the Nelson-Churchill drainage basins allow Manitoba Hydro to store water for future electrical generation. These reserves are held at virtually no economic cost and it allows Manitoba Hydro to reserve power generation for future seasons in order to meet variable domestic demand and to optimize export sales during peak load demand in the MISO grid.

3.2. LIABILITIES

Liabilities are defined as the stream of cash outflows that result from both operating and financial activities. These include cost of power purchased from extraprovincial sources, as well as interest payments on issued debt.

3.2.1. Purchased Power

Purchased power costs are subject to spot rate risk in the MISO system given that Manitoba Hydro purchases electricity from the MISO grid at the prevailing spot price. Constant movement in spot prices affects the cost of purchased power.

²² Data as per Manitoba Hydro.

3.2.2. Operation and Maintenance Expenses

Costs and operating programs have increased due to: increased maintenance requirements (due to an aging infrastructure); wage and benefit settlements that exceed projected inflation; additional overtime and increased staffing levels (to meet extraprovincial requirements); the expansion of programs (to meet higher than expected domestic customer numbers and needs); and the meeting of environmental and other stakeholder expectations. These costs have been compounded by the recent shortage of skilled labour in Manitoba, which results in higher training and labour costs.

3.2.3. Water Rental Fees

Water rentals relate to the use of provincial water resources. Water rentals and assessment fees are determined by the amount of annual water-flow used during the year.

3.2.4. Debt and Interest Expenses

Manitoba Hydro maintains a proportion of floating rate debt in its debt portfolio, which is subject to the volatility of the underlying rate drivers (3 month BA in Canada, 3 month LIBOR in the US). Their respective correlations with other key factors are analyzed in detail in the technical analysis portion of this assessment, and form the basis for the scenario analysis.

The portion of total debt denominated in US Dollars is in place as part of Manitoba Hydro's Exposure Management Program ("EMP") to manage the currency risk associated with extraprovincial power sales. This portion of total debt establishes a natural hedge against US Dollar denominated extraprovincial revenues. This assumption is discussed further in section 5.1.1.

3.3. HYDROLOGY RISK

Based on a study published in Manitoba Hydro's 2008/09 General Rate Application, 94 years of river flow history revealed that Manitoba has faced drought conditions in 23 of the 94 years (approximately 1 year in every 4). Consecutive years of drought conditions occurred from 1929 to 1932, 1936 to 1942, 1976 to 1977, 1980 to 1981, and 1987 to 1991. The most recent drought was in 2003-04. In Table 7, Manitoba Hydro has forecasted the impact of a drought on retained earnings.

Table 7: Hydrology Risk Analysis²³

Event in Forecast Period	Frequency	Cumulative Retained Earnings Reductions (\$mm)
One Year Drought (50% of 2003/04 loss)	1 in 10	(\$490)
2003/04 Drought	1 in 15	(\$891)
Five-Year Drought (1987-91)	1 in 50	(\$2,800)
Seven-Year Drought (1936-42)	1 in 100	(\$3,500)

Hydrology is considered a key volatility factor affecting the financial performance of Manitoba Hydro. Although hydrology risk can affect the volatility of regulated electricity rates and extraprovincial generation, there is no causal effect between hydrology and macroeconomic factors and therefore cannot, in the context of this assessment, be deemed a key variable in determining the optimal fixed versus floating rate debt policy.

3.4. CONCLUSION

The foregoing analysis demonstrates that Manitoba Hydro’s business model is subject to several volatility factors that affect its assets and liabilities. In formulating an optimal fixed vs. floating rate debt policy, the relationship between these factors justifies the use of an asset/liability management framework. Such an approach will allow Manitoba Hydro to lower net income volatility risk while attaining an optimal level of return.

²³ Data as per Manitoba Hydro.

4. PEER GROUP ANALYSIS

As part of this assessment, NBF examined Manitoba Hydro’s peer group’s fixed vs. floating rate debt policies. The peer group consisted of vertically integrated electric utilities, and was segmented into two separate types of peers: crown utility corporations and publicly-traded corporations.

Table 8: Peer Group List

Crown Utility Corporations	Publicly Traded Corporations
BC Hydro	Emera Inc.
SaskPower	Fortis Inc.
Hydro Québec	Canadian Utilities Limited
New Brunswick Power	
Newfoundland & Labrador Hydro (Nalcor Energy)	

First, NBF tracked each of the peer’s historical floating rate debt mix over a 10 year period and found evidence that Manitoba Hydro’s peers utilized market timing to adjust their fixed vs. floating rate debt mix to account for prevailing interest conditions.

Second, NBF extended the key factor identification process to the peer group to identify the sources of volatility affecting their assets and liabilities, and found evidence of asset/liability management.

The purpose of the peer group analysis was not to provide an evaluation of the peer group’s fixed vs. floating rate debt policy. Rather, this analysis simply compared Manitoba Hydro’s policy to its peers and found that it was consistent with industry practice from an asset/liability management perspective.

4.1. MARKET TIMING EVIDENCE

Market timing provides context as to the macroeconomic reasoning for changes in floating rate debt proportions over time. Companies use this strategy to take advantage of a steep yield curve by increasing floating rate debt, or by fixing their floating rate debt during low interest rate timeframes.

The market timing component of this analysis first examined the relationship between the floating rate debt mix and the slope of the yield curve. Figure 5 depicts the relationship between the peer group’s floating rate debt proportion and term spreads in the past 10 years:

Figure 5: Term Spread vs. Average Peer Group Floating Rate Debt %²⁴

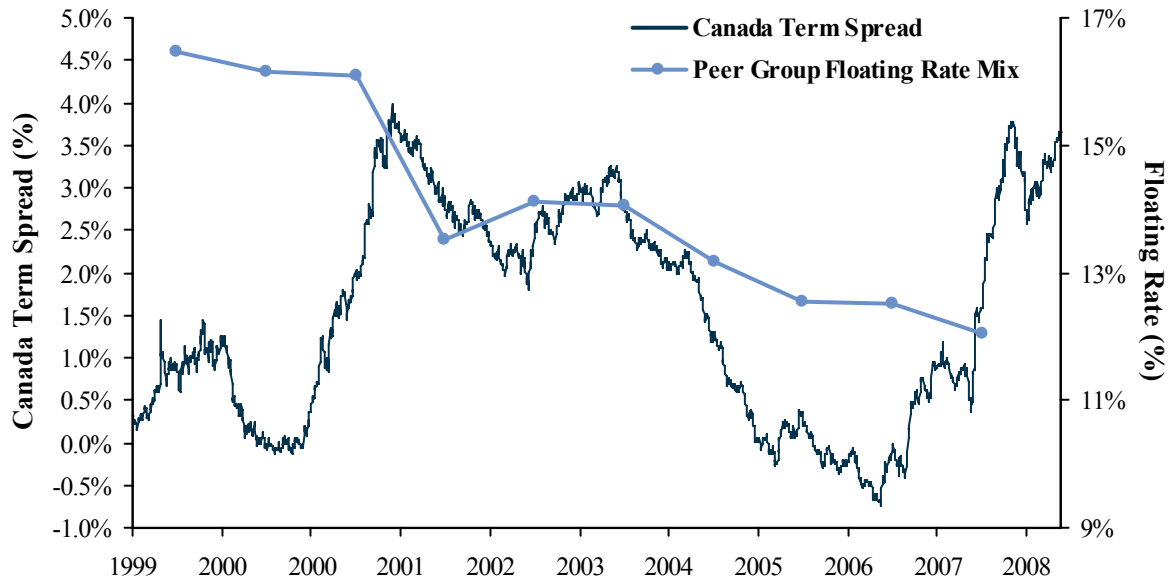


Figure 5 proves that while the peer group’s floating rate debt proportion has followed the term spread between 2000 and 2006, these companies have not increased their proportion of floating rate debt in the context of the recent spike in term spreads that has taken place over the last two years.

One reason for this divergence could involve a lag effect between the term spread change and its reflection in company policy. However, another explanation could be the fact that the current low-interest economic environment provides an opportunity for companies to fix their long-term debt at cheaper prices than historical levels.

Figure 6 tests this latter hypothesis by examining the relationship between the peer group’s average floating rate debt proportion and long-term interest rates:

²⁴ Historical interest rate data as per Bloomberg, peer group floating rate mix as per peer group company reports.

Figure 6: 20 Year Government of Canada vs. Average Peer Group Floating Rate Debt %²⁵

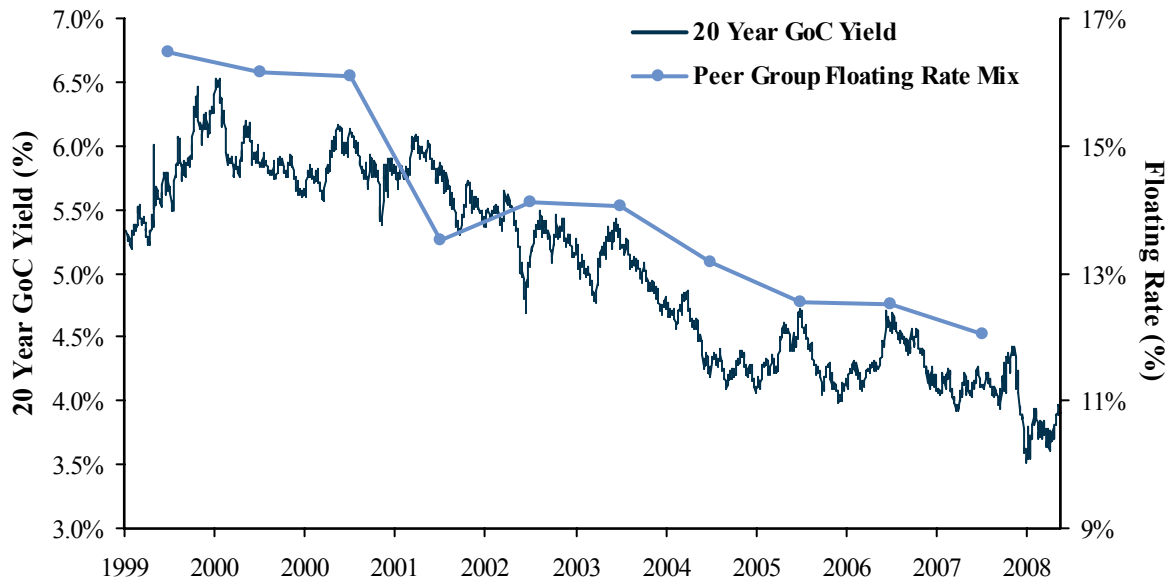


Figure 6 provides evidence that given the unique interest rate environment today, these companies are choosing to engage in market timing not by taking advantage of the increasing term spread, but rather by taking the opportunity to lower their interest rate volatility by fixing more of their debt at historically lower levels.

4.2. ASSET/LIABILITY MANAGEMENT EVIDENCE

The asset/liability management approach is a more fulsome and detailed methodology of determining the reasons behind implementing certain individual debt management policies. The sources of revenue and costs were both examined, and the analysis assessed volatility factors associated with changes to each company’s net income.

4.2.1. Assets

4.2.1.1. Domestic Utility Rates

The prices charged for the sale of electricity and natural gas within the respective operating provinces of the peer group is subject to review and approval by each public utilities board/commission, with the exception of companies that operate in merchant markets such as Alberta. The public utilities board/commission is the respective provincial government’s regulatory body through which all electricity and natural gas rate applications must be approved before rate increases or decreases can become effective.

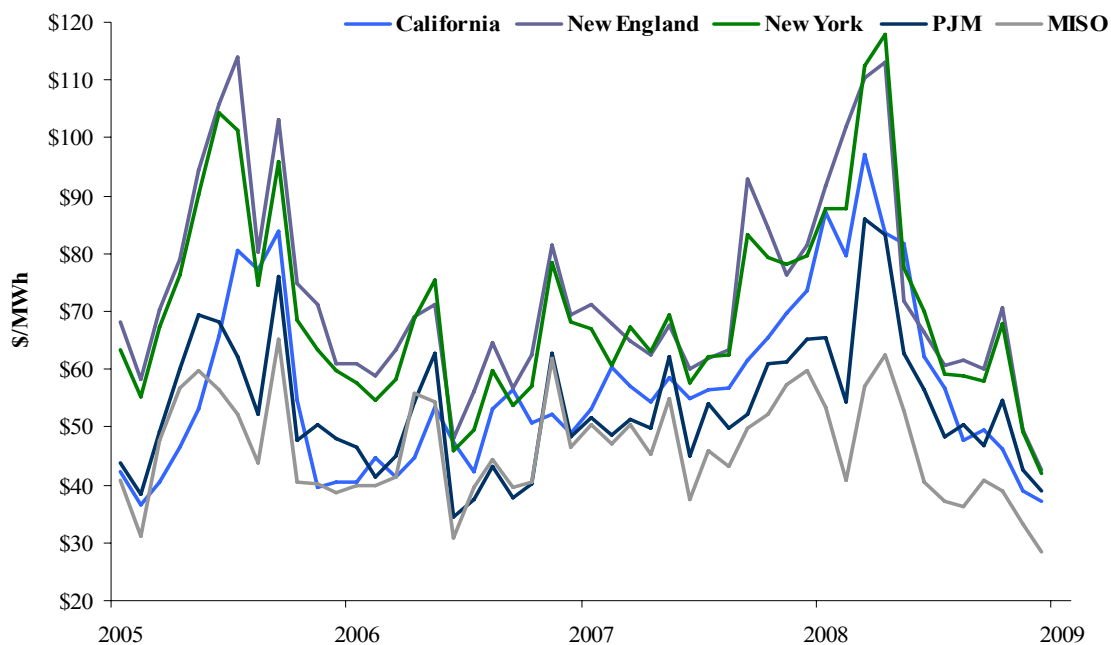
²⁵ Historical interest rate data as per Bloomberg, peer group floating rate mix as per peer group company reports.

Regulated electricity rates are determined by a host of factors including, but not limited to, inflation risk, electricity demand risk and fuel price risk.

4.2.1.2. Export Revenue

Export revenues are subject to two main macroeconomic volatility factors; spot/forward prices associated with selling excess electricity to open-market grids and foreign currency exchange exposure. Open-market grids that the peer group sells excess electricity into include; California ISO (CISO), ISO New England, MISO, New York Independent System Operator (NYISO), PJM Interconnection and Alberta ISO. The peer group sells excess electricity to these open-market grids at the prevailing respective spot/forward prices. Constant changes in spot prices affect total export revenue. Secondly, due to export revenues generated from sales into the previously mentioned open-market grids, export revenues are exposed to fluctuations in foreign currency exchange rates.

Figure 7: Historical ISO Electricity Spot Prices²⁶



4.2.1.3. Generation Risk

Natural weather conditions such as hydrology and wind levels impact generation and its volatility increases dependency on import power. The unpredictability of these sources of generation affect the volatility of regulated electricity rates, however it is not a risk that is correlated with macroeconomic metrics such as interest rates and cannot be used in forecasting

²⁶ Historical ISO electricity spot prices as per Bloomberg.

future impacts on financial performance, specifically through determining an optimal debt policy.

4.2.2. Liabilities

4.2.2.1. Operation and Maintenance Expenses

Unexpected inflation risk is the key metric affecting volatility in operation and maintenance expenses of the peer group. Items such as unforeseen changes in staffing levels/costs are responsible for this volatility.

4.2.2.2. Purchased Power

Purchased power costs are subject to two main volatility factors: spot rate risk associated with purchasing electricity due to domestic generation shortfall on open-market grids and foreign currency exchange exposure. The open-market grids that the peer group purchases electricity from include: ISO New England, MISO, New York Independent System Operator (NYISO), and PJM Interconnection. Secondly, due to purchased power from electricity in the previously mentioned open-market grids, purchased power is exposed to fluctuations in foreign currency exchange rates.

The cost of producing power from certain additional sources of generation is an additional volatility factor affecting the peer group. Input fuel prices for power generation from natural gas, coal and oil are all examples of fuel costs that are subject to external pricing.

4.2.2.3. Debt and Interest Costs

Peers that maintain a floating portion of their total debt are subject to volatilities in rate drivers (BA and LIBOR). NBF's peer group analysis demonstrated that among the peers, only SaskPower fixed all of its debt and hence was not affected by fluctuations in short-term interest rates.

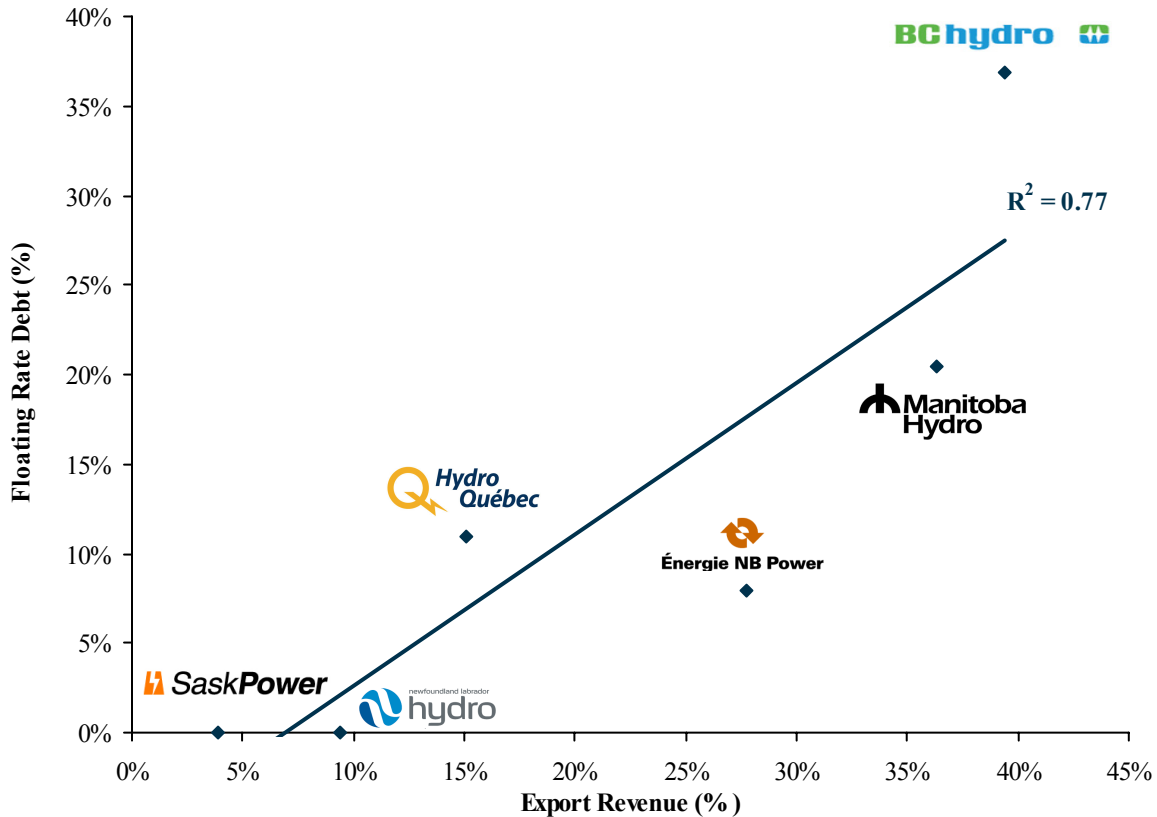
Furthermore, the analysis also demonstrates that peer group members issue a portion of their debt in foreign currencies to mitigate foreign revenue exposures.

4.2.3. Asset/Liability Management Evidence

The foregoing key factor identification process demonstrated that Manitoba Hydro's peers are subject to volatility factors that warrant an asset/liability management approach to their fixed vs. floating rate debt policy.

In Figure 8, an evaluation of the crown utility peer group’s operations indicates that there is a positive relationship (as evidenced by an R^2 of 0.77) between the exposure to exported power revenue, which is subject to spot/forward electricity price volatility, and the proportion of floating rate debt on the company’s balance sheet. Figure 8 suggests that as revenues become more dependent on exports, the floating rate debt component becomes more prevalent.

Figure 8: Peer Group Floating Rate Debt % (2008) vs. Export Revenue % (Crown Utilities)²⁷



Manitoba Hydro, BC Hydro, NB Power and Hydro Québec all export material amounts of power to various markets in the United States. To hedge part of the volatility of spot/forward prices, each respective peer carries a floating rate debt component in their debt portfolio.

4.3. CONCLUSION

The peer group analysis provided evidence of market timing among Manitoba Hydro’s peer group. The historical analysis suggests that the peers adjusted their floating rate debt proportion to take advantage of the prevailing interest rate environment.

²⁷ Data as per Manitoba Hydro and peer group company reports.

The asset/liability portion of the analysis yielded evidence that Manitoba Hydro's fixed vs. floating rate debt policy is consistent with that of its crown utility peers from an asset/liability management perspective.

5. TECHNICAL ANALYSIS

The purpose of NBF's technical analysis was to quantify the volatility and correlation of the key factors identified in Section 3, namely domestic utility rates, export power prices (short-term contracts/spot transactions and long-term contracts) and Canadian and US short-term interest rates. NBF found that the difference in volatilities between regulated and spot electricity prices and their correlation to short-term interest rates were the key elements of this analysis. The results were then used as inputs for the scenario analysis in Section 6.

5.1. ASSUMPTIONS

In order to strictly adhere to the scope of this mandate and issue in question, namely the optimal mix of fixed vs. floating rate debt, NBF has made the following assumptions in its technical analysis.

5.1.1. US Assets and Liabilities

The NBF methodology assumed Manitoba Hydro's current mix of Canadian and US Dollar ("USD") denominated debt as given, and then analyzed the optimal mix of fixed vs. floating rate debt for its entire debt portfolio.

Manitoba Hydro currently has an EMP to manage its currency risk. The EMP uses USD denominated debt to establish a natural hedge between USD cash inflows and outflows. Any discussion regarding the appropriate mix of Canadian vs. USD denominated debt instruments would entail an evaluation of Manitoba Hydro's currency risk hedging practices, which is outside the scope of this assignment.

For the purposes of the technical analysis, NBF assumed that USD denominated debt accounted for 37% of the total debt portfolio in the base case year, calculated as the average proportion of total debt over the last three years. This proportion is comparable to the 37% in extraprovincial revenues as a percentage of Manitoba Hydro's total electric revenue as identified in Table 6.

Table 9: Historical Proportion of US Dollar Denominated Debt²⁸

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Exchange Rate (C\$/US\$)	\$1.172	\$1.174	\$1.594	\$1.469	\$1.311	\$1.210	\$1.167	\$1.153	\$1.028
Fixed Debt (C\$m)	\$3,367	\$2,758	\$4,033	\$3,425	\$2,793	\$2,578	\$2,488	\$2,458	\$2,191
Floating Rate Debt (C\$m)	\$206	\$176	\$478	\$441	\$393	\$363	\$350	\$346	\$514
Total US Debt (C\$m)	\$3,573	\$2,934	\$4,511	\$3,866	\$3,186	\$2,940	\$2,838	\$2,804	\$2,705
(%) of Total Debt	50.1%	45.5%	58.9%	53.2%	43.1%	40.8%	39.6%	38.8%	35.6%

5.1.2. Debt Maturity Schedule

Discussion regarding the maturity schedule of debt instruments is outside the scope of this assignment. Hence, current and historical maturities will form the basis for the technical analysis.

As Manitoba Hydro's weighted average fixed term to maturity in 2008 was 14.7 years, throughout its technical analysis, NBF assumes a fixed term to maturity of 15 years for fixed debt instruments.

Table 10: Historical Average Maturity Terms²⁹

Term to Maturity	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total Canada	23.2	21.9	21.1	20.7	19.4	18.9	18.8	18.1	19.4
Total US	18.2	15.6	13.5	12.4	12.3	11.3	10.3	10.3	8.8
Total Fixed	18.7	17.3	15.9	15.6	14.9	14.6	14.4	13.7	14.7
Total Floating	13.0	12.7	9.4	8.3	7.8	8.0	7.1	7.8	6.4

5.2. VOLATILITY AND CORRELATION ANALYSIS

As previously discussed, Manitoba Hydro's financial results are subject to several volatility factors, most notably variances in export electricity prices, exchange rates and hydrology. The primary source of net income variability relates to the substantial level of hydrology risk that is present in Manitoba Hydro's operations. Given that in principle there is no causal relationship between weather patterns and macroeconomic indicators, it is not possible to lower exposure to this hydrology risk through determining a debt policy.

However, it is important to note that the added volatility introduced by fluctuations in hydrology does highlight the need for the stabilization of income, to the extent that it can be managed through financial instruments.

²⁸ Data as per Manitoba Hydro.

²⁹ Data as per Manitoba Hydro.

Given that hydrology and currency risks are non-factors in the technical component of the analysis, NBF’s methodology focuses on power prices in both the domestic and extraprovincial markets as value drivers for the assets, and compares them to the liability portion driven by short-term interest rates. As a proxy for volatility in domestic rates and long-term export contracts, NBF’s technical analysis utilizes the volatility in the Canadian Consumer Price Index (“Canadian CPI”) and US Consumer Price Index (“US CPI”), respectively.

The historical results, based on a 2005-2009 period, are summarized as follows:

Table 11: Variable Volatilities, 2005-2009³⁰

Asset Variables	Volatility Metric	Mean	Standard Deviation
A Domestic Utility Rates	Change in Canadian CPI	1.68%	1.45%
B Extraprovincial Power (Short-Term Contracts and Spot)	MISO Power Price	US\$42.37	US\$11.96
C Extraprovincial Power (Long-Term Contracts)	Change in US CPI	2.32%	1.66%

Liability Variables	Volatility Metric	Mean	Standard Deviation
D Canadian Short-Term Interest Rates	3 Month BA	3.49%	1.18%
E US Short Term-Interest Rates	3 Month LIBOR	4.02%	1.43%

Changes in Canadian CPI and US CPI levels were measured using a lognormal distribution. The mean reflects annualized increases, whereas the standard deviation represents the proportion of the mean that is subject to volatility on an annualized basis.

Table 12: Variable Correlation Matrix, 2005-2009

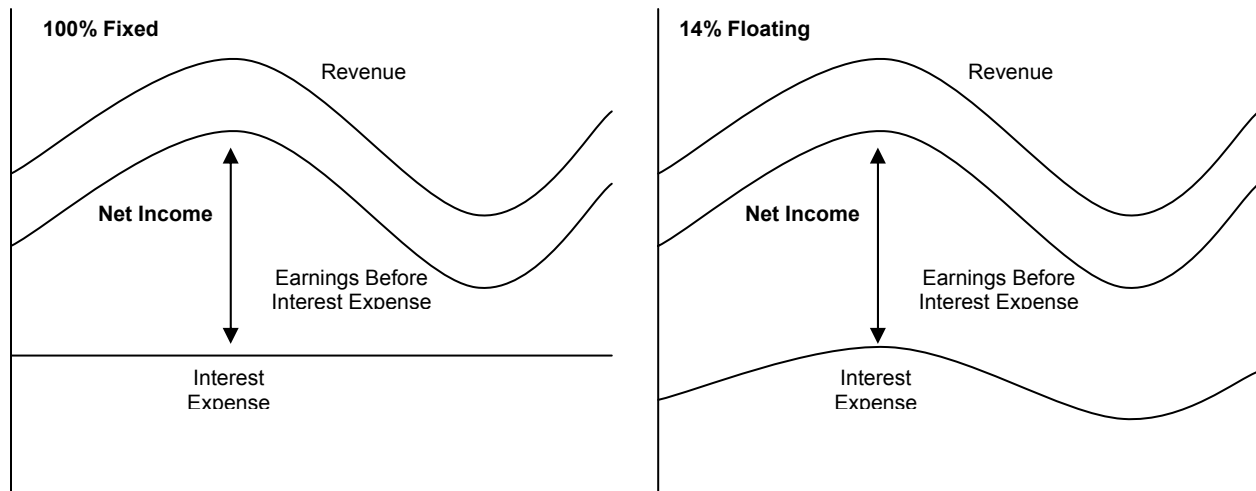
Correlations	Domestic Utility Rates	Export Power (ST and Spot)	Export Power (LT Contracts)	Canadian ST Interest Rates	US ST Interest Rates
Domestic Utility Rates	-	0.17	0.66	0.06	0.00
Extraprovincial Power (ST and Spot)	0.17	-	0.23	0.46	0.37
Extraprovincial Power (LT Contracts)	0.66	0.23	-	0.22	0.00
Canadian ST Interest Rates	0.06	0.46	0.22	-	0.91
US ST Interest Rates	0.00	0.37	0.19	0.91	-

³⁰ Historical interest rate data as per Bloomberg.

The technical analysis demonstrates that short-term export power contract prices have higher correlation with short-term interest rates than domestic rates and long-term export contracts. The results suggest that the volatility in the pricing of these contracts could be better mitigated by increasing the proportion of floating rate debt.

Increasing the proportion of floating rate debt can lead to lower risk because our analysis shows that interest expense and revenues are correlated. Because short term interest expense and revenues move together to a certain extent, net income can be stabilized by adding a floating element to the overall debt portfolio. A 100% fixed portfolio would keep interest expense flat, and hence revenue fluctuations will be reflected in net income. However, by allowing interest expense to move together with revenue, Manitoba Hydro can achieve more net income stability, as shown in figure 9.

Figure 9: Correlation Impact on Net Income



This conclusion was incorporated in the scenario analysis portion of NBF’s assessment.

6. SCENARIO ANALYSIS

Based on the aforementioned technical analysis, NBF’s scenario analysis generated a set of 10,000 scenarios for each of the identified key factors. These scenarios reflected the volatility and correlation metrics previously quantified in the technical analysis.

This set of scenarios was then applied to 100 portfolios of different fixed vs. floating rate debt mixes. Under each scenario, the net impact on Manitoba Hydro’s net income was calculated for each portfolio mix. The inherent volatility in a given portfolio selection was then derived from the variance that each fixed vs. floating rate debt mix caused under each one of the 10,000 generated scenarios.

The product of this scenario generation process was an average return (defined as net income impact) and risk (the level of volatility of this net income impact) that resulted from each one of the 100 different portfolio mixes.

6.1. EFFICIENT FRONTIER

Each portfolio was plotted according to its risk and reward profile, yielding a curve of possible outcomes. Due to the positive correlation between power prices (especially short-term and spot export prices) and floating interest rates, the result suggested that risk could actually be lowered by increasing the proportion of floating rate debt.

The fixed equivalent, defined as the portfolio that yields the same level of risk as the 100% fixed portfolio, consisted of 27% floating rate debt. For illustration purposes, this was established as the base case level of risk and return, and each portfolio’s net income impact and volatility were calculated relative to this base case.

Table 13 summarizes these findings:

Table 13: Portfolio Risk/Return Matrix

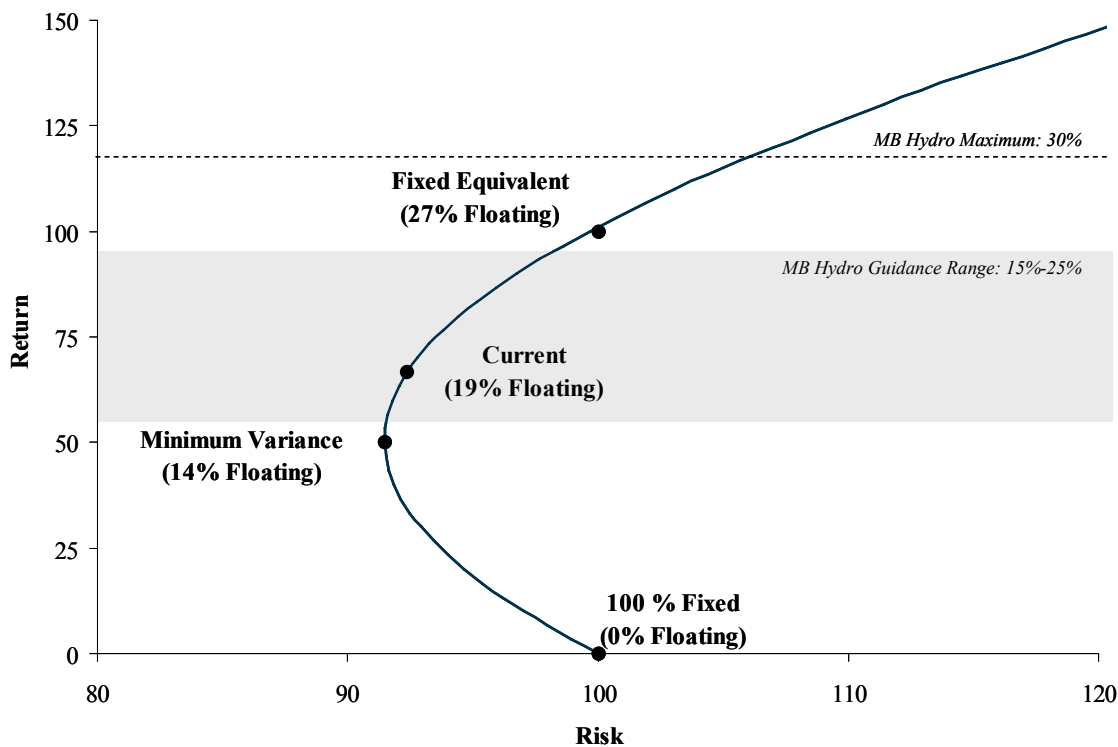
	Floating (%)	Adjusted Risk	Adjusted Return
1. Fixed	0%	100	0
2. Minimum Variance	14%	93	50
3. Current (March 31, 2008)	19%	94	69
4. Fixed Equivalent	27%	100	100
5. Floating	100%	253	370

The minimum variance portfolio was defined as the fixed vs. floating rate mix that yielded the lowest variance in net income, and was achieved by incorporating 14% floating rate debt into the debt portfolio. The above analysis implied that risk could be lowered by 7% by increasing the floating rate debt mix to 14% (from a 100% fixed portfolio) while making positive gains in net income since floating interest rates tend to be lower than fixed interest rates.

Furthermore, this analysis demonstrated that in order to maximize returns for a given level of risk, the portfolio must contain more than 14% floating rate debt. This minimum variance point therefore determined the beginning of the efficient frontier, which was defined as the set of portfolios that maximize return for a given level of risk.

The efficient frontier resulting from this scenario analysis is illustrated as follows:

Figure 10: Volatility Impact Model Efficient Frontier



This analysis proves that Manitoba Hydro’s guidance range of 15% to 25% floating rate debt mix is efficient from a risk/return perspective as it is above the minimum variance portfolio. In addition, this range is below the fixed equivalent mix of 27% floating rate debt. As a result, Manitoba Hydro’s current floating rate debt policy has the effect of lowering net income volatility in relation to a 100% fixed debt portfolio, while increasing returns through interest cost savings.

7. SOLUTION FORMULATION

Based on the analysis conducted, NBF formulated a set of recommendations for Manitoba Hydro to consider in determining the appropriate policy for fixed vs. floating rate debt mix. Such a policy needs to take into account the results of the asset/liability management framework, which allows the company to achieve an efficient level of risk. Moreover, the policy should also take into consideration the prevailing interest rate environment in order to take advantage of potential market timing opportunities.

7.1. ASSET/LIABILITY MANAGEMENT FRAMEWORK

The scenario analysis demonstrates that Manitoba Hydro's current guidance range of 15% to 25% is on the efficient frontier given that it falls inside the optimal risk reduction range of 14% to 27%. As a result, Manitoba Hydro's range has the effect of lowering risk from a 100% fixed rate debt portfolio while increasing net income through the introduction of lower interest costs.

Having analyzed the risk profile of the business, NBF believes that Manitoba Hydro's current guidance range is close to optimal, given that it seeks to lower risk in an efficient manner as prescribed by the asset/liability framework. This risk lowering approach is consistent with the risk profile of Manitoba Hydro's business, since the substantial hydrology risk highlights the need for stable underlying net income levels.

Given that the asset/liability framework adopts a consolidated approach, it also takes into account Centra Gas' risk profile and its respective impact on net income volatility. Accordingly, the results of our analysis are applicable to Manitoba Hydro's consolidated financials, which include Centra Gas.

While the current guidance range lies on the efficient frontier, NBF suggests that Manitoba Hydro should constantly monitor the performance of asset and liability variables to ensure that they reflect the prevailing economic environment.

7.2. MARKET TIMING

While the minimum variance portfolio yields the most stability, there are opportunities to lower the cost of interest (hence increase net income) by taking advantage of the prevailing interest rates at any given time. This approach should complement the asset/liability approach, which prescribes a range of optimal mixes.

One of the outcomes of the current recession has been a substantial drop in interest rates across the yield curve. Interest rates are currently at historically low levels because of a low inflation

environment. The Bank of Canada and Federal Reserve have reduced key interest rates (currently 0.25% in Canada and between 0% and 0.25% in the US) and the equities sell-off and ‘flight-to-quality’ has generated high demand for government bonds in Canada.

Figures 11 and 12 demonstrate that Canadian interest rates are at historical lows, further promoting an opportune time to consider market timing as a viable strategy in determining an optimal debt mix.

Figure 11: Bank of Canada Overnight Rate³¹

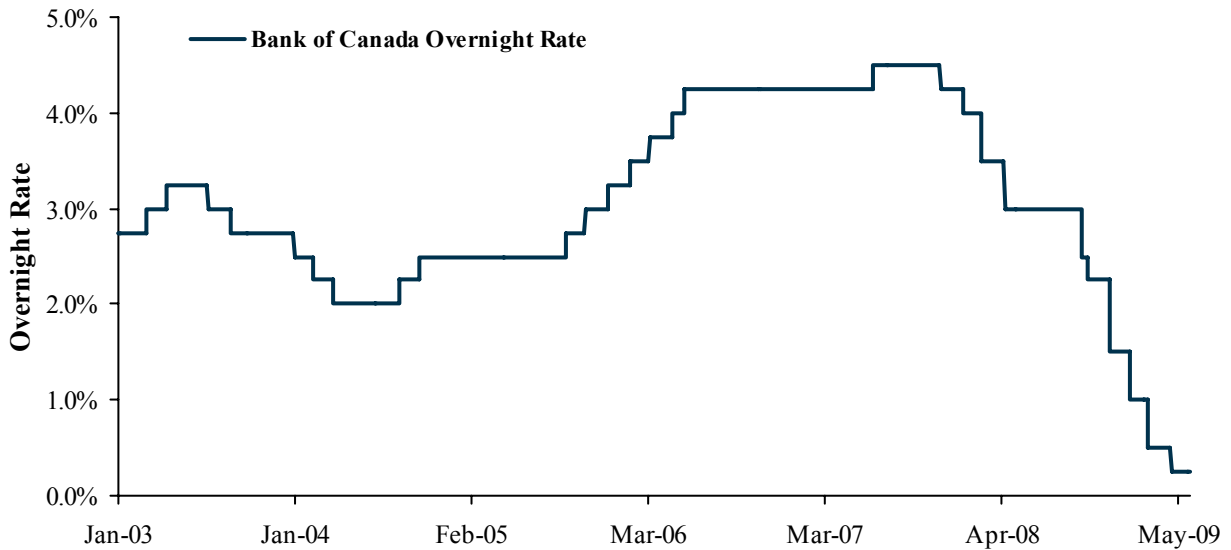
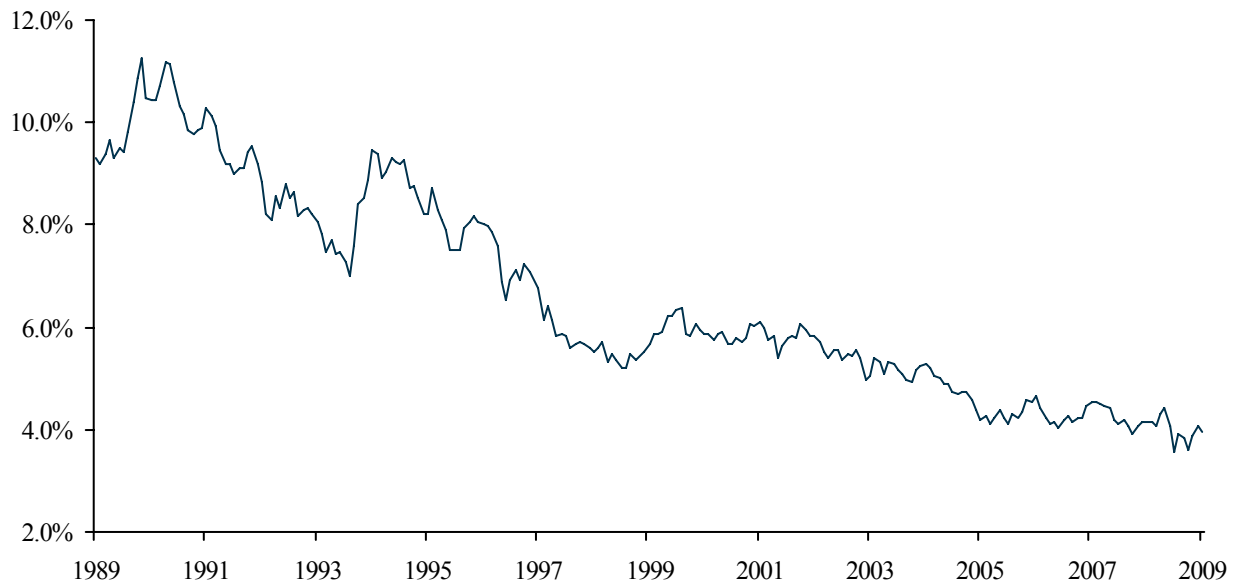


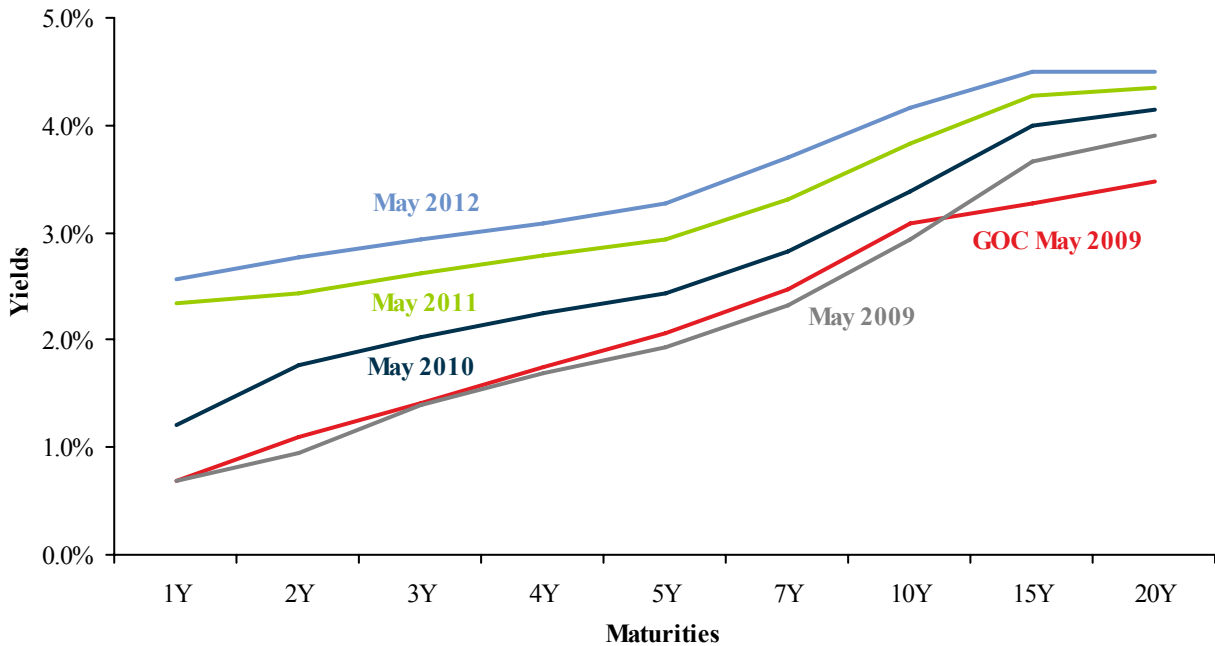
Figure 12: 20 Year Government of Canada Interest Rates³¹



³¹ Historical interest rate data as per Bloomberg.

It is important to note that incremental increases in floating rate debt leads to higher interest rate risk. By examining the forward curves for different maturities outlined in Figure 13, it is evident that market participants believe interest rates will move significantly higher, hence the steepness of the yield curve.

Figure 13: Canadian Swap Curve and Forward Curves³²



Figures 11, 12 and 13 provide evidence that the prevailing interest rate environment and yield curve slopes need to be taken into consideration in order to determine the optimal fixed vs. floating rate debt portfolio. Traditional market timing theory would normally prescribe a higher proportion of floating rate debt during periods of steep yield curves. However, it is important to note that these historically low interest rate levels provide an opportunity to lower interest rate risk at relatively inexpensive levels by increasing the proportion of fixed rate debt.

³² Interest rate data as per Bloomberg.

8. IMPACT ANALYSIS

Having established an optimal range of fixed vs. floating rate debt mix, as prescribed by the asset/liability framework, NBF analyzed the retroactive impact of this range on Manitoba Hydro's historical financial results.

8.1. IMPACT ON MANITOBA HYDRO

For each year, NBF calculated the impact on interest expense resulting from both the minimum variance (14% floating rate debt) and fixed equivalent (27% floating rate debt) portfolios. This allowed for an adjustment to the actual net income and coverage ratios. These impacts are summarized as follows:

Table 14: Impact of changes in Floating Rate Debt Mix³³

<i>all figures in (\$mm)</i>	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total Debt	\$7,134	\$6,442	\$7,661	\$7,268	\$7,390	\$7,204	\$7,169	\$7,227	\$7,599
Historical Debt Mix									
Floating Rate	15%	14%	14%	16%	17%	22%	19%	19%	19%
Net Income									
Minimum Variance	\$152	\$267	\$206	\$61	(\$453)	\$129	\$410	\$116	\$326
Actual	\$152	\$269	\$214	\$71	(\$436)	\$136	\$415	\$122	\$346
Fixed Equivalent	\$171	\$301	\$229	\$93	(\$424)	\$149	\$424	\$133	\$363
Interest Coverage									
Minimum Variance	1.35	1.62	1.41	1.12	0.14	1.24	1.76	1.22	1.67
Actual	1.35	1.62	1.42	1.14	0.17	1.25	1.77	1.23	1.71
Fixed Equivalent	1.39	1.69	1.45	1.18	0.19	1.27	1.79	1.25	1.75

8.2. CONCLUSION

The impact analysis demonstrates that since Manitoba Hydro's historical floating rate debt mix had stayed within the optimal range as prescribed by the asset/liability framework, the actual financial results were also within the optimal range.

³³ Historical financial data as per Manitoba Hydro.

9. CONCLUSIONS

An assessment of Manitoba Hydro's fixed vs. floating rate debt policy suggests that its current guidance range of 15% to 25% floating rate debt represents a range that is close to optimal under the asset/liability management framework. Furthermore, NBF recommends that Manitoba Hydro adjust its floating rate debt proportion accordingly within its current guidance range in order to take advantage of market timing opportunities presented by the prevailing interest rate environment by taking into account both the slope of the yield curve and the level of interest rates.

9.1. THE NBF APPROACH

NBF's assessment of Manitoba Hydro's fixed vs. floating rate debt policy was based on a comprehensive analysis of the issues relevant to this policy. The components of this approach were:

9.1.1. Portfolio Theory Overview

The approach began with a comprehensive review of academic literature on portfolio theory and the alternative approaches to managing fixed vs. floating rate debt. Based on this review process, NBF concluded that the asset/liability management approach was the appropriate framework for this analysis given its ability to optimize net income by matching assets and liabilities.

9.1.2. Identification of Key Factors

The asset/liability management framework involved an identification of the sources of volatility affecting the net income of the business. NBF found that the key asset factors were domestic utility rates and extraprovincial revenues, and key liability factors were purchased power prices, operation and maintenance expenses and interest expenses. These factors were the key drivers of the technical and scenario analysis portion of the assessment.

9.1.3. Peer Group Analysis

A comprehensive review of the fixed vs. floating rate debt policies of Manitoba Hydro's peer group provided evidence of market timing and asset/liability management. This analysis demonstrated that Manitoba Hydro's fixed vs. floating rate debt policy was consistent with that of its peer group.

9.1.4. Technical Analysis

A historical analysis involving volatility and correlation analysis was conducted on the key asset and liability factors identified in Section 3. This analysis demonstrated that short-term export contracts and spot price transactions for excess power exhibited higher volatility and correlation with short-term interest rates compared to both the domestic utility and long-term export contract rates. Such a result suggests that the volatility in short-term contract and spot prices could be mitigated by introducing a floating rate debt portion to the total debt portfolio.

9.1.5. Scenario Analysis

Based on the historical volatility and correlation metrics calculated in the technical analysis, the scenario analysis generated 10,000 scenarios for each of the identified key factors and calculated the net income impact and volatility of a set of 100 fixed vs. floating rate debt portfolios. This analysis demonstrated that the minimum variance portfolio comprised 14% floating rate debt, while the fixed equivalent portfolio, a mix that yielded the same risk as a 100% fixed portfolio, comprised 27% floating rate debt. These results implied that Manitoba Hydro could lower its net income volatility while improving its returns by keeping floating rate debt mix between 14% and 27% of the total debt portfolio.

The analysis also takes into account Centra Gas' risk profile and its respective impact on net income volatility. Accordingly, the results of our analysis are applicable to Manitoba Hydro's consolidated financials, which include Centra Gas.

9.2. SOLUTION FORMULATION

The scenario analysis demonstrated that Manitoba Hydro's current guidance range of 15% to 25% was inside the optimal risk reduction range of 14% and 27%. NBF recommends that Manitoba Hydro should maintain this guidance range given that this risk reduction approach appears appropriate in the context of its overall business risk. In particular, Manitoba Hydro is exposed to substantial levels of hydrology risk, supporting the view that net income volatility should be minimized through an asset/liability management framework.

Furthermore, NBF recommends that Manitoba Hydro adjust its floating proportion of total debt within this guidance range in order to take advantage of any market timing opportunities.

9.3. IMPACT ANALYSIS

An impact analysis of the effect of an optimal risk reduction range on Manitoba Hydro's financials demonstrated that there was negligible financial impact as Manitoba Hydro's historical floating rate debt proportion had stayed within this optimal range.

9.4. ASSUMPTIONS AND LIMITATIONS

Given that Manitoba Hydro's debt is issued and guaranteed by the Province of Manitoba, Manitoba Hydro's cost of debt is dependent on the Province of Manitoba's credit rating. NBF's assessment is therefore premised on the maintenance of the current credit rating of the Province of Manitoba. In addition, in order to strictly adhere to the mandate of providing an independent assessment of Manitoba Hydro's fixed vs. floating rate debt mix, NBF's assessment has not included an evaluation of Manitoba Hydro's choice of debt maturities or the proportion of US Dollar denominated debt. It is important to note that these factors can impact the results of an optimal debt policy.

10. APPENDICES

Figure 14: MPT Efficient Frontier, 1999-2003

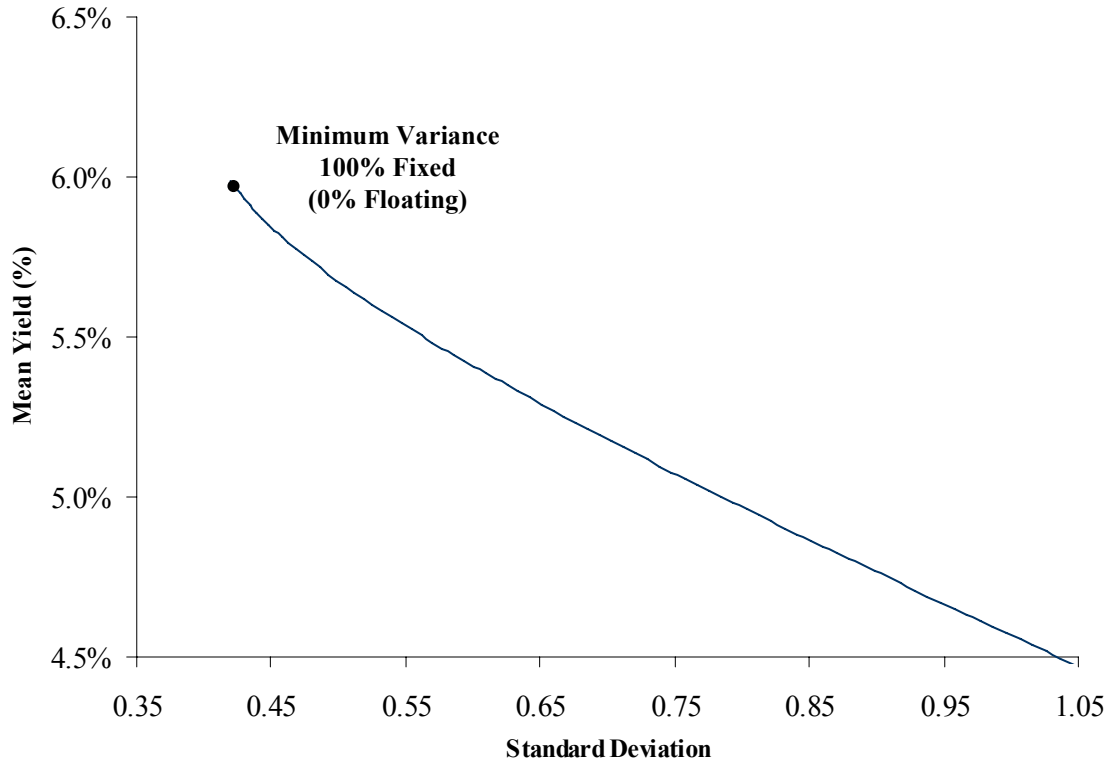


Figure 15: MPT Efficient Frontier, 2004-2009

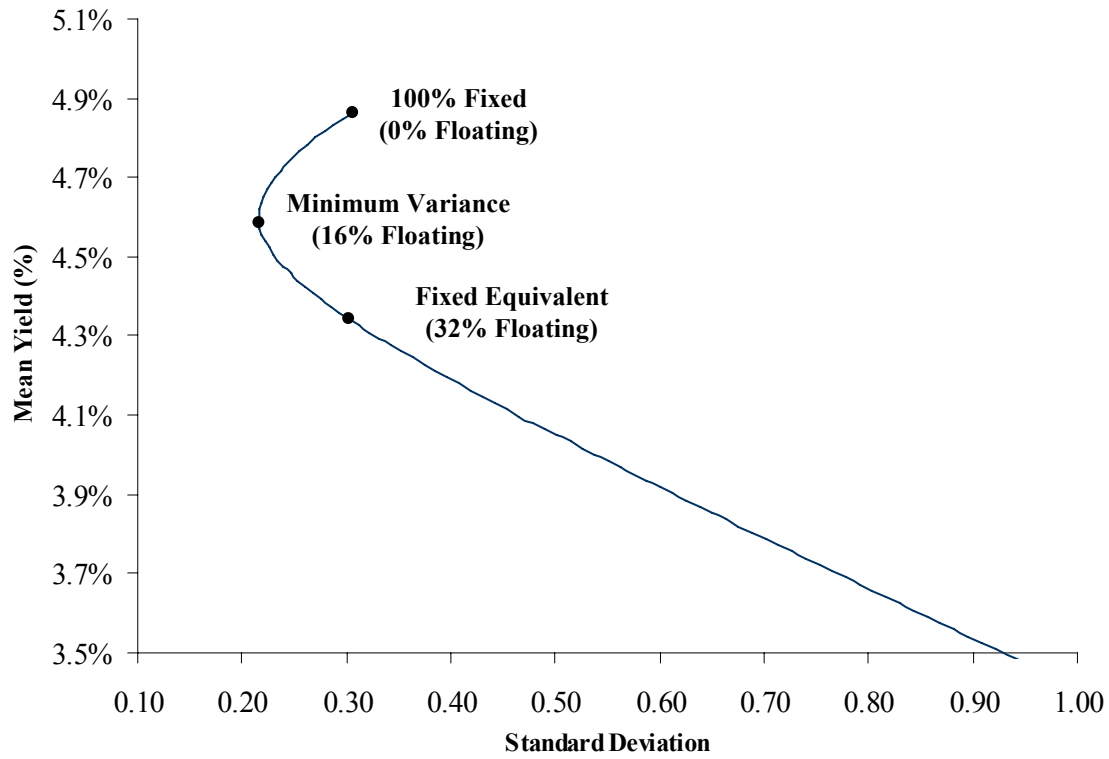


Table 15: Peer Group – Crown Utility Corporations³⁴

	Manitoba Hydro	BC Hydro	SaskPower	Hydro Québec	NB Power	Nfld. & Labrador Hydro
Revenue	\$2,250	\$4,855	\$1,469	\$12,717	\$1,712	\$573
EBITDA	\$1,215	\$1,211	\$589	\$8,814	\$645	\$233
Net Income	\$346	\$369	\$138	\$3,141	\$89	\$82
% of Floating Rate Debt	19.4%	36.9%	0.0%	11.0%	7.9%	1.2%
Capital Expenditures	\$827	\$1,072	\$280	\$3,756	\$409	\$87
Exports as a % of Revenue	36.3%	39.4%	3.9%	15.1%	27.7%	9.4%
Return on Equity	12.2%	11.3%	9.3%	15.4%	9.5%	13.0%
Peak Demand (MW)	4,273	9,548	2,969	37,230	3,447	6,898
Generation Capacity (MW)	5,465	11,326	3,668	36,429	3,959	7,307

³⁴ Historical financial data as per company reports.

Table 16: Peer Group – Publicly Traded Corporations³⁵

	Manitoba Hydro	Emera	Fortis	Canadian Utilities
Revenue	\$2,250	\$1,332	\$3,903	\$2,779
EBITDA	\$1,215	\$562	\$1,048	\$1,319
Net Income	\$346	\$145	\$235	\$580
% of Floating Rate Debt	19.4%	6.4%	11.9%	2.9%
Capital Expenditures	\$827	\$546	\$890	\$1,011
Exports as a % of Revenue	36.3%	15.4%	10.5%	13.8%
Return on Equity	12.2%	9.4%	8.7%	15.7%
Peak Demand (MW)	4,273	2,560	5,724	n/a
Generation Capacity (MW)	5,465	3,038	927	2,503

³⁵ Historical financial data as per company reports.

Table 17: Peer Group – Historical Floating Rate Debt³⁶

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Manitoba Hydro		15%	14%	14%	16%	17%	22%	19%	19%	19%
BC Hydro	38%	30%	19%	26%	38%	29%	29%	36%	38%	37%
SaskPower	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Hydro Québec	26%	26%	26%	24%	25%	26%	20%	8%	8%	11%
NB Power	3%	5%	3%	0%	10%	14%	11%	8%	0%	8%
Nfld. Hydro		20%	17%	13%	11%	11%	10%	4%	1%	n/a
Emera Inc.	20%	18%	27%	16%	7%	8%	5%	7%	2%	6%
Fortis Inc.	14%	4%	14%	14%	9%	9%	6%	13%	18%	12%
Canadian Utilities Limited	4%	7%	7%	2%	1%	1%	1%	2%	2%	3%

³⁶ Historical financial data as per company reports.

CAC/CENTRA I-18

Reference: Tab 5, Financial Results and Forecast, 5.6 Finance Expense, page 20 of 30, lines 15-16

Tab 5, Financial Results and Forecast, 5.8 Capital & Other Taxes, page 28 of 30, lines 11-12

The Manitoba Hydro Debt Strategy 2012/13 and 2013/14, dated April 12, filed as Appendix 17 to the 2012/13 & 2013/14 Hydro GRA

CAC/MSOS/CENTRA 1-5, 1-7, 1-8, 1-9 and 1-10 dated March 31, 2009 filed in respect to the 2009/10 & 2010/11 GRA.

Preamble: “Centra has no employees” Tab 5, page 28 of 30, lines 11-12

The Manitoba Hydro Debt Strategy indicates a weighted average term to maturity of long term debt for Hydro at approximately 13.75 years, while CAC/MSOS/Centra 1-5 (a) indicates that Centra then enjoyed a weighted average term to maturity of long term debt approximately 3.5 years.

CAC/MSOS/Centra 1-5 (a) indicates large refinancing risk concentrated in specific years with up to 39% of its debt maturing in one year.

In the 2010/11 & 2011/12 Manitoba Hydro GRA, MH indicated a number of policies, limits and target guidelines for its short term and floating rate debt. These included a policy limit of 30% floating rate debt, target range of 15% to 25%.

Schedules, beginning with Schedule 9.7.0 and following, indicate the percentage weight of Short Term Debt in the capital structure was, or is forecast to be:

20.8% in 2008/09,	\$102,164,000.
16.4% in 2009/10,	\$80,145,000.
4.5% in 2010/11,	\$21,600,000.
3.5% in 2011/12,	\$16,696,000.
1.8% in 2012/13,	\$8,494,000 (forecast), and
4.3% in 2013/14,	\$20,340,000 (forecast).

CAC wishes to better understand the extent of Centra policies with respect to its funding and maintaining an optimal proportion of its debt in both Short Term and Floating Rate debt.

CAC also understands that Centra's Finance Expense, shown as \$19 million for 2012, in Note 23 of the Annual Financial Statements of the Manitoba Hydro-Electric Board, represent only about 5% of \$385 million Finance Expense of the Electricity segment, which is in the midst of its "decade of investment". CAC wishes to learn whether higher debt costs due to the greater demand for debt by the Electricity segment are being visited upon gas consumers.

Centra, in its evidence in the 2009/10 & 2010/11 GRA, indicated that "Interest rates for inter-company advances to Centra are based on the approximate associated cost of financing for Manitoba Hydro. These short term advances are charged an interest rate equal to the average one month banker's acceptance rate." [emphasis added]

Centra currently indicates its short term interest rate is "based on the associated cost of short term Canadian dollar financing for Manitoba Hydro" but does not provide the rate at which the short term advances are charged, nor the variance if any to the average "one month banker's acceptance rate" formerly used.

CAC observes that a shorter weighted average term to maturity may indicate a different level of exposure to refinancing risk, a higher utilization to potentially less costly [in a normal yield curve market] shorter term debt, or other factors. CAC wishes to better understand the practices related to financing Centra, and whether there are any policies in place, in the absence of employees to protect its interests, to avoid it being financially disadvantaged or exposed to higher levels of risk relative to those experienced by Hydro.

Centra notes that to permit comparison of the Centra and Hydro's weighted average term to maturities, it has asked for certain Hydro data to be added to an updated and enhanced table in similar to the table found in CAC/MSOS/Centra 1-7 (c), dated March 31, 2009.

- a) To permit a comparison of the relative amounts of Short Term, Floating Rate, and Fixed Rate Long term debt, supply a Hydro table, on the same terms as the enhanced and extend table requested above, based on the table found in CAC/MSOS/Centra 1-7 (c), dated March 31, 2009 to include the period from March 2004 to the most recent date for which actual values are available, and, thereafter the forecast values to and including March 2014.
- b) What policies, if any, are in place to protect Centra from materially higher refinancing risk, than that enjoyed by Hydro?
- c) What policies, if any, are in place to protect Centra from materially higher debt concentration risk, than that enjoyed by Hydro?
- d) Has Centra used financing from instruments other than Canadian dollar denominated instruments since financial year 2008/09 through to today's date?

- e) **Has Centra used financing from foreign currency instruments swapped into Canadian dollar denominated instruments since financial year 2008/09 through to today's date?**
- f) **Are short term advances to Centra charged an interest rate equal to the average one month banker's acceptance rate?**
- g) **If short term advances to Centra are not charged an interest rate equal to the average one month banker's acceptance rate, advise at what rates or rates are each of these advances charged, providing the base reference rate, if any, and spread, if any, upon which these funds are advanced?**
- h) **If short term advances to Centra are not charged an interest rate equal to the average one month banker's acceptance rate at what date or dates was the policy changed?**
- i) **If short term advances to Centra are not charged an interest rate equal to the average one month banker's acceptance rate, provide a copy of the current policy?**
- j) **Compare the changes in the changes in the spreads which existed in the 2005 through 2007 period and the spreads that existed in the 2010 to 2012 period for Hydro as indicated in Chart 3 of the Hydro Debt Strategy, to the changes in spreads of the financing entity of BC Hydro, Ontario Hydro and Quebec Hydro for the similar period, and discuss the relative changes in comparison to the capital program of the relevant eclectic utility.**

ANSWER:

Response to part (a), (b) and (c):

Please see the schedule included as Attachment 1 to this response.¹ For a graphical depiction and discussion regarding the short term & long term debt balances and percentages, please see Centra's response to CAC/Centra I-19.

The Corporation's debt management strategies and practices are applicable to Centra, recognizing that Centra has seasonal working capital requirements for short term debt. Centra debt issues CG1 through CG4, representing 58% of the debt portfolio at March 31, 2004 was legacy debt which Centra had on its books at the time of acquisition. Since the acquisition of Centra in 1999, Centra's debt portfolio has been in transition as the principles of Manitoba Hydro's Debt Management Strategy (including those to reduce the concentration of interest rate refinancing risk and to enhance the stability of the debt portfolio by extending the term to maturity) have been applied to manage its debt. For a discussion of the Corporation's debt management strategies, please see Centra's response to CAC/Centra I-14.

Response to parts (d), (e), (f), (g), (h), and (i):

Treasury operations are performed on a consolidated basis for the Corporation, including Centra. The Corporation does not execute financings specifically for Centra. As indicated in the long term debt term sheets provided in response to PUB/Centra I-43(b), the interest assigned to Centra's long term advances are based on actual MHEB financings. No

¹ The short term debt values and percentages shown in the preamble are from Schedules 9.7.0 – 9.7.5 in Tab 9 and follow the PUB methodology for Centra's rate base rate of return capitalization calculation. As described on page 61 of Tab 9, the short term debt balances derived with this methodology are calculated values. For actual and forecasted quarter-end short term debt balances and percentages, please see Attachment 1 in response to this information request.

additional intercompany spread is attached to the advances from Manitoba Hydro to Centra.² All of Centra's financings since 2008/09 have been Canadian dollar issues. Centra does not have any existing long term debt advances that originated as foreign currency instruments.

In order to support Centra's operations and capital programs, Manitoba Hydro provides cash advances as needed and on a cost recovery basis. Interest rates for intercompany short term advances to Centra are based on the approximate associated cost of short term Canadian dollar financing for Manitoba Hydro. From the time of Manitoba Hydro's acquisition of Centra in 1999 through to March 31, 2011 the intercompany short term advances to Centra utilized the 1 month Bloomberg banker's acceptance rates (Bloomberg index CDOR01). Commencing April 1, 2009 a true-up calculation has been performed to adjust for rate variances from the index short term interest rate. The true-up methodology for Centra's short term debt interest costs utilizes Manitoba Hydro's actual short term debt interest rate where applicable. When Centra's short term debt balances exceeds Manitoba Hydro's short term debt balances, the weighted average index rate is utilized to calculate the adjusted interest cost. Effective April 1, 2011 the 3 month Canadian T-Bill rate (C1033M) has been utilized for Centra's intercompany short term interest rate. With the adoption of this enhancement, the true-up amounts have decreased such that the amount of the variance is now negligible (averaging less than \$200 per quarter over the past two fiscal years). For the status and additional commentary regarding the intercompany short term debt true-up, please see Centra's response to CAC/Centra I-11.

² The preamble infers that Centra's financings are disadvantaged due to its relationship with Manitoba Hydro. Centra notes that it has access to the flow through financing strength of Manitoba Hydro and the Province of Manitoba and that, and that in the absence of this financing strength, on "a stand-alone basis, Centra's capital structure may not be sufficient to support an investment grade credit rating" [PUB/Centra I-43(a)].

Response to part (j):

Manitoba Hydro receives long term debt advances for the Province of Manitoba, and Chart 3 in the Manitoba Hydro Debt Management Strategy depicts the Province of Manitoba's 10 Year+ credit spread (see CAC/Centra I-14, Attachments 1 and 2). Similarly, BC Hydro receives long term debt advances from the Province of British Columbia. Any variation between the credit spreads for Manitoba Hydro and BC Hydro would be the difference in the credit spreads for the respective provinces.³ There are multitudes of potential factors that may impact the provincial credit spreads within the financial markets. While the Corporation does monitor the relative performance of provincial credit spreads, the causal role, if any, associated with crown corporation capital programs is indeterminable.

³ Ontario Hydro no longer exists in its original form having been subdivided into various components in 1999. Although Hydro Quebec issues long term debt in its own name, it receives a debt guarantee and flow through credit from the Province of Quebec.

Centra Debt Structure by Quarter

	Quarter Ended Mar-04	Quarter Ended Jun-04	Quarter Ended Sep-04	Quarter Ended Dec-04	Quarter Ended Mar-05	Quarter Ended Jun-05	Quarter Ended Sep-05	Quarter Ended Dec-05	Quarter Ended Mar-06	Quarter Ended Jun-06
Short Term Debt	14,459	16,233	51,031	59,921	9,698	23,387	54,159	131,083	44,885	58,444
Floating Rate Long Term Debt	-	-	-	-	-	-	-	-	-	-
Total Short Term Debt and Floating Rate Long Term Debt (CAD)	14,459	16,233	51,031	59,921	9,698	23,387	54,159	131,083	44,885	58,444
Fixed Rate Long Term Debt	253,691	253,691	252,891	252,891	250,632	250,632	249,832	249,832	247,572	247,572
Total Debt	268,151	269,925	303,923	312,812	260,329	274,019	303,990	380,914	292,457	306,016
Debt Portfolio Percentages:										
Short Term Debt	5.4%	6.0%	16.8%	19.2%	3.7%	8.5%	17.8%	34.4%	15.3%	19.1%
Floating Rate Long Term Debt	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Short Term Debt & Floating Rate Long Term Debt	5.4%	6.0%	16.8%	19.2%	3.7%	8.5%	17.8%	34.4%	15.3%	19.1%
Fixed Rate Long Term Debt	94.6%	94.0%	83.2%	80.8%	96.3%	91.5%	82.2%	65.6%	84.7%	80.9%
Centra Rolling 5 Quarter Averages:										
Percentage Short Term Debt					10.2%	10.8%	13.2%	16.7%	16.0%	19.0%
Percentage Floating Rate Long Term Debt					0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Percentage Short Term Debt & Floating Rate Long Term Debt					10.2%	10.8%	13.2%	16.7%	16.0%	19.0%
Percentage Fixed Rate Long Term Debt					89.8%	89.2%	86.8%	83.3%	84.0%	81.0%
Centra Rolling 4 Quarter Averages:										
Percentage Short Term Debt & Floating Rate Long Term Debt					11.8%	11.4%	12.1%	12.3%	16.1%	21.7%

Centra Debt Structure by Quarter

	Quarter Ended Sep-06	Quarter Ended Dec-06	Quarter Ended Mar-07	Quarter Ended Jun-07	Quarter Ended Sep-07	Quarter Ended Dec-07	Quarter Ended Mar-08	Quarter Ended Jun-08	Quarter Ended Sep-08	Quarter Ended Dec-08
Short Term Debt	93,678	116,196	81,454	98,901	137,882	141,530	90,157	112,672	165,691	168,466
Floating Rate Long Term Debt	-	-	-	-	-	-	-	-	-	-
Total Short Term Debt and Floating Rate Long Term Debt (CAD)	93,678	116,196	81,454	98,901	137,882	141,530	90,157	112,672	165,691	168,466
Fixed Rate Long Term Debt	241,052	242,527	240,267	240,267	240,267	240,267	238,007	238,007	238,007	238,007
Total Debt	334,730	358,723	321,721	339,169	378,149	381,797	328,164	350,679	403,699	406,473
Debt Portfolio Percentages:										
Short Term Debt	28.0%	32.4%	25.3%	29.2%	36.5%	37.1%	27.5%	32.1%	41.0%	41.4%
Floating Rate Long Term Debt	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Short Term Debt & Floating Rate Long Term Debt	28.0%	32.4%	25.3%	29.2%	36.5%	37.1%	27.5%	32.1%	41.0%	41.4%
Fixed Rate Long Term Debt	72.0%	67.6%	74.7%	70.8%	63.5%	62.9%	72.5%	67.9%	59.0%	58.6%
Centra Rolling 5 Quarter Averages:										
Percentage Short Term Debt	22.9%	25.8%	24.0%	26.8%	30.3%	32.1%	31.1%	32.5%	34.8%	35.8%
Percentage Floating Rate Long Term Debt	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Percentage Short Term Debt & Floating Rate Long Term Debt	22.9%	25.8%	24.0%	26.8%	30.3%	32.1%	31.1%	32.5%	34.8%	35.8%
Percentage Fixed Rate Long Term Debt	77.1%	74.2%	76.0%	73.2%	69.7%	67.9%	68.9%	67.5%	65.2%	64.2%
Centra Rolling 4 Quarter Averages:										
Percentage Short Term Debt & Floating Rate Long Term Debt	24.2%	23.7%	26.2%	28.7%	30.8%	32.0%	32.5%	33.3%	34.4%	35.5%

Centra Debt Structure by Quarter

	Quarter Ended Mar-09	Quarter Ended Jun-09	Quarter Ended Sep-09	Quarter Ended Dec-09	Quarter Ended Mar-10	Quarter Ended Jun-10	Quarter Ended Sep-10	Quarter Ended Dec-10	Quarter Ended Mar-11	Quarter Ended Jun-11
Short Term Debt	102,458	97,417	97,021	98,930	16,502	7,156	52,332	58,242	12,707	5,177
Floating Rate Long Term Debt	-	-	-	-	35,000	35,000	35,000	35,000	35,000	35,000
Total Short Term Debt and Floating Rate Long Term Debt (CAD)	102,458	97,417	97,021	98,930	51,502	42,156	87,332	93,242	47,707	40,177
Fixed Rate Long Term Debt	235,748	235,748	265,748	265,748	262,671	262,671	262,671	262,671	262,671	262,671
Total Debt	338,206	333,165	362,769	364,678	314,173	304,827	350,003	355,912	310,378	302,848
Debt Portfolio Percentages:										
Short Term Debt	30.3%	29.2%	26.7%	27.1%	5.3%	2.3%	15.0%	16.4%	4.1%	1.7%
Floating Rate Long Term Debt	0.0%	0.0%	0.0%	0.0%	11.1%	11.5%	10.0%	9.8%	11.3%	11.6%
Short Term Debt & Floating Rate Long Term Debt	30.3%	29.2%	26.7%	27.1%	16.4%	13.8%	25.0%	26.2%	15.4%	13.3%
Fixed Rate Long Term Debt	69.7%	70.8%	73.3%	72.9%	83.6%	86.2%	75.0%	73.8%	84.6%	86.7%
Centra Rolling 5 Quarter Averages:										
Percentage Short Term Debt	34.5%	34.8%	33.8%	31.0%	23.7%	18.1%	15.3%	13.2%	8.6%	7.9%
Percentage Floating Rate Long Term Debt	0.0%	0.0%	0.0%	0.0%	2.2%	4.5%	6.5%	8.5%	10.7%	10.8%
Percentage Short Term Debt & Floating Rate Long Term Debt	34.5%	34.8%	33.8%	31.0%	26.0%	22.7%	21.8%	21.7%	19.3%	18.7%
Percentage Fixed Rate Long Term Debt	65.5%	65.2%	66.2%	69.0%	74.0%	77.3%	78.2%	78.3%	80.7%	81.3%
Centra Rolling 4 Quarter Averages:										
Percentage Short Term Debt & Floating Rate Long Term Debt	36.2%	35.5%	31.9%	28.4%	24.9%	21.0%	20.6%	20.3%	20.1%	19.9%

Centra Debt Structure by Quarter

	Quarter Ended Sep-11	Quarter Ended Dec-11	Quarter Ended Mar-12	Quarter Ended Jun-12	Quarter Ended Sep-12	Quarter Ended Dec-12	Prelim Quarter Ended Mar-13	Quarter Ended Jun-13	Quarter Ended Sep-13	Quarter Ended Dec-13	Quarter Ended Mar-14
Short Term Debt	41,233	41,725	7,116	5,271	37,455	42,410	19,262	-	28,734	56,080	9,149
Floating Rate Long Term Debt	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	50,000
Total Short Term Debt and Floating Rate Long Term Debt (CAD)	76,233	76,725	42,116	40,271	72,455	77,410	54,262	35,000	63,734	91,080	59,149
Fixed Rate Long Term Debt	262,671	262,671	262,671	262,671	260,000	260,000	260,000	260,000	260,000	260,000	275,000
Total Debt	338,904	339,395	304,786	302,942	332,455	337,410	314,262	295,000	323,734	351,080	334,149
Debt Portfolio Percentages:											
Short Term Debt	12.2%	12.3%	2.3%	1.7%	11.3%	12.6%	6.1%	0.0%	8.9%	16.0%	2.7%
Floating Rate Long Term Debt	10.3%	10.3%	11.5%	11.6%	10.5%	10.4%	11.1%	11.9%	10.8%	10.0%	15.0%
Short Term Debt & Floating Rate Long Term Debt	22.5%	22.6%	13.8%	13.3%	21.8%	22.9%	17.3%	11.9%	19.7%	25.9%	17.7%
Fixed Rate Long Term Debt	77.5%	77.4%	86.2%	86.7%	78.2%	77.1%	82.7%	88.1%	80.3%	74.1%	82.3%

Centra Rolling 5 Quarter Averages:

Percentage Short Term Debt	9.9%	9.3%	6.5%	6.0%	8.0%	8.0%	6.8%	6.3%	7.8%	8.7%	6.7%
Percentage Floating Rate Long Term Debt	10.6%	10.7%	11.0%	11.0%	10.8%	10.9%	11.0%	11.1%	10.9%	10.8%	11.7%
Percentage Short Term Debt & Floating Rate Long Term Debt	20.5%	20.0%	17.5%	17.1%	18.8%	18.9%	17.8%	17.4%	18.7%	19.5%	18.5%
Percentage Fixed Rate Long Term Debt	79.5%	80.0%	82.5%	82.9%	81.2%	81.1%	82.2%	82.6%	81.3%	80.5%	81.5%

Centra Rolling 4 Quarter Averages:

Percentage Short Term Debt & Floating Rate Long Term Debt	19.3%	18.4%	18.0%	18.1%	17.9%	18.0%	18.8%	18.5%	17.9%	18.7%	18.8%
--	--------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------

Consolidated Debt Structure by Quarter

	Quarter Ended Mar-04	Quarter Ended Jun-04	Quarter Ended Sep-04	Quarter Ended Dec-04	Quarter Ended Mar-05	Quarter Ended Jun-05	Quarter Ended Sep-05	Quarter Ended Dec-05	Quarter Ended Mar-06	Quarter Ended Jun-06
Short Term Debt (CAD)	81,000	60,000	57,000	110,000	59,000	-	15,000	-	-	-
Short Term Debt (USD)	9,500	35,000	-	-	-	-	-	-	-	-
Exchange Rate for USD	1.311	1.340	1.264	1.204	1.210	1.226	1.161	1.166	1.167	1.115
Total Short Term Debt (CAD)	93,450	106,914	57,000	110,000	59,000	-	15,000	-	-	-
Floating Rate Long Term Debt (CAD)	1,148,800	941,300	941,200	940,500	940,500	940,600	940,500	940,400	840,300	905,900
Floating Rate Long Term Debt (USD)	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000
Exchange Rate for USD	1.311	1.340	1.264	1.204	1.210	1.226	1.161	1.166	1.167	1.115
Total Floating Rate Long Term Debt (CAD)	1,541,950	1,343,420	1,320,370	1,301,580	1,303,380	1,308,280	1,288,800	1,290,170	1,190,430	1,240,400
Total Short Term Debt and Floating Rate Long Term Debt (CAD)	1,635,400	1,450,334	1,377,370	1,411,580	1,362,380	1,308,280	1,303,800	1,290,170	1,190,430	1,240,400
Fixed Rate Long Term Debt (CAD)	3,055,700	3,194,900	3,344,200	3,323,300	3,322,800	3,394,900	3,394,400	3,390,900	3,490,400	3,463,500
Fixed Rate Long Term Debt (USD)	2,131,000	2,131,000	2,131,000	2,131,000	2,131,000	2,131,000	2,131,000	2,131,000	2,131,000	2,131,000
Exchange Rate for USD	1.31	1.34	1.26	1.20	1.21	1.23	1.16	1.17	1.17	1.12
Total Fixed Rate Long Term Debt (CAD)	5,848,376	6,051,292	6,037,571	5,888,172	5,900,458	6,006,654	5,868,491	5,875,433	5,977,490	5,839,565
Total Debt (CAD)	7,483,775	7,501,626	7,414,941	7,299,752	7,262,838	7,314,934	7,172,291	7,165,603	7,167,920	7,079,965
Debt Portfolio Percentages:										
Short Term Debt	1.2%	1.4%	0.8%	1.5%	0.8%	0.0%	0.2%	0.0%	0.0%	0.0%
Floating Rate Long Term Debt	20.6%	17.9%	17.8%	17.8%	17.9%	17.9%	18.0%	18.0%	16.6%	17.5%
Short Term Debt & Floating Rate Long Term Debt	21.9%	19.3%	18.6%	19.3%	18.8%	17.9%	18.2%	18.0%	16.6%	17.5%
Fixed Rate Long Term Debt	78.1%	80.7%	81.4%	80.7%	81.2%	82.1%	81.8%	82.0%	83.4%	82.5%

Consolidated Debt Structure by Quarter

	Quarter Ended Sep-06	Quarter Ended Dec-06	Quarter Ended Mar-07	Quarter Ended Jun-07	Quarter Ended Sep-07	Quarter Ended Dec-07	Quarter Ended Mar-08	Quarter Ended Jun-08	Quarter Ended Sep-08	Quarter Ended Dec-08
Short Term Debt (CAD)	18,000	80,000	148,000	177,000	155,000	15,000	-	21,000	165,000	100,000
Short Term Debt (USD)	-	-	-	-	-	-	-	-	-	-
Exchange Rate for USD	1.115	1.165	1.153	1.063	0.996	0.988	1.028	1.019	1.060	1.225
Total Short Term Debt (CAD)	18,000	80,000	148,000	177,000	155,000	15,000	-	21,000	165,000	100,000
Floating Rate Long Term Debt (CAD)	905,800	905,800	905,800	942,769	1,042,767	1,042,738	1,042,738	994,822	994,778	994,778
Floating Rate Long Term Debt (USD)	300,000	300,000	300,000	300,000	300,000	300,000	500,000	500,000	500,000	500,000
Exchange Rate for USD	1.115	1.165	1.153	1.063	0.996	0.988	1.028	1.019	1.060	1.225
Total Floating Rate Long Term Debt (CAD)	1,240,390	1,255,390	1,251,670	1,261,789	1,341,657	1,339,168	1,556,688	1,504,122	1,524,728	1,607,078
Total Short Term Debt and Floating Rate Long Term Debt (CAD)	1,258,390	1,335,390	1,399,670	1,438,789	1,496,657	1,354,168	1,556,688	1,525,122	1,689,728	1,707,078
Fixed Rate Long Term Debt (CAD)	3,470,000	3,518,200	3,517,600	3,655,920	3,852,372	3,851,476	3,851,051	3,865,031	3,954,013	4,138,482
Fixed Rate Long Term Debt (USD)	2,131,000	2,131,000	2,131,000	2,132,002	2,132,002	2,132,002	2,132,002	2,132,002	2,132,002	1,885,508
Exchange Rate for USD	1.12	1.17	1.15	1.06	1.00	0.99	1.03	1.02	1.06	1.22
Total Fixed Rate Long Term Debt (CAD)	5,846,704	6,001,454	5,974,430	5,923,091	5,976,485	5,958,107	6,042,536	6,036,688	6,213,722	6,447,476
Total Debt (CAD)	7,105,094	7,336,844	7,374,100	7,361,879	7,473,142	7,312,276	7,599,224	7,561,810	7,903,451	8,154,553
Debt Portfolio Percentages:										
Short Term Debt	0.3%	1.1%	2.0%	2.4%	2.1%	0.2%	0.0%	0.3%	2.1%	1.2%
Floating Rate Long Term Debt	17.5%	17.1%	17.0%	17.1%	18.0%	18.3%	20.5%	19.9%	19.3%	19.7%
Short Term Debt & Floating Rate Long Term Debt	17.7%	18.2%	19.0%	19.5%	20.0%	18.5%	20.5%	20.2%	21.4%	20.9%
Fixed Rate Long Term Debt	82.3%	81.8%	81.0%	80.5%	80.0%	81.5%	79.5%	79.8%	78.6%	79.1%

Consolidated Debt Structure by Quarter

	Quarter Ended Mar-09	Quarter Ended Jun-09	Quarter Ended Sep-09	Quarter Ended Dec-09	Quarter Ended Mar-10	Quarter Ended Jun-10	Quarter Ended Sep-10	Quarter Ended Dec-10	Quarter Ended Mar-11	Quarter Ended Jun-11
Short Term Debt (CAD)	100,000	-	20,000	-	-	155,000	267,000	148,000	-	-
Short Term Debt (USD)	-	-	-	-	-	-	-	-	-	-
Exchange Rate for USD	1.260	1.163	1.072	1.047	1.016	1.061	1.030	0.995	0.972	0.964
Total Short Term Debt (CAD)	100,000	-	20,000	-	-	155,000	267,000	148,000	-	-
Floating Rate Long Term Debt (CAD)	964,778	1,061,569	1,161,568	1,161,466	1,269,962	1,137,143	1,078,811	1,078,811	1,178,801	1,850,430
Floating Rate Long Term Debt (USD)	500,000	500,000	500,000	500,000	600,000	396,950	396,950	350,000	150,000	250,000
Exchange Rate for USD	1.260	1.163	1.072	1.047	1.016	1.061	1.030	0.995	0.972	0.964
Total Floating Rate Long Term Debt (CAD)	1,594,878	1,642,819	1,697,668	1,684,766	1,879,322	1,558,149	1,487,591	1,426,921	1,324,571	2,091,505
Total Short Term Debt and Floating Rate Long Term Debt (CAD)	1,694,878	1,642,819	1,717,668	1,684,766	1,879,322	1,713,149	1,754,591	1,574,921	1,324,571	2,091,505
Fixed Rate Long Term Debt (CAD)	4,238,394	4,508,808	4,508,703	4,868,513	4,918,453	4,933,325	5,141,789	5,391,211	5,641,206	5,641,919
Fixed Rate Long Term Debt (USD)	1,885,508	1,885,508	1,885,508	1,885,508	1,788,387	1,788,387	1,788,387	1,788,387	1,788,387	1,788,387
Exchange Rate for USD	1.26	1.16	1.07	1.05	1.02	1.06	1.03	0.99	0.97	0.96
Total Fixed Rate Long Term Debt (CAD)	6,614,511	6,700,711	6,530,345	6,841,886	6,734,739	6,830,088	6,983,470	7,169,941	7,379,161	7,366,461
Total Debt (CAD)	8,309,389	8,343,530	8,248,012	8,526,651	8,614,061	8,543,237	8,738,060	8,744,862	8,703,732	9,457,966
Debt Portfolio Percentages:										
Short Term Debt	1.2%	0.0%	0.2%	0.0%	0.0%	1.8%	3.1%	1.7%	0.0%	0.0%
Floating Rate Long Term Debt	19.2%	19.7%	20.6%	19.8%	21.8%	18.2%	17.0%	16.3%	15.2%	22.1%
Short Term Debt & Floating Rate Long Term Debt	20.4%	19.7%	20.8%	19.8%	21.8%	20.1%	20.1%	18.0%	15.2%	22.1%
Fixed Rate Long Term Debt	79.6%	80.3%	79.2%	80.2%	78.2%	79.9%	79.9%	82.0%	84.8%	77.9%

Consolidated Debt Structure by Quarter

	Quarter Ended Sep-11	Quarter Ended Dec-11	Quarter Ended Mar-12	Quarter Ended Jun-12	Quarter Ended Sep-12	Quarter Ended Dec-12	Prelim Quarter Ended Mar-13	Quarter Ended Jun-13	Quarter Ended Sep-13	Quarter Ended Dec-13	Quarter Ended Mar-14
Short Term Debt (CAD)	-	-	-	2,000	5,000	-	-	54,348	101,088	84,295	90,848
Short Term Debt (USD)	-	-	-	-	-	-	-	-	-	-	-
Exchange Rate for USD	1.039	1.017	0.999	1.019	0.984	0.995	1.016				
Total Short Term Debt (CAD)	-	-	-	2,000	5,000	-	-	54,348	101,088	84,295	90,848
Floating Rate Long Term Debt (CAD)	1,850,392	1,269,365	1,269,350	1,203,747	1,400,100	1,350,100	1,350,099	1,430,099	1,550,099	1,660,599	1,740,599
Floating Rate Long Term Debt (USD)	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
Exchange Rate for USD	1.039	1.017	0.999	1.019	0.984	0.995	1.016	0.990	0.990	0.990	0.990
Total Floating Rate Long Term Debt (CAD)	2,110,117	1,523,615	1,519,125	1,458,522	1,646,025	1,598,825	1,603,999	1,677,599	1,797,599	1,908,099	1,988,099
Total Short Term Debt and Floating Rate Long Term Debt (CAD)	2,110,117	1,523,615	1,519,125	1,460,522	1,651,025	1,598,825	1,603,999	1,731,947	1,898,687	1,992,394	2,078,947
Fixed Rate Long Term Debt (CAD)	5,641,918	6,041,301	6,116,282	6,400,510	6,500,510	6,499,860	6,589,861	6,869,195	7,149,195	7,420,875	7,725,875
Fixed Rate Long Term Debt (USD)	1,788,387	1,788,387	1,788,387	1,788,387	1,788,387	1,788,387	1,788,387	1,788,387	1,600,000	1,600,000	1,450,000
Exchange Rate for USD	1.04	1.02	1.00	1.02	0.98	0.99	1.02	0.990	0.990	0.990	0.990
Total Fixed Rate Long Term Debt (CAD)	7,499,873	7,860,091	7,903,060	8,223,055	8,259,746	8,279,126	8,406,147	8,639,698	8,733,195	9,004,875	9,161,375
Total Debt (CAD)	9,609,990	9,383,706	9,422,185	9,683,577	9,910,771	9,877,951	10,010,146	10,371,645	10,631,882	10,997,269	11,240,322
Debt Portfolio Percentages:											
Short Term Debt	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.5%	1.0%	0.8%	0.8%
Floating Rate Long Term Debt	22.0%	16.2%	16.1%	15.1%	16.6%	16.2%	16.0%	16.2%	16.9%	17.4%	17.7%
Short Term Debt & Floating Rate Long Term Debt	22.0%	16.2%	16.1%	15.1%	16.7%	16.2%	16.0%	16.7%	17.9%	18.1%	18.5%
Fixed Rate Long Term Debt	78.0%	83.8%	83.9%	84.9%	83.3%	83.8%	84.0%	83.3%	82.1%	81.9%	81.5%

CAC/CENTRA I-19

Reference: Tab 9, Section 9.8.2 page 59 of 63 line 2, and, line 24 to page 60 of 63 line 2

CAC/MSOS/Centra 1-1 and 1-7 dated March 31, 2009 filed in respect to the 2009/10 & 2010/11 GRA

Preamble: Centra indicates a recent \$30 million Floating Rate Long Term Issue and indicates its intention to issue, in March 2014, a similar \$15 million issue of unspecified maturity at a 45 basis point spread.

CAC recalls that the refinancing of the \$75 million February 2010 maturity had been forecast to require fixed financing at a rate of approximately 5.3%.

In CAC/MSOS/Centra 1-1 (f) and (g), dated March 31, 2009, Centra replied when asked of its policy, that “Manitoba Hydro’s policy of maintaining a floating rate debt portfolio that does not exceed 30% of total debt is a long-standing policy of the Corporation, and continues to be, in Manitoba Hydro’s judgment, an appropriate policy in the context of the Corporation’s risk tolerance and current market conditions.”

In CAC/MSOS/Centra 1-7, dated March 31, 2009, Centra supplied a table showing no floating rate long term debt in the period March 2004 to December 2008.

CAC would like to better understand Centra’s changing interest in Floating Rate Long Term debt issues, and the policies relating to short term and floating rate financings in the debt portfolio

- a) Enumerate, and provide copies thereof, any new Centra policies respecting the proportion of short term debt relative to total debt, the proportion of short term debt to floating rate long term debt, and the proportion the aggregate of short term debt and floating rate debt to total debt.
- b) Extend the table found in CAC/MSOS/Centra 1-7 (c), dated March 31, 2009 to include the period from March 2004 to the most recent date for which actual values are available, and, thereafter the forecast values to and including March 2014, and in addition, enhance the table,

Please also enhance the table:

- (i) by adding 2 lines above the “Percentage Short Term & Floating” line, being first, the calculation of the “Percentage Short Term” values, and, second, the calculation of the “Percentage Floating” values, for each period;
- (ii) by providing an average of the “Percentage Short Term” values, the “Percentage Floating” values, the “Percentage Short Term & Floating” values, and, the “Percentage Fixed Long Term” values, and
- (iii) by providing 4 calculation lines below the “Percentage Fixed Long Term” line being, each of which would calculate a 5 period rolling average [e.g. March 2004 through March 2005, and say September 2009 through September 2010] for each of the percentage values calculated , being, “Percentage Short Term” values, the “Percentage Floating” values, the “Percentage Short Term & Floating” values, and, the “Percentage Fixed Long Term” values.

- c) For each individual quarterly period [e.g. December 2005, December 2007, etc.] in which the any of values for the “Percentage Short Term”, “Percentage Floating”, “Percentage Short Term & Floating” are separately or collectively above the 30% policy limit [which MH has indicated was “an appropriate policy in the context of the Corporation’s risk tolerance and current market conditions”], or such other policy limit that may have applied:
- (i) describe the financial market conditions or conditions within Centra that created the high level of short term or floating rate debt;
 - (ii) describe and the sources of funds accessed to maintain the high level of short term debt; and
 - (iii) identify the long term fixed rate financings during that period in which Manitoba Hydro did participate, but Centra did not participate.
- d) For each rolling 5 quarter period [e.g. December 2007 through December 2008, etc.] in which the any of values for the “Percentage Short Term”, “Percentage Floating”, “Percentage Short Term & Floating” are separately or collectively above the 30% policy limit, or such other policy limit that may have applied:
- (i) describe the financial market conditions or conditions within Centra that created the high level of short term or floating rate debt;
 - (ii) describe and the sources of funds accessed to maintain the high level of short term debt; and
 - (iii) identify the long term fixed rate financings during that period in which Manitoba Hydro did participate, but Centra did not participate.
- e) What is the current expectation for maturity for the fixed rate issue in March 2014?

- f) **What is the current expectation for maturity for the floating rate issue in March 2014, having regard to the forecast spread of 45 basis points?**
- g) **How will that choice of maturity date for each of these issues impact the weighted average term to maturity, and concentration of debt?**
- h) **Confirm that the forecast refinancing terms for the February 2010 \$75 million maturity were 20 year fixed rate debt at a 5.30% coupon, or if unable to confirm provide the corrected details.**
- i) **Calculate the excess annual interest arising from the difference between the 5.30% forecast coupon and the resulting floating rate interest costs, in respect of \$30 million floating rate issue not being done as a fixed rate issue.**

ANSWER:

Response to parts (a), (b), (c), and (d):

The Corporation's debt management strategies and practices are applicable to Centra, recognizing that Centra has seasonal working capital requirements for short term debt. Since the acquisition of Centra in 1999, Centra's debt portfolio has been in transition as the principles of Manitoba Hydro's Debt Management Strategy (including those to manage the interest rate risk with the debt portfolio arising from the use of short term debt and floating rate long term debt) have been applied to manage its debt. For a discussion of the Corporation's debt management strategies, please see Centra's response to CAC/Centra I-14. The proportion of short term debt within the debt portfolio is managed within the interest rate risk policy and target ranges established for the aggregated percentage of short term debt and floating rate long term debt.

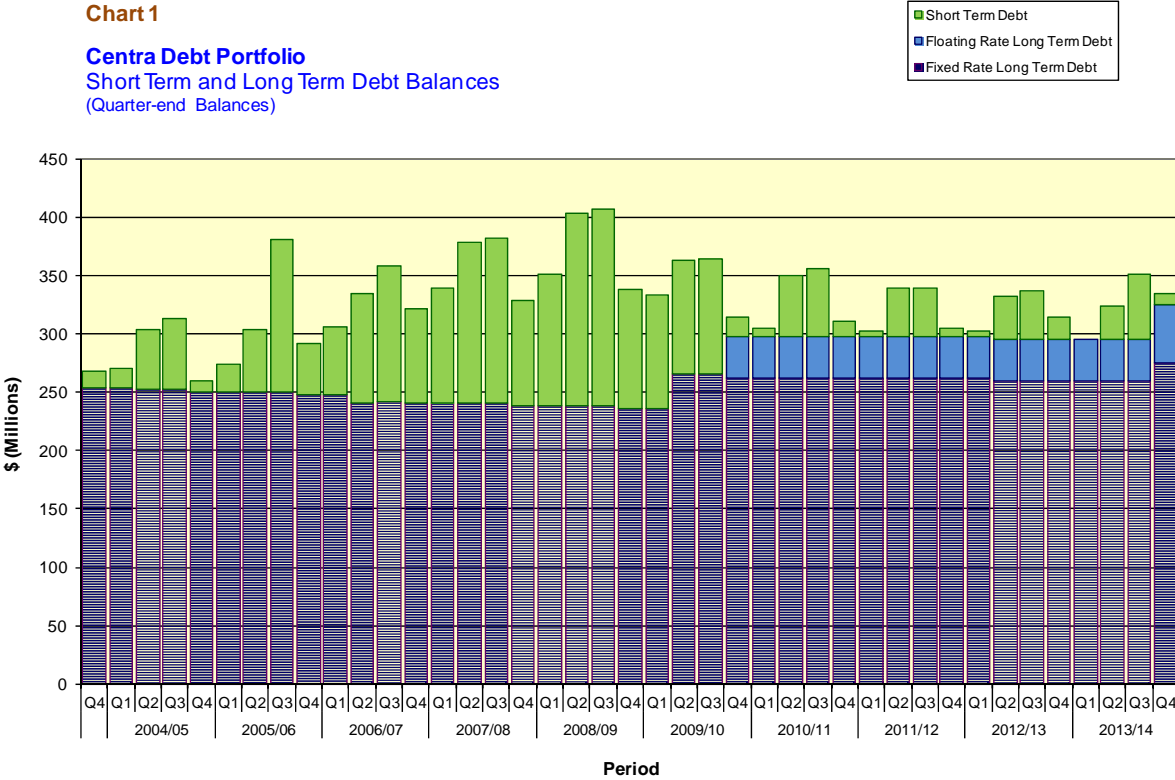
Regarding the use of short term debt within the debt portfolio:

“Section 30 of *The Manitoba Hydro Act* authorizes the Corporation to borrow money from time to time ‘for temporary purposes.’ Order in Council 815/92 was issued under the authority of Section 30 of the Act. It authorizes up to \$500 million of borrowing for temporary purposes. The \$500 million short term borrowing program is a credit facility to safeguard Manitoba Hydro from liquidity risk and to provide sufficient liquidity for the Corporation’s temporary cash requirements. Short term borrowings are not intended as a financing vehicle to reduce Manitoba Hydro’s overall debt servicing costs. Manitoba Hydro uses its short term debt line to fund seasonal working capital requirements and to bridge the timing between long term debt issues. It is inappropriate to utilize the Corporation’s overdraft credit facilities and Commercial Paper Program to permanently fund capital construction that should more appropriately be financed through debt.”¹

Given that Centra’s debt represents less than 5% of the consolidated debt portfolio, the proportionate amount of the Corporation’s total \$500 million limit that would be allocated to Centra would be approximately \$25 million. In recognition of Centra’s seasonal temporary borrowing requirements arising primarily from its gas inventory purchases, Centra may access additional short term debt from the Corporation as required. Interest rates for intercompany short term advances to Centra are based on the approximate associated cost of short term Canadian dollar financing for Manitoba Hydro (please see Centra’s response to CAC/Centra I-11 for a description of the intercompany short term debt interest rates and true-up methodology).

¹ As stated in Manitoba Hydro’s response to CAC/MSOS/MH I-175(a) from the 2010/11 & 2011/12 Electric GRA.

The following chart depicts Centra’s quarter ending short and long term debt balances from March 31, 2004 to March 31, 2014 (actuals, with forecasts for 2013/14).

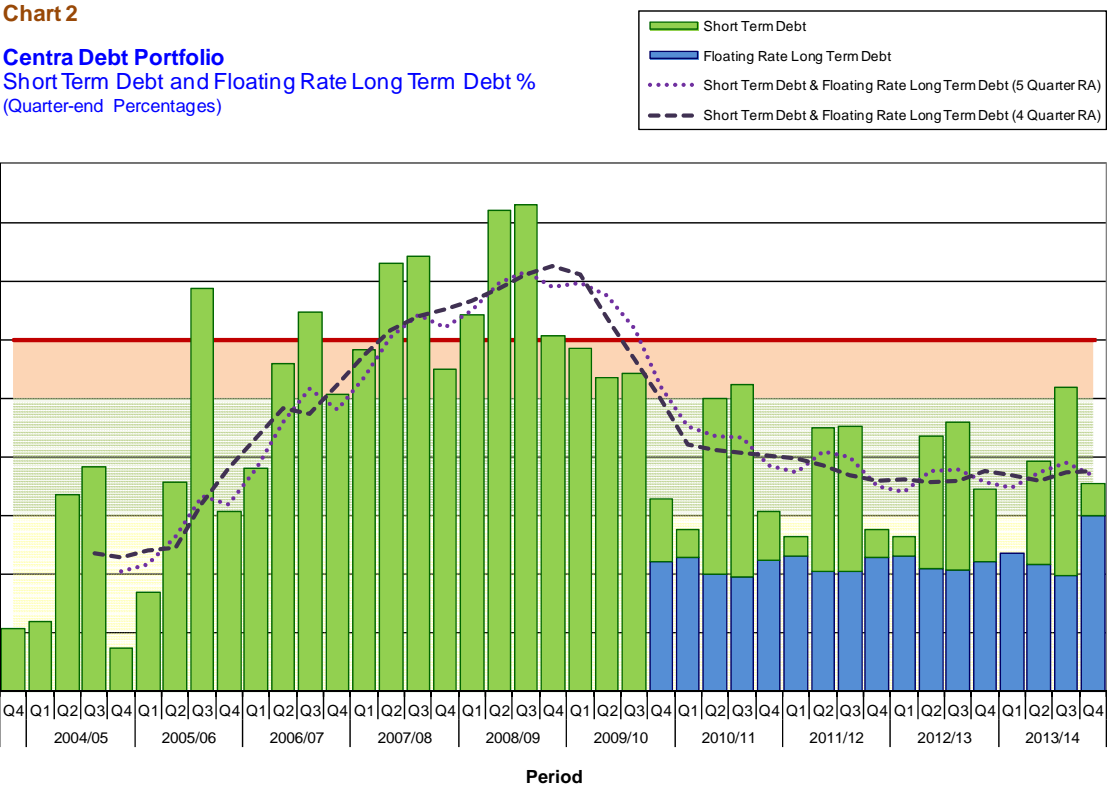


While there have been seasonal fluctuations of differing magnitudes, along with a rebalancing of the debt portfolio, the average of the total debt balances (approximately \$328 million) has not changed significantly during the 10 year period depicted in the chart.

The variability in the seasonality of the cash flows has primarily changed in conjunction with the price of natural gas. Natural gas prices reached a peak in 2005/06 which led to the wide range of short term debt balances during this fiscal year. Natural gas prices fell during the next two fiscal years, but then spiked again in 2008/09. Since then, natural gas prices have remained low, thereby leading to smaller seasonal variations in Centra’s short term debt balances. In keeping with the Corporation’s utilization of short term debt for temporary purposes, Centra converted cumulative amounts of its capital financing from short term debt

to long term debt with debt series CG9 (\$30 million on September 1, 2009) and CG14 (\$30 million on March 31, 2010).

The following chart depicts Centra’s quarter end percentages for short and long term debt balances from March 31, 2004 to March 31, 2014 (actuals, with forecasts for 2013/14).



The Corporation’s debt management strategies and practices are not measured using rolling averages. However, this approach will smooth the seasonal variability inherent in Centra’s short term working capital requirements. As a result of the rebalancing of the Centra debt portfolio,² the quarter rolling averages have stayed within the target range since 2009/10.

² In addition to the conversion of short term debt to long term debt with the issuance of CG9 and CG14, the refinancing of CG5 on February 22, 2010 introduced floating rate long term debt into Centra’s debt portfolio with debt series CG10 (\$35 million).

For Centra's debt portfolio balances and percentages, please see the schedules provided in Centra's response to CAC/Centra I-18. For a discussion of the debt management strategies and practices, as well as historical financial market conditions, please see Attachments 1 and 2 to Centra's response to CAC/Centra I-14.

Response to parts (e), (f), (g), (h), and (i):

Centra Debt Series CG5 had a February 22, 2010 maturity of \$75 million and a 6.269% interest rate. The forecasted refinancing of CG5 had a term to maturity of 20 years³ and an interest rate for rate setting purposes of 4.00%.⁴ The CG5 refinancing provided Centra with an opportunity:

- a) to reduce the weighted average interest rate;
- b) to extend the weighted average term to maturity;
- c) to minimize the concentration of interest rate refinancing risk by sub-dividing the \$75 million lump sum amount into smaller maturity segments; and
- d) to rebalance its debt portfolio by introducing floating rate long term debt.

Accordingly, Centra refinanced CG5 in the following manner:

³ Centra's forecasted new long term debt financings have a 20 year term to maturity. This forecasted 20 year term to maturity is aligned with the 10 year+ Canadian interest rate forecast which utilizes the average of 10 and 30 year information. Actual financings will vary from forecast. During the past number of years, the Corporation's actual long term financing has included issuance in various terms throughout the yield curve and it is the Corporation's intention to continue with this flexible practice.

⁴ The interest rate for this forecasted refinancing was 5.30% in the original filing for the 2009/10 & 2010/11 Centra GRA (all interest rates shown are excluding the provincial debt guarantee fee). Centra's May 2009 update had a forecasted long term interest rate of 4.75%. As per Board Order 128/09, the long term interest rate forecasts for 2009/10 and 2010/11 were 4.00%.

Series Name	Amount	Interest Rate	Term	Maturity Date
CG10	\$35 million	CDOR03 + 0.484%	5 years	February 22, 2015
CG11	\$30 million	4.726%	20 years	February 22, 2030
CG12	\$10 million	4.638%	27.5 years	August 22, 2037
Weighted Average		3.974%⁵	14 years	

At issuance, the weighted average interest rate for the CG5 refinancing of 3.97% was approximately equivalent to the 4.00% interest rate utilized for rate-setting purposes.

Centra's new long term debt forecasted for March 2014 has a term to maturity of 20 years.

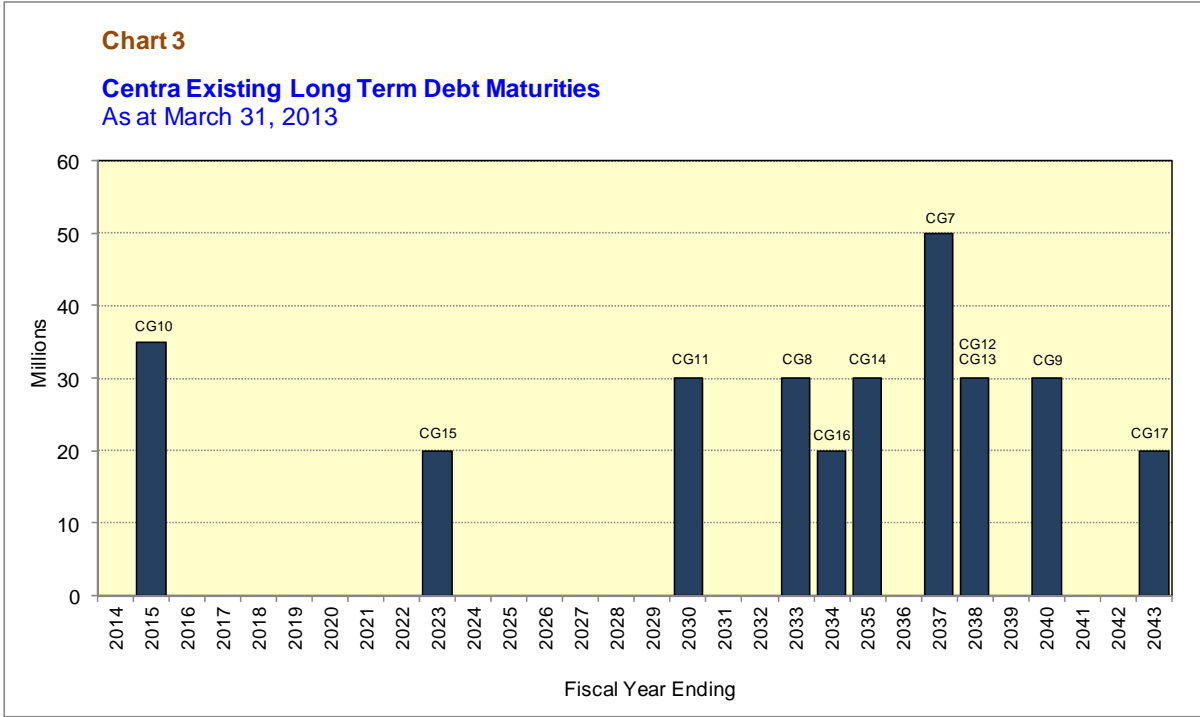
This \$30 million long term debt financing is forecasted to have two tranches:

1. \$15 million fixed rate long term debt (forecast at 3.30%, excluding PGF); and
2. \$15 million floating rate long term debt (with a forecasted pricing of CDOR03 + 45 basis points, excluding PGF).

The following chart depicts Centra's existing long term debt maturities.

⁵ At the time of debt issuance, the Corporation is economically indifferent between fixed or floating long term debt of the same term to maturity. For example, intercompany long term debt CG10 in the amount of \$35 million was issued February 22, 2010 for a five year term maturing February 22, 2015 with a coupon and yield rate of CDOR03 + 0.484%. This issue originated as Manitoba Hydro FM-4 (\$100 million principal, issued September 1, 2009 with a September 1, 2014 maturity). At the original issue date, using implied forward interest rates within the capital markets, the floating rate long term debt price of CDOR03 + 0.484% had an equivalent all-in yield rate of 3.14%.

The resultant weighted average yield rate for the combined CG5 refinancing was **3.974%** (the proximity of this 3.974% interest rate to the 4.00% rate utilized for rate-setting purposes, was achieved by shortening the duration of the weighted average term to maturity from 20 to 14 years). With the unanticipated extension of the low interest rate environment, the actual interest reset rates have been less than the original implied forward interest rates. As described in Centra's response to CAC/Centra I-16, the effective interest yield rate for CG10 at March 31, 2012 was 1.90%. Using this CG10 yield rate, the weighted average yield rate for the CG5 refinancing at March 31, 2012 was **3.395%**. At March 31, 2013 the effective interest yield rate for CG10 was 1.74% resulting in a weighted average yield rate for the CG5 refinancing at March 31, 2013 of **3.321%**. As the future interest reset rates on CG10 are not yet known, the complete evaluation of the CG5 refinancing will not be available until the final CG10 interest rate reset is determined. The full revenue requirement analysis would also need to consider the partially counterbalancing impact associated with capitalized interest when arriving at total finance expense.



Actual financing terms will vary from forecast. In order to create a smooth maturity schedule and manage the interest rate refinancing risk, although Centra anticipates that the weighted average term to maturity of the new long term debt financings will be approximately 20 years (thereby extending the weighted average term to maturity and enhancing the stability of Centra’s debt portfolio), it is not anticipated that the full \$30 million will be advanced with a 2033/34 maturity.⁶

⁶ The debt management strategy guidance for the concentration of refinancing risk is to have less than 15% of the long term debt portfolio maturing within a fiscal year. With Centra’s long term debt portfolio forecasted to be \$325 million at March 31, 2014, up to \$50 million of debt maturity may be situated into any fiscal year. As shown in Chart 3, 2033/34 already has \$20 million scheduled for refinancing CG16. As with the CG5 refinancing, it is anticipated that the new financing volumes and maturity dates may be segregated.

As a measure of the interest rate risk profile within the debt portfolio, along with the percentage of short term debt and floating rate long term debt, the Corporation also considers the percentage of long term debt to be refinanced within the subsequent 12 months. For example, as depicted in Chart 7 of the Manitoba Hydro Debt Management Strategy 2012/13 and 2013/14 (see Attachment 1 to Centra’s response to CAC/Centra I-14), at March 31, 2012 Manitoba Hydro had 22% of its debt portfolio subject to interest rate risk (16% short term debt and floating rate long term debt + 6% long term debt to be refinanced within 12 months). As shown in Chart 8 in Attachment 2 to Centra’s response to CAC/Centra I-14, at March 31, 2013 the interest rate risk profile for Centra is 17%. By March 31, 2014 Centra’s interest rate risk profile will increase approximately 11% with the \$35 million refinancing requirement in February 15, 2015 (\$35 million refinancing/ \$325 million long term debt portfolio = 11%).

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- a) Provide the Company’s demographic study, as ordered by the Board in 2009 (Order 128/09 , hereafter “Order”, at 34) and earlier.**

ANSWER:

Centra filed the 2009 Residential Energy Use Survey Report – Low Income Cut-off (LICO) with the PUB on May 28, 2010, and a revised report on August 31, 2010. This report was also filed as Appendix 50 to the Manitoba Hydro 2010/11 & 2011/12 General Rate Application. Please find this report as an attachment to this response.

The figures presented within this report have been refined since the above filing. The revised figures are used for target setting purposes as noted in Manitoba Hydro’s LIEEP Program 2011/12 Quarter 4 Report (Appendix 7.3 at 41). The following adjustments were incorporated to the overall 2009 Residential Energy Use survey findings from which the above LICO sector study was derived:

- Follow-up survey of furnace efficiencies to confirm potentially improbable customer reported combinations of “efficiency level” versus “age of furnace” as described in Manitoba Hydro’s response to CAC/Centra I-20(t).
- Inclusion of additional survey returns received after May 2010.
- Weightings were modified to align with actual number of natural gas customers.

Verification of dwelling type, year of construction, and heating type resulted in small changes.

2009 Residential Energy Use Survey Report

Low Income Cut-Off (LICO) Sector

IMPORTANT:

This is the exclusive property of Manitoba Hydro and all rights are reserved. Any release, reproduction or other use thereof, without the express written consent of Manitoba Hydro is strictly prohibited.

Research Conducted By:
Market Forecast Department
Consumer Marketing & Sales
May, 2010

EXECUTIVE SUMMARY

Purpose

The objective of this summary is to present a detailed demographic analysis of Manitoba Hydro customers who may be defined as lower income according to Statistics Canada's Low Income Cut-Off criteria. Better definition of the size and characteristics of this market sector will assist Manitoba Hydro in the design and development of its current and future customer service offerings.

Background

Manitoba Hydro's 2009 Residential Energy Use Survey was mailed to 19,422 selected customers in November 2009. The customers were randomly selected from 439,096 customers in Manitoba Hydro's residential basic class, which is comprised of all residential customers except seasonal customers and those in diesel communities. A response rate of 24.9% was realized. The primary purpose of the survey was to gather current information on residential demographic, dwelling, appliance and energy usage characteristics. This information is utilized to create a residential sector database, which is subsequently used to assist in developing Manitoba Hydro's Load Forecast and Power Smart programs. This report provides details on a component of the survey related to the lower income market sector.

Lower income customers were classified using Statistics Canada's Low Income Cut-Off (LICO) definitions. For the purposes of this report, the low income market sector is classified into two groups: the LICO Standard (LICO-100) classification and a LICO-125 group. The LICO-100 group uses the standard Statistics Canada definition to identify the income threshold. The LICO-125 group uses the same definition as outlined by Statistics Canada except the income thresholds are increased by 25%. The following tables outline the income threshold levels used for both low income categories presented in this report.

2008 LICO-100	Community Population			
	Rural Community	Less than 30,000	30,000 to 99,999	500,000 and Over
1 Person	\$15,262	\$17,364	\$18,976	\$22,171
2 Persons	\$19,000	\$21,615	\$23,623	\$27,601
3 Persons	\$23,358	\$26,573	\$29,041	\$33,933
4 Persons	\$28,361	\$32,264	\$35,261	\$41,198
5 Persons	\$32,165	\$36,594	\$39,992	\$46,727
6 Persons	\$36,278	\$41,272	\$45,105	\$52,699
7 or more Persons	\$40,390	\$45,950	\$50,218	\$58,673

2008 LICO-125	Community Populations			
Number of Persons per Household	Rural Community	Less than 30,000	30,000 to 99,999	500,000 and Over
1 Person	\$19,077	\$21,704	\$23,733	\$27,714
2 Persons	\$23,750	\$27,019	\$29,527	\$34,501
3 Persons	\$23,358	\$33,216	\$36,300	\$42,415
4 Persons	\$29,197	\$40,330	\$44,075	\$51,496
5 Persons	\$35,450	\$45,742	\$49,989	\$58,407
6 Persons	\$40,205	\$51,588	\$56,380	\$65,872
7 or more Persons	\$50,487	\$57,437	\$62,771	\$73,340

Key Findings

Demographic Characteristics

- The Manitoba Hydro residential basic population estimated to meet LICO-100 is 74,938 (17.1%); the LICO-125 population is estimated to be 105,784 (24.1%). Expanding the income definition of LICO by 25% increases the Manitoba Hydro LICO customer base by 30,846 customers, or 41.1%.
- LICO customers are about 2.5 times more likely to be one person households compared to NON-LICO households. 48.9% of LICO-100 customers (36,612 households) are one person households compared to 18.3% of NON-LICO-100 customers. 41.0% of LICO-125 customers (43,361 households) are one person households compared to 18.0% of NON-LICO-125 customers. Expanding the criteria to LICO-125 introduces 6,749 more single-person households to the lower income category.
- The LICO population has a higher proportion of individuals 65 years or older compared to the NON-LICO population. 36.0% of the LICO-100 population (26,956 people) is 65 years or older compared to 16.5% of the NON-LICO-100 population. 36.8% of the LICO-125 population (38,916 people) is 65 years or older compared to 14.4% of the NON-LICO-125 population. Expanding the criteria to LICO-125 introduces an additional 11,960 more senior individuals into the lower income population.
- Almost half the LICO occupied dwellings have an individual 65 years or older residing in them: 49.8% of LICO-100 dwellings (37,295 dwellings) have a senior resident compared to 26.7% of the NON-LICO-100 dwellings. 49.7% of LICO-125 dwellings (52,601 dwellings) have a senior resident compared to 24.5% of the NON-LICO-125 dwellings. Expanding the criteria to LICO-125 introduces 15,306 additional dwellings with senior occupants.

- LICO annual household income is one third that of NON-LICO annual household income. The average LICO-100 income is \$20,318 compared to the average NON-LICO-100 income of \$73,514. 56.8% of LICO-100 customers have incomes under \$20,000. The average LICO-125 income is \$23,597 compared to the average NON-LICO-125 income of \$77,002. 39.5% of LICO-100 customers have household incomes between \$20,000 and \$39,999 compared to 52.6% of LICO-125 customers.
- LICO households tend to be less educated. 55.2% of LICO-100 household heads have attained high school or less compared to 27.3% of the NON-LICO-100 heads. 53.3% of LICO-125 household heads have attained high school or less compared to 25.3% of the NON-LICO-125 heads. The LICO-125 criterion introduces higher educated household heads, which is correlated to a higher income group.
- A greater proportion of LICO customers are from the Winnipeg Central area (former Winnipeg Hydro). 27.9% of LICO-100 customers reside in Central Winnipeg compared to 15.1% of NON-LICO-100 customers. 23.8% of LICO-125 customers reside in Central Winnipeg compared to 15.3% of NON-LICO-125 customers. Expanding the criteria to LICO-125 introduces more customers from outside of the Winnipeg inner city area.

Dwelling Characteristics

- LICO customers are more likely to reside in apartment suites. 24.3% of LICO-100 customers reside in apartment suites compared to 10.4% of NON-LICO-100 customers. 22.5% of LICO-125 customers reside in apartment suites compared to 9.6% of NON-LICO-125 customers.
- LICO customers are 2.5 times more likely to rent their dwellings compared to NON-LICO customers. 27.5% of LICO-100 customers rent their dwellings compared to 10.9% of NON-LICO-100 customers. 25.5% of LICO-125 customers rent their dwellings compared to 10.0% of NON-LICO-125 customers.
- LICO customers live in older dwellings. The average LICO-100 occupied dwelling is 56 years old compared to the average NON-LICO-100 occupied dwelling of 45 years. The average LICO-125 occupied dwelling is 54 years old compared to the average NON-LICO-125 occupied dwelling of 45 years.
- LICO customers live in smaller dwellings (25% smaller square footage). The average LICO-100 occupied dwelling is 1,074 square feet compared to the average NON-LICO-100 occupied dwelling of 1,343 square feet. The average LICO-125 occupied dwelling is 1,086 square feet compared to the average NON-LICO-125 occupied dwelling of 1,364.

- 14.5% of the LICO-125 group rates their insulation as fair; 9.9% rate their insulation as poor. This represents 19,993 dwelling units. In terms of single detached dwellings, this is estimated to be 15,197 dwellings. There are an estimated 18,751 dwellings with 30% or less basement insulation of which 14,893 are single detached. Increasing the LICO income criteria by 25% introduces 5,008 housing units with a fair to poor insulation rating into the lower income group, of which 3,602 are single detached. The LICO (100-125) definition introduces 4,024 dwellings with 30% or less basement insulation, of which 3,280 are single detached.

Space Heating Characteristics

- LICO customers consume less electricity than NON-LICO customers. This correlates with the findings that LICO customers tend to be single person households, seniors, apartment dwellers, residing in smaller dwellings.
- The average LICO-100 non-electric heat customer consumes 6,782 kilowatt hours (kW.h) annually compared to the average NON-LICO-100 customer consuming 10,803 kW.h annually. The average LICO-125 non-electric heat customer consumes 7,250 kilowatt hours (kW.h) annually compared to the average NON-LICO-125 non-electric customer consuming 11,035 kW.h annually.
- The average LICO-100 electric heat customer consumes 20,466 kilowatt hours (kW.h) annually compared to the average NON-LICO-100 electric heat customer consuming 26,906 kW.h annually. The average LICO-125 electric heat customer consumes 21,116 kilowatt hours (kW.h) annually compared to the average NON-LICO-125 electric customer consuming 27,267 kW.h annually.
- More LICO natural gas customers use a standard efficient furnace compared to NON-LICO natural gas customers. 42.0% of LICO-100 and 42.3% of LICO-125 natural customers use a standard efficient furnace compared to 29.4% of NON-LICO-100 and 28.2% of NON-LICO-125 natural gas customers. There are 15,510 standard efficient furnaces remaining in LICO-100 households. There are 22,536 standard efficient furnaces remaining in LICO-125 households. Expanding the criteria to LICO-125 introduces 7,026 more standard efficient natural gas forced air furnaces into the lower income group.

Energy Burden

- Overall, Manitoba Hydro residential basic customers who are homeowners have an energy burden of 4.3% compared to an energy burden of 2.8% for renters. For the LICO-100 group, homeowners have an average energy burden of 9.2% and renters have an average energy burden of 4.7%. For the LICO-125 group, homeowners have an average energy burden of 8.3% and renters have an average energy burden of 4.2%. LICO-100 and LICO-125 apartment renters have the lowest energy burden at 2.4% and 2.2% respectively.

- The average energy burden of 9.9% is experienced by LICO-100 single detached, homeowners. LICO-125 single detached, homeowners have an average energy burden of 8.9%.
- The highest average energy burden of 11.1% is experienced by LICO-100 single person households residing in natural gas heated dwellings. This is followed by LICO-125 single person households residing in natural gas dwellings with an average energy burden of 10.2%.

Water Tanks and Refrigeration

- Although the proportion of private use electric water tanks (approximately 41%) and private use natural gas water tanks (approximately 38%) is similar between the two LICO classifications, expanding the criteria to LICO-125 introduces 12,361 more electric water tanks and 13,100 more natural gas water tanks into the lower income category.
- LICO customers are more likely to have a primary use refrigerator that is over 20 years old. 18.2% of LICO-100 customers use a primary refrigerator that is over 20 years old compared to 11.4% of NON-LICO-100 customers. 17.2% of LICO-125 customers use a primary refrigerator that is over 20 years old compared to 11.0% of NON-LICO-125 customers. Expanding the criteria to LICO-125 introduces 4,582 more primary refrigerators that are over 20 years old into the lower income households.

Services and Program Participation

- LICO customers are less likely to have home internet service. There are 46.7% of LICO-100 customers with home internet compared to 78.4% of NON-LICO-100 customers. 50.4% of LICO-125 customers have home internet service compared to 80.1% of NON-LICO-125 customers. The LICO-125 criterion introduces 18,293 more internet households into the lower income classification.
- LICO customers prefer to pay their pay their monthly Hydro bills in-person. 30.8% of LICO-100 customers pay in-person compared to 16.0% of NON-LICO-100 customers. 31.0% of LICO-125 customers pay in-person compared to 16.2% of NON-LICO-125 customers. The LICO-125 criterion introduces 9,684 more customers paying in-person into the lower income classification.
- 25.2% of LICO-100 customers have participated in residential programs offered by Manitoba Hydro versus 37.4% of NON-LICO-100 customers. 25.6% of LICO-125 customers have participated, compared to 61.5% of NON-LICO-125 customers. Expanding the criteria to LICO-125 introduces 8,132 more residential program participants.

Table of Contents

	Page
1.0 Introduction	1
2.0 Survey Methodology	2
2.1 Sample Design	2
2.2 Sample Selection	2
2.3 Survey Returns	2
2.4 Weightings	2
2.5 Survey Results	3
3.0 Demographic Characteristics.....	6
3.1 Demographic Characteristics: Total Residential Basic	6
3.2 Demographic Characteristics: Natural Gas Customers	8
3.3 Average Annual Household Income by People Per Household.....	10
4.0 Dwelling Characteristics	12
4.1 Dwelling Characteristics: Total Residential Basic.....	12
4.2 Dwelling Characteristics: Natural Gas Customers	14
4.3 Insulation Ratings and Basement Insulation Levels.....	16
4.4 Dwelling Ownership by Dwelling Type	18
4.5 Average Annual Household Income by Dwelling Type.....	20
5.0 Space Heating Characteristics	22
5.1 Annual Energy Use Space Heating Fuel.....	22
5.2 Space Heating Fuel by Dwelling Type.....	24
5.3 Average Annual Energy Use by People Per Household.....	26
5.4 Average Annual Energy Use by Dwelling Type.....	28
5.5 Space Heating Systems: Total Residential Basic	30
5.6 Space Heating Systems: Natural Gas Customers	32
5.7 Space Heating Systems by Dwelling Type	34
6.0 Energy Burden.....	36
6.1 Energy Burden Range by Space Heat Fuel	36
6.2 Average Energy Burden by People Per Household.....	38
6.3 Average Energy Burden by Dwelling Type	40

Table of Contents (Cont'd)

	Page
7.0 Water Tanks and Refrigeration	42
7.1 Water Tanks and Refrigeration: Total Residential Basic	42
7.2 Water Tanks and Refrigeration: Natural Gas Customers.....	44
8.0 Services and Program Participation	46
8.1 Services and Programs: Total Residential Basic	46
8.2 Services and Programs: Natural Gas Customers	48
9.0 Appendix	51
9.1 Questionnaire Booklet	51

1.0 Introduction

The Market Forecast Department regularly conducts a large scale mail-out survey to determine the most current energy use characteristics of Manitoba Hydro residential customers. In November 2009, the Residential Energy Use Survey was mailed to approximately 19,000 residential customers. The 20-page survey collected detailed information from residential customers on their dwellings characteristics, end use appliance saturations, energy use behavior, residential program participation rates, as well as some demographic information as it relates to energy use.

The main objective of collecting survey data is to incorporate the findings into the annual Manitoba Hydro Load Forecast. The information collected is also used to design Power Smart Programs. For this particular report, demographic and energy use characteristics are provided for the lower income residential market sector.

2.0 Survey Methodology

Main survey design objectives and procedures taken to implement the 2009 Residential Energy Use Survey are presented in the following sections.

2.1 Sample Design Objectives

The main objective of the sample design was to ensure a sufficient number of completed surveys were returned for analysis of key categories such as dwelling types, fuel area location, and heating fuel source.

2.2 Sample Selection

As of September 23, 2009, there were a total of 439,096 premises under the residential basic customer rate class. A total of 19,422 residential accounts were randomly selected from this group, using a random number generating process. Survey packages were mailed in November 2009 and included the 20-page questionnaire booklet and a stamped self-addressed return envelope. A French version of the survey was made available upon request. Five customers requested the French version. No incentive was given to complete the survey and no attempt was made to contact non-respondents.

2.3 Survey Returns

In total 19,256 residential customers were reached and 4,738 surveys were returned. This included 166 surveys returned to Manitoba Hydro as a result of customers having moved or passed away. A survey response rate of 24.9% was achieved. The overall survey results are accurate within 1.5%, 19 times out of 20.

2.4 Weightings

Each response was assigned a weighting factor. The weighting variables are part of every residential customer record. Weights are calculated using the ratio between the population cells and the number of returned records in that case. Survey responses were weighted back to the population base of 439,096. Weighting criteria used was as follows.

- Dwelling Type:
1. Single Detached
 2. Duplex Multiplex
 3. Mobile Home
 4. Town/Rowhouse
 5. Apartment Suite

Heat Capability: 1. All-Electric
 2. Standard (Non-Electric Heat)

Fuel Area: 1. Winnipeg
 2. South Natural Gas Available
 3. South No Natural Gas Available
 4. North

2.5 Survey Results

The survey results provide up-to-date profiles of Manitoba Hydro’s residential basic customers. All results show the (%) responding for any given variable and the corresponding estimated number (N) of Manitoba Hydro customers that finding represents. All results in this report are summarized in table form and are cross-tabulated by the following five major groupings.

1. LICO STANDARD - Also referred to as LICO-100. The low income cut-off point is a standard measure developed by Statistics Canada to identify the income threshold below which a household will likely devote a larger share of its income on the necessities of life more so than the average household. LICO is the point where 20 percentage points are exceeded more than average on food, shelter, and clothing. The threshold varies with people per household as well as community size. Responses from the survey were used to establish whether a customer fit the LICO criteria. The variables used were survey responses to people per household and annual household income. Community size was determined from the town as linked to by the account number and the billing data. There were 740 survey respondents that fit the LICO-100 criteria. The LICO-100 survey results are accurate within 3.6% percentage points, 19 times out of 20. The following Statistics Canada chart (catalogue # 75F0002M) was used to determine survey LICO-100.

2008 LICO-100	Community Population			
	Rural Community	Less than 30,000	30,000 to 99,999	500,000 and Over
1 Person	\$15,262	\$17,364	\$18,976	\$22,171
2 Persons	\$19,000	\$21,615	\$23,623	\$27,601
3 Persons	\$23,358	\$26,573	\$29,041	\$33,933
4 Persons	\$28,361	\$32,264	\$35,261	\$41,198
5 Persons	\$32,165	\$36,594	\$39,992	\$46,727
6 Persons	\$36,278	\$41,272	\$45,105	\$52,699
7 or more Persons	\$40,390	\$45,950	\$50,218	\$58,673

2. 125% of LICO - Also referred to as LICO-125. LICO-125 is calculated using the same definitions as outlined by Statistics Canada except the income thresholds are increased by 25%. There were 1063 survey respondents that fit the LICO-125 criteria. The LICO-125 survey results are accurate within 3.0% percentage points, 19 times out of 20. The following chart was used to determine survey LICO-125.

2008 LICO-125 Number of Persons per Household	Community Population			
	Rural Community	Less than 30,000	30,000 to 99,999	500,000 and Over
1 Person	\$19,077	\$21,704	\$23,733	\$27,714
2 Persons	\$23,750	\$27,019	\$29,527	\$34,501
3 Persons	\$23,358	\$33,216	\$36,300	\$42,415
4 Persons	\$29,197	\$40,330	\$44,075	\$51,496
5 Persons	\$35,450	\$45,742	\$49,989	\$58,407
6 Persons	\$40,205	\$51,588	\$56,380	\$65,872
7 or more Persons	\$50,487	\$57,437	\$62,771	\$73,340

3. LICO-125 Difference - Also referred to as LICO (100-125). LICO (100-125) is the difference in the number of households qualifying under LICO-125 minus the number of households defined under LICO-100. It is the income threshold group that is increased by 25%.

4. Manitoba Hydro Electric Residential Basic Customers- This refers to the rate class of Manitoba Hydro residential accounts. It was from this rate class that the survey sample was drawn. All residential customers are included except for seasonal (cottage) and diesel community customers. These customers have their own rate classifications. At the time of the survey, there were 439,096 residential basic customers.

5. Manitoba Hydro Natural Gas Customers - These are all Manitoba Hydro natural gas customers that are affiliated with a Manitoba Hydro Residential Basic account. These customers total 241,106. It should be noted that there are 32,495 customers that indicate they use natural gas for heat but they do not receive a natural gas bill from Manitoba Hydro. Almost all these customers reside in multi-family dwellings, such as apartment suites (94.5%), where natural gas heat is provided from a central or shared source. The cost of heating is usually incorporated into rent or into a monthly common service fee. These 32,495 customers are not included in the 241,106 natural gas customer count but they are included in the 439,096 electric residential basic total.

Select survey variables were analyzed specifically for this report in order to provide demographic and energy use profiles of LICO versus NON-LICO customers for both electric and natural gas customers. The variables extracted for this report are:

- | | |
|---------------------------------------|--|
| 1. Demographic: | People per Household
Population Age
Household Income
Highest Education Level Attained |
| 2. Dwellings | Location
Type
Ownership
Year Built
Square Footage
Insulation Rating
Basement Insulation Levels
Annual Kilowatt Hours
Annual Natural Gas Cubic Meters |
| 3. Space Heat | Heating Fuel Type
Energy Use
Heating System
Heating System Age |
| 4. Water Tanks and Refrigeration | Hot Water Tank Fuel
Hot Water Tank Age
Primary Refrigerator Age
Secondary Refrigerator Age
Primary Freezer Age
Secondary Freezer Age |
| 5. Services and Program Participation | Home Internet Access
Bill Payment Method
MYBILL Awareness and Interest
Manitoba Hydro Website Visits
Energy Matters Readership
Power Smart Program Insert Readership
Residential Program Participation
Lower Income Program Participation |

3.0 Demographic Characteristics

3.1 Demographic Characteristics: Total Residential Basic

Table 3.1 shows the demographic profile of the total residential basic electric customers within the Manitoba Hydro provincial service territory for LICO-100, LICO-125, and LICO (100-125) classifications.

Overall, there are a total of 439,096 Manitoba Hydro residential basic customers. Out of the Manitoba Hydro residential basic customer total, 74,938 customers or 17.1% are estimated to meet the LICO-100 criteria, and 105,784 customers or 24.1% are estimated to meet the LICO-125 criteria. The difference between the two LICO classifications is 30,846 customers or 7.0% of the total residential basic population. Expanding the income definition of LICO by 25% increases the Manitoba Hydro lower income customer base by 41.1%.

LICO customers are more likely than NON-LICO customers to be single person households. In the LICO-100 group, 48.9% are single person households compared to 18.3% of NON-LICO-100 households. In the LICO-125 group, 41.0% are single person households compared to 18.0% of NON-LICO-125 households. Increasing the income threshold by 25% introduces more two person households into the LICO-125 category. Two person households comprise 51.4% of the LICO (100-125) group compared to 28.3% in the LICO-100 class.

Residents of LICO households tend to be older. Overall, 19.8% of the total Manitoba Hydro residential basic customer base is 65 years of age or older. This compares to 36.0% of the LICO-100 population base and 36.8% of the LICO-125 base. The proportion of the population in the LICO (100-125) group that is 65 years or older is a little higher at 38.8%. Almost half of all LICO households have an occupant 65 years or older. Dwellings with senior occupants are twice as likely to occur in the defined LICO groups compared to the defined NON-LICO groups.

The average annual household income for a LICO-100 household is \$20,318 compared to \$73,514 for a NON-LICO-100 household. The average annual household income for a LICO-125 household is \$23,597 compared to \$77,002 for a NON-LICO-125 household. LICO households earn about one third the amount of income earned by NON-LICO households. The average income of the LICO (100-125) group is \$31,565 or 55.4% higher than the average for the LICO-100 class.

The highest level of education attained per household is related to income. LICO households tend to be less educated than NON-LICO households. Just over 55% of LICO-100 households have attained high school or less compared to 27.3% NON-LICO-100 households while 53.3% of LICO-125 households have attained high school or less compared to 25.3% NON-LICO-125 households. LICO (100-125) introduces more people with a trades or community college background to the lower income category.

Table 3.1 % Weighted Frequency and Population Estimates

Demographic Characteristics across LICO versus NON-LICO Total Manitoba Hydro Residential Basic Customers

Total Manitoba Hydro Residential Basic Customers												
	OVERALL		LICO-100		NON-LICO-100		LICO-125		NON-LICO-125		LICO (100-125)	
Population (N)	100.0%	439,096	17.1%	74,938	82.9%	364,158	24.1%	105,784	75.9%	333,312	7.0%	30,846
People Per Household	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)
One	23.6%	103,413	48.9%	36,612	18.3%	66,801	41.0%	43,361	18.0%	60,052	21.9%	6,749
Two	45.5%	199,771	28.3%	21,183	49.0%	178,588	35.0%	37,041	48.8%	162,730	51.4%	15,858
Three	12.2%	53,540	8.3%	6,227	13.0%	47,313	9.9%	10,489	12.9%	43,051	13.8%	4,262
Four	12.4%	54,580	8.0%	5,969	13.3%	48,611	7.5%	7,979	14.0%	46,601	6.5%	2,010
Five Or More	6.3%	27,792	6.6%	4,947	6.3%	22,845	6.5%	6,914	6.3%	20,878	6.4%	1,967
Average PPH		2.4		2.0		2.4		2.1		2.4		2.3
Population Age												
18 and Under	18.6%	81,640	19.9%	14,895	18.3%	66,745	19.4%	20,519	18.3%	61,121	18.2%	5,624
19 to 24	6.3%	27,598	7.0%	5,282	6.1%	22,316	5.9%	6,223	6.4%	21,375	3.1%	941
25 to 34	9.4%	41,204	10.0%	7,512	9.3%	33,692	9.4%	9,926	9.4%	31,278	7.8%	2,414
35 to 44	10.6%	46,762	7.0%	5,254	11.4%	41,508	7.8%	8,206	11.6%	38,556	9.6%	2,952
45 to 54	17.4%	76,212	8.7%	6,488	19.1%	69,724	8.7%	9,243	20.1%	66,969	8.9%	2,755
55 to 64	17.9%	78,666	11.4%	8,551	19.3%	70,115	12.1%	12,751	19.8%	65,915	13.6%	4,200
65 and Over	19.8%	87,014	36.0%	26,956	16.5%	60,058	36.8%	38,916	14.4%	48,098	38.8%	11,960
% with 65+ Year Occupants	30.6%	134,384	49.8%	37,295	26.7%	97,089	49.7%	52,601	24.5%	81,783	49.6%	15,306
Average Age		49.7		54.7		48.7		54.7		48.2		54.8
Household Income												
Under \$20,000	9.7%	42,582	56.8%	42,582	0.0%	0	40.3%	42,582	0.0%	0	0.0%	0
\$20,000 to \$39,999	25.0%	109,866	39.5%	29,609	22.0%	80,257	52.6%	55,625	16.3%	54,241	84.3%	26,017
\$40,000 to \$59,999	20.9%	91,615	3.7%	2,747	24.4%	88,868	7.0%	7,396	25.3%	84,219	15.1%	4,648
\$60,000 to \$79,999	18.1%	79,383	0.0%	0	21.8%	79,383	0.2%	181	23.8%	79,202	0.6%	181
\$80,000 to \$99,999	9.8%	43,127	0.0%	0	11.8%	43,127	0.0%	0	12.9%	43,127	0.0%	0
\$100,000 and Over	16.5%	72,523	0.0%	0	19.9%	72,523	0.0%	0	21.8%	72,523	0.0%	0
Average Household Income		\$64,136		\$20,318		\$73,514		\$23,597		\$77,002		\$31,565
Education												
Incomplete High School	4.1%	18,180	14.5%	10,887	2.0%	7,293	13.0%	13,803	1.3%	4,377	9.5%	2,916
High School	27.9%	122,622	40.7%	30,474	25.3%	92,148	40.3%	42,593	24.0%	80,029	39.3%	12,119
Trades/College	34.0%	149,200	28.6%	21,405	35.1%	127,795	31.3%	33,092	34.8%	116,108	37.9%	11,687
University	34.0%	149,094	16.2%	12,172	37.6%	136,922	15.4%	16,296	39.8%	132,798	13.4%	4,124

3.2 Demographic Characteristics: Natural Gas Customers

Table 3.2 shows the demographic profile of the total natural gas customers within the Manitoba Hydro provincial service territory for LICO-100, LICO-125, and LICO (100-125) classifications.

Overall, there are a total of 241,106 Manitoba Hydro natural gas customers. Out of the Manitoba Hydro natural gas customer total, 36,919 customers or 15.3% are estimated to be LICO-100, and 53,312 customers or 22.1% are estimated to be LICO-125. The difference between the two LICO classifications is 16,393 customers or 6.8% of residential natural gas population. Expanding the income definition of LICO by 25% increases the Manitoba Hydro natural gas lower income customer base by 44.4%.

LICO natural gas customers are more likely than NON-LICO natural gas customers to be single person households. In the LICO-100 group, 42.1% are single person households compared to 15.2% of NON-LICO-100 households. In the LICO-125 group, 35.7% are single person households compared to 14.7% of NON-LICO-125 households. Increasing the income threshold by 25% introduces more two person households into the LICO-125 category. Two person households comprise 46.3% of the LICO (100-125) group compared to 30.3% in the LICO-100 class.

LICO households tend to be older. Overall, 18.4% of the total Manitoba Hydro natural gas customer base is 65 years or older. This compares to 37.6% of the LICO-100 population base and 37.3% of the LICO-125 base. The proportion of the population in the LICO (100-125) group, 65 years or older, is a little lower at 36.6%. About 55% of all LICO households have an occupant that is 65 years or older. Dwellings with senior occupants are more than twice as likely to occur in the defined LICO groups compared to the defined NON-LICO groups.

The average annual household income for a LICO-100 household is \$22,303 compared to \$80,527 for a NON-LICO-100 household. The average annual household income for a LICO-125 household is \$26,150 compared to \$84,518 for a NON-LICO-125 household. LICO households earn less than one third the amounts earned by NON-LICO households. The average income of the LICO (100-125) group is \$34,814, or 56.1% higher than the average for the LICO-100 class. Natural gas customers earn, on average, more than the total Manitoba residential basic customers. This difference arises because most natural gas customers live in Winnipeg, which is a higher earning centre compared to smaller urban and rural locations.

The highest level of education attained per household is related to income. LICO households tend to be less educated than NON-LICO households. Just over 52% of LICO-100 households have attained high school or less compared to 23.2% NON-LICO-100 households, while 50.1% of LICO-125 households have attained high school or less compared to 21.3% NON-LICO-125 households. LICO (100-125) introduces more people with a trades or community college background.

Table 3.2 % Weighted Frequency and Population Estimates

Demographic Characteristics across LICO versus NON-LICO Manitoba Hydro Residential Natural Gas Customers

	Manitoba Hydro Residential Natural Gas Customers											
	OVERALL		LICO-100		NON-LICO-100		LICO-125		NON-LICO-125		LICO (100-125)	
Population (N)	100.0%	241,106	15.3%	36,919	84.7%	204,187	22.1%	53,312	77.9%	187,794	6.8%	16,393
People Per Household	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)
One	19.3%	46,596	42.1%	15,555	15.2%	31,041	35.7%	19,047	14.7%	27,549	21.3%	3,492
Two	43.5%	104,978	30.3%	11,172	45.9%	93,806	35.2%	18,761	45.9%	86,217	46.3%	7,589
Three	14.6%	35,095	8.4%	3,098	15.7%	31,997	11.0%	5,888	15.6%	29,207	17.0%	2,790
Four	15.3%	36,992	11.4%	4,226	16.0%	32,766	10.0%	5,315	16.9%	31,677	6.6%	1,089
Five Or More	7.2%	17,445	7.8%	2,868	7.1%	14,577	8.1%	4,301	7.0%	13,144	8.7%	1,433
Average PPH		2.5		2.2		2.6		2.2		2.6		2.4
Population Age												
18 and Under	19.4%	46,749	20.5%	7,550	19.2%	39,199	20.4%	10,855	19.1%	35,894	20.2%	3,305
19 to 24	7.0%	16,805	5.5%	2,031	7.2%	14,774	4.8%	2,543	7.6%	14,262	3.1%	512
25 to 34	9.4%	22,587	10.1%	3,724	9.2%	18,863	9.7%	5,172	9.3%	17,415	8.8%	1,448
35 to 44	11.3%	27,152	7.4%	2,740	12.0%	24,412	8.4%	4,459	12.1%	22,693	10.5%	1,719
45 to 54	17.5%	42,080	8.2%	3,016	19.1%	39,064	7.8%	4,179	20.2%	37,901	7.1%	1,163
55 to 64	17.2%	41,428	10.7%	3,967	18.3%	37,461	11.7%	6,211	18.8%	35,217	13.7%	2,244
65 and Over	18.4%	44,305	37.6%	13,891	14.9%	30,414	37.3%	19,893	13.0%	24,412	36.6%	6,002
% with 65+ Year Occupants	30.1%	72,645	55.6%	20,519	25.5%	52,126	54.3%	28,944	23.3%	43,701	51.4%	8,425
Average Age		48.8		55.7		47.6		55.4		47.1		54.6
Household Income												
Under \$20,000	6.9%	16,747	45.4%	16,747	0.0%	0	31.4%	16,747	0.0%	0	0.0%	0
\$20,000 to \$39,999	21.0%	50,527	48.3%	17,839	16.0%	32,688	56.6%	30,194	10.8%	20,333	75.4%	12,355
\$40,000 to \$59,999	20.6%	49,564	6.3%	2,333	23.1%	47,231	11.6%	6,190	23.1%	43,374	23.5%	3,857
\$60,000 to \$79,999	19.0%	45,816	0.0%	0	22.4%	45,816	0.3%	181	24.3%	45,635	1.1%	181
\$80,000 to \$99,999	11.2%	27,071	0.0%	0	13.3%	27,071	0.0%	0	14.4%	27,071	0.0%	0
\$100,000 and Over	21.3%	51,381	0.0%	0	25.2%	51,381	0.0%	0	27.4%	51,381	0.0%	0
Average Household Income		\$71,612		\$22,303		\$80,527		\$26,150		\$84,518		\$34,814
Education												
Incomplete High School	2.4%	5,728	10.9%	4,022	0.8%	1,706	9.6%	5,096	0.3%	632	6.6%	1,074
High School	25.3%	60,937	41.4%	15,272	22.4%	45,665	40.5%	21,578	21.0%	39,359	38.5%	6,306
Trades/College	33.6%	80,988	36.5%	13,488	33.1%	67,500	36.6%	19,524	32.7%	61,464	36.8%	6,036
University	38.8%	93,453	11.2%	4,137	43.7%	89,316	13.3%	7,114	46.0%	86,339	18.2%	2,977

3.3 Average Annual Household Income by People Per Household

Table 3.3 compares the average annual household income by people per household between LICO and NON-LICO groups. Space heating fuel is also introduced into the analysis.

On average, NON-LICO households earn over three times the income of LICO households. For the LICO-100 group, the average annual household income is \$20,318 and for the NON-LICO-100 group, the average annual household income is \$73,514. For the LICO-125 group, the average annual household income increases to \$23,597 and for the NON-LICO-125 group, the average annual household income is \$77,002.

Across all LICO classifications, annual household income increases as people per household increases. Across all LICO classifications, annual household income is higher for non-electric heat customers compared with electric heat customers. Non-electric heat includes those customers utilizing natural gas, propane, wood, coal or oil fuels for heat.

Natural gas customers earn, on average, more than the total Manitoba residential basic customers. This difference arises because most natural gas customers live in Winnipeg, which is a higher earning centre compared to smaller urban and rural locations.

For the LICO-100 group, the lowest average household income of \$15,548 is associated by LICO-100 single person households residing in electrically heated dwellings. The highest average household income of \$107,267 is associated with NON-LICO-100 four person households residing in natural gas heated dwellings.

For the LICO-125 group, the lowest average household income of \$16,764 is experienced by LICO-125 single person households residing in electrically heated dwellings. The highest average household income of \$109,229 is associated with NON-LICO-125 four person households residing in natural gas heated dwellings.

**Table 3.3 Weighted Average Annual Household Income by Space Heat Fuel
by People Per Household across LICO versus NON-LICO Total Manitoba Hydro Residential Customers**

Total Manitoba Hydro Residential Basic Customers						
	OVERALL	LICO-100	NON-LICO-100	LICO-125	NON-LICO-125	LICO (100-125)
Overall Average Income						
Overall	\$64,136	\$20,318	\$73,514	\$23,597	\$77,002	\$31,565
One Person	\$38,061	\$16,016	\$50,143	\$17,565	\$52,860	\$25,967
Two Person	\$63,184	\$20,791	\$68,213	\$23,795	\$72,150	\$27,809
Three Person	\$77,365	\$24,306	\$84,348	\$30,454	\$88,794	\$39,437
Four Person	\$93,648	\$32,850	\$101,114	\$35,522	\$103,600	\$43,461
Five or More	\$84,568	\$29,988	\$96,387	\$36,206	\$100,585	\$51,842
Average Annual Income Non-Electric Heat*						
Overall	\$67,606	\$21,316	\$77,473	\$24,967	\$81,671	\$30,526
One Person	\$39,872	\$16,291	\$52,235	\$18,009	\$55,480	\$26,147
Two Person	\$65,850	\$21,549	\$71,995	\$24,856	\$76,080	\$30,027
Three Person	\$80,352	\$25,422	\$88,169	\$31,978	\$93,098	\$41,705
Four Person	\$97,792	\$34,711	\$106,147	\$37,593	\$108,907	\$46,258
Five or More	\$90,689	\$32,427	\$101,698	\$39,877	\$106,597	\$54,782
Average Annual Income Natural Gas Billed Heat**						
Overall	\$71,612	\$22,303	\$80,827	\$26,150	\$84,518	\$34,814
One Person	\$41,275	\$16,181	\$53,850	\$18,030	\$57,347	\$26,265
Two Person	\$68,100	\$22,225	\$73,563	\$25,465	\$77,377	\$30,235
Three Person	\$84,055	\$26,011	\$89,674	\$33,459	\$94,254	\$41,728
Four Person	\$99,063	\$35,458	\$107,267	\$38,466	\$109,229	\$50,150
Five or More	\$90,539	\$32,428	\$101,971	\$39,877	\$107,118	\$54,782
Average Annual Income Electric Heat						
Overall	\$57,590	\$18,264	\$65,145	\$20,780	\$68,429	\$26,894
One Person	\$34,731	\$15,548	\$46,122	\$16,764	\$47,979	\$25,504
Two Person	\$58,766	\$18,875	\$62,230	\$21,624	\$65,931	\$24,308
Three Person	\$69,512	\$20,437	\$74,635	\$25,318	\$78,097	\$32,088
Four Person	\$83,625	\$27,065	\$89,288	\$29,167	\$91,249	\$35,183
Five or More	\$73,282	\$26,624	\$85,909	\$30,163	\$89,042	\$43,945

* Includes natural gas and other non-electric heat customers (Standard Heat)

** Includes only natural gas customers.

4.0 Dwelling Characteristics

4.1 Dwelling Characteristics: Total Residential Basic

Table 4.1 shows the dwelling characteristics of total residential basic customers within the Manitoba Hydro provincial service territory for both LICO and NON-LICO classifications.

Overall, 54.8% of customers reside in Winnipeg. In comparison, 63.3% of LICO-100 and 60.8% of LICO-125 customers reside in Winnipeg. LICO (100-125) introduces fewer customers from Central Winnipeg (13.7%) when compared to LICO-100 Central Winnipeg customers at 27.9%.

The majority of total customers (77.7%) reside in single detached dwellings and the majority of total customers (86.3%) own their dwelling. In comparison, 64.2% of LICO-100 and 65.0% of LICO-125 customers reside in single detached dwellings and 72.5% of LICO-100 and 74.5% of LICO-125 customers are homeowners. About 90% of NON-LICO customers are homeowners. LICO customers are over twice as likely to live in apartment suites compared to NON-LICO customers.

LICO customers, on average, live in smaller and older dwellings. A LICO-100 dwelling is 56 years old and 1,074 square feet. A NON-LICO-100 dwelling is 45 years old and 1,343 square feet. A LICO-125 dwelling is, on average, 54 years old and 1,086 square feet. The income increase of 25% introduces newer housing into the LICO definition. A LICO (100-125) dwelling is, on average, 48 years old and 1,115 square feet.

**Table 4.1 Weighted % Frequency and Population Estimates
Dwelling Characteristics across LICO versus NON-LICO Total Manitoba Hydro Residential Basic Customers**

Total Manitoba Hydro Residential Basic Customers												
	OVERALL		LICO-100		NON-LICO-100		LICO-125		NON-LICO-125		LICO (100-125)	
Population (N)	100.0%	439,096	17.1%	74,938	82.9%	364,158	24.1%	105,784	75.9%	333,312	7.0%	30,846
	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)
Location												
Winnipeg - Central	17.3%	76,057	27.9%	20,896	15.1%	55,161	23.8%	25,130	15.3%	50,927	13.7%	4,234
Winnipeg - Suburban	37.5%	164,728	35.4%	26,501	38.0%	138,227	37.0%	39,164	37.7%	125,564	41.1%	12,663
South - Gas Available	27.5%	120,847	22.2%	16,668	28.6%	104,179	24.6%	26,068	28.4%	94,779	30.5%	9,400
South - Not Gas Available	12.9%	56,612	11.3%	8,444	13.2%	48,168	11.2%	11,836	13.4%	44,776	11.0%	3,392
North	4.7%	20,852	3.2%	2,429	5.1%	18,423	3.4%	3,585	5.2%	17,267	3.7%	1,156
Dwelling Type												
Single Detached	77.7%	341,265	64.2%	48,108	80.5%	293,157	65.0%	68,744	81.8%	272,521	66.9%	20,636
Duplex/Triplex	4.3%	18,970	5.3%	4,003	4.1%	14,967	6.6%	6,986	3.6%	11,984	9.7%	2,983
Mobile Home	2.0%	8,597	2.5%	1,842	1.9%	6,755	2.7%	2,879	1.7%	5,718	3.4%	1,037
Town/Rowhouse	3.3%	14,347	3.7%	2,765	3.2%	11,582	3.2%	3,389	3.3%	10,958	2.0%	624
Apartment Suite	12.7%	55,927	24.3%	18,220	10.4%	37,707	22.5%	23,786	9.6%	32,141	18.0%	5,566
Dwelling Ownership												
Own/Buying	86.3%	378,898	72.5%	54,327	89.1%	324,571	74.5%	78,856	90.0%	300,042	79.5%	24,529
Rent/Lease	13.7%	60,198	27.5%	20,611	10.9%	39,587	25.5%	26,928	10.0%	33,270	20.5%	6,317
Year Built												
2000 to 2009	8.2%	36,062	4.5%	3,409	9.0%	32,653	4.8%	5,067	9.3%	30,995	5.4%	1,658
1990 to 1999	7.7%	33,807	5.7%	4,286	8.1%	29,521	6.0%	6,397	8.2%	27,410	6.8%	2,111
1980 to 1989	13.5%	59,268	8.5%	6,367	14.5%	52,901	8.5%	9,027	15.1%	50,241	8.6%	2,660
1970 to 1979	18.3%	80,522	16.7%	12,500	18.7%	68,022	18.2%	19,265	18.4%	61,257	21.9%	6,765
1960 to 1969	14.6%	64,196	13.7%	10,267	14.8%	53,929	14.8%	15,661	14.6%	48,535	17.5%	5,394
1950 to 1959	13.6%	59,788	16.2%	12,117	13.1%	47,671	16.2%	17,139	12.8%	42,649	16.3%	5,022
Pre 1950	24.0%	105,453	34.7%	25,992	21.8%	79,461	31.4%	33,228	21.7%	72,225	23.5%	7,236
Average Year Built		1963		1954		1965		1956		1965		1962
Average Age (Years)		47		56		45		54		45		48
Size (Square Feet)												
900 or Less	22.3%	97,918	37.4%	28,027	19.2%	69,892	36.0%	38,082	18.0%	59,836	32.6%	10,055
901 to 1,100	23.2%	101,870	26.7%	20,008	22.5%	81,862	26.6%	28,139	22.1%	73,732	26.4%	8,130
1,101 to 1,300	18.7%	82,111	18.8%	14,088	18.7%	68,023	18.1%	19,147	18.9%	62,964	16.4%	5,059
1,301 to 1,500	10.0%	43,910	6.7%	5,021	10.7%	38,889	8.3%	8,780	10.5%	35,130	12.2%	3,759
1,501 to 1,800	10.9%	47,861	4.2%	3,147	12.3%	44,714	4.6%	4,866	12.9%	42,995	5.6%	1,719
Over 1,800	14.9%	65,425	6.2%	4,646	16.7%	60,779	6.4%	6,770	17.6%	58,655	6.9%	2,124
Average Square Feet		1,298		1,074		1,343		1,086		1,364		1,115

4.2 Dwelling Characteristics: Natural Gas Customers

Table 4.2 shows the dwelling characteristics of natural gas customers within the Manitoba Hydro provincial service territory for both LICO and NON-LICO classifications.

Overall, 76.3% of natural gas customers reside in Winnipeg. In comparison, 82.0% of LICO-100 and 80.1% of LICO-125 natural gas customers reside in Winnipeg. LICO (100-125) introduces fewer customers from Central Winnipeg with 14.2% residing in Central Winnipeg, compares to 31.1% of LICO-100 natural gas customers.

The majority of natural gas customers (88.7%) reside in single detached dwellings and the majority of these customers (95.3%) own their dwelling. In comparison, 82.8% of LICO-100 and 82.4% of LICO-125 natural gas customers reside in single detached dwellings and 88.3% of LICO-100 and 90.3% of LICO-125 natural gas customers are homeowners. Only 3.1% of LICO-125 natural gas customers live in apartment suites and only 9.7% rent their dwellings.

LICO natural gas customers, on average, live in smaller and older dwellings. A LICO-100 natural gas dwelling is 60 years old and 1,100 square feet. A NON-LICO-100 dwelling is 46 years old and 1,353 square feet. A LICO-125 dwelling is, on average, 56 years old and 1,108 square feet. The income increase of 25% introduces newer housing into the LICO category. A LICO (100-125) natural gas dwelling is, on average, 49 years old and 1,127 square feet.

**Table 4.2 Weighted % Frequency and Population Estimates
Dwelling Characteristics across LICO versus NON-LICO Manitoba Hydro Residential Natural Gas Customers**

	Manitoba Hydro Natural Gas Residential Customers											
	OVERALL		LICO-100		NON-LICO-100		LICO-125		NON-LICO-125		LICO (100-125)	
Population (N)	100.0%	241,106	15.3%	36,919	84.7%	204,187	22.1%	53,312	77.9%	187,794	6.8%	16,393
	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)
Location												
Winnipeg - Central	19.5%	46,921	31.1%	11,479	17.4%	35,442	25.9%	13,804	17.6%	33,117	14.2%	2,325
Winnipeg - Suburban	56.8%	136,981	50.9%	18,793	57.9%	118,188	54.2%	28,881	57.6%	108,100	61.5%	10,088
South - Gas Available	23.7%	57,204	18.0%	6,647	24.8%	50,557	19.9%	10,627	24.8%	46,577	24.3%	3,980
South - Not Gas Available	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
North	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Dwelling Type												
Single Detached	88.7%	213,917	82.8%	30,579	89.8%	183,338	82.4%	43,938	90.5%	169,979	81.5%	13,359
Duplex/Triplex	6.1%	14,640	8.2%	3,033	5.7%	11,607	9.6%	5,120	5.1%	9,520	12.7%	2,087
Mobile Home	0.3%	839	0.8%	305	0.3%	534	0.6%	305	0.3%	534	0.0%	0
Town/Rowhouse	3.0%	7,331	5.3%	1,958	2.6%	5,373	4.3%	2,271	2.7%	5,060	1.9%	313
Apartment Suite	1.8%	4,379	2.8%	1,044	1.6%	3,335	3.1%	1,678	1.4%	2,701	3.9%	634
Dwelling Ownership												
Own/Buying	95.3%	229,763	88.3%	32,594	96.6%	197,169	90.3%	48,141	96.7%	181,622	94.8%	15,547
Rent/Lease	4.7%	11,343	11.7%	4,325	3.4%	7,018	9.7%	5,171	3.3%	6,172	5.2%	846
Year Built												
2000 to 2009	7.2%	17,337	2.1%	787	8.1%	16,550	1.8%	968	8.7%	16,369	1.1%	181
1990 to 1999	8.5%	20,424	5.3%	1,957	9.0%	18,467	5.3%	2,841	9.4%	17,583	5.4%	884
1980 to 1989	12.8%	30,875	5.1%	1,867	14.2%	29,008	6.4%	3,391	14.6%	27,484	9.3%	1,524
1970 to 1979	16.2%	39,109	14.5%	5,340	16.5%	33,769	16.9%	9,034	16.0%	30,075	22.5%	3,694
1960 to 1969	14.7%	35,521	14.7%	5,421	14.7%	30,100	16.5%	8,800	14.2%	26,721	20.6%	3,379
1950 to 1959	15.7%	37,792	20.1%	7,432	14.9%	30,360	19.6%	10,428	14.6%	27,364	18.3%	2,996
Pre 1950	24.9%	60,047	38.2%	14,115	22.5%	45,932	33.5%	17,850	22.5%	42,197	22.8%	3,735
Average Year Built		1962		1950		1964		1954		1964		1961
Average Age (Years)		48		60		46		56		46		49
Size (Square Feet)												
900 or Less	16.7%	40,265	26.1%	9,636	15.0%	30,629	25.2%	13,435	14.3%	26,830	23.2%	3,799
901 to 1,100	25.1%	60,518	33.7%	12,442	23.5%	48,076	33.0%	17,593	22.9%	42,925	31.4%	5,151
1,101 to 1,300	20.4%	49,186	21.9%	8,085	20.1%	41,100	21.4%	11,409	20.1%	37,777	20.3%	3,324
1,301 to 1,500	10.8%	26,039	9.2%	3,397	11.1%	22,643	10.8%	5,758	10.8%	20,282	14.4%	2,361
1,501 to 1,800	11.8%	28,451	4.4%	1,624	13.1%	26,826	4.7%	2,506	13.8%	25,945	5.4%	881
Over 1,800	15.2%	36,648	4.7%	1,735	17.1%	34,913	4.9%	2,612	18.1%	34,036	5.4%	877
Average Square Feet		1,315		1,100		1,353		1,108		1,373		1,127

4.3 Insulation Ratings and Basement Insulation Levels

Table 4.3 shows how customers rate the overall insulation levels of their dwellings. This analysis excludes apartment suites.

Of the residential basic sector, excluding apartment suites, 11.9% of customers rate their overall dwelling insulation as fair and 6.7% rate their insulation as poor. These two ratings represent 71,380 dwellings. The number of single detached dwellings rated as either fair or poor, in terms of overall insulation, is estimated to be 59,247. There are an estimated 57,713 dwellings with 30% or less basement insulation, of which 50,359 are single detached. Note the estimates of dwellings with low basement insulation levels and overall dwelling ratings of fair or poor do not equal since some customers may have given a higher overall insulation rating despite the low basement insulation levels and vice versa.

Of the LICO-100 group, 15.3% rate their insulation as fair and 11.1% rate their insulation as poor. These two ratings represent 14,985 dwellings. The number of single detached dwellings rated as either fair or poor, in terms of overall insulation, is estimated to be 11,595. There are an estimated 14,727 dwellings with 30% or less basement insulation, of which 11,613 are single detached.

Of the LICO-125 group, 14.5% rate their insulation as fair and 9.9% rate their insulation as poor. These two ratings represent 19,993 dwellings. The number of single detached dwellings rated as either fair or poor, in terms of overall insulation, is estimated to be 15,197. There are an estimated 18,751 dwellings with 30% or less basement insulation, of which 14,893 are single detached.

The income increase of 25% introduces 5,008 housing units with a fair to poor insulation rating into the LICO definition, of which 3,602 are single-detached. The LICO (100-125) definition introduces 4,024 units with 30% or less basement insulation, of which 3,280 are single detached.

Table 4.3 % Frequency and Population Estimates of Insulation Ratings and Basement Insulation Levels across LICO versus NON-LICO Total Manitoba Hydro Residential Basic Customers - EXCLUDING APARTMENT SUITES

		Total Manitoba Hydro Residential Basic Customers											
		OVERALL		LICO-100		NON-LICO-100		LICO-125		NON-LICO-125		LICO (100-125)	
Population (N)		100.0%	383,169	14.8%	56,719	85.2%	326,450	21.4%	81,998	78.6%	301,171	6.6%	25,279
		%	(N)	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)
Overall Insulation Rating													
Excellent		11.2%	43,005	8.4%	4,754	11.7%	38,251	7.8%	6,378	12.2%	36,627	6.4%	1,624
Very Good		28.3%	108,392	22.3%	12,628	29.3%	95,764	24.6%	20,131	29.3%	88,261	29.7%	7,503
Average		41.9%	160,391	42.9%	24,352	41.7%	136,039	43.3%	35,496	41.5%	124,895	44.1%	11,144
Fair		11.9%	45,768	15.3%	8,663	11.4%	37,105	14.5%	11,854	11.3%	33,914	12.6%	3,191
Poor		6.7%	25,612	11.1%	6,322	5.9%	19,290	9.9%	8,139	5.8%	17,473	7.2%	1,817
Single Detached Rating		N=	341,265	N=	48,108	N=	293,157	N=	68,744	N=	272,521	N=	20,636
Excellent		11.5%	39,361	8.8%	4,249	12.0%	35,112	8.2%	5,607	12.4%	33,754	6.6%	1,358
Very Good		29.4%	100,221	24.0%	11,554	30.2%	88,667	26.0%	17,884	30.2%	82,337	30.7%	6,330
Average		41.6%	142,117	43.0%	20,710	41.4%	121,407	43.7%	30,056	41.1%	112,061	45.3%	9,346
Fair		11.4%	38,957	13.9%	6,709	11.0%	32,248	13.3%	9,126	10.9%	29,831	11.7%	2,417
Poor		5.9%	20,290	10.2%	4,886	5.3%	15,404	8.8%	6,071	5.2%	14,219	5.7%	1,185
% Basement Insulated													
30% or less		15.1%	57,713	26.0%	14,727	13.2%	42,986	22.9%	18,751	12.9%	38,962	15.9%	4,024
Single Detached % Basement Insulated													
30% or less		14.8%	50,359	24.1%	11,613	13.2%	38,746	21.7%	14,893	13.0%	35,466	15.9%	3,280

4.4 Dwelling Ownership by Dwelling Type

Table 4.4 shows the population estimates of dwelling ownership by dwelling type for total residential basic and natural gas LICO-100 and LICO-125 customers.

An estimated 54,328 total LICO-100 customers own their dwelling. Of those, 44,200 reside in single detached homes. An estimated 32,594 natural gas LICO-100 customers own their dwelling. Of those, 28,179 reside in single detached homes.

An estimated 20,610 total LICO-100 customers rent. Of those, 14,015 reside in apartment suites. An estimated 4,325 natural gas LICO-100 customers rent. Of those, 226 reside in apartment suites.

An estimated 78,856 total LICO-125 customers own their dwelling. Of those, 64,024 reside in single detached homes. An estimated 48,141 natural gas LICO-125 customers own their dwelling. Of those, 41,101 reside in single detached homes.

An estimated 26,928 total LICO-125 customers rent. Of those, 18,630 reside in apartment suites. An estimated 5,171 natural gas LICO-125 customers rent. Of those, 430 reside in apartment suites.

The 25% income increase from the LICO definition increases homeowners by 24,528 customers. Of those, 19,824 reside in single detached homes. An estimated 15,547 natural gas LICO (100-125) customers own their dwelling. Of those, 12,922 reside in single detached homes.

The 25% income increase from the LICO definition increases renters by 6,318 customers. Of those, 4,615 reside in apartment suites. An estimated 846 natural gas LICO (100-125) customers rent their dwelling. Of those, 437 reside in single detached homes.

Table 4.4 Weighted Population Estimates of Residential Dwelling Ownership by Dwelling Type across LICO versus NON-LICO Classifications for Total Manitoba Hydro Electric and Natural Gas Customers

Total Manitoba Hydro Residential Basic Customers			
OVERALL - POPULATION			
DWELLING TYPE	OWN	RENT	TOTAL
Single Detached	329,639	11,626	341,265
Multiplex	14,243	4,727	18,970
Rowhouse	10,020	4,327	14,347
Mobile Home	8,232	355	8,587
Apartment Suite	16,764	39,163	55,927
TOTAL	378,898	60,198	439,096

Manitoba Hydro Natural Gas Residential Customers			
OVERALL - POPULATION			
DWELLING TYPE	OWN	RENT	TOTAL
Single Detached	208,268	5,649	213,917
Multiplex	11,695	2,945	14,640
Rowhouse	6,056	1,275	7,331
Mobile Home	839	0	839
Apartment Suite	2,905	1,474	4,379
TOTAL	229,763	11,343	241,106

LICO-100 - POPULATION			
DWELLING TYPE	OWN	RENT	TOTAL
Single Detached	44,200	3,908	48,108
Multiplex	2,809	1,194	4,003
Rowhouse	1,327	1,438	2,765
Mobile Home	1,787	55	1,842
Apartment Suite	4,205	14,015	18,220
TOTAL	54,328	20,610	74,938

LICO-100 - POPULATION			
DWELLING TYPE	OWN	RENT	TOTAL
Single Detached	28,179	2,400	30,579
Multiplex	2,197	836	3,033
Rowhouse	1,095	863	1,958
Mobile Home	305	0	305
Apartment Suite	818	226	1,044
TOTAL	32,594	4,325	36,919

NON LICO-100 - POPULATION			
DWELLING TYPE	OWN	RENT	TOTAL
Single Detached	285,439	7,717	293,156
Multiplex	11,435	3,532	14,967
Rowhouse	8,693	2,888	11,581
Mobile Home	6,446	299	6,745
Apartment Suite	12,558	25,149	37,707
TOTAL	324,571	39,585	364,156

NON LICO-100 - POPULATION			
DWELLING TYPE	OWN	RENT	TOTAL
Single Detached	180,089	3,249	183,338
Multiplex	9,498	2,109	11,607
Rowhouse	4,960	412	5,372
Mobile Home	534	0	534
Apartment Suite	2,088	1,248	3,336
TOTAL	197,169	7,018	204,187

LICO-125 - POPULATION			
DWELLING TYPE	OWN	RENT	TOTAL
Single Detached	64,024	4,720	68,744
Multiplex	5,164	1,822	6,986
Rowhouse	1,735	1,654	3,389
Mobile Home	2,777	102	2,879
Apartment Suite	5,156	18,630	23,786
TOTAL	78,856	26,928	105,784

LICO-125 - POPULATION			
DWELLING TYPE	OWN	RENT	TOTAL
Single Detached	41,101	2,837	43,938
Multiplex	4,179	941	5,120
Rowhouse	1,308	963	2,271
Mobile Home	305	0	305
Apartment Suite	1,248	430	1,678
TOTAL	48,141	5,171	53,312

NON LICO-125 - POPULATION			
DWELLING TYPE	OWN	RENT	TOTAL
Single Detached	265,615	6,905	272,520
Multiplex	9,080	2,905	11,985
Rowhouse	8,285	2,673	10,958
Mobile Home	5,456	252	5,708
Apartment Suite	11,606	20,535	32,141
TOTAL	300,042	33,270	333,312

NON LICO-125 - POPULATION			
DWELLING TYPE	OWN	RENT	TOTAL
Single Detached	167,168	2,811	169,979
Multiplex	7,516	2,004	9,520
Rowhouse	4,747	313	5,060
Mobile Home	534	0	534
Apartment Suite	1,657	1,044	2,701
TOTAL	181,622	6,172	187,794

LICO (100-125) - POPULATION			
DWELLING TYPE	OWN	RENT	TOTAL
Single Detached	19,824	812	20,636
Multiplex	2,355	628	2,983
Rowhouse	408	216	624
Mobile Home	990	47	1,037
Apartment Suite	951	4,615	5,566
TOTAL	24,528	6,318	30,846

LICO (100-125) - POPULATION			
DWELLING TYPE	OWN	RENT	TOTAL
Single Detached	12,922	437	13,359
Multiplex	1,982	105	2,087
Rowhouse	213	100	313
Mobile Home	0	0	0
Apartment Suite	430	204	634
TOTAL	15,547	846	16,393

4.5 Average Annual Household Income by Dwelling Type

Table 4.5 compares the average annual household income by dwelling type between LICO and NON-LICO groups. Space heating fuel is also introduced into the analysis.

On average, NON-LICO households earn over three times the income of LICO households. The average annual household income of the LICO-100 group is \$20,318. In the NON-LICO-100 group, the average annual household income is \$73,514. For the LICO-125 group, the average annual household income increases to \$23,597 and in the NON-LICO-125 group, the average annual household income is \$77,002.

Across all NON-LICO classifications, annual household income is highest in single detached dwellings and lowest for apartment suite customers. Across the LICO classifications, household income is highest in duplex/triplexes and town/rowhouses but income tends to be more evenly distributed among housing types with the exception of apartment suites.

For the LICO-100 group, the lowest average household income of \$16,469 is associated by LICO-100 natural gas apartment suite customers. The highest average household income of \$24,701 is associated by LICO-100 natural gas duplex/triplex customers.

For the LICO-125 group, the lowest average household income of \$16,949 is associated by LICO-125 natural gas mobile home customers. The highest average household income of \$30,134 is associated by LICO-125 natural gas duplex/triplex customers.

**Table 4.5 Weighted Average Annual Household Income
by Dwelling Type across LICO versus NON-LICO Total Manitoba Hydro Residential Customers**

Total Manitoba Hydro Residential Basic Customers						
	OVERALL	LICO-100	NON-LICO-100	LICO-125	NON-LICO-125	LICO (100-125)
Overall Average Income						
Overall	\$64,136	\$20,318	\$73,514	\$23,597	\$77,002	\$31,565
Single Detached	\$68,639	\$20,784	\$76,492	\$24,081	\$79,879	\$31,768
Duplex/Triplex	\$56,972	\$23,992	\$65,792	\$28,812	\$73,386	\$35,281
Mobile Home	\$44,621	\$18,035	\$51,882	\$22,447	\$55,805	\$30,286
Town/Rowhouse	\$58,272	\$21,142	\$67,137	\$23,176	\$69,125	\$32,198
Apartment Suite	\$43,594	\$18,385	\$55,774	\$20,867	\$60,413	\$28,990
Average Annual Income Non-Electric Heat*						
Overall	\$67,606	\$21,316	\$77,473	\$24,967	\$81,671	\$33,865
Single Detached	\$72,487	\$22,106	\$80,966	\$25,859	\$84,697	\$34,378
Duplex/Triplex	\$58,678	\$23,963	\$68,121	\$29,246	\$74,809	\$37,305
Mobile Home	\$44,203	\$16,949	\$58,489	\$16,949	\$58,489	---
Town/Rowhouse	\$60,614	\$20,440	\$73,100	\$22,362	\$74,987	\$35,106
Apartment Suite	\$43,677	\$18,658	\$56,337	\$21,258	\$61,425	\$29,512
Average Annual Income Natural Gas Billed Heat**						
Overall	\$71,612	\$22,303	\$80,827	\$26,150	\$84,518	\$34,814
Single Detached	\$73,565	\$22,419	\$82,096	\$26,165	\$85,817	\$34,739
Duplex/Triplex	\$58,984	\$24,701	\$67,942	\$30,134	\$74,499	\$38,029
Mobile Home	\$45,427	\$16,949	\$61,676	\$16,949	\$61,676	---
Town/Rowhouse	\$56,303	\$20,716	\$69,276	\$22,685	\$71,393	\$35,016
Apartment Suite	\$49,073	\$16,469	\$59,275	\$19,968	\$67,164	\$25,719
Average Annual Income Electric Heat						
Overall	\$57,590	\$18,264	\$65,145	\$20,780	\$68,429	\$26,894
Single Detached	\$61,258	\$18,078	\$68,000	\$20,352	\$70,840	\$25,962
Duplex/Triplex	\$40,810	\$24,310	\$44,538	\$25,919	\$55,876	\$26,850
Mobile Home	\$44,668	\$18,251	\$51,259	\$23,098	\$55,501	\$30,286
Town/Rowhouse	\$54,685	\$23,183	\$59,179	\$25,069	\$61,171	\$29,363
Apartment Suite	\$43,445	\$17,850	\$54,803	\$20,080	\$58,731	\$27,862

* Includes natural gas and other non-electric heat customers (Standard Heat)

** Includes only natural gas customers.

5.0 Space Heating Characteristics

5.1 Annual Energy Use by Space Heating Fuel

Table 5.1 compares the average annual energy use range by dwelling type between LICO and NON-LICO groups. Space heating fuel is also introduced into the analysis.

Overall, 43.9% of all residential basic customers use 10,000 kW.h or less per year. A greater proportion of LICO households fall into this range. LICO-100 customers in the 10,000 kW.h or less range represent 63.8% compared to 39.7% of NON-LICO-100 households. LICO-125 customers in the 10,000 kW.h or less range represent 61.2% compared to 38.4% of NON-LICO-125 households. Comparing across all space heating fuel categories, LICO customers use less than their NON-LICO counterparts. This is mainly due to the tendency of LICO customers to reside in apartment suites or other multi-family dwellings compared to NON-LICO customers.

For non-electric heat customers, LICO-100 customers in the 5,000 kW.h or less range represent 39.2% compared to 16.8% of NON-LICO-100 households. LICO-125 customers in the 5,000 kW.h or less range represent 35.6% compared to 15.8% of NON-LICO-125 households.

For electric heat customers, LICO-100 customers in the over 25,000 kW.h range represent 31.6% compared to 52.6% of NON-LICO-100 households. LICO-125 customers in the over 25,000 kW.h range represent 33.3% compared to 54.0% of NON-LICO-125 households.

For natural gas users, LICO and NON-LICO customers demonstrate similar per cent distributions by cubic meter ranges. Overall, the majority of gas consumption (45.3%) falls in the 2,001 to 3,000 cubic meter range. LICO-100 customers in the 2,001 to 3,000 cubic meter range represent 44.2% compared to 45.5% of NON-LICO-100 households. LICO-125 customers in the 2,001 to 3,000 cubic meter range represent 45.7% compared to 45.2% of NON-LICO-125 households.

**Table 5.1 Weighted % Frequency and Population Estimates
Annual Energy Use by Space Heat Fuel across LICO Versus NON-LICO Total Manitoba Hydro Residential Customers**

		Total Manitoba Hydro Residential Basic Customers											
		OVERALL		LICO-100		NON-LICO-100		LICO-125		NON-LICO-125		LICO (100-125)	
Population (N)		100.0%	439,096	17.1%	74,938	82.9%	364,158	24.1%	105,784	75.9%	333,312	7.0%	30,846
		%	(N)	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)
Annual kWh													
Overall													
5,000 or less		15.0%	65,774	29.3%	21,925	12.0%	43,849	26.6%	28,141	11.3%	37,633	20.2%	6,216
5,001 to 10,000		28.9%	126,717	34.5%	25,828	27.7%	100,889	34.6%	36,552	27.1%	90,165	34.8%	10,724
10,001 to 15,000		18.4%	80,707	12.1%	9,090	19.7%	71,617	12.6%	13,369	20.2%	67,338	13.9%	4,279
15,001 to 20,000		10.7%	46,847	7.4%	5,574	11.3%	41,273	7.8%	8,262	11.6%	38,585	8.7%	2,688
20,001 to 25,000		7.7%	33,732	6.0%	4,497	8.0%	29,235	6.8%	7,180	8.0%	26,552	8.7%	2,683
Over 25,000		19.4%	85,319	10.7%	8,024	21.2%	77,295	11.6%	12,280	21.9%	73,039	13.8%	4,256
Annual kWh													
Non-Electric Heat*													
		N= 286,999		N= 50,428		N= 236,301		N= 71,187		N= 215,812		N= 20,759	
5,000 or less		20.8%	59,560	39.2%	19,782	16.8%	39,778	35.6%	25,369	15.8%	34,191	26.9%	5,587
5,001 to 10,000		39.4%	113,210	42.6%	21,463	38.8%	91,747	43.7%	31,100	38.0%	82,110	46.4%	9,637
10,001 to 15,000		23.5%	67,312	13.1%	6,600	25.7%	60,712	14.0%	9,982	26.6%	57,330	16.3%	3,382
15,001 to 20,000		9.6%	27,676	3.7%	1,843	10.9%	25,833	4.7%	3,346	11.3%	24,330	7.2%	1,503
20,001 to 25,000		3.1%	8,882	0.9%	464	3.6%	8,418	0.9%	615	3.8%	8,267	0.7%	151
Over 25,000		3.6%	10,359	0.5%	276	4.3%	10,083	1.1%	776	4.4%	9,583	2.4%	500
Annual kWh													
Electric Heat													
		N= 152,097		N= 24,510		N= 127,857		N= 34,597		N= 117,500		N= 10,087	
5,000 or less		4.1%	6,214	8.7%	2,143	3.2%	4,071	8.0%	2,772	2.9%	3,442	6.2%	629
5,001 to 10,000		8.9%	13,507	17.8%	4,365	7.2%	9,142	15.8%	5,452	6.9%	8,055	10.8%	1,087
10,001 to 15,000		8.8%	13,395	10.2%	2,490	8.5%	10,905	9.8%	3,387	8.5%	10,008	8.9%	897
15,001 to 20,000		12.6%	19,171	15.2%	3,731	12.1%	15,440	14.2%	4,916	12.1%	14,255	11.7%	1,185
20,001 to 25,000		16.3%	24,850	16.5%	4,033	16.3%	20,817	19.0%	6,565	15.6%	18,285	25.1%	2,532
Over 25,000		49.3%	74,960	31.6%	7,748	52.6%	67,212	33.3%	11,504	54.0%	63,456	37.2%	3,756
Annual m³													
Natural Gas													
		N= 241,106		N= 36,919		N= 204,187		N= 53,312		N= 187,794		N= 16,393	
1,000 or less		2.7%	6,570	3.6%	1,328	2.6%	5,242	3.7%	1,963	2.5%	4,607	3.9%	635
1,001 to 2,000		24.5%	59,119	25.6%	9,452	24.3%	49,667	25.1%	13,355	24.4%	45,764	23.8%	3,903
2,001 to 3,000		45.3%	109,248	44.2%	16,334	45.5%	92,914	45.7%	24,342	45.2%	84,906	48.9%	8,008
3,001 to 4,000		19.2%	46,300	19.9%	7,337	19.1%	38,963	19.8%	10,563	19.0%	35,737	19.7%	3,226
Over 4,000		8.2%	19,869	6.7%	2,468	8.5%	17,401	5.8%	3,089	8.9%	16,780	3.8%	621

* Includes natural gas and other non-electric heat customers (Standard Heat)

5.2 Space Heating Fuel by Dwelling Type

Table 5.2 compares space heating fuel saturation by dwelling type between LICO and NON-LICO groups.

Overall, 34.6% of Manitoba Hydro residential customers heat with electricity, 54.9% heat with natural gas and are directly billed for gas use by Manitoba Hydro, 7.4% heat with natural gas but are not directly billed for gas use by Manitoba Hydro, and 3.1% heat with other fuels such as propane, wood, oil, coal or solar. The only appreciable difference of space heat fuel across LICO groups is that LICO-100 (15.0%) and LICO-125 (13.9%) have greater proportions of customers in the natural gas no bill category compared to NON-LICO-100 (5.8%) and NON-LICO-125 (5.3%) customers.

LICO-100 is 32.7% all-electric and NON-LICO-100 is 35.0% all-electric. One quarter of LICO-100 electric heat customers are apartment dwellers compared to 10.8% of NON-LICO-100 electric heat customers. LICO-125 is 32.7% all-electric and NON-LICO-125 is 35.3% all-electric. Almost 23% of LICO-125 electric heat customers are apartment dwellers compared to 11.8% of NON-LICO-125 electric heat customers.

LICO-100 is 49.3% natural gas billed heat and NON-LICO-100 is 56.1% natural gas billed heat. Across all income classes, the greater majority of natural gas billed customers occupy single detached dwellings. Almost 83% of LICO-100 natural gas billed heat customers live in single detached dwellings compared to 89.8% of NON-LICO-100 natural gas billed customers. LICO-125 is 50.4% natural gas billed heat and NON-LICO-125 is 56.3% natural gas billed. There are 82.4% of LICO-125 natural gas billed customers residing in single detached dwellings compared to 90.5% of NON-LICO-125 natural gas billed heat customers.

It should be noted that there are 32,495 customers (Natural Gas - No Bill) that indicate they use natural gas for heat but they do not receive a natural gas bill from Manitoba Hydro. Almost all these customers reside in multi-family dwellings, such as apartment suites (94.5%), where natural gas heat is provided from a central or shared source. The cost of heating is usually incorporated into rent or into a monthly common service fee. These 32,495 customers are not included in the 241,106 natural gas customer count but they are included in the 439,096 total residential basic total.

The 13,398 customers classed as “other” include those that use sources other than electricity or natural gas for heat. These sources included propane, wood, oil, coal or solar.

Table 5.2 Weighted % Frequency and Population Estimates

Space Heating Fuel by Dwelling Type across LICO versus NON-LICO Manitoba Hydro Residential Customers

Total Manitoba Hydro Residential Basic Customers												
	OVERALL		LICO-100		NON-LICO-100		LICO-125		NON-LICO-125		LICO (100-125)	
Population (N)	100.0%	439,096	17.1%	74,938	82.9%	364,158	24.1%	105,784	75.9%	333,312	7.0%	30,846
	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)
Heating Fuel												
Electric	34.6%	152,097	32.7%	24,510	35.0%	127,587	32.7%	34,597	35.3%	117,500	32.7%	10,087
Single Detached	76.9%	116,945	64.4%	15,793	79.3%	101,152	64.2%	22,194	86.1%	101,152	63.5%	6,401
Duplex/Triplex	1.2%	1,812	1.4%	334	1.2%	1,478	2.6%	911	1.3%	1,478	5.7%	577
Mobile Home	5.1%	7,701	6.3%	1,538	4.8%	6,164	7.4%	2,574	5.2%	6,164	10.3%	1,036
Town/Rowhouse	3.7%	5,668	2.9%	707	3.9%	4,960	2.9%	1,018	4.2%	4,960	3.1%	311
Apartment Suite	13.1%	19,971	25.0%	6,138	10.8%	13,833	22.8%	7,899	11.8%	13,833	17.5%	1,761
Natural Gas - Billed*	54.9%	241,106	49.3%	36,919	56.1%	204,187	50.4%	53,312	56.3%	187,794	53.1%	16,393
Single Detached	88.7%	213,917	82.8%	30,579	89.8%	183,338	82.4%	43,938	90.5%	169,979	81.5%	13,359
Duplex/Triplex	6.1%	14,640	8.2%	3,033	5.7%	11,607	9.6%	5,120	5.1%	9,520	12.7%	2,087
Mobile Home	0.3%	839	5.3%	1,958	0.3%	534	4.3%	2,271	0.3%	534	1.9%	313
Town/Rowhouse	3.0%	7,331	0.8%	305	2.6%	5,372	0.6%	305	2.7%	5,060	0.0%	0
Apartment Suite	1.8%	4,379	2.8%	1,044	1.6%	3,336	3.1%	1,678	1.4%	2,701	3.9%	634
Natural Gas - No Bill**	7.4%	32,495	15.0%	11,252	5.8%	21,243	13.9%	14,722	5.3%	17,774	11.2%	3,470
Single Detached	0.5%	170	0.0%	0	0.8%	170	0.6%	85	0.5%	85	2.4%	85
Duplex/Triplex	4.9%	1,601	1.9%	214	6.5%	1,388	2.9%	428	6.6%	1,174	6.2%	214
Mobile Home	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Town/Rowhouse	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Apartment Suite	94.5%	30,724	98.1%	11,038	92.7%	19,685	96.5%	14,209	92.9%	16,515	91.4%	3,171
Other	3.1%	13,398	3.0%	2,257	3.1%	11,141	3.0%	3,154	3.1%	10,244	2.9%	897
Single Detached	76.4%	10,233	76.9%	1,736	76.3%	8,497	80.1%	2,527	75.2%	7,705	88.2%	791
Duplex/Triplex	6.8%	917	18.7%	422	4.4%	494	16.7%	527	3.8%	389	11.7%	105
Mobile Home	0.4%	47	0.0%	0	0.4%	47	0.0%	0	0.5%	47	0.0%	0
Town/Rowhouse	10.1%	1,348	4.4%	99	11.2%	1,249	3.1%	99	12.2%	1,249	0.0%	0
Apartment Suite	6.4%	853	0.0%	0	7.7%	853	0.0%	0	8.3%	853	0.0%	0

* Includes only natural gas customers billed directly by Manitoba Hydro for their natural gas use.

** Includes natural gas users who are not billed directly by Manitoba Hydro for their natural gas use.

5.3 Average Annual Energy Use by People Per Household

Table 5.3 compares the average annual energy use by people per household between LICO and NON-LICO groups. Space heating fuel is also introduced into the analysis.

In general, LICO households use about 30% less electric energy (kW.h) on an annual basis compared to NON-LICO households. Across all LICO classifications, annual energy use increases as people per household increases. Across all LICO classifications, annual kW.h use is higher for households using electricity for space heat compared to households using non-electric fuels for space heat. LICO households use about 4% less cubic meters of natural gas, on an annual basis, than do NON-LICO households. Across all LICO classifications, annual natural gas use steadily increases as people per household increases.

On average, the LICO-100 customers consume 11,258 kW.h annually and the NON-LICO-100 group consumes 16,445 kW.h. The average annual consumption of the LICO-125 group increases to 11,785 kW.h. In the NON-LICO-125 group, the average annual consumption is 16,757 kW.h.

In the LICO-100 group, the lowest average consumption of 5,170 kW.h is by LICO-100 single person households residing in non-electrically (standard) heated dwellings. The highest average consumption of 29,645 kW.h is in LICO-100 households with 5 or more persons residing in electrically heated dwellings.

In the LICO-125 group, the lowest average consumption of 5,120 kW.h is by LICO-125 single person households residing in non-electrically (standard) heated dwellings. The highest average consumption of 29,347 kW.h is in LICO-125 households with 5 or more persons residing in electrically heated dwellings.

**Table 5.3 Weighted Average Annual Energy Use by Space Heat Fuel
by People Per Household across LICO versus NON-LICO Total Manitoba Hydro Residential Customers**

	Total Manitoba Hydro Residential Basic Customers					
	OVERALL	LICO-100	NON-LICO-100	LICO-125	NON-LICO-125	LICO (100-125)
<u>Overall Average kW.h</u>						
Overall	15,559	11,258	16,445	11,785	16,757	13,066
One Person	10,126	9,676	10,372	9,281	10,736	7,136
Two Person	15,984	11,340	16,535	12,818	16,705	14,793
Three Person	16,709	11,307	17,420	12,116	17,828	13,297
Four Person	19,592	13,928	20,287	14,478	20,467	16,109
Five or More	22,591	19,328	23,297	18,346	23,996	15,876
<u>Average Annual kW.h Non-Electric Heat*</u>						
Overall	10,096	6,782	10,803	7,250	11,035	8,779
One Person	5,690	5,170	5,963	5,120	6,097	4,881
Two Person	9,813	7,273	10,165	7,869	10,298	8,799
Three Person	11,863	7,467	12,489	8,230	12,821	9,362
Four Person	14,099	9,406	14,720	10,098	14,837	12,176
Five or More	16,049	11,847	16,844	11,662	17,424	11,293
<u>Average Annual kW.h Electric Heat</u>						
Overall	25,868	20,466	26,906	21,116	27,267	22,697
One Person	18,277	17,321	18,844	16,786	19,376	12,939
Two Person	26,214	21,618	26,613	22,951	26,843	24,253
Three Person	29,451	24,613	29,956	25,215	30,273	26,051
Four Person	32,876	27,980	33,366	27,919	33,569	27,745
Five or More	34,670	29,645	36,030	29,347	36,615	28,187
<u>Average Annual Cubic Meters Natural Gas</u>						
Overall	2,615	2,514	2,633	2,499	2,648	2,465
One Person	2,409	2,439	2,393	2,356	2,445	1,985
Two Person	2,591	2,485	2,605	2,499	2,612	2,518
Three Person	2,660	2,646	2,661	2,598	2,672	2,546
Four Person	2,746	2,576	2,769	2,613	2,769	2,755
Five or More	2,937	2,804	2,963	2,860	2,962	2,972

* Includes natural gas and other non-electric heating fuel customers (Standard Heat).

5.4 Average Annual Energy Use by Dwelling Type

Table 5.4 compares the average annual energy use by dwelling type between LICO and NON-LICO groups. Space heating fuel is also introduced into the analysis.

Across all LICO classifications and dwellings types, annual kW.h use is higher for dwellings using electricity for space heat compared to households using non-electric fuels for space heat. Average annual energy use is highest in single detached homes and lowest in apartment suites. This observation holds true across all LICO classifications.

In the LICO-100 group, the lowest average consumption of 3,746 kW.h is by LICO-100 apartment suite customers residing in non-electrically (standard) heated dwellings. The highest average consumption of 25,359 kW.h is by LICO-100 customers residing in electrically heated single detached dwellings.

In the LICO-125 group, the lowest average consumption of 4,653 kW.h is by LICO-125 apartment suite customers residing in non-electrically (standard) heated dwellings. The highest average consumption of 25,816 kW.h is by LICO-100 customers residing in electrically heated single detached dwellings.

**Table 5.4 Weighted Average Annual Energy Use
by Space Heat Fuel by Dwelling Type across LICO versus NON-LICO Manitoba Hydro Residential Customers**

Total Manitoba Hydro Residential Basic Customers						
	OVERALL	LICO-100	NON-LICO-100	LICO-125	NON-LICO-125	LICO (100-125)
<u>Average Annual kW.h</u>						
<u>Total Overall</u>						
Overall	15,559	11,258	16,445	11,785	16,757	13,066
Single Detached	17,438	13,617	18,065	14,069	18,287	15,123
Duplex/Triplex	9,786	8,268	10,192	9,295	10,072	10,672
Mobile Home	23,602	20,088	24,562	21,736	24,543	24,666
Town/Rowhouse	11,138	9,350	11,565	9,305	11,705	9,102
Apartment Suite	5,956	5,083	6,378	5,065	6,616	5,005
<u>Average Annual kW.h</u>						
<u>Non-Electric Heat*</u>						
Overall	10,096	6,782	10,803	7,250	11,035	8,387
Single Detached	11,247	7,878	11,813	8,159	11,707	9,808
Duplex/Triplex	8,617	7,132	9,021	7,224	9,682	8,106
Mobile Home	12,083	9,202	13,593	9,202	13,944	----
Town/Rowhouse	7,333	6,425	7,615	6,310	7,855	6,275
Apartment Suite	4,244	3,746	4,496	4,653	5,699	3,421
<u>Average Annual kW.h</u>						
<u>Electric Heat</u>						
Overall	25,868	20,466	26,906	21,116	27,267	22,697
Single Detached	29,313	25,359	29,931	25,816	30,132	26,944
Duplex/Triplex	20,855	20,750	20,879	21,139	20,569	21,364
Mobile Home	24,927	22,245	25,596	23,220	25,784	24,666
Town/Rowhouse	16,965	17,858	16,838	16,054	17,165	11,946
Apartment Suite	9,039	7,715	9,626	7,874	9,800	8,430
<u>Average Annual</u>						
<u>Cubic Meters Natural Gas</u>						
Overall	2,615	2,514	2,633	2,499	2,648	2,465
Single Detached	2,700	2,640	2,710	2,621	2,720	2,578
Duplex/Triplex	2,289	2,291	2,289	2,314	2,276	2,348
Mobile Home	2,301	1,944	1,874	1,944	2,505	----
Town/Rowhouse	1,902	1,977	2,504	1,996	1,859	2,115
Apartment Suite	814	672	859	657	912	633

* Includes natural gas and other non-electric heating fuel customers (Standard Heat).

5.5 Space Heating Systems: Total Residential Basic

Table 5.5 shows the space heating systems of residential basic electric customers within the Manitoba Hydro provincial service territory for all LICO and NON-LICO classifications.

In terms of total space heating systems, 21.0% of LICO-100 and 21.7% of LICO-125 natural gas customers use standard efficiency natural gas furnaces compared to 16.6% of NON-LICO-100 and 16.0% of NON-LICO-125 customers.

LICO customers tend to have older space heating systems. Space heating systems that are older than 25 years are in 39.9% or 29,911 of LICO-100 occupied dwellings compared to 24.5% or 89,057 of NON-LICO-100 occupied dwellings. Space heating systems that are older than 25 years are in 38.2% or 40,458 of LICO-125 occupied dwellings compared to 23.6% or 78,510 of NON-LICO-125 occupied dwellings. The 25% income increase from the LICO definition increases the number of older heating systems by 10,547. This analysis has not filtered out apartment dwellers.

**Table 5.5 Weighted % Frequency and Population Estimates
Space Heating System Characteristics across LICO versus NON-LICO Total Manitoba Hydro Residential Basic Customers**

Total Manitoba Hydro Residential Basic Customers												
	OVERALL		LICO-100		NON-LICO-100		LICO-125		NON-LICO-125		LICO (100-125)	
Population (N)	100.0%	439,096	17.1%	74,938	82.9%	364,158	24.1%	105,784	75.9%	333,312	7.0%	30,846
	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)
<u>Space Heating System*</u>												
Hi-Efficiency Gas	19.2%	84,172	14.2%	10,637	20.2%	73,535	14.8%	15,607	20.6%	68,565	16.1%	4,970
Mid-Efficiency Gas	16.6%	72,858	13.6%	10,204	17.2%	62,654	13.7%	14,449	17.5%	58,409	13.8%	4,245
Standard-Efficiency Gas	17.3%	76,155	21.0%	15,715	16.6%	60,440	21.7%	22,967	16.0%	53,188	23.5%	7,252
Boilers	6.3%	27,783	7.1%	5,344	6.2%	22,439	7.1%	7,534	6.1%	20,249	7.1%	2,190
Electric Furnace	16.9%	74,401	10.7%	8,030	18.2%	66,371	12.0%	12,664	18.5%	61,737	15.0%	4,634
Electric Baseboard	14.0%	61,459	20.4%	15,266	12.7%	46,193	19.1%	20,192	12.4%	41,267	16.0%	4,926
Heat Pump	1.3%	5,899	0.1%	78	1.6%	5,821	0.2%	233	1.7%	5,666	0.5%	155
Other	8.3%	36,369	12.9%	9,665	7.3%	26,704	11.5%	12,138	7.3%	24,231	8.0%	2,473
<u>% Older Than 25 Years</u>	27.1%	118,968	39.9%	29,911	24.5%	89,057	38.2%	40,458	23.6%	78,510	34.2%	10,547
<u>Heating System Avg. Age</u>												
Hi-Efficiency Gas		6.0		7.5		5.7		7.6		5.6		8.0
Mid-Efficiency Gas		11.2		10.7		11.3		10.8		11.3		10.9
Standard-Efficiency Gas		28.8		34.0		27.5		32.3		27.3		28.7
Boilers		33.9		56.3		28.5		49.9		27.9		34.5
Electric Furnace		17.8		17.5		17.8		18.5		17.6		20.3
Electric Baseboard		25.9		30.1		24.5		29.3		24.2		26.9
Heat Pump		6.6		5.0		6.6		4.0		6.7		3.5
Other		34.6		42.0		31.9		38.7		32.5		26.0

* Includes Electric Heat, Natural Gas Billed, Natural Gas No Bill, and Other Heat Customers

5.6 Space Heating Systems: Natural Gas Customers

Table 5.6 shows the space heating systems of natural gas customers within the Manitoba Hydro provincial service territory for all LICO and NON-LICO classifications.

In terms of total space heating systems, 42% of LICO-100 and 42.3% of LICO-125 natural gas customers use standard efficiency natural gas furnaces compared to 29.4% of NON-LICO-100 and 28.2% of NON-LICO-125 customers.

LICO customers tend to have older space heating systems. Natural gas space heating systems that are older than 25 years are in 28.0% or 10,332 of natural gas LICO-100 occupied dwellings compared to 15.7% or 32,123 of NON-LICO-100 occupied dwellings. Natural gas space heating systems that are older than 25 years are in 26.3% or 14,003 of LICO-125 occupied dwellings compared to 15.2% or 28,452 of NON-LICO-125 occupied dwellings. The 25% income increase from the LICO definition increases older natural gas heating systems by 3,671.

**Table 5.6 Weighted % Frequency and Population Estimates
Space Heating System Characteristics across LICO versus NON-LICO Manitoba Hydro Residential Natural Gas Customers**

Manitoba Hydro Natural Gas Residential Customers												
	OVERALL		LICO-100		NON-LICO-100		LICO-125		NON-LICO-125		LICO (100-125)	
Population (N)	100.0%	241,106	15.3%	36,919	84.7%	204,187	22.1%	53,312	77.9%	187,794	6.8%	16,393
	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)
<u>Space Heating System*</u>												
Hi-Efficiency Gas	34.8%	83,833	28.1%	10,383	36.0%	73,450	28.8%	15,354	36.5%	68,479	30.3%	4,971
Mid-Efficiency Gas	29.8%	71,799	26.5%	9,786	30.4%	62,013	26.3%	14,031	30.8%	57,768	25.9%	4,245
Standard-Efficiency Gas	31.3%	75,520	42.0%	15,510	29.4%	60,010	42.3%	22,536	28.2%	52,984	42.9%	7,026
Boilers	4.1%	9,954	3.4%	1,240	4.3%	8,714	2.6%	1,391	4.6%	8,563	0.9%	151
Electric Furnace	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Electric Baseboard	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Heat Pump	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Other	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
<u>% Older Than 25 Years</u>	17.6%	42,455	28.0%	10,332	15.7%	32,123	26.3%	14,003	15.2%	28,452	22.4%	3,671
<u>Heating System Avg. Age</u>												
Hi-Efficiency Gas		6.2		7.6		5.7		8.1		5.7		8.0
Mid-Efficiency Gas		11.2		10.9		11.3		10.9		11.3		10.9
Standard-Efficiency Gas		29.1		34.2		27.3		32.6		27.7		28.1
Boilers		25.6		35.2		25.0		32.5		24.5		27.7
Electric Furnace		n/a		n/a		n/a		n/a		n/a		n/a
Electric Baseboard		n/a		n/a		n/a		n/a		n/a		n/a
Heat Pump		n/a		n/a		n/a		n/a		n/a		n/a
Other		n/a		n/a		n/a		n/a		n/a		n/a

* Includes only Natural Gas Billed Customers

5.7 Space Heating Systems by Dwelling Type

Table 5.7 shows the population estimates of space heating systems by dwelling type for total residential basic, natural gas, LICO-100 and LICO-125 customers.

There are differences between the estimated numbers of natural gas furnaces in the total Manitoba Hydro residential basic population versus the numbers in the Manitoba Hydro natural gas residential population. For example, there are an estimated 76,155 Manitoba Hydro residential basic customers who heat their home with a natural gas standard efficiency furnace. There are, however, an estimated 75,520 Manitoba Hydro natural gas customers who heat their home with a natural gas standard efficiency furnace. The reason for the discrepancy is the natural gas-no bill customer. As previously noted in Section 5.2, there are 32,495 customers (Natural Gas - No Bill) that indicate they use natural gas for heat but they do not receive a natural gas bill from Manitoba Hydro. Almost all these customers reside in multi-family dwellings, such as apartment suites (94.5%), where natural gas heat is provided from a central or shared source. The cost of heating is usually incorporated into rent or into a monthly common service fee. These 32,495 customers are not included in the 241,106 natural gas customer count but they are included in the 439,096 total residential basic total. For this reason, it is best to use the numbers for natural gas customers who receive a bill to estimate the number of natural gas heating systems. This avoids any multiple counts.

In total, an estimated 75,520 residential natural gas customers use standard efficient gas furnaces, 71,799 use mid-efficient gas furnaces, and 83,833 use high-efficiency gas furnaces.

An estimated 15,510 LICO-100 natural gas customers use standard efficient gas furnaces, 9,785 use mid-efficient furnaces, and 10,384 use high-efficiency gas furnaces.

An estimated 22,536 LICO-125 natural gas customers use standard efficient gas furnaces, 14,031 use mid-efficient furnaces, and 15,354 use high-efficiency gas furnaces.

The 25% income increase into the LICO definition increases standard efficient furnaces by 7,026, mid-efficient furnaces by 4,246 high-efficiency gas furnaces by 4,970.

**Table 5.7 Weighted Population Estimates of Space Heating Systems (All Fuels)
by Dwelling Type across LICO versus NON-LICO Total Manitoba Hydro Residential Electric and Natural Gas Customers**

Total Manitoba Hydro Residential Basic Customers								
OVERALL - POPULATION								
DWELLING TYPE	GAS-HI	GAS-MID	GAS-STD	ELEC -CFA	BASEBOARD	BOILERS	HEAT PUMP	OTHER
Single Detached	76,810	64,161	63,395	62,733	38,364	14,852	5,761	15,189
Multiplex	4,289	3,974	6,913	1,077	735	1,042	0	940
Rowhouse	2,281	2,323	2,727	806	4,862	114	0	1,234
Mobile Home	129	291	419	6,424	1,025	58	139	102
Apartment Suite	662	2,109	2,701	3,360	16,474	11,717	0	18,904
TOTAL	84,171	72,858	76,155	74,400	61,460	27,783	5,900	36,369

Manitoba Hydro Natural Gas Residential Customers				
OVERALL - POPULATION				
DWELLING TYPE	GAS-HI	GAS-MID	GAS-STD	BOILERS
Single Detached	76,725	64,161	63,395	9,635
Multiplex	4,289	3,119	6,913	319
Rowhouse	2,281	2,323	2,727	0
Mobile Home	129	291	419	0
Apartment Suite	409	1,905	2,066	0
TOTAL	83,833	71,799	75,520	9,954

LICO-100 - POPULATION								
DWELLING TYPE	GAS-HI	GAS-MID	GAS-STD	ELEC -CFA	BASEBOARD	BOILERS	HEAT PUMP	OTHER
Single Detached	8,957	8,580	11,802	6,339	8,298	1,888	79	2,165
Multiplex	734	939	1,574	80	253	0	0	422
Rowhouse	441	228	1,289	116	592	0	0	99
Mobile Home	48	47	210	1,204	276	58	0	0
Apartment Suite	457	409	840	291	5,847	3,398	0	6,978
TOTAL	10,637	10,203	15,715	8,030	15,266	5,344	79	9,664

LICO-100 - POPULATION				
DWELLING TYPE	GAS-HI	GAS-MID	GAS-STD	BOILERS
Single Detached	8,957	8,580	11,802	1,240
Multiplex	734	725	1,574	0
Rowhouse	441	228	1,289	0
Mobile Home	48	47	210	0
Apartment Suite	204	205	635	0
TOTAL	10,384	9,785	15,510	1,240

NONLICO-100 - POPULATION								
DWELLING TYPE	GAS-HI	GAS-MID	GAS-STD	ELEC -CFA	BASEBOARD	BOILERS	HEAT PUMP	OTHER
Single Detached	67,853	55,581	51,593	56,394	30,066	12,964	5,682	13,024
Multiplex	3,555	3,035	5,339	997	482	1,042	0	518
Rowhouse	1,840	2,095	1,438	690	4,270	114	0	1,135
Mobile Home	81	244	209	5,220	749	0	139	102
Apartment Suite	205	1,700	1,861	3,069	10,627	8,319	0	11,926
TOTAL	73,534	62,655	60,440	66,370	46,194	22,439	5,821	26,705

NONLICO-100 - POPULATION				
DWELLING TYPE	GAS-HI	GAS-MID	GAS-STD	BOILERS
Single Detached	67,768	55,581	51,593	8,395
Multiplex	3,555	2,394	5,339	319
Rowhouse	1,840	2,095	1,438	0
Mobile Home	81	244	209	0
Apartment Suite	205	1,700	1,431	0
TOTAL	73,449	62,014	60,010	8,714

LICO-125 - POPULATION								
DWELLING TYPE	GAS-HI	GAS-MID	GAS-STD	ELEC -CFA	BASEBOARD	BOILERS	HEAT PUMP	OTHER
Single Detached	13,303	12,193	17,051	9,520	11,046	2,195	233	3,204
Multiplex	1,357	1,043	2,933	577	334	214	0	527
Rowhouse	441	327	1,503	116	903	0	0	99
Mobile Home	48	47	210	2,015	446	58	0	55
Apartment Suite	458	839	1,270	436	7,462	5,068	0	8,253
TOTAL	15,607	14,449	22,967	12,664	20,191	7,535	233	12,138

LICO-125 - POPULATION				
DWELLING TYPE	GAS-HI	GAS-MID	GAS-STD	BOILERS
Single Detached	13,303	12,193	17,051	1,391
Multiplex	1,358	829	2,933	0
Rowhouse	441	327	1,503	0
Mobile Home	48	47	210	0
Apartment Suite	204	635	839	0
TOTAL	15,354	14,031	22,536	1,391

NONLICO-125 - POPULATION								
DWELLING TYPE	GAS-HI	GAS-MID	GAS-STD	ELEC -CFA	BASEBOARD	BOILERS	HEAT PUMP	OTHER
Single Detached	63,507	51,968	46,344	53,213	27,318	12,657	5,528	11,985
Multiplex	2,932	2,931	3,980	500	401	828	0	413
Rowhouse	1,840	1,996	1,224	690	3,959	114	0	1,135
Mobile Home	81	244	209	4,409	579	0	139	47
Apartment Suite	204	1,270	1,431	2,924	9,012	6,649	0	10,651
TOTAL	68,564	58,409	53,188	61,736	41,269	20,248	5,667	24,231

NONLICO-125 - POPULATION				
DWELLING TYPE	GAS-HI	GAS-MID	GAS-STD	BOILERS
Single Detached	63,422	51,968	46,344	8,244
Multiplex	2,931	2,290	3,980	319
Rowhouse	1,840	1,996	1,224	0
Mobile Home	81	244	209	0
Apartment Suite	205	1,270	1,227	0
TOTAL	68,479	57,768	52,984	8,563

LICO (100-125) - POPULATION								
DWELLING TYPE	GAS-HI	GAS-MID	GAS-STD	ELEC -CFA	BASEBOARD	BOILERS	HEAT PUMP	OTHER
Single Detached	4,346	3,613	5,249	3,181	2,748	307	154	1,039
Multiplex	623	104	1,359	497	81	214	0	105
Rowhouse	0	99	214	0	311	0	0	0
Mobile Home	0	0	0	811	170	0	0	55
Apartment Suite	1	430	430	145	1,615	1,670	0	1,275
TOTAL	4,970	4,246	7,252	4,634	4,925	2,191	154	2,474

LICO (100-125) - POPULATION				
DWELLING TYPE	GAS-HI	GAS-MID	GAS-STD	BOILERS
Single Detached	4,346	3,613	5,249	151
Multiplex	624	104	1,359	0
Rowhouse	0	99	214	0
Mobile Home	0	0	0	0
Apartment Suite	0	430	204	0
TOTAL	4,970	4,246	7,026	151

6.0 Energy Burden

6.1 Energy Burden Range by Space Heat Fuel

Table 6.1 shows the energy burden ranges of residential basic and natural gas customers within the Manitoba Hydro provincial service territory for both LICO and NON-LICO classifications.

Energy burden is defined as the per cent of energy costs, all applicable taxes included, over the total annual household income. Overall, 47.5% of Manitoba Hydro residential basic customers spend 3.0% or less of their total household income on energy costs. In the LICO-100 group, 18.7% spend 3.0% or less compared to 53.4% of the NON-LICO-100 group. 64.6% of the LICO-100 group spends over 6.0% percent on energy costs compared to 10.1% of the NON-LICO-100 group. In the LICO-125 group, 19.3% spend 3.0% or less compared to 56.4% of the NON-LICO-125 group. 58.1% of the LICO-125 group spends over 6.0% on energy costs compared to 7.1% of the NON-LICO-125 group.

Analyzing by space heating fuel, natural gas billed LICO customers have a higher energy burden compared to electric heat LICO customers. This is due to vast majority of natural gas customers residing in single detached homes, which have higher energy use, as opposed to the all-electric LICO customer group which has a higher proportion residing in apartment suites. For the natural gas billed LICO-100 group, 1.1% spends 3.0% or less on energy costs compared to 50.3% of the natural gas NON-LICO-100 group. 84.4% of the natural gas LICO-100 group spends over 6.0% on energy costs compared to 8.6% of the natural gas NON-LICO-100 group. For the natural gas LICO-125 group, 1.7% spend 3.0% or less compared to 54.4% of the NON-LICO-125 group. 72.3% of the natural gas LICO-125 group spends over 6.0% on energy costs compared to 5.2% of the natural gas NON-LICO-125 group.

In the electric heat LICO-100 group, 13.4% spend 3.0% or less compared on energy costs compared to 49.3% of the electric heat NON-LICO-100 group. 65.7% of the electric heat LICO-100 group spends over 6.0% on energy costs compared to 14.3% of the electric heat NON-LICO-100 group. In the electric heat LICO-125 group, 15.9% spend 3.0% or less compared to 51.7% of the electric heat NON-LICO-125 group. 62.1% of the electric heat LICO-125 group spends over 6.0% percent on energy costs compared to 10.9% of the electric heat NON-LICO-125 group.

**Table 6.1 % Frequency and Population Estimates
Energy Burden Range by Space Heating Fuel across LICO versus NON-LICO Total Manitoba Hydro Residential Customers**

Total Manitoba Hydro Residential Basic Customers												
	OVERALL		LICO-100		NON-LICO-100		LICO-125		NON-LICO-125		LICO (100-125)	
Population (N)	100.0%	439,096	17.1%	74,938	82.9%	364,158	24.1%	105,784	75.9%	333,312	7.0%	30,846
	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)
Overall												
3.00% or Less	47.5%	208,458	18.7%	13,979	53.4%	194,479	19.3%	20,380	56.4%	188,078	20.8%	6,401
3.01% to 6.00%	33.2%	145,742	16.7%	12,505	36.6%	133,237	22.6%	23,861	36.6%	121,881	36.8%	11,356
6.01% to 9.00%	10.7%	47,178	25.0%	18,766	7.8%	28,412	27.9%	29,563	5.3%	17,615	35.0%	10,797
9.01% to 12.00%	4.8%	21,139	20.6%	15,440	1.6%	5,699	16.0%	16,930	1.3%	4,209	4.8%	1,490
12.01% to 15.00%	2.4%	10,634	12.4%	9,313	0.4%	1,321	9.1%	9,635	0.3%	999	1.0%	322
Over 15.00%	1.4%	5,945	6.6%	4,935	0.3%	1,010	5.1%	5,415	0.2%	530	1.6%	480
Non-Electric Heat*	N=	286,999	N=	50,428	N=	236,571	N=	71,187	N=	215,812	N=	20,759
3.00% or Less	49.6%	142,237	21.2%	10,706	55.6%	131,531	20.9%	14,871	59.0%	127,366	20.1%	4,165
3.01% to 6.00%	32.8%	94,131	14.6%	7,370	36.7%	86,761	22.8%	16,242	36.1%	77,889	42.7%	8,872
6.01% to 9.00%	10.1%	28,950	26.1%	13,154	6.7%	15,796	28.2%	20,089	4.1%	8,861	33.4%	6,935
9.01% to 12.00%	4.3%	12,337	20.6%	10,385	0.8%	1,952	15.5%	11,002	0.6%	1,335	3.0%	617
12.01% to 15.00%	2.1%	6,156	11.5%	5,795	0.2%	361	8.3%	5,880	0.1%	276	0.4%	85
Over 15.00%	1.1%	3,188	6.0%	3,018	0.1%	170	4.4%	3,103	0.0%	85	0.4%	85
Natural Gas Billed**	N=	241,106	N=	36,919	N=	204,187	N=	53,312	N=	187,794	N=	16,393
3.00% or Less	42.7%	103,065	1.1%	395	50.3%	102,670	1.7%	884	54.4%	102,181	3.0%	489
3.01% to 6.00%	37.1%	89,475	14.5%	5,371	41.2%	84,104	26.0%	13,845	40.3%	75,630	51.7%	8,474
6.01% to 9.00%	11.3%	27,177	32.9%	12,163	7.4%	15,014	35.4%	18,890	4.4%	8,287	41.0%	6,727
9.01% to 12.00%	5.0%	12,129	27.6%	10,177	1.0%	1,952	20.2%	10,795	0.7%	1,335	3.8%	618
12.01% to 15.00%	2.5%	6,071	15.7%	5,795	0.1%	276	10.9%	5,795	0.1%	276	0.0%	0
Over 15.00%	1.3%	3,189	8.2%	3,018	0.1%	171	5.8%	3,103	0.0%	85	0.5%	85
Electric Heat	N=	152,097	N=	24,510	N=	127,587	N=	34,597	N=	117,500	N=	10,087
3.00% or Less	43.5%	66,221	13.4%	3,273	49.3%	62,948	15.9%	5,509	51.7%	60,712	22.2%	2,236
3.01% to 6.00%	33.9%	51,612	21.0%	5,135	36.4%	46,477	22.0%	7,619	37.4%	43,993	24.6%	2,484
6.01% to 9.00%	12.0%	18,228	22.9%	5,612	9.9%	12,616	27.4%	9,474	7.5%	8,754	38.3%	3,862
9.01% to 12.00%	5.8%	8,802	20.6%	5,055	2.9%	3,747	17.1%	5,927	2.4%	2,874	8.6%	872
12.01% to 15.00%	2.9%	4,478	14.4%	3,518	0.8%	960	10.9%	3,756	0.6%	723	2.4%	238
Over 15.00%	1.8%	2,756	7.8%	1,917	0.7%	839	6.7%	2,311	0.4%	444	3.9%	394

* Includes natural gas and other non-electric heat customers (Standard Heat)

** Includes only natural gas customers.

6.2 Average Energy Burden by People Per Household

Table 6.2 shows the per cent energy burden by people per household of total residential basic and natural gas customers within the Manitoba Hydro provincial service territory for both LICO and NON-LICO categories.

In general, across all LICO categories and space heating fuels, as people per household increases, energy burden decreases. The exception appears in the five or more people per household category where per cent income burden takes an increase.

The highest average energy burden of 11.1% is experienced by LICO-100 single person households residing in natural gas heated dwellings, followed by LICO-125 single person households residing in natural gas dwellings with an average energy burden of 10.2%.

Electric heat, single person household LICO-100 and LICO-125 customers have average energy burdens of 8.2% and 7.7% respectively.

Natural gas billed LICO customers have a higher overall energy burden compared to electric heat LICO customers due to the greater majority of natural gas customers residing in single detached homes, which have higher energy use as opposed to all-electric customers residing in apartment suites.

**Table 6.2 Weighted Average % Energy Burden by Space Heat Fuel
by People Per Household across LICO versus NON-LICO Total Manitoba Hydro Residential Customers**

Total Manitoba Hydro Residential Basic Customers						
	OVERALL	LICO-100	NON-LICO-100	LICO-125	NON-LICO-125	LICO (100-125)
% Energy Burden						
Overall	4.1%	8.0%	3.3%	7.2%	3.1%	5.5%
One Person	5.1%	8.3%	3.3%	7.7%	3.2%	4.4%
Two Person	4.0%	8.0%	3.5%	7.3%	3.3%	6.5%
Three Person	3.5%	6.7%	3.1%	6.0%	2.9%	4.9%
Four Person	3.2%	6.8%	2.8%	6.2%	2.7%	4.5%
Five or More	4.1%	8.6%	3.2%	7.4%	3.0%	4.4%
Non-Electric Heat*						
Overall	3.9%	7.7%	3.1%	6.9%	2.9%	5.1%
One Person	4.9%	8.3%	3.1%	7.6%	2.9%	4.5%
Two Person	3.8%	7.5%	3.3%	6.8%	3.1%	5.8%
Three Person	3.4%	6.2%	3.0%	5.6%	2.8%	4.6%
Four Person	3.1%	6.3%	2.7%	5.8%	2.6%	4.2%
Five or More	3.9%	8.6%	3.0%	7.2%	2.8%	4.4%
Natural Gas Billed**						
Overall	4.3%	9.6%	3.4%	8.4%	3.2%	5.9%
One Person	6.4%	11.1%	4.0%	10.2%	3.8%	5.9%
Two Person	4.2%	9.1%	3.6%	8.1%	3.4%	6.6%
Three Person	3.6%	8.6%	3.1%	7.0%	2.9%	5.1%
Four Person	3.1%	6.4%	2.6%	6.1%	2.6%	4.7%
Five or More	3.9%	8.6%	3.0%	7.2%	2.9%	4.4%
Electric Heat						
Overall	4.5%	8.5%	3.7%	7.9%	3.5%	6.2%
One Person	5.4%	8.2%	3.8%	7.7%	3.8%	3.9%
Two Person	4.3%	9.3%	3.9%	8.3%	3.5%	7.2%
Three Person	3.9%	8.5%	3.4%	7.4%	3.2%	5.9%
Four Person	3.5%	8.1%	3.1%	7.5%	3.0%	5.6%
Five or More	4.6%	8.6%	3.5%	7.8%	3.4%	4.5%

* Includes natural gas and other non-electric heat customers (Standard Heat)

** Includes only natural gas customers.

6.3 Average Energy Burden by Dwelling Type

Table 6.3 shows the per cent energy burden by owner occupancy and dwelling type for the total residential basic and natural gas customers within the Manitoba Hydro provincial service territory for both LICO and NON-LICO categories.

In general, across all income categories and space heating fuels, homeowners have a greater energy burden than renters and single detached and mobile home dwellings have the higher energy burden compared to all forms of multi-family dwellings.

Analyzing by homeownership, Manitoba Hydro residential basic customers who are homeowners have an energy burden of 4.3% compared to an energy burden of 2.8% for renters. In the LICO-100 group, homeowners have an average energy burden of 9.2% and renters have an average energy burden of 4.7%. In the LICO-125 group, homeowners have an average energy burden of 8.3% and renters have an average energy burden of 4.2%. Analyzing by homeownership and dwelling type, LICO-100 and LICO-125 apartment renters have the lowest energy burden at 2.4% and 2.2% respectively. The highest average energy burden of 10.8% is experienced by LICO-100 single detached, renters followed by LICO-125 single detached renters, with an average energy burden of 10.0%.

Analyzing by space heating fuel, natural gas billed LICO customers, overall, have a higher energy burden compared to electric heat LICO customers due to the greater majority of natural gas customers residing in single detached homes, which have higher energy use, as opposed to the electrically heated customer group which has a higher proportion residing in apartment suites. However, when dwelling type is introduced into the analysis, LICO-100 customers residing in electrically heated, single detached homes have a higher energy burden of 10.6% compared to LICO-100 customers residing in gas heated single detached homes with an energy burden of 9.9%. LICO-125 customers residing in electrically heated, single detached homes have a higher energy burden of 9.7% compared to LICO-125 customers residing in gas heated single detached homes with an energy burden of 8.8%.

Table 6.3 Weighted Average % Energy Burden by Ownership and Space Heat Fuel by Dwelling Type across LICO Versus NON-LICO Total Manitoba Hydro Residential Basic Customers

	Total Manitoba Hydro Residential Basic Customers					
	OVERALL	LICO-100	NON-LICO-100	LICO-125	NON-LICO-125	LICO (100-125)
%Energy Burden						
Overall	4.1%	8.0%	3.3%	7.2%	3.1%	5.5%
Single Detached	4.5%	9.9%	3.6%	8.9%	3.4%	6.6%
Duplex/Multiplex	4.0%	7.3%	3.1%	6.3%	2.7%	5.0%
Mobile Home	5.3%	9.5%	4.2%	8.2%	3.9%	5.8%
Town/Rowhouse	3.5%	8.0%	2.5%	7.2%	2.4%	4.0%
Aparment Suite	1.7%	2.8%	1.2%	2.5%	1.1%	1.7%
Owner Occupancy						
Overall	4.3%	9.2%	3.5%	8.3%	3.3%	6.3%
Single Detached	4.5%	9.9%	3.6%	8.9%	3.4%	6.6%
Duplex/Multiplex	3.9%	6.7%	3.2%	6.1%	2.6%	5.4%
Mobile Home	5.3%	9.5%	4.2%	8.3%	3.8%	6.0%
Town/Rowhouse	3.4%	8.6%	2.6%	7.5%	2.5%	4.0%
Aparment Suite	1.9%	3.9%	1.3%	3.6%	1.2%	2.6%
Renter Occupancy						
Overall	2.8%	4.7%	1.9%	4.2%	1.8%	2.4%
Single Detached	6.0%	10.8%	3.6%	10.0%	3.4%	5.8%
Duplex/Multiplex	4.4%	8.7%	2.9%	6.9%	2.8%	3.4%
Mobile Home	4.6%	7.0%	4.2%	4.2%	4.8%	---
Town/Rowhouse	3.8%	7.3%	2.0%	6.9%	1.9%	3.9%
Aparment Suite	1.6%	2.4%	1.1%	2.2%	1.0%	1.5%
Non-Electric Heat*						
Overall	3.9%	9.6%	3.4%	6.9%	2.9%	5.1%
Single Detached	4.3%	9.6%	3.4%	8.6%	3.2%	6.2%
Duplex/Multiplex	4.0%	7.4%	3.0%	6.3%	2.6%	4.8%
Mobile Home	6.6%	10.9%	4.3%	10.9%	4.3%	---
Town/Rowhouse	4.0%	8.5%	2.7%	8.0%	2.5%	4.9%
Aparment Suite	1.4%	2.4%	1.0%	2.1%	1.0%	1.4%
Natural Gas Billed**						
Overall	4.3%	9.6%	3.4%	8.4%	3.2%	5.9%
Single Detached	4.3%	9.9%	3.4%	8.8%	3.2%	6.2%
Duplex/Multiplex	4.3%	8.2%	3.3%	6.9%	2.9%	5.0%
Mobile Home	6.7%	10.9%	4.3%	10.9%	4.3%	---
Town/Rowhouse	4.6%	8.7%	3.1%	8.2%	3.0%	4.9%
Aparment Suite	3.0%	6.1%	2.1%	5.0%	1.8%	3.3%
Electric Heat						
Overall	4.5%	8.5%	3.7%	7.9%	3.5%	6.2%
Single Detached	4.9%	10.6%	4.0%	9.7%	3.8%	7.6%
Duplex/Multiplex	4.6%	6.2%	4.2%	6.0%	3.1%	5.9%
Mobile Home	5.2%	9.2%	4.2%	7.8%	3.8%	5.8%
Town/Rowhouse	2.7%	6.4%	2.2%	5.4%	2.2%	3.0%
Aparment Suite	2.1%	3.6%	1.5%	3.3%	1.4%	2.3%

* Includes natural gas and other non-electric heat customers (Standard Heat)

** Includes only natural gas customers.

7.0 Water Tanks and Refrigeration

7.1 Water Tanks and Refrigeration: Total Residential Basic

Table 7.1 shows the water tank and refrigeration characteristics of residential basic customers within the Manitoba Hydro provincial service territory for both LICO-100 and LICO-125 classifications.

Overall, 47.9% of Manitoba Hydro residential customers have their hot water needs supplied by a private (for use by only that specific residence) electric tank and 40.7% are supplied by a private natural gas tank. The LICO groups are more likely to use a shared hot water source, approximately 20%, compared to NON-LICO customers at approximately 9%. This finding is consistent with the higher incidence of LICO customers residing in multi-family dwellings.

The only distinct observation between LICO and NON-LICO groups, in terms of refrigeration, is that LICO (18%) customers are more likely to have an older primary use refrigerator compared to NON-LICO (11%) customers. Older is defined as over 20 years of age. In the LICO-100 group, there are an estimated total of 20,652 older refrigerators and 18,660 older freezers in use. In the LICO-125 group, there are an estimated total of 29,981 older refrigerators and 29,616 older freezers in use. The LICO-125 criterion increases older refrigerators by 9,329 units and older freezers by 10,956 units.

**Table 7.1 Weighted % Frequency and Population Estimates
Water Tank & Refrigerator Characteristics across LICO versus NON-LICO Total Manitoba Hydro Residential Basic Customers**

Total Manitoba Hydro Residential Basic Customers												
	OVERALL		LICO-100		NON-LICO-100		LICO-125		NON-LICO-125		LICO (100-125)	
Population (N)	100.0%	439,096	17.1%	74,938	82.9%	364,158	24.1%	105,784	75.9%	333,312	7.0%	30,846
	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)
Hot Water Tank												
Private Electric	47.9%	210,424	41.1%	30,833	49.3%	179,591	40.8%	43,194	50.2%	167,230	40.1%	12,362
Private Natural Gas	40.7%	178,821	38.1%	28,536	41.3%	150,285	39.4%	41,636	41.2%	137,185	42.5%	13,100
Private Other	0.1%	359	0.1%	103	0.1%	256	0.1%	103	0.1%	256	0.0%	0
Shared	11.3%	49,492	20.6%	15,466	9.3%	34,026	19.7%	20,850	8.6%	28,642	17.5%	5,384
Water Tank Avg. Age												
Private Electric		6.6		7.6		6.4		7.2		6.4		6.1
Private Natural Gas		6.8		7.6		6.7		7.4		6.7		6.9
Private Other		4.3		5.0		4.0		5.0		4.0		5.0
Shared		10.0		10.3		9.8		12.4		6.7		15.2
Primary Fridge Ages												
% Over 20 Years	12.5%	54,973	18.2%	13,638	11.4%	41,335	17.2%	18,220	11.0%	36,753	14.9%	4,582
Primary Fridge Avg. Age		10.1		11.9		9.6		11.6		9.5		10.8
Second Fridge Ages												
% Over 20 Years	14.1%	61,842	9.4%	7,014	15.1%	54,828	11.1%	11,761	15.0%	50,081	15.4%	4,747
Second Fridge Avg. Age		15.7		16.6		15.4		16.7		15.3		17.0
Primary Freezer Ages												
% Over 20 Years	23.6%	103,576	21.4%	16,070	24.0%	87,506	22.9%	24,206	23.8%	79,370	26.4%	8,136
Primary Freezer Avg. Age		14.6		14.7		14.6		15.0		14.5		15.5
Second Freezer Ages												
% Over 20 Years	5.5%	23,988	3.5%	2,590	5.9%	21,398	5.1%	5,410	5.6%	18,578	9.1%	2,820
Second Freezer Avg. Age		16.0		14.4		16.2		16.1		16.0		18.9

7.2 Water Tanks and Refrigeration: Natural Gas Customers

Table 7.2 shows the water tank and refrigeration characteristics of natural gas customers within the Manitoba Hydro provincial service territory for both LICO-100 and LICO-125 classifications.

Overall, 73.6% of Manitoba Hydro natural gas customers have their hot water needs supplied by a private (for use by only that specific residence) natural gas tank and 24.5% are supplied by a private electric tank. There are far less LICO natural gas customers using a shared hot water source (approximately 4.0%) compared to the total Manitoba Hydro residential basic customer base (approximately 20%). This finding is consistent given the much higher incidence of LICO natural gas customers residing in single detached dwellings.

The only distinct observation between LICO and NON-LICO, in terms of refrigeration, is that over one-quarter of LICO natural gas customers are more likely to have an older primary use refrigerator compared to just fewer than 10% of NON-LICO natural gas customers. Older is defined as being over 20 years of age. In the LICO-100 natural gas group, there are an estimated total of 14,217 older refrigerators and 9,756 older freezers in use. In the LICO-125 natural gas group, there are an estimated total of 20,385 older refrigerators and 16,019 older freezers in use. The LICO-125 criterion increases older refrigerators by 6,168 units and older freezers by 6,233 units.

**Table 7.2 Weighted % Frequency and Population Estimates
Water Tank & Refrigerator Characteristics across LICO versus NON-LICO Manitoba Hydro Residential Natural Gas Customers**

Manitoba Hydro Natural Gas Residential Customers												
	OVERALL		LICO-100		NON-LICO-100		LICO-125		NON-LICO-125		LICO (100-125)	
Population (N)	100.0%	241,106	15.3%	36,919	84.7%	204,187	22.1%	53,312	77.9%	187,794	6.8%	16,393
	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)
Hot Water Tank												
Private Electric	24.5%	59,182	20.5%	7,575	25.3%	51,607	19.2%	10,229	26.1%	48,953	16.2%	2,654
Private Natural Gas	73.6%	177,517	75.5%	27,874	73.3%	149,643	76.8%	40,974	72.7%	136,543	79.9%	13,100
Private Other		----		----		----		----		----		----
Shared	1.8%	4,407	4.0%	1,470	1.4%	2,937	4.0%	2,109	1.2%	2,298	3.9%	639
Water Tank Avg. Age												
Private Electric		5.3		7.3		5.1		6.6		5.1		4.8
Private Natural Gas		6.8		7.6		6.7		7.4		6.7		6.9
Private Other		----		----		----		----		----		----
Shared		6.1		8.0		4.8		8.0		4.8		8.0
Primary Fridge Ages												
% Over 20 Years	12.6%	30,319	27.7%	10,217	9.8%	20,102	25.3%	13,472	9.0%	16,847	19.9%	3,255
Primary Fridge Avg. Age		9.7		11.4		9.4		11.1		9.3		10.3
Second Fridge Ages												
% Over 20 Years	14.1%	34,035	10.8%	4,000	14.7%	30,035	13.0%	6,913	14.4%	27,122	17.8%	2,913
Second Fridge Avg. Age		15.0		15.7		14.9		16.0		14.7		16.8
Primary Freezer Ages												
% Over 20 Years	25.2%	60,800	23.1%	8,526	25.6%	52,274	25.0%	13,322	25.3%	47,478	29.3%	4,796
Primary Freezer Avg. Age		15.0		15.1		15.0		15.5		14.9		16.4
Second Freezer Ages												
% Over 20 Years	3.9%	9,287	3.4%	1,260	3.9%	8,027	5.1%	2,697	3.5%	6,590	8.8%	1,437
Second Freezer Avg. Age		16.3		14.0		16.8		16.4		16.3		21.1

8.0 Services and Program Participation

8.1 Services and Programs: Total Residential Basic

Table 8.1 shows how the various services and programs offered by Manitoba Hydro are utilized by residential basic customers for both LICO-100 and LICO-125 classifications.

Home internet access for LICO-100 customers (46.7%) is lower compared to NON-LICO-100 customers (78.4%). Home internet access increases for the LICO-125 group to 50.4% due to the introduction of 18,293 customers which represents 59.3% of LICO (100-125) with home internet access.

LICO-100 (30.8%) and LICO-125 (31.0%) customers are more likely to pay their monthly utility bills in person compared to NON-LICO-100 (16.0%) and NON-LICO-125 (16.2%) customers. Consistent with the home internet access finding, fewer LICO-100 (18.3%) and LICO-125 (19.8%) use online banking to pay Hydro bills compared to 36.0% of NON-LICO-100 and 37.1% of NON-LICO-125 customers.

There are 2.7% of LICO-100 and 3.6% of LICO-125 customers who are interested in receiving Hydro bills via email (MYBILL) compared to 8.8% of NON-LICO-100 and 9.1% of NON-LICO-125.

Approximately 29% of LICO-100 customers read all forms of Hydro inserts on a regular basis compared to about 22% of NON-LICO-100 customers. Just over 15% of LICO-100 customers indicated they decided to participate in a residential program because of reading an insert. Similar results are observed for LICO-125. Approximately 28% of LICO-125 customers more likely read all forms of Hydro inserts on a regular basis compared to about 22% of NON-LICO-125 customers. Fewer than 15% of LICO-125 customers indicated they decided to participate in a residential program because of reading an insert.

Approximately 25% of LICO-100 and LICO-125 customers have participated in one or more Residential Programs offered by Manitoba Hydro compared to approximately 38% of NON-LICO customers. 3.1% of LICO-100 and 2.5% of LICO-125 customers have applied to Manitoba Hydro to participate in the Lower Income Energy Program.

**Table 8.1 Weighted % Frequency and Population Estimates
Services and Program Participation across LICO versus NON-LICO Total Manitoba Hydro Residential Basic Customers**

Total Manitoba Hydro Residential Basic Customers												
	OVERALL		LICO-100		NON-LICO-100		LICO-125		NON-LICO-125		LICO (100-125)	
Population (N)	100.0%	439,096	17.1%	74,938	82.9%	364,158	24.1%	105,784	75.9%	333,312	24.1%	30,846
	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)
<u>Home Internet Access</u>	73.0%	320,343	46.7%	34,985	78.4%	285,358	50.4%	53,278	80.1%	232,080	59.3%	18,293
<u>Bill Payment Method</u>												
MH District Office	7.8%	34,408	10.9%	8,185	7.2%	26,223	11.7%	12,356	6.6%	22,052	13.5%	4,171
Designated Agency	12.0%	52,506	19.9%	14,884	8.8%	32,109	19.3%	20,397	9.6%	32,109	17.9%	5,513
Mail	7.5%	32,845	8.1%	6,097	7.3%	26,748	7.3%	7,775	7.5%	25,070	5.4%	1,678
Online Banking	32.9%	144,662	18.3%	13,693	36.0%	130,969	19.8%	20,963	37.1%	123,699	23.6%	7,270
PAPP	28.6%	125,566	28.3%	21,212	28.7%	104,354	28.6%	30,226	28.6%	95,340	29.2%	9,014
Telepay	11.2%	49,109	14.5%	10,867	10.5%	38,242	13.3%	14,067	10.5%	35,042	10.4%	3,200
<u>MYBILL Awareness</u>	62.6%	274,944	55.1%	41,269	64.2%	233,675	55.8%	59,033	64.8%	215,911	57.6%	17,764
<u>MYBILL Interest</u>	7.8%	34,175	2.7%	2,012	8.8%	32,163	3.6%	3,803	9.1%	30,372	5.8%	1,791
<u>2009 MH Website Visitors</u>	23.1%	101,562	12.1%	9,073	25.4%	92,489	12.5%	13,189	26.5%	88,373	13.3%	4,116
<u>Energy Matters Readership</u>												
Regularly	22.8%	100,025	30.9%	23,125	21.1%	76,900	29.1%	30,757	20.8%	69,268	24.7%	7,632
Occasionally	57.8%	253,684	49.0%	36,745	59.6%	216,939	52.2%	55,173	59.6%	198,511	59.7%	18,428
Never	19.4%	85,387	20.1%	15,068	19.3%	70,319	18.8%	19,854	19.7%	65,533	15.5%	4,786
<u>Power Smart Insert Readership</u>												
Regularly	23.1%	101,232	29.2%	21,914	21.8%	79,318	27.5%	29,138	21.6%	72,094	23.4%	7,224
Occasionally	60.9%	267,351	51.8%	38,847	62.7%	228,504	54.8%	57,922	62.8%	209,429	61.8%	19,075
Never	16.0%	70,463	18.9%	14,178	15.5%	56,285	17.7%	18,724	15.5%	51,739	14.7%	4,546
<u>Power Smart Insert Participation</u>	19.5%	85,717	15.2%	11,358	20.4%	74,359	14.6%	15,408	21.1%	70,309	13.1%	4,050
<u>Residential Program Participation</u>												
None	64.6%	283,847	74.8%	56,040	62.6%	227,807	74.4%	78,754	61.5%	205,093	73.6%	22,714
One	19.4%	85,305	13.6%	10,211	20.6%	75,094	14.1%	14,866	21.1%	70,439	15.1%	4,655
Two	9.5%	41,819	7.6%	5,697	9.9%	36,122	7.2%	7,666	10.2%	34,153	6.4%	1,969
Three or More	6.4%	28,125	4.0%	2,990	6.9%	25,135	4.3%	4,498	7.1%	23,627	4.9%	1,508
<u>Lower Income Energy Program</u>	0.7%	3,060	3.1%	2,308	0.2%	752	2.5%	2,623	0.1%	437	1.0%	315

8.2 Services and Programs: Natural Gas Customers

Table 8.2 shows how the various services and programs offered by Manitoba Hydro are utilized by natural gas customers for both LICO-100 and LICO-125 classifications.

Home internet access for LICO-100 customers (53.8%) is lower compared to NON-LICO-100 customers (84.6%). Home internet access increases for the LICO-125 group to 57.6% due to the introduction of 10,822 customers which represents 66.0% of LICO (100-125) with home internet access. Natural gas customers have a higher saturation of home internet access compared to the total Manitoba Hydro residential basic population due to most natural gas customers living in Winnipeg, which has better internet access compared to smaller urban and rural locations.

LICO-100 (28.0%) and LICO-125 (26.5%) natural gas customers are more likely to pay their monthly utility bills in person compared to NON-LICO-100 (13.7%) and NON-LICO-125 (12.9%) customers. Consistent with the home internet access finding, fewer LICO-100 (19.5%) and LICO-125 (22.0%) use online banking to pay energy bills compared to 39.1% of NON-LICO-100 and 40.1% of NON-LICO-125 customers.

There are 2.8% of LICO-100 and 4.2% of LICO-125 natural gas customers who are interested in receiving Hydro bills via email (MYBILL) compared to 8.9% of NON-LICO-100 and 9.0% of NON-LICO-125.

Over one-third of LICO-100 natural gas customers read all forms of Hydro inserts on a regular basis compared to about 22% of NON-LICO-100 customers. Just over 21% of LICO-100 natural gas customers indicated they decided to participate in a residential program because of reading an insert. Similar results are observed for LICO-125. Almost one third of LICO-125 natural gas customers read all forms of Hydro inserts on a regular basis compared to about 22% of NON-LICO-125 customers. Just over 20% of LICO-125 customers indicated they decided to participate in a residential program because of reading an insert.

Approximately 36% LICO-100 and LICO-125 natural gas customers have participated in one or more Residential Programs offered by Manitoba Hydro compared to approximately 45% of NON-LICO natural gas customers. 3.9% of LICO-100 and 3.2% of LICO-125 natural gas customers have applied to Manitoba Hydro to participate in the Lower Income Energy Program.

**Table 8.2 Weighted % Frequency and Population Estimates
Services and Program Participation across LICO versus NON-LICO Manitoba Hydro Residential Natural Gas Customers**

Manitoba Hydro Natural Gas Residential Customers												
	OVERALL		LICO-100		NON-LICO-100		LICO-125		NON-LICO-125		LICO (100-125)	
Population (N)	100.0%	241,106	15.3%	36,919	84.7%	204,187	22.1%	53,312	77.9%	187,794	6.8%	16,393
	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)	%	(N)
<u>Home Internet Access</u>	79.9%	192,637	53.8%	19,867	84.6%	172,770	57.6%	30,689	86.2%	161,948	66.0%	10,822
<u>Bill Payment Method</u>												
MH District Office	5.0%	12,125	8.6%	3,182	4.4%	8,943	8.4%	4,471	4.1%	7,654	7.9%	1,289
Designated Agency	10.9%	26,233	19.4%	7,172	9.3%	19,061	18.1%	9,640	8.8%	16,593	15.1%	2,468
Mail	6.0%	14,352	4.9%	1,794	6.2%	12,558	4.5%	2,382	6.4%	11,970	3.6%	588
Online Banking	36.1%	87,121	19.5%	7,215	39.1%	79,906	22.0%	11,736	40.1%	75,385	27.6%	4,521
PAPP	29.9%	72,207	31.6%	11,657	29.7%	60,550	31.5%	16,785	29.5%	55,422	31.3%	5,128
Telepay	12.1%	29,068	16.0%	5,899	11.3%	23,169	15.6%	8,298	11.1%	20,770	14.6%	2,399
<u>MYBILL Awareness</u>	65.2%	157,246	57.0%	21,027	66.7%	136,219	57.7%	30,741	67.4%	126,505	59.3%	9,714
<u>MYBILL Interest</u>	8.0%	19,215	2.8%	1,034	8.9%	18,181	4.2%	2,221	9.0%	16,994	7.2%	1,187
<u>2009 MH Website Visitors</u>	27.6%	66,638	13.4%	4,944	30.2%	61,694	14.4%	7,696	31.4%	58,942	16.8%	2,752
<u>Energy Matters Readership</u>												
Regularly	23.4%	56,317	35.2%	12,978	21.2%	43,339	32.9%	17,529	20.7%	38,788	27.8%	4,551
Occasionally	57.9%	139,702	49.0%	18,094	59.6%	121,608	51.9%	27,679	59.7%	112,023	58.5%	9,585
Never	18.7%	45,087	15.8%	5,847	19.2%	39,240	15.2%	8,104	19.7%	36,983	13.8%	2,257
<u>Power Smart Insert Readership</u>												
Regularly	24.0%	57,849	33.4%	12,335	22.3%	45,514	30.5%	16,260	22.1%	41,589	23.9%	3,925
Occasionally	61.6%	148,486	51.0%	18,841	63.5%	129,645	54.4%	29,021	63.6%	119,465	62.1%	10,180
Never	14.4%	34,771	15.6%	5,743	14.2%	29,028	15.1%	8,031	14.2%	26,740	14.0%	2,288
<u>Power Smart Insert Participation</u>	23.6%	56,915	21.1%	7,774	24.1%	49,141	20.4%	10,867	24.5%	46,048	18.9%	3,093
<u>Residential Program Participation</u>												
None	56.7%	136,599	63.0%	23,270	55.5%	113,329	64.2%	34,218	54.5%	102,381	66.8%	10,948
One	21.7%	52,403	17.8%	6,583	22.4%	45,820	17.8%	9,493	22.8%	42,910	17.8%	2,910
Two	12.7%	30,696	12.6%	4,667	12.7%	26,029	11.1%	5,915	13.2%	24,781	7.6%	1,248
Three or More	8.9%	21,408	6.5%	2,399	9.3%	19,009	6.9%	3,686	9.4%	17,722	7.9%	1,287
<u>Lower Income Energy Program</u>	0.9%	2,148	3.9%	1,454	0.3%	694	3.2%	1,711	0.2%	437	1.6%	257

9.0 APPENDIX

9.1 Questionnaire Booklet

2009 Residential Energy Use Survey

Dear Customer:

You have been randomly selected to participate in the Manitoba Hydro, Residential Energy Use Survey. Your response may represent up to two hundred other similar households in the province, so it is very important that each selected customer complete and return their questionnaire. Please invest your time so that we can better serve you and effectively plan for the future. All responses will be treated in the strictest confidence.



Please answer the survey for the address shown BELOW. Return the completed questionnaire within the next TWO WEEKS, in the postage paid envelope provided.

123 MAIN AVE
WINNIPEG MB
412345602



*Manitoba Hydro is a licensee of the Trademark and Official Mark.

All responses will be treated in the strictest confidence.
Personal information requested in this form is collected for the purposes of administration of this program pursuant to section 36(1)(b) of The Freedom of Information and Protection of Privacy Act of Manitoba. For inquiries concerning the collection of personal information contained in this form or if you have any questions concerning this survey please contact:

**RESIDENTIAL ENERGY USE SURVEY
MARKET FORECAST DEPARTMENT**
Manitoba Hydro
P.O. Box 815, Station Main
Winnipeg, Manitoba R3C 2P4

204.360.4629
204.360.3447
(Weekdays 8:00 a.m. to 3:00 p.m.)

Outside Winnipeg, call collect.

A postage paid envelope is provided for your convenience.
Please return the completed questionnaire within the next **two weeks**.

THANK YOU FOR YOUR TIME AND COOPERATION

Section 1

Your Residence

Please answer all the questions by marking an “x” in the box(es) beside the appropriate answer OR print your answer in the space provided. If you are unsure of a particular answer, mark the “Do not know” box.

1 What best describes your residence ?

- ¹ Single Family House (Detached) ⁶ Mobile Home/Trailer
 ² Side by Side (Two Attached Units) ⁷ Rowhouse/Townhouse (Exterior Entrance)
 ³ Duplex (Upper Unit) ⁸ Apartment Suite or Condominium unit
 ⁴ Duplex (Lower Unit) ⁹ Cottage or Seasonal Home
 ⁵ Triplex/Fourplex ¹⁰ Other: _____

2 Do you OWN or RENT this residence ?

- ¹ Own/Buying ² Rent/Lease ³ Other

3 Do you live at this residence year round?

- ¹ Yes, all year ² No, only part of the year

4 What type of DWELLING STRUCTURE do you live in?

- ¹ 1 storey ⁴ 2 storey ⁷ Bi-level ¹⁰ Cab - Over
 ² 1 1/2 storey ⁵ 2 1/2 storey ⁸ 2 level split ¹¹ Suite
 ³ 1 3/4 storey ⁶ 3 storey ⁹ 4 level split ¹² Other: _____

5 How many walls in your residence are ATTACHED to other residences or heated structures?

- ¹ None ² One ³ Two ⁴ Three

6 When was your residence originally BUILT?

- ¹ 2000 - present ⁵ 1960 - 1969 ⁹ 1920 - 1929
 ² 1990 - 1999 ⁶ 1950 - 1959 ¹⁰ 1910 - 1919
 ³ 1980 - 1989 ⁷ 1940 - 1949 ¹¹ 1900 - 1909
 ⁴ 1970 - 1979 ⁸ 1930 - 1939 ¹² 1899 or before

7 What is the **SIZE** of your residence in square feet?

(EXCLUDE BASEMENT AND GARAGE AREAS. ANSWER "7a", IF POSSIBLE.)

a) Specify size if **KNOWN**: _____ square feet.

b) If **UNKNOWN**, choose the approximate size range in square feet.

- | | | |
|--|---|---|
| <input type="checkbox"/> 1 Under 500 sq ft | <input type="checkbox"/> 7 1,501-1,700 sq ft | <input type="checkbox"/> 13 2,701-2,900 sq ft |
| <input type="checkbox"/> 2 501-700 sq ft | <input type="checkbox"/> 8 1,701-1,900 sq ft | <input type="checkbox"/> 14 2,901-3,100 sq ft |
| <input type="checkbox"/> 3 701-900 sq ft | <input type="checkbox"/> 9 1,901-2,100 sq ft | <input type="checkbox"/> 15 3,101-3,300 sq ft |
| <input type="checkbox"/> 4 901-1,100 sq ft | <input type="checkbox"/> 10 2,101-2,300 sq ft | <input type="checkbox"/> 16 3,301-3,500 sq ft |
| <input type="checkbox"/> 5 1,101-1,300 sq ft | <input type="checkbox"/> 11 2,301-2,500 sq ft | <input type="checkbox"/> 17 over 3,500 sq ft |
| <input type="checkbox"/> 6 1,301-1,500 sq ft | <input type="checkbox"/> 12 2,501-2,700 sq ft | |

8 What is the **ELECTRIC PANEL** size servicing your residence?

- | | | | |
|------------------------------------|------------------------------------|---|--|
| <input type="checkbox"/> 1 60 amp | <input type="checkbox"/> 3 150 amp | <input type="checkbox"/> 5 400 amp | <input type="checkbox"/> 7 Do not know |
| <input type="checkbox"/> 2 100 amp | <input type="checkbox"/> 4 200 amp | <input type="checkbox"/> 6 Other: _____ | |

9 What type of **WINDOWS** are in your residence? (CHECK ALL THAT APPLY)

- 1 Single Pane with Storm Window
- 1 Two Pane Slider
- 1 Dual Pane
- 1 Triple Pane
- 1 Dual Pane with Low E coating(s) or Insulating Spacer Bar(s)
- 1 Triple Pane with Low E coating(s) or Insulating Spacer Bar(s)
- 1 Argon Gas (dual pane)
- 1 Argon Gas (triple pane)
- 1 Other : _____

a) How many exterior **DOORS** do you have in your residence? (Indicate by door type)

___ Patio Doors ___ Wood Doors ___ Steel Insulated Doors
___ Storm Doors ___ PVC Doors

b) What best describes the quality of **WINDOWS** in your residence?

- | | | |
|--------------------------------------|------------------------------------|---------------------------------|
| <input type="checkbox"/> 1 Excellent | <input type="checkbox"/> 3 Average | <input type="checkbox"/> 5 Poor |
| <input type="checkbox"/> 2 Very Good | <input type="checkbox"/> 4 Fair | |

c) What best describes the quality of **EXTERIOR DOORS** in your residence?

- | | | |
|--------------------------------------|------------------------------------|---------------------------------|
| <input type="checkbox"/> 1 Excellent | <input type="checkbox"/> 3 Average | <input type="checkbox"/> 5 Poor |
| <input type="checkbox"/> 2 Very Good | <input type="checkbox"/> 4 Fair | |

10

What best describes the overall level of **INSULATION** in your residence?

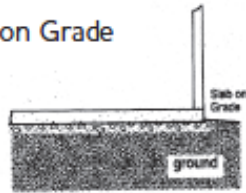
(EXCLUDE BASEMENT)

- | | | |
|--------------------------------------|------------------------------------|---------------------------------|
| <input type="checkbox"/> 1 Excellent | <input type="checkbox"/> 3 Average | <input type="checkbox"/> 5 Poor |
| <input type="checkbox"/> 2 Very Good | <input type="checkbox"/> 4 Fair | |

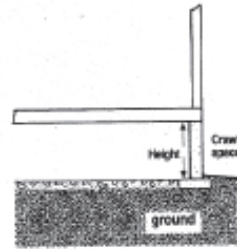
11 Please indicate which of the following best describes the **BASEMENT (foundation)** of your residence:

a) No Basement (foundation) – [Go to Question 12](#)

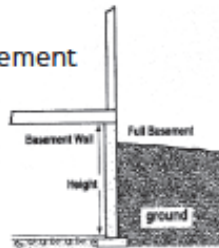
Slab on Grade



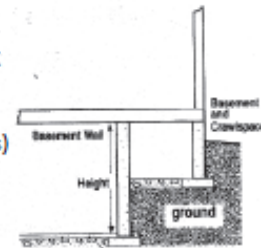
Crawl Space
(including cottages and mobile homes)



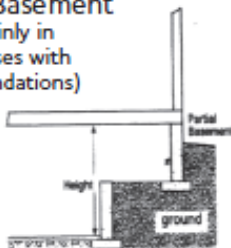
Full Basement



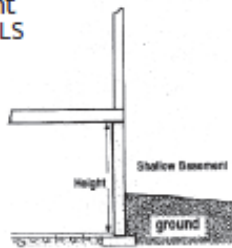
Partial Basement and Crawl Space
(includes houses with ground level additions)



Partial Basement
(found mainly in older houses with stone foundations)



Shallow Basement
(includes SPLIT LEVELS and BI-LEVELS)



Other: _____

Do Not Know

b) What percentage of your home's **BASEMENT (foundation)** walls are insulated?

No Insulation –
[Go to Question 12](#)

40% Insulated

90% Insulated

50% Insulated

100% Insulated

10% Insulated

60% Insulated

2 ft Below Grade Only

20% Insulated

70% Insulated

Other: _____

30% Insulated

80% Insulated

Do not know

c) Main type of **INSULATION**

Fibreglass Batting

Other: _____

Rigid

Do not know

Spray Foam

d) What % of your basement is finished?

No Basement

1 - 20%

41 - 60%

81 - 100%

0%

21 - 40%

61 - 80%

Do not know

12 Does this residence have any of the following PROBLEMS?

(CHECK ALL THAT APPLY.)

- | | |
|--|---|
| <input type="checkbox"/> 1 Odours, cooking smells, stale air | <input type="checkbox"/> 1 Water leakage in basement |
| <input type="checkbox"/> 1 High humidity in winter | <input type="checkbox"/> 1 Cold floor on slab on grade foundation |
| <input type="checkbox"/> 1 Low humidity in winter | <input type="checkbox"/> 1 Difficult to heat rooms |
| <input type="checkbox"/> 1 Window condensation | <input type="checkbox"/> 1 Inadequate supply of hot water |
| <input type="checkbox"/> 1 Condensation in attic | <input type="checkbox"/> 1 Short life of hot water tank
(less than five years) |
| <input type="checkbox"/> 1 Mold and mildew | <input type="checkbox"/> 1 No problems |
| <input type="checkbox"/> 1 Ice dams on roof | |

13 In the last THREE YEARS, have you done any of the following projects at this residence? (CHECK ALL THAT APPLY.)

- 1 Insulated basement or crawlspace
- 1 Re-sided your house or upgraded the exterior walls
- 1 Added insulation to your attic or ceiling
- 1 Caulked the house to reduce air leakage
- 1 Replaced some or all of the windows
- 1 Improved the ventilation system in your home
- 1 Upgraded electrical service/wiring
- 1 Upgraded size of electrical panel
- 1 Built an addition to the house
- 1 Installed a natural gas BBQ hookup
- 1 Replaced incandescent with compact fluorescent lighting
- 1 Replaced heating system
- 1 Replaced air conditioning
- 1 Replaced hot water tank
- 1 No projects done

14 Are any FARMING ACTIVITIES requiring electricity or natural gas conducted at this location?

- 1 Yes, primarily farming 2 Yes, hobby farming 3 No

15 Are any ADDITIONAL BUILDINGS using ELECTRICITY at this location?

(CHECK ALL THAT APPLY.)

- | | | |
|---|---|---|
| <input type="checkbox"/> 1 None | <input type="checkbox"/> 1 Storage Shed | <input type="checkbox"/> 1 Grain Dryer |
| <input type="checkbox"/> 1 Workshop | <input type="checkbox"/> 1 Barn | <input type="checkbox"/> 1 Grain Bin(s) |
| <input type="checkbox"/> 1 Garage | <input type="checkbox"/> 1 Pumphouse | <input type="checkbox"/> 1 Greenhouse |
| <input type="checkbox"/> 1 Other: _____ | | |

16 Are any ADDITIONAL BUILDINGS using NATURAL GAS at this location?

(CHECK ALL THAT APPLY.)

- | | | |
|---|---|---|
| <input type="checkbox"/> 1 None | <input type="checkbox"/> 1 Storage Shed | <input type="checkbox"/> 1 Grain Dryer |
| <input type="checkbox"/> 1 Workshop | <input type="checkbox"/> 1 Barn | <input type="checkbox"/> 1 Grain Bin(s) |
| <input type="checkbox"/> 1 Garage | <input type="checkbox"/> 1 Pumphouse | <input type="checkbox"/> 1 Greenhouse |
| <input type="checkbox"/> 1 Other: _____ | | |

Section 2

Heating System

1 How do you pay for your SPACE HEATING costs?

- 1 Payment is made directly to Manitoba Hydro (part of utility bill)
- 2 Cost is included in rent or common service fees
- 3 Other: _____
- 4 Do not know

2 What is the MAIN HEATING FUEL used to heat your residence? (CHECK ONLY ONE.)

- 1 Electricity
- 2 Natural Gas
- 3 Fuel Oil
- 4 Wood
- 5 Propane
- 6 Other: _____
- 7 Do not know

3 What is the MAIN HEATING SYSTEM used to heat your residence? (CHECK ONLY ONE.)

- 1 Hi-efficiency Gas (+ 90%)
Central Forced Air Furnace
- 2 Mid-efficiency Gas (80-85%)
Central Forced Air Furnace
- 3 Standard-efficiency Gas (65%)
Central Forced Air Furnace
- 4 Gravity Air Furnace (no fan)
- 5 Electric Baseboards
- 6 Electric Forced Air Furnace
- 7 Radiant Cables/Panels
- 8 Heat Pump - Geothermal
(Ground Source)
- 9 Heat Pump - Air Source
- 10 Wood Stove
- 11 Outside Wood Boiler
- 12 Hot Water Boiler - with Pump
- 13 Hot Water Boiler - no Pump
- 14 Space Heater (Oil/Kerosene)
- 15 Dual Fuel - Wood/Electric Furnace
- 16 Dual Fuel - Wood/Oil Furnace
- 17 Other: _____
- 18 Do not know

4 What is the AGE of the main heating system?

- 1 0 - 3 years
- 2 4 - 6 years
- 3 7 - 9 years
- 4 10 - 12 years
- 5 13 - 15 years
- 6 16 - 20 years
- 7 21 - 25 years
- 8 Over 25 years
- 9 Do Not Know

5 What SUPPLEMENTAL heating fuel is used to heat your residence?

- 1 None
- 2 Electricity
- 3 Natural Gas
- 4 Fuel Oil
- 5 Wood
- 6 Propane
- 7 Other: _____
- 8 Do not know

6 What other HEATING SYSTEMS are used in your home?

(CHECK ALL THAT APPLY.)

- | | |
|---|--|
| <input type="checkbox"/> 1 None | <input type="checkbox"/> 1 Wood Fireplace (with glass doors) |
| <input type="checkbox"/> 1 Forced Air Furnace | <input type="checkbox"/> 1 Wood Fireplace (no glass doors) |
| <input type="checkbox"/> 1 Electric Baseboards | <input type="checkbox"/> 1 Outside Wood Boiler |
| <input type="checkbox"/> 1 Electric Portable Heater | <input type="checkbox"/> 1 Pellet Stove |
| <input type="checkbox"/> 1 Stove/Spaceheater | <input type="checkbox"/> 1 Heat Pump |
| <input type="checkbox"/> 1 Gas Fireplace (not decorative) | <input type="checkbox"/> 1 Other: _____ |
| <input type="checkbox"/> 1 Wood Stove | <input type="checkbox"/> 1 Do not know |

7 How is the central forced air furnace fan motor normally operated?

- | | |
|--|--|
| <input type="checkbox"/> 1 No Central Forced Air Furnace | <input type="checkbox"/> 5 Continuous Variable Direct Current Motor (on select hi-efficiency furnaces) |
| <input type="checkbox"/> 2 Comes on only when furnace is running | <input type="checkbox"/> 6 Do not know |
| <input type="checkbox"/> 3 Two speed (high, low) - continuous | |
| <input type="checkbox"/> 4 Continuous - one speed on | |

8 Do you perform annual maintenance checks on your heating system?

- | | | |
|---|---|--|
| <input type="checkbox"/> 1 Not applicable | <input type="checkbox"/> 3 Once a year | <input type="checkbox"/> 5 Every 4 or more years |
| <input type="checkbox"/> 2 No, never | <input type="checkbox"/> 4 Every 2 to 3 years | <input type="checkbox"/> 6 Do not know |

9 Do you regularly change or clean your furnace filter?

- | | | |
|---|---|--|
| <input type="checkbox"/> 1 Not applicable | <input type="checkbox"/> 3 Yes, every 3 to 4 months | <input type="checkbox"/> 5 Do not know |
| <input type="checkbox"/> 2 No, never | <input type="checkbox"/> 4 Yes, every year or more | |

10 If you use WOOD to provide heat for your home, how many FULL CORDS were burned in the past 12 months?

(A FULL CORD OF WOOD IS 4 FT X 4 FT X 8 FT.)

- | | | | |
|---|----------------------------------|----------------------------------|--|
| <input type="checkbox"/> 1 No wood used | <input type="checkbox"/> 3 1 - 2 | <input type="checkbox"/> 5 5 - 6 | <input type="checkbox"/> 7 9+ |
| <input type="checkbox"/> 2 Under 1 | <input type="checkbox"/> 4 3 - 4 | <input type="checkbox"/> 6 7 - 8 | <input type="checkbox"/> 8 Do not know |

11 What type of THERMOSTAT controls the main heating system?

- | | |
|--|---|
| <input type="checkbox"/> 1 No Thermostat | <input type="checkbox"/> 5 Flue Gauge (located on a wood stove chimney) |
| <input type="checkbox"/> 2 Individual Unit or Room Control | <input type="checkbox"/> 6 Other: _____ |
| <input type="checkbox"/> 3 Manual Central Control | <input type="checkbox"/> 7 Do not know |
| <input type="checkbox"/> 4 Programmable Thermostat | |

12 How often do you TURN DOWN the temperature at night during the heating season?

- | | | |
|--|---|--|
| <input type="checkbox"/> 1 Every Night | <input type="checkbox"/> 3 Occasionally | <input type="checkbox"/> 5 No Thermostat |
| <input type="checkbox"/> 2 Most Nights | <input type="checkbox"/> 4 Never | <input type="checkbox"/> 6 Do not know |

13 What is the average TEMPERATURE set for heating?

(CHECK ONE FOR EACH TIME PERIOD.)

°C	°F	Day	Evening	Night
17° or less	64° or less	¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>
18°-19°	65°-67°	¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>
20°-21°	68°-70°	¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>
22°-23°	71°-73°	¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>
24°-25°	74°-77°	¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>
26° plus	78° plus	¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>
Do not know		¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>

14 Do you use a dehumidifier?

¹ Yes ² No ³ Do not know

15 Do you use a humidifier?

¹ Yes ² No ³ Do not know

Section 3

Ventilation & Air Quality

1 What type of VENTILATION SYSTEM(s) is/are used to control the air quality in your home? (CHECK ALL THAT APPLY.)

- | | |
|--|---|
| ¹ <input type="checkbox"/> Central Exhaust System | ¹ <input type="checkbox"/> Roof Turbine Vent |
| ¹ <input type="checkbox"/> Heat Recovery Ventilator | ¹ <input type="checkbox"/> Windows/Doors |
| ¹ <input type="checkbox"/> Furnace Fan | ¹ <input type="checkbox"/> Other: _____ |
| ¹ <input type="checkbox"/> Kitchen/Bathroom Fans | ¹ <input type="checkbox"/> No Ventilation System |
| ¹ <input type="checkbox"/> Ceiling Fans | ¹ <input type="checkbox"/> Do not know |
| ¹ <input type="checkbox"/> Portable Fans | |

2 What type of AIR FILTRATION system is used?

- | | |
|---|---|
| ¹ <input type="checkbox"/> None | ⁴ <input type="checkbox"/> Electrostatic (Electronic) Air Filter/Cleaner |
| ² <input type="checkbox"/> Standard Furnace Air Filter | ⁵ <input type="checkbox"/> Other: _____ |
| ³ <input type="checkbox"/> Room Air Filter(s) | ⁶ <input type="checkbox"/> Do not know |

3 Is there a FRESH AIR INTAKE to your central forced air furnace?

- | | |
|---|---|
| ¹ <input type="checkbox"/> Yes | ³ <input type="checkbox"/> No Central Forced Air Furnace |
| ² <input type="checkbox"/> No | ⁴ <input type="checkbox"/> Do not know |

4 What best describes the air quality in your home during the winter months?

- | | | |
|---|---|---|
| ¹ <input type="checkbox"/> Too Dry | ² <input type="checkbox"/> Too Humid | ³ <input type="checkbox"/> Comfortable |
|---|---|---|

Section 4

Air Conditioning

1 What type of AIR CONDITIONER is used to COOL your residence?

- ¹ No Air Conditioner – Go to SECTION 5
- ² Heat Pump
- ³ Window or Wall Air Conditioner: How many?
¹ One ² Two ³ Three or More
- ⁴ Central Air Conditioner: How many?
¹ One ² Two ³ Three or More

2 How do you pay for your AIR CONDITIONING costs?

- ¹ Payment is made directly to
 Manitoba Hydro (part of utility bill)
- ² Cost is included in rent or common service fee
- ³ Other: _____
- ⁴ Do not know

3 What is the age of the MAIN air conditioning system?

- ¹ 0 - 3 years ⁴ 10 - 12 years ⁷ 21 - 25 years
- ² 4 - 6 years ⁵ 13 - 15 years ⁸ Over 25 years
- ³ 7 - 9 years ⁶ 16 - 20 years ⁹ Do not know

4 What is the AVERAGE TEMPERATURE set for cooling?

(CHECK ONE FOR EACH TIME PERIOD.)

°C	°F	Day	Evening	Night
17° or less	64° or less	¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>
18°-19°	65°-67°	¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>
20°-21°	68°-70°	¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>
22°-23°	71°-73°	¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>
24°-25°	74°-77°	¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>
26° plus	78° plus	¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>
Do not know		¹ <input type="checkbox"/>	² <input type="checkbox"/>	³ <input type="checkbox"/>

Section 5

Hot Water

1 Is there a **HOT WATER TANK** used at your residence?

- ¹ No Hot Water Tank – Go to **SECTION 6**
- ² Shared Central Supply (Serving two or more residences.) – Go to **SECTION 6**
- ³ Private Individual Hot Water Tank (Used solely by your household.)
- ⁴ Instantaneous tankless water heater

2 How do you pay for your water heating costs?

- ¹ Payment is made directly to
Manitoba Hydro (part of utility bill)
- ² Cost is included in rent or
common service fee
- ³ Other: _____
- ⁴ Do not know

3 What is the temperature setting of your hot water?

- ¹ less than 120°F (warm)
- ² 120°F to 130°F (very warm)
- ³ 130°F to 140°F (hot)
- ⁴ 140°F to 150°F (very hot)
- ⁵ More than 150°F (scalding)
- ⁶ Do not know

4 What type of fuel is used to **HEAT** your **WATER**?

- ¹ Electricity
- ² Natural Gas
- ³ Propane
- ⁴ Fuel Oil
- ⁵ Wood
- ⁶ Solar
- ⁷ Other: _____
- ⁸ Do not know

5 Have you always heated the water with the **HEATING FUEL** mentioned in **Question #4**?

- ¹ Yes, Always
 - ² No, Previously Heated
 - ³ Do not know
- With: _____
Year Converted: _____ (e.g., 1992)

6 What is the **AGE** of your hot water tank?

- ¹ 0 - 3 years
- ² 4 - 6 years
- ³ 7 - 9 years
- ⁴ 10 - 12 years
- ⁵ 13 - 15 years
- ⁶ 16 - 20 years
- ⁷ 21 - 25 years
- ⁸ Over 25 years
- ⁹ Do not know

7 What is the approximate total size of your hot water tank(s)?

- ¹ Small (under 30 gal.)
- ² Medium (30-50 gal.)
- ³ Large (60-90 gal.)
- ⁴ Extra Large (over 90 gal.)
- ⁵ Other: _____
- ⁶ Do not know

- 8** How many **SHOWERHEADS** are installed in your home?
 1 None 2 One 3 Two 4 Three or more
- 9** On average, how many total showers are taken by your household per day?
 1 None 4 Two 7 Five
 2 Rarely shower 5 Three 8 Six or more
 3 One 6 Four
- 10** On average, how many tub baths are taken by your household per day?
 1 None 4 Two 7 Five
 2 Rarely take tub baths 5 Three 8 Six or more
 3 One 6 Four
- 11** Have you done any of the following been done to **CONSERVE** water?
 (CHECK ALL THAT APPLY.)
 1 Installed Energy Efficient Showerhead(s) (6 gal/min) 1 Installed Pipe Wrap
 1 Installed Energy Efficient Faucet Aerator(s) 1 None
 1 Installed Water Heater Blanket/Insulation 1 Do not know
 1 Installed Energy Efficient Toilets (1.6 or less gal/flush)
 1 Lowered Water Heater Temperature
- 12** Do you have an **ELECTRIC WATER PUMP** installed on your water system?
 (CHECK ALL THAT APPLY.)
 1 No Pump 1 Pressure Pump 1 Sewage Pump
 1 Well Pump 1 Sump Pump 1 Do not know

Section 6

Major Appliances

- 1** Please indicate the **COOKING APPLIANCE(S)** used in your home.
 (CHECK ALL THAT APPLY.)
- | | |
|---|--|
| 1 <input type="checkbox"/> None | 1 <input type="checkbox"/> Gas Cooktop |
| 1 <input type="checkbox"/> Electric Range with Standard Oven | 1 <input type="checkbox"/> Gas Range |
| 1 <input type="checkbox"/> Electric Range with Self-Cleaning Oven | 1 <input type="checkbox"/> Gas Wall Oven |
| 1 <input type="checkbox"/> Electric Range with Convection Oven | 1 <input type="checkbox"/> Wood Stove/Oven |
| 1 <input type="checkbox"/> Electric Counter Cooktop | 1 <input type="checkbox"/> Other: _____ |
| 1 <input type="checkbox"/> Electric Wall Oven | |
- a) **WEEKLY USAGE:** _____ (Average number of cooked meals each week.)

2 Is a MICROWAVE OVEN used in your home?

- ¹ No ² Yes

a) Daily usage _____ (average minutes per day)

3 How many REFRIGERATORS are used in your home?

- ¹ None – [Go to Question 4](#) ² One ³ Two ⁴ Three or More

a) Please describe the **MAIN REFRIGERATOR** that is used in your home.

- TYPE: ¹ Frost-Free ² Manual Defrost
- DOORS: ¹ Single Door ⁴ French Door, Bottom Freezer
 ² Two Door, Top Freezer ⁵ Side-By-Side
 ³ Two Door, Bottom Freezer
- SIZE: ¹ Small (12 cu. ft. or less) ³ Large (16.1 to 20 cu. ft.)
 ² Medium (12.1 to 16 cu. ft.) ⁴ Extra Large (Over 20 cu. ft.)
- AUTOMATIC WATER DISPENSER: ¹ yes ² no
- AUTOMATIC ICE DISPENSER: ¹ yes ² no

- AGE: (years) ¹ 0 - 3 years ⁴ 10 - 12 years ⁷ 21 - 25 years
 ² 4 - 6 years ⁵ 13 - 15 years ⁸ Over 25 years
 ³ 7 - 9 years ⁶ 16 - 20 years ⁹ Do not know

b) Please describe the **SECOND REFRIGERATOR** that is used in your home.

- ¹ None – [Go to Question 4](#)

- TYPE: ¹ Frost-Free ² Manual Defrost
- DOORS: ¹ Single Door ⁴ French Door, Bottom Freezer
 ² Two Door, Top Freezer ⁵ Side-By-Side
 ³ Two Door, Bottom Freezer
- SIZE: ¹ Small (12 cu. ft. or less) ³ Large (16.1 to 20 cu. ft.)
 ² Medium (12.1 to 16 cu. ft.) ⁴ Extra Large (Over 20 cu. ft.)

- AGE: (years) ¹ 0 - 3 years ⁴ 10 - 12 years ⁷ 21 - 25 years
 ² 4 - 6 years ⁵ 13 - 15 years ⁸ Over 25 years
 ³ 7 - 9 years ⁶ 16 - 20 years ⁹ Do not know

c) Is the second fridge operating all year?

- ¹ Yes, all year ² No, only part of the year.

d) Location of second refrigerator?

- ¹ Garage ³ Porch ⁵ Other: _____
² Basement ⁴ Main floor or above

4 How many stand-alone FREEZERS are used in your home?

(DO NOT INCLUDE FREEZER COMPARTMENT OF YOUR REFRIGERATOR)

- None - Go to Question 5 One Two Three or More

a) Please describe the **MAIN** stand-alone FREEZER that is used.

- TYPE: Frost-Free Manual Defrost
- STYLE: Upright Chest
- SIZE: Small (12 cu. ft. or less) Large (16.1 to 20 cu. ft.)
 Medium (12.1 to 16 cu. ft.) Extra Large (Over 20 cu. ft.)

- AGE: (years) 0 - 3 years 10 - 12 years 21 - 25 years
 4 - 6 years 13 - 15 years Over 25 years
 7 - 9 years 16 - 20 years Do not know

b) Location of main freezer?

- Garage Porch Other: _____
 Basement Main floor or above

c) Please describe the **SECOND** stand-alone FREEZER that is used.

- None - Go to Question 5

- TYPE: Frost-Free Manual Defrost
- STYLE: Upright Chest
- SIZE: Small (12 cu. ft. or less) Large (16.1 to 20 cu. ft.)
 Medium (12.1 to 16 cu. ft.) Extra Large (Over 20 cu. ft.)

- AGE: (years) 0 - 3 years 10 - 12 years 21 - 25 years
 4 - 6 years 13 - 15 years Over 25 years
 7 - 9 years 16 - 20 years Do not know

d) Is the second freezer operating all year?

- Yes, all year No, only part of the year.

e) Location of second freezer?

- Garage Porch Other: _____
 Basement Main floor or above

5 Is there an automatic DISHWASHER used in your home?

- No Dishwasher - Go to Question 6 Yes

- LOADS PER WEEK: ____ (loads/week)
(Average number of times the dishwasher is operating each week.)

- AGE: (years) 0 - 3 years 10 - 12 years 21 - 25 years
 4 - 6 years 13 - 15 years Over 25 years
 7 - 9 years 16 - 20 years Do not know

a) What type of DRYING CYCLE do you use most often:

- Heat Dry (Sanitizing Cycle) Air Dry (Econo) Do not know

b) Do you use the Water Heat Temperature Boost option?

- 1 Not available 3 Available, but choose not to use it
2 Available, and used always 4 Available, and use occasionally

6 Is there a CLOTHES WASHER used in your home? (CHECK TYPE USED MOST OFTEN)

- 1 Do not have a Clothes Washer – Go to Question 7
2 Hand Washing – Go to Question 7
3 Use laundry facility outside the home (e.g., apartment block or laundromat)
(Serving two or more residences.) – Go to Question 7
4 Top Load Automatic Clothes Washer (Used solely by this residence.)
5 Front Load Automatic Clothes Washer (Used solely by this residence.)
6 Compact/Spinner Washer
7 Wringer Washer

a) WATER TEMPERATURE for the WASH/RINSE CYCLE:

(Setting used most often, choose only one.)

- 1 Hot/Hot 4 Warm/Warm 7 Do not know
2 Hot/Warm 5 Warm/Cold
3 Hot/Cold 6 Cold/Cold

- LOADS PER WEEK: _____ (loads/week)
(Average number of times the clothes washer is operating each week.)

- AGE: (years) 1 0 - 3 years 4 10 - 12 years 7 21 - 25 years
2 4 - 6 years 5 13 - 15 years 8 Over 25 years
3 7 - 9 years 6 16 - 20 years 9 Do not know

7 Is there a CLOTHES DRYER used in your home? (CHECK TYPE USED MOST OFTEN.)

- 1 No Clothes Dryer – Go to Section 7
2 Clothes Line/Rack – Go to Section 7
3 Use laundry facility outside the home (e.g., apartment block or laundromat)
(Serving two or more residences.) – Go to Section 7
4 Automatic Clothes Dryer (Used solely by this residence.)
 - DRYER FUEL: 1 Electricity 3 Propane
2 Natural Gas 4 Other: _____
 - DRYER TEMP: 1 Cold (Low) 3 Warm (Medium) 5 Hot (High)
(Used most often.) 2 Delicate 4 Permanent Press 6 Automatic
 - LOADS/WEEK: _____ (loads/week) (Average number of times the dryer is operating each week.)
 - MINUTES/LOAD: _____ (minutes/load) 1 Automatic
(Average number of minutes the dryer is operating for each load.)

- AGE: (years) 1 0 - 3 years 4 10 - 12 years 7 21 - 25 years
2 4 - 6 years 5 13 - 15 years 8 Over 25 years
3 7 - 9 years 6 16 - 20 years 9 Do not know

Section 7 Home Electronics and Lighting

- 1 For the top 3 most frequently used television sets in your home, please check the most appropriate boxes below:

a) Please describe the **MAIN TELEVISION** that is used in your home.

Do not have a television set – [Go to Question 3](#)

- TYPE: ¹ Tube (CRT) ³ LCD ⁵ Projection
 ² Plasma ⁴ LED ⁶ Do not know
- SIZE: ¹ Under 21" ³ 30" - 39" ⁵ Over 49"
 ² 21" - 29" ⁴ 40" - 49" ⁶ Do not know

- AGE: (years) ¹ 0 - 3 years ³ 7 - 9 years ⁵ Over 12 years
 ² 4 - 6 years ⁴ 10 - 12 years ⁶ Do not know

- USAGE: ¹ 0 hours ³ 4 - 6 hours ⁵ Over 9 hours
 ² 1 - 3 hours ⁴ 7 - 9 hours ⁶ Do not know

b) Please describe the **SECOND TELEVISION** that is used in your home.

Do not have a second television set – [Go to Question 2](#)

- TYPE: ¹ Tube (CRT) ³ LCD ⁵ Projection
 ² Plasma ⁴ LED ⁶ Do not know
- SIZE: ¹ Under 21" ³ 30" - 39" ⁵ Over 49"
 ² 21" - 29" ⁴ 40" - 49" ⁶ Do not know

- AGE: (years) ¹ 0 - 3 years ³ 7 - 9 years ⁵ Over 12 years
 ² 4 - 6 years ⁴ 10 - 12 years ⁶ Do not know

- USAGE: ¹ 0 hours ³ 4 - 6 hours ⁵ Over 9 hours
 ² 1 - 3 hours ⁴ 7 - 9 hours ⁶ Do not know

c) Please describe the **THIRD TELEVISION** that is used in your home.

Do not have a third television set – [Go to Question 2](#)

- TYPE: ¹ Tube (CRT) ³ LCD ⁵ Projection
 ² Plasma ⁴ LED ⁶ Do not know
- SIZE: ¹ Under 21" ³ 30" - 39" ⁵ Over 49"
 ² 21" - 29" ⁴ 40" - 49" ⁶ Do not know

- AGE: (years) ¹ 0 - 3 years ³ 7 - 9 years ⁵ Over 12 years
 ² 4 - 6 years ⁴ 10 - 12 years ⁶ Do not know

- USAGE: ¹ 0 hours ³ 4 - 6 hours ⁵ Over 9 hours
 ² 1 - 3 hours ⁴ 7 - 9 hours ⁶ Do not know

2 For the top 3 most frequently used set top box or cable converter box in your home, please check the most appropriate boxes below.

a) Please describe the **MAIN SET-TOP OR CABLE CONVERTER BOX** that is used in your home.

Do not have a set-top or cable converter box – [Go to Question 3](#)

- SERVICE PROVIDER: Cable company Telephone company Satellite Do not know
- FEATURES: Digital Digital PVR HD HD PVR Do not know

- AGE: (years) 0 - 3 years 4 - 6 years 7 - 9 years 10 - 12 years Over 12 years Do not know

b) Please describe the **SECOND MAIN SET-TOP OR CABLE CONVERTER BOX** that is used in your home.

Do not have a second set-top or cable converter box – [Go to Question 3](#)

- SERVICE PROVIDER: Cable company Telephone company Satellite Do not know
- FEATURES: Digital Digital PVR HD HD PVR Do not know

- AGE: (years) 0 - 3 years 4 - 6 years 7 - 9 years 10 - 12 years Over 12 years Do not know

c) Please describe the **THIRD MAIN SET-TOP OR CABLE CONVERTER BOX** that is used in your home.

Do not have a third set-top or cable converter box – [Go to Question 3](#)

- SERVICE PROVIDER: Cable company Telephone company Satellite Do not know
- FEATURES: Digital Digital PVR HD HD PVR Do not know

- AGE: (years) 0 - 3 years 4 - 6 years 7 - 9 years 10 - 12 years Over 12 years Do not know

3 For the top 3 most frequently used computers in your home, please check the most appropriate boxes.

a) Please describe the **MAIN COMPUTER** that is used in your home.

Do not have a computer – [Go to Question 5](#)

- TYPE: Desktop Laptop Do not know
- SCREEN: Tube (CRT) LCD

- AGE: (years) 0 - 3 years 4 - 6 years 7 - 9 years 10 - 12 years Over 12 years Do not know

- USAGE: On 24 hours On when necessary Do not know

b) Please describe the **SECOND COMPUTER** that is used in your home.

¹ Do not have a second computer – [Go to Question 4](#)

• TYPE: ¹ Desktop ² Laptop ³ Do not know

• SCREEN: ¹ Tube (CRT) ² LCD

• AGE: (years) ¹ 0 - 3 years ³ 7 - 9 years ⁵ Over 12 years

² 4 - 6 years ⁴ 10 - 12 years ⁶ Do not know

• USAGE: ¹ On 24 hours ² On when necessary ³ Do not know

c) Please describe the **THIRD COMPUTER** that is used in your home.

¹ Do not have a third computer – [Go to Question 4](#)

• TYPE: ¹ Desktop ² Laptop ³ Do not know

• SCREEN: ¹ Tube (CRT) ² LCD

• AGE: (years) ¹ 0 - 3 years ³ 7 - 9 years ⁵ Over 12 years

² 4 - 6 years ⁴ 10 - 12 years ⁶ Do not know

• USAGE: ¹ On 24 hours ² On when necessary ³ Do not know

4 Do you have internet access at your residence?

¹ No ² Yes

5 What **LIGHT FIXTURES** listed below are used in your home? ([CHECK ALL THAT APPLY.](#))

a) **Bedrooms**

¹ Compact Fluorescent ¹ LED ¹ Tube Fluorescent

¹ Incandescent ¹ Halogen

b) **Kitchen**

¹ Compact Fluorescent ¹ LED ¹ Tube Fluorescent

¹ Incandescent ¹ Halogen

c) **Hallway**

¹ Compact Fluorescent ¹ LED ¹ Tube Fluorescent

¹ Incandescent ¹ Halogen

d) **Living/Family Room / Dining Room**

¹ Compact Fluorescent ¹ LED ¹ Tube Fluorescent

¹ Incandescent ¹ Halogen

e) **Laundry Area**

¹ Compact Fluorescent ¹ LED ¹ Tube Fluorescent

¹ Incandescent ¹ Halogen ¹ No laundry area

f) **Basement area**

¹ Compact Fluorescent ¹ LED ¹ Tube Fluorescent

¹ Incandescent ¹ Halogen ¹ No basement area

6 How many **HALOGEN TORCHIERE LAMPS** are used at your residence?

¹ None ² One ³ Two or more

7 Are there any strings of **OUTDOOR SEASONAL LIGHTS** hung at your residence?

¹ No ³ Yes, Incandescent lights

² Yes, LED lights ⁴ Yes, both LED and Incandescent lights

Section 8

Hot Tub, Pool & Sauna

EXCLUDING HOT TUBS, POOLS AND SAUNAS IN APARTMENT/TOWNHOUSE COMPLEXES

- 1 Is there a **HOT TUB/JACUZZI** installed in your home?

¹ No ² Yes, total seating capacity _____

- 2 Is there a **SAUNA** installed in your home?

¹ No ² Yes

- 3 Does your home have a **SWIMMING POOL**?

¹ No - Go to SECTION 9 ² Yes, Indoor ³ Yes, Outdoor

a) **SIZE OF PUMP MOTOR:**

¹ No Pump ³ 1 hp ⁵ Do not know

² 3/4 hp or less ⁴ 1 1/4 hp

b) **HEATING FUEL:**

¹ Not Heated ³ Natural Gas ⁵ Solar

² Electric ⁴ Propane ⁶ Do not know

Section 9

Your Vehicle

- 1 How many **VEHICLES** are usually plugged in by your household during the winter months? (NOVEMBER - MARCH)

¹ None - Go to SECTION 10 ³ Two ⁵ Four or More

² One ⁴ Three

- 2 For your most **COMMONLY** used vehicle, please indicate your normal routine during the winter months. (NOVEMBER - MARCH)

a) **PARKED IN:** ¹ Detached Garage ³ Carport/Shelter ⁵ Outside
² Attached Garage ⁴ Underground Parkade

b) **CAR TIMER FOR BLOCKHEATER:** ¹ Yes ² No

c) **INTERIOR CAR WARMER:** ¹ Yes ² No

d) **What best describes the routine for plugging in your vehicle(s)?**

(CHOOSE ONLY ONE)

¹ Do not plug-in

² Plug-in every day

³ Plug-in occasionally - # of DAYS PER WEEK: _____ (1 to 7)

⁴ Dependent on the overnight temperature: _____ (Celsius) or _____ (Fahrenheit)

e) **When you do plug-in your vehicle(s), how many HOURS PER DAY ON AVERAGE is the block heater operating? ON A WEEKDAY (MON. TO FRI)**

¹ None ³ 3 - 4 hours ⁵ 7 to 8 hours

² 1 - 2 hours ⁴ 5 - 6 hours ⁶ Over 8 hours

Section 10

Services and Programs

- 1** Please indicate how you or anyone in your household USUALLY pays the Manitoba Hydro bill? (CHECK ONLY ONE.)
- ¹ In-Person - at a Manitoba Hydro office ⁵ Pre-Authorized Payment Plan
 ² In-Person - at a designated agency ⁶ Other: _____
 ³ By Mail ⁷ Do not know
 ⁴ On-Line
- 2** Are you aware of Manitoba Hydro's MYBILL method of receiving bills by email?
 ¹ Yes ² No
- 3** Would you be interested in receiving your Manitoba Hydro bill by email?
 ¹ Yes ³ Not sure ⁵ Have no internet access
 ² No ⁴ Already receive monthly Hydro bill by email
- 4** In the last year, how many times did you access the Manitoba Hydro website?
 ¹ Zero ² 1 to 5 ³ 6 to 10 ⁴ Over 10 ⁵ Have no internet access
- 5** Do you read the monthly Energy Matters news bulletin that comes with your bill?
 ¹ Yes, Always ² Yes, Occasionally ³ No, Never
- 6** Do you read the special bill inserts describing new Power Smart programs Manitoba Hydro is offering?
 ¹ Yes, Always ² Yes, Occasionally ³ No, Never
- 7** Have you participated in any programs as a result of reading the special bill insert?
 ¹ Yes ² No
- 8** Please check all the programs you have PARTICIPATED in while at your PRESENT RESIDENCE? (CHECK AS MANY AS APPLY.)
- ¹ Have participated in no programs at this point
 ¹ Power Smart Natural Gas Furnace Replacement Program
 ¹ Power Smart Natural Gas Boiler Replacement Program
 ¹ Power Smart New Home Program
 ¹ Power Smart Residential Loan
 ¹ WISE Program - Seniors Helping Seniors
 ¹ Earth Power (Geothermal) Loan
 ¹ Home Evaluation Program On-line
 ¹ Power Smart Home Insulation Program
 ¹ Power Smart Energy Efficient Appliance Program
 ¹ Power Smart Compact Fluorescent Lighting Promotions
 ¹ Seasonal LED Lights Turn-in Program
 ¹ Torchiere Lamp - Turn-In Halogen Program
 ¹ ENERGY STAR Light Fixtures - Mail-In Rebate
 ¹ Home Evaluation Program - Mail-in
 ¹ Power Smart In-Home Energy Evaluation program
 ¹ Lower Income Energy Efficiency Program

Section 1.1

Household Demographics

The following questions are of a personal nature, but are very important in explaining energy usage. Please try to answer these questions. If you are uncomfortable in answering any of them, just mark the 'Choose not to answer' box. All responses are kept strictly confidential.

1 Including yourself, how many persons usually live in your home?

- One (myself) Three Five Seven or more
 Two Four Six Choose not to answer

2 Please indicate the number of people usually living in your home, within each AGE GROUP.

_____ Under 6 years _____ 25-34 years _____ 55-64 years
 _____ 6-18 years _____ 35-44 years _____ 65 and older
 _____ 19-24 years _____ 45-54 years Choose not to answer

3 How many people who live in your home are EMPLOYED either FULL-TIME or PART-TIME?

- a) ___ Full-Time b) ___ Part-Time c) ___ Choose not to answer

4 What is your approximate total annual household INCOME? (ALL SOURCES BEFORE TAXES)

- Under \$20,000 \$50,000-\$54,999 \$80,000-\$89,999
 \$20,000-\$24,999 \$55,000-\$59,999 \$90,000-\$99,999
 \$25,000-\$29,999 \$60,000-\$64,999 \$100,000-\$124,999
 \$30,000-\$34,999 \$65,000-\$69,999 \$125,000-\$149,999
 \$35,000-\$39,999 \$70,000-\$74,999 \$150,000 or over
 \$40,000-\$49,999 \$75,000-\$79,999 Choose not to answer

5 Please indicate the highest EDUCATION LEVEL attained by each head of household?

	Person 1	Person 2
No Formal Education	<input type="checkbox"/>	<input type="checkbox"/>
Elementary (Grades 1-6)	<input type="checkbox"/>	<input type="checkbox"/>
Junior High (Grades 7-9)	<input type="checkbox"/>	<input type="checkbox"/>
Senior High (Grades 10-12)	<input type="checkbox"/>	<input type="checkbox"/>
Trade School	<input type="checkbox"/>	<input type="checkbox"/>
Community College	<input type="checkbox"/>	<input type="checkbox"/>
University (Bachelor)	<input type="checkbox"/>	<input type="checkbox"/>
Graduate (Master's or PHD)	<input type="checkbox"/>	<input type="checkbox"/>
Other _____	<input type="checkbox"/>	<input type="checkbox"/>
Choose not to answer	<input type="checkbox"/>	<input type="checkbox"/>

Please mail this completed form in the postage
paid self-addressed envelope to:

**RESIDENTIAL ENERGY USE SURVEY
MARKET FORECAST DEPARTMENT**

Manitoba Hydro
P.O. Box 815, Station Main
Winnipeg, Manitoba R3C 2P4

THANK YOU
FOR YOUR TIME AND COOPERATION

Please answer the survey for the address shown on the **FRONT COVER**.
Return the completed questionnaire within the next **TWO WEEKS**, in
the postage paid envelope provided.



CAC/CENTRA I-20

Reference: Tab 7 – DSM

b) State the (a) number and (b) fraction of customers that are lower income households (defined as LICO 125%) served by Centra that use natural gas for heat and do not live in owner-occupied housing.

ANSWER:

Please see the table below.

	Served by Centra – Natural Gas Heat – Number of Dwellings				
	Own	% Own	Rent	% Rent	Total
LICO 125%	46,314	20%	4,572	2%	50,886
NON LICO 125%	178,775	76%	4,875	2%	183,650
Total	225,089	96%	9,447	4%	234,536

There were 4,572 lower income rental homes served by Centra that use natural gas for heat. This is 2% of the total customers served by Centra with natural gas heat.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- c) Of the number of Centra lower income households who are renters, provide the number with (a) a standard furnace, and (b) fair or poor insulation.**

ANSWER:

There are 2,285 LICO 125% rental households with a standard efficient furnace. The number of LICO 125% rental households with poor and fair insulation is 3,361 (excludes apartments).

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- d) Of the number of Centra lower income households who are renters and are served by a standard furnace, provide the number who pay for their own heat.**

ANSWER:

The number of LICO 125% rental households served by Centra with a standard efficient furnace that pay for their own heat is 2,285.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- e) (i) Describe all Company activities from and including May 2009 to extend its Lower Income programs to tenants (See Company’s rebuttal evidence in 2009/10 GRA at 13).**
- (ii) Describe and document the Company’s programs, if any, that are available to renters who pay for their own heat. Include all program designs, marketing and application materials.**
- (iii) Provide the number of such participants, by measure and by quarter.**
- (iv) For each year beginning in 2009, provide the Company’s:**
- (a) marketing plan, and,**
 - (b) program implementation plan for “lower income households living in rented quarters” (Order 128/09 at 32).**

ANSWER:

i) & ii)

Centra continues to work extensively with non-profit and government housing agencies to extend the Lower Income Energy Efficiency Program to rental homes designated for lower income tenants (excluding apartments). From 2009 to present, energy efficiency upgrades have been performed by two well established social enterprises within Manitoba; Building Urban Industries for Local Development (BUILD) and Brandon Energy Efficiency Program (BEEP). Through this approach, Centra provides funding for the in-home energy evaluation

housing. In 2011, Centra began working with another social enterprise, Manitoba Green Retrofit (MGR), in addition to BUILD and BEEP.

A new initiative, the Neighbourhood Power Smart Project, launched in late 2012 builds upon the Lower Income Energy Efficiency Program with the goal of completing energy efficiency upgrades on a block-by-block basis in lower income neighbourhoods. Under this initiative, North End Community Renewal Corporation and Brandon Neighbourhood Renewal Corporation employ local residents and social enterprises; BUILD, MGR and Inner City Renovation, to bring energy efficiency upgrade opportunities direct to the customer's door. Homeowners and tenants not qualifying under LIEEP will be encouraged to participate in Pay-As-You-Save Financing Program (PAYS) for qualifying upgrades and the other available Power Smart offerings (see below).

“Pay As You Save” Financing Program:

The PAYS Program offers long-term financing for qualifying energy efficient upgrades where the estimated monthly bill savings generated by the upgrade are sufficient to offset the average monthly finance payments; thereby not increasing the average monthly utility bill. Landlords and tenant together are eligible to complete upgrades to the property with the unique feature that the tenant, who receives the benefit of the upgrade, can pay for the upgrade on their utility bill. Upgrades eligible under this program include insulation upgrades, natural gas heating systems, geothermal systems, and drain water heat recovery systems. Water Sense Toilets can also be financed when installed in conjunction with an energy efficient upgrade.

Customers interested in participating apply through a registered contractor or retailer, who will complete the paperwork on their behalf and submit to Centra for pre-approval. Once the upgrade is completed, the customer signs a Completion Form to indicate the work is

completed and to authorize Centra to pay the contractor or retailer. Centra then sets up the monthly finance charge on the customer's Manitoba Hydro account(s).

Water and Energy Saver Program:

The Water and Energy Saver Program promotes the use of energy efficient low-flow plumbing fixtures by providing the technologies at no cost to all residential customers of Manitoba Hydro including landlords and tenants. Eligible customers receive up to two energy efficient showerheads, two energy efficient bathroom faucet aerators, one energy efficient kitchen aerator, and hot water tank pipe insulation for free. Tenants interested in participating in the Program can do so by telephone, mail-in application, or online application, however they must obtain the landlord's express permission prior to participating in the Program. Within two weeks of submitting an application, the customer will receive their energy efficient products in the mail. The Program utilizes various communication mediums to promote the program such as bill inserts, print, radio, and online advertising.

Centra also works directly with property managers as part of a multi-unit bulk offering to encourage the installation of the energy efficient showerheads across all units within their facilities.

Home Insulation Program (HIP):

HIP provides information and financial incentives to encourage customers to upgrade the insulation in their attics, walls, and foundations to Power Smart recommended levels. Landlords of single detached or multi-attached houses are eligible to apply for rebates for insulation upgrades completed on their rental properties (multi-unit residential buildings are eligible under the Power Smart Building Envelope Program). Customers interested in participating apply through a registered contractor or retailer who will complete the

paperwork on their behalf and submit to Centra for pre-approval. Once the work is complete original paperwork and invoices are sent to Centra for processing. The homeowner or landlord receives the rebate as a cheque or it can be applied to the owner's account. If the insulation for the upgrade has been financed through PAYS, the amount of the rebate will be applied to the loan principal. Tenants will realize the benefit of landlord participation through the energy savings achieved on their monthly bill.

Other Initiatives:

In addition to the above programs available to single and multi-attached residential buildings (e.g. townhouses/rowhouses), Manitoba Hydro's Power Smart initiative has been and continues to target cost effective energy efficient opportunities within the multifamily residential housing sector. The following Power Smart programs target opportunities in multi-family commercial buildings:

- Commercial Building Envelope Program (windows and insulation)
- Commercial Heating Ventilation and Air Conditioning Program
- Commercial Lighting Program
- Commercial Clothes Washer Program
- Commercial New Building Program
- Commercial Earth Power Program
- Water and Energy Saver Program - Multifamily Residences (described above)

Manitoba Hydro has recently reviewed its penetration within the multifamily residential housing sector to assess the success of the Corporation's efforts in this market sector. Based on this data, to date over 3,200 multi-family residential buildings, representing approximately 68% of multifamily residential buildings in Manitoba, have participated in at least one of the Power Smart offerings. Multifamily residential building customers have participated in Manitoba Hydro's Lighting (48%), Parking Lot Controller (18%), Windows

(26%), Insulation (10%), Clothes Washer (8%), CFL Bulk Purchase (10%), Water & Energy Saver (66%), Boilers (6%) and Energy Star Appliance programs (4%).

iii)

Participation by Program (all tenants)

LIEEP Participants:

LIEEP – Natural Gas – Number of Tenant Participants

Fiscal Year	2008/09	2009/10	2010/11	2011/12	2012/13*	Total
Total Participation	15	219	258	326	78	896
Insulation	15	219	258	307	78	877
Low Cost No Cost	15	219	258	326	78	896

* 2012/13 includes participation up to December 31 2012

PAYS Participants:

Pay-As-You-Save – Tenant Participation		
Fiscal Year	2012/13	
Quarter	Q3	Q4
Participation	7	2

During the time period of November 2012 (program launch) and February 28, 2013, nine landlords have completed upgrades to their properties, representing 17% of the projects under this program completed during this time period.

Water and Energy Saver Program Participants:

Water and Energy Saver Program – Natural Gas Water Heat – Participation by Tenants												
Fiscal Year	2010			2011				2012				
Quarter	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Total
Participants	8	4655	1391	3336	1171	1131	145	225	414	535	256	13267

Note: Program launched September, 2010

Home Insulation Program Participants:

Home Insulation Program – Natural Gas Space Heat – Participation by Landlords (number of rental units)																	
Fiscal Year	2008	2009				2010				2011				2012			
Quarter	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Participants	84	30	36	41	81	38	39	35	61	39	23	36	52	53	33	27	25

iv)

Centra is providing the programming described above, but does not have a discrete program implementation plan

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- f) Describe and document the Company’s programs, if any, that are available to assist landlords of lower income households to improve standard furnaces or insulation. Include all program designs, marketing and application materials.**

ANSWER:

Please see Centra’s response to CAC/Centra I-20(e), (i) and (ii).

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- g) For each calendar quarter beginning in 2009, state the number of lower income households living in rented quarters served by the Company's (a) Furnace Replacement Program and (b) insulation program.**

ANSWER:

Please see Centra's response to CAC/Centra I-20 e (iii).

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- h) State the number of boilers in lower income households served by the Company (a) who live in owner-occupied quarters, and (b) who live in rented quarters.**

ANSWER:

There are 1,480 boilers in LICO 125% owner-occupied households served by Centra and no boilers in rented quarters.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- i) Provide all Company plan and budgets for(a) process evaluation, (b) impact evaluation(s) (c) all other evaluation(s) (See Order 128/09 at 32, Company’s rebuttal evidence in 2009/10 GRA at 15). Include all documents.**

ANSWER:

The Lower Income Energy Efficiency Program (LIEEP) is presently being evaluated based on a draft evaluation plan.

As all evaluations are presently performed in-house, Centra does not specifically allocate dollars to the cost of evaluations. In the creation of the Power Smart Plan, program managers provide a program budget which includes an estimate of hours from department staff who undertake both the planning and evaluation functions for that program. In 2011/12, the LIEEP included a total budget of \$25,000 for labour for work on both program planning and evaluation, with \$22,000 being allocated to Centra.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- j) Provide (a) all completed evaluation reports and (b) a timetable for all planned evaluations.**

ANSWER:

Results of program evaluations are formally reported in the Power Smart Annual Review; refer to Tab 7 Appendix 7.2 pages 68 to 74 for the natural gas results. Program evaluations are performed on an annual basis at the end of each fiscal year, and results are aggregated and reported in the Power Smart Annual Review.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- k) Provide the Company's best dollar estimate (NPV over the same duration and with the same discount rate as used for the Company's levelized cost of gas) of the following benefits to the Company due to investments in DSM for lower income households: (a) reduced arrears, (b) reduced disconnection and reconnection costs, (c) reduced customer calls, (d) reduced notices regarding late payment, (e) reduced emergency calls, (f) reduced insurance costs, (g) all other cost reductions for the Company (specify).**

ANSWER:

Centra has not undertaken an assessment of this nature. Centra does not believe there is a notable impact on the items identified that result from the Corporation's investments in DSM for lower income households to warrant the expense of such an undertaking. Lower income households experience many competing priorities for their limited dollars. Although reductions in energy use will benefit low income households by reducing their energy costs, it may or may not influence their utility bill payment patterns.

There are no reduced insurance costs for the Corporation as a result of investing in energy efficiency or specifically in energy efficiency for low income households. Centra is not aware of any reduction in insurance costs that a customer may receive as a result of undertaking an energy efficiency upgrade in their home.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- I) Provide all documents describing and/or analyzing the Company's consideration of alternatives it considered in order to increase the pace of lower income DSM programs (see at 36-39) (a) within the current budget and (b) with an increased budget.**

ANSWER:

Please see Centra's response to CAC/Centra I-20 (hh) for information on the Corporation's original program strategies and more recent enhancements to encourage participation.

Working with program partners and retaining a new advertising agency, the Corporation has made significant efforts to increase the pace of lower income DSM programs since 2009/10 with marketing expenditures totaling \$968,513 as of March 2013. The significant increase in spending is largely attributed to increased use of mass market media. A new, focus on barriers to participation resulted in the "Up to 74,000" campaign with the intent to further reach lower income customers.

Outbound calling was introduced in 2011 as well as canvassing by community groups in an effort to reach lower income customers through a more direct approach; please see Centra's response to CAC/Centra I-20(v) for further detail.

In 2012, the Neighbourhood Power Smart Project was introduced; please refer to Centra's response to CAC/Centra I-20 (e)(i) for further detail.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- m) Define “rentals” in the Target Furnace Replacement Market reports, e.g., at Filing, Appendix 7.3, p. 1.**

ANSWER:

In the Target Furnace Replacement Market reports, “rentals” refers to single-detached residences, multi-attached residences and a small number of apartment suites with in-suite natural gas heating.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- n) Restate Target Insulation Upgrade Market tables (e.g., at Filing, Appendix 7.3, p. 2) to include buildings with apartments, at least for LICO 125%.

ANSWER:

The chart below shows the Target Insulation Upgrade Market table revised to include apartment dwellings for both LICO 125% and Non-LICO dwellings. With apartments added into the table, the number of Total LICO 125% Dwellings with Insulation reported as “Poor/Fair” increased from 19,065 to 27,804.

Q3 - 2012/13 Report - including Apartment Suites

Insulation Target Market Review	LICO 125%	Non-LICO Dwellings	All Dwellings
Dwellings with Insulation Rated "Poor/Fair"			
Owners	16,846	46,913	63,759
Renters	10,957	12,512	23,469
Total Dwellings with Insulation reported as "Poor/Fair" (2009 Insulation Upgrade Target Market)*	27,804	59,425	87,229
Estimate of Number of Private Poor/Fair Dwellings Insulated from Dec 2009 to December 31,2012**	1,131	2,063	3,194
Number of dwellings requiring Insulation Upgrades	26,673	57,362	84,035
<i>Total Dwellings</i>	105,086	334,010	439,096
Fair/Poor % of Marketplace	25%	17%	19%

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- o) State the beginning of the time range denoted as “cumulative” in the LIEEP Program Participation Highlights, e.g., Filing, Appendix 7.3, p. 3.**

ANSWER:

The beginning of time range denoted as “cumulative” refers to the Lower Income Energy Efficiency Program inception of December 2007.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- p) **Confirm that the number of LICO 125% homes insulated in a quarter can be determined by calculating the difference between (i) the total insulated to date from Dec. 2009 and (ii) the total insulated to date from Dec. 2009 at the immediately prior quarter (e.g., chart at bottom of Filing, Appendix 7.3 at 20, line 5, column 2 [676] v. at 21 line 5, column 2 [606]).**

ANSWER:

The total number of LICO 125% homes insulated over the quarter cannot be determined by calculating the difference between the total insulated to date from Dec. 2009 and the total insulated to date from Dec. 2009 at the immediately prior quarter. The total number of LICO 125% homes insulated in the quarter is presented in Program Participation Highlights on Page 3 of Appendix 7.3 of this Application.

The information presented in the Table on page 20 of Appendix 7.3 of this Application presents the program reach within the targeted owner-occupied LICO 125% homes indicating poor or fair insulation. Fifty-seven per cent is assumed to be the proportion of LIEEP owner-occupied insulation upgrades with poor and fair insulation levels prior to the upgrade. This assumption was determined by analyzing the insulation job costs of a sample of 466 customers.

The difference between the two periods noted above represents 57% of the insulated owner-occupied homes for the period. For example, if you subtract 1,016 (refer to the 2013 04 16

estimated number of private poor/fair dwellings on page 85 of Appendix 7.3 for the period ending September 30, 2012) from 1,131 (refer to the estimated number of private poor/fair dwellings in Centra's response to CAC/Centra I-20(r) for the period ending December 31, 2012) the difference would equate to 115, or 57% of the 202 owner occupied dwellings insulated for the quarter ending December 31, 2012.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- q) The report for the period through Dec. 30, 2011, appears to indicate that the program insulated 375 lower income homes (Filing, Appendix 7.3, p. 21) while the total number of lower income dwellings insulated in the period was 70 (id. at 20 v previous period, at 2: the value of 70 is the difference between the two values reported for Dec. 2009 through the end of the relevant period, as in the previous IR). Explain and reconcile (a) these numbers, as well as similar differences for the periods (b) through March 31, 2012 (538 v 139) (id at 43, 44, using similar method to calculate 139), (c) through June 30, 2012 (391 v 102) (id at 65, 64) (d) through September 30, 2012 (341 v 99) (id at 86, 85).**

ANSWER:

The total number of LICO 125% homes insulated over the quarter cannot be determined by calculating the difference between the total insulated to date from Dec. 2009 and the total insulated to date from Dec. 2009 at the immediately prior quarter. The total number of LICO 125% homes insulated in the quarter is presented in Program Participation Highlights on Page 3 of Appendix 7.3 of this Application. Please see Centra's response to CAC/Centra I-20(p).

- a) Total insulation upgrades completed in the quarter ending December 30, 2011 are 375. This includes Individual (private homeowners), Community, and First Nations homes. The difference in values between this and the immediately prior quarter in**

- the Target Insulation Update Market table, 70, is 57% of the 123 individual insulation upgrades completed during the quarter.
- b) Total insulation upgrades completed in the quarter ending March 31, 2012 are 538. This includes Individual (private homeowners), Community, and First Nations homes. The difference in values between this and the immediately prior quarter in the Target Insulation Update Market table, 139, is 57% of the 244 individual insulation upgrades completed during the quarter.
 - c) Total insulation upgrades completed in the quarter ending June 30, 2012 are 391. This includes Individual (private homeowners), Community, and First Nations homes. The difference in values between this and the immediately prior quarter in the Target Insulation Update Market table, 102, is 57% of the 179 individual insulation upgrades completed during the quarter.
 - d) Total insulation upgrades completed in the quarter ending September 30, 2012 are 341. This includes Individual (private homeowners), Community, and First Nations homes. The difference in values between this and the immediately prior quarter in the Target Insulation Update Market table, 99, is 57% of the 173 individual insulation upgrades completed during the quarter.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- r) Provide the data provided in Filing, Appendix 7.3, for each quarter subsequent to the quarters reported therein, including the information requested in IR 14 above. For quarters for which data are not available now, provide data (including partial data) as they become available.**

ANSWER:

Please refer to PUB/Centra I-59(b) for the 2012/13 Q3 Quarterly Report and Centra's response to CAC/Centra I -20(n).

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- s) For each calendar quarter beginning in 2009, provide disbursements for lower income insulation.

ANSWER:

Centra reports on a fiscal year which ranges from April 1 of a given year to March 31 of the following year. Quarters are broken down as such: Quarter 1 (April 1 to June 30), Quarter 2 (July 1 to September 30), Quarter 3 (October 1 to December 31) and Quarter 4 (January 1 to March 31).

	Insulation Disbursements			
	Q1	Q2	Q3	Q4
2008/09	N/A	N/A	N/A	68,635
2009/10	38,376	146,202	247,074	516,024
2010/11	495,644	718,636	433,149	450,220
2011/12	550,352	488,111	525,691	734,095
2012/13	784,388	525,498	622,910	N/A

The total Lower Income Energy Efficiency Program insulation disbursements for the period from Q4 2008/09 to Q3 2012/13 are \$7,345,000.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- t) Describe in detail, and provide all documents related to, the “slight refinement” of the furnace marketplace data in the Q4 2011/12 report (Filing, Appendix 7.3 at 41).

ANSWER:

The Low Income Cut-Off (LICO) Sector report, as referenced in Centra’s response to CAC/Centra I-20(a), was produced in May 2010, based on preliminary results of the 2009 Residential Energy Use Survey.

The “slight refinement” refers to the difference between the LIEEP Standard Efficiency Furnace Target Market Review table with update as of September 30, 2011 and the same table with update as of March 31, 2012. The earlier table is on page 1 of Appendix 7.3 and the later table is on page 41 of Appendix 7.3.

The refinement was due to a Manitoba Hydro Residential Furnace Verification Study that was undertaken to clarify potentially improbable customer reported combinations of “efficiency level” versus “age of furnace”. The study resulted in the estimate of standard furnaces in Manitoba as of December 1, 2009 decreasing from 67,557 to 60,329, and from 20,187 to 18,319 for the low income (LICO 125) market. Attached to this response is the Residential Furnace Verification Study - Final Analysis.

Manitoba Hydro Residential Furnace Verification Study - Final Analysis

Market Forecast Department – April 2012

Executive Summary

In the Fall of 2009, the Market Forecast Department conducted an extensive 24 page mail-out survey of its residential customers. 19,422 residential accounts were randomly selected and 4,738 surveys were returned.

One of the important results from the survey was to determine the number of central forced air gas furnaces in the province at three efficiency-levels: High (90%+), Mid (78-84%) and Standard (60-65%) cross tabulated by the age of the furnace. When the original estimate was produced, it included standard furnaces respondents claimed were installed as late as 1997-99. This was not thought to be possible, since standard furnaces were not installed in Manitoba after 1992.

A follow-up Residential Furnace Verification Study was then administered by the Power Smart Planning, Evaluation and Research Department. They created a set of telephone verification questions. 318 survey respondents whose survey answers raised suspicion as to the accuracy of their response were selected for follow-up. Of those, 20 were pre-evaluated using the furnace model or install date from the Customer Information Database (CIDB). The remaining 298 were telephoned and 186 (62%) responded. The phone survey was conducted by NRG Research Group.

The 186 telephone respondents were told how to properly identify the level of efficiency of their furnace, and with that information 152 were able to provide an efficiency level and 148 provided either the furnace age or year of installation.

The phone survey and database analysis resulted in changing the efficiency level of 109 responses, including 93 that were changed from standard to mid-efficiency. In addition, 99 of the furnace ages were changed. The verification resulted in the following changes to the results of the mail-out survey:

- the number of standard furnaces reduced by 7,229 or 10.7%, from 67,557 to 60,329
- the number of mid-efficiency furnaces increased by 7,106 or 9.9%, from 71,852 to 78,958
- the number of high-efficiency furnaces increased by 122 or 0.1%, from 85,671 to 85,793
- furnace ages now are consistent with the years the furnace was available

These changes have been applied to the original Residential Survey responses, so that analysis of survey information for November 2009 (when the survey was administered) will be properly adjusted.

Population and Selection

The original survey results are shown in Table 1. There were 2,745 respondents who had central forced air gas furnaces. When weighted back to the population, this represented 225,080 customers.

Table 1 – Original Survey Results

Surveys					Weighted Customers					
Age		High	Mid	Std	Total	Age	High	Mid	Std	Total
2	2006-09	592	117	-	709	2	48,144	9,742	-	57,886
5	2003-05	216	167	-	383	5	17,612	13,776	-	31,388
8	2000-02	109	169	-	278	8	8,905	13,809	-	22,714
11	1997-99	62	162	77	301	11	5,148	13,389	6,383	24,921
14	1994-96	26	119	70	215	14	2,121	9,707	5,763	17,590
17.5	1989-93	31	98	112	241	17.5	2,472	7,889	9,021	19,382
22.5	1984-88	13	40	151	204	22.5	1,040	3,217	12,333	16,590
35	To 1983	2	4	408	414	35	230	322	34,057	34,609
Total		1,051	876	818	2,745	Total	85,671	71,851	67,557	225,080

The responses in question were those in yellow. They include standard efficiency furnaces installed after 1992 which based upon Federal regulations should not have been available in the market. They also include mid and high-efficiency furnaces which were installed prior to 1985 before they may have been readily available.

Table 2 shows the survey respondents selected for follow-up. Selected were 259 standard-efficiency furnaces representing 21,167 furnaces in the population, and 59 mid and high-efficiency furnaces representing 4,809 furnaces in the population.

Table 2 - Selection for Follow-up

Resurveyed					Weighted Customers					
Original Age		High	Mid	Std	Total	Original Age	High	Mid	Std	Total
2	2006-09				-	2				-
5	2003-05				-	5				-
8	2000-02				-	8				-
11	1997-99			77	77	11			6,383	6,383
14	1994-96			70	70	14			5,763	5,763
17.5	1989-93			112	112	17.5			9,021	9,021
22.5	1984-88	13	40		53	22.5	1,040	3,217		4,257
35	To 1983	2	4		6	35	230	322		552
Total		15	44	259	318	Total	1,270	3,539	21,167	25,976

Respondents

The furnace data for each of the 318 survey respondents selected for follow-up were checked on the Customer Information Database (CIDB) to see if any listed a furnace model or install date. There were 20 having the needed information. The remaining 298 were telephoned and 186 (62%) responded.

The 186 telephone respondents were told how to properly identify the level of efficiency of their furnace, and with that information 152 were able to provide an efficiency level and 148 provided either the furnace age or year of installation.

Of the 152 telephone respondents that provided an efficiency level, 131 were used as provided. The other 21 responses were changed based on other information the respondent provided such as the model or age of the furnace. For the 34 respondents unable to provide an efficiency level, the level was taken from the original mail-out survey response. If the survey responses for the age of the furnace and the year the house was built did not support the efficiency level, then the efficiency level was changed to be consistent.

Verification

Table 3 shows the number of verified respondents by their original response, along with their weighting back to the population they represent. Of the 318 original survey respondents who were resurveyed, the type of gas furnace was found on the CIDB or telephone verified for 206 or 65% of them.

Table 3 - Verified Respondents

Verified via Phone Survey or CIDB					Weighted Verifications						
Age		High	Mid	Std	Total	Age		High	Mid	Std	Total
2	2006-09				-	2	2006-09				-
5	2003-05				-	5	2003-05				-
8	2000-02				-	8	2000-02				-
11	1997-99			53	53	11	1997-99			4,398	4,398
14	1994-96			42	42	14	1994-96			3,462	3,462
17.5	1989-93			67	67	17.5	1989-93			5,405	5,405
22.5	1984-88	12	27		39	22.5	1984-88	961	2,186		3,147
35	To 1983	1	4		5	35	To 1983	115	322		437
Total		13	31	162	206	Total		1,076	2,508	13,265	16,849
					65%						65%

Correction of Heating System

For each furnace age grouping as originally answered, the respondent was placed into the column corresponding to the verified efficiency level. Table 4 shows that 90 of the 162 furnaces said by the mail-in survey to be standard-efficiency furnaces that were installed from 1989 to 1999 were corrected to be mid or high-efficiency furnaces. Also, 9 of the 45 furnaces said to be mid or high-efficiency furnaces that were installed 1988 or earlier were corrected to be standard-efficiency furnaces.

Table 4 - Correction of Heating System

Corrected Efficiency via Phone Survey or CIDB					Weighted Corrections						
Age		High	Mid	Std	Total	Age		High	Mid	Std	Total
2	2006-09				-	2	2006-09				-
5	2003-05				-	5	2003-05				-
8	2000-02				-	8	2000-02				-
11	1997-99		40	13	53	11	1997-99		3,320	1,078	4,398
14	1994-96	1	32	9	42	14	1994-96	79	2,665	718	3,462
17.5	1989-93	3	14	50	67	17.5	1989-93	240	1,118	4,047	5,405
22.5	1984-88	11	22	6	39	22.5	1984-88	879	1,793	475	3,147
35	To 1983		2	3	5	35	To 1983		161	276	437
Total		15	110	81	206	Total		1,198	9,057	6,594	16,849

Correction of Furnace Age

Correction for just heating system was not enough. In Table 4, there are still 22 standard furnaces in installed in 1994 or later.

An attempt was made to use the age of the heating system as provided by the phone survey. However, only 6 of the 22 were able to give the furnace age or year installed, and one person stated the furnace was installed in 2003, still leaving it in need of correction.

Since the period in question was from 1994 to 1999, several checks were done using the CIDB to validate the furnace age. Of the 206 responses being verified, the following changes were required:

- 14 were found to have a different furnace install date in the inventory of their account – so the age of the furnace was updated to reflect the inventory date
- 15 homes had a build year (i.e. the year the home was built) that was only a few years different than the stated furnace age. The furnace age was changed to reflect the build date
- 25 homes had monthly and annual gas usage characteristics that indicated that a gas furnace change happened in a different year than stated in the response. The age of the furnace was changed to reflect the year the gas usage dropped.

These 54 changes to the furnace ages were applied, and the results are shown in Table 5:

Table 5 - Correction of Furnace Age

Corrected Ages from CIDB					Weighted Corrections					
Corrected Age	High	Mid	Std	Total	Corrected Age	High	Mid	Std	Total	
2	2006-09	2	2	4	2	2006-09	161	158	319	
5	2003-05	1	2	3	5	2003-05	79	158	237	
8	2000-02		6	6	8	2000-02		477	477	
11	1997-99		27	27	11	1997-99		2,247	2,247	
14	1994-96	1	26	27	14	1994-96	79	2,148	2,228	
17.5	1989-93	3	20	66	17.5	1989-93	240	1,601	5,366	
22.5	1984-88	9	26	10	22.5	1984-88	718	2,115	793	
35	To 1983		2	3	35	To 1983		230	276	
Total		15	110	81	206	Total	1,198	9,057	6,594	16,849

All but two of the responses were now validated.

Adjustment of Results for Corrected Ages

The two standard furnaces of 2003-05 were corrected to be mid-efficient.

Nine standard efficient furnaces that were corrected to be mid-efficient because of their furnace age, were changed back to be standard efficient (as originally answered on the mail-in survey) because their standard efficient furnace was now possible using their corrected age.

One high-efficiency furnace was found to be installed in 2010 after the mail-in survey. This response was changed back to being standard efficiency with the original install date.

Table 6 shows the results after making these changes.

Table 6 – Corrected Efficiency adjusting for Corrected Ages

Corrected Efficiency adjusted for Corrected Ages					Weighted Corrections					
Corrected Age	High	Mid	Std	Total	Corrected Age	High	Mid	Std	Total	
2	2006-09	2	2	4	2	2006-09	161	158	319	
5	2003-05	1	2	3	5	2003-05	79	158	237	
8	2000-02		6	6	8	2000-02		477	477	
11	1997-99		27	27	11	1997-99		2,247	2,247	
14	1994-96	1	26	27	14	1994-96	79	2,148	2,228	
17.5	1989-93	2	13	74	17.5	1989-93	161	1,039	6,007	
22.5	1984-88	9	26	10	22.5	1984-88	718	2,115	793	
35	To 1983			5	35	To 1983			507	
Total		15	102	89	206	Total	1,198	8,344	7,307	16,849

Analysis of Non-Responses

In addition to the 206 now-verified survey respondents, corrections now had to be made for the 112 telephone non-respondents.

Table 7 shows the non-respondents from the telephone survey:

Table 7 – Non-Responses from Phone Survey

Non-Respondents from Survey				Total	Weighted Non-Respondents				Total		
Age		High	Mid		Std	Age		High		Mid	Std
2	2006-09				-	2	2006-09				-
5	2003-05				-	5	2003-05				-
8	2000-02				-	8	2000-02				-
11	1997-99			24	24	11	1997-99			1,985	1,985
14	1994-96			28	28	14	1994-96			2,301	2,301
17.5	1989-93			45	45	17.5	1989-93			3,616	3,616
22.5	1984-88	1	13		14	22.5	1984-88	79	1,031		1,110
35	To 1983	1	-		1	35	To 1983	115	-		115
Total		2	13	97	112	Total		194	1,031	7,901	9,127

Non-respondents were first age-corrected by the CIDB in a similar manner as was done for the respondents:

- 2 were found to have a furnace install date.
- 9 homes had a build year.
- 49 had usage indicating a different change year

The age was corrected for these 60 responses. The corrected non-respondents are shown in Table 8:

Table 8 – Non-Responses with Corrected Ages from CIDB

Non-Respondents with Corrected Ages from CIDB				Total	Weighted Corrections				Total		
Corrected Age		High	Mid		Std	Corrected Age		High		Mid	Std
2	2006-09				-	2	2006-09				-
5	2003-05	1	1	1	3	5	2003-05	115	79	79	273
8	2000-02				-	8	2000-02				-
11	1997-99			2	2	11	1997-99			194	194
14	1994-96			12	12	14	1994-96			997	997
17.5	1989-93			69	69	17.5	1989-93			5,603	5,603
22.5	1984-88	1	12		21	22.5	1984-88	79	952	633	1,664
35	To 1983			5	5	35	To 1983			395	395
Total		2	13	97	112	Total		194	1,031	7,901	9,127

Based on the corrected ages, 15 of the furnaces that were too new to be standard efficiency were corrected to be mid-efficient. Table 9 gives the final non-response values:

Table 9 – Corrected Non-Responses

Non-Respondents with Corrected Ages and Efficiency					Weighted Corrections						
Corrected Age		High	Mid	Std	Total	Corrected Age		High	Mid	Std	Total
2	2006-09				-	2	2006-09				-
5	2003-05	1	2		3	5	2003-05	115	158		273
8	2000-02				-	8	2000-02				-
11	1997-99		2		2	11	1997-99		194		194
14	1994-96		12		12	14	1994-96		997		997
17.5	1989-93			69	69	17.5	1989-93			5,603	5,603
22.5	1984-88	1	12	8	21	22.5	1984-88	79	952	633	1,664
35	To 1983			5	5	35	To 1983			395	395
Total		2	28	82	112	Total		194	2,301	6,631	9,127

Final Results

The customers selected for the phone survey (Table 2) were corrected to give Table 10 below, made up of the CIDB or telephone verified (Table 5) and the telephone non-respondents (Table 9).

Table 10 - Final Corrections

Final Corrections - Respondents and Non-Respondents					Weighted Final Corrections						
Corrected Age		High	Mid	Std	Total	Corrected Age		High	Mid	Std	Total
2	2006-09	2	2	-	4	2	2006-09	161	158	-	319
5	2003-05	2	4	-	6	5	2003-05	194	316	-	511
8	2000-02	-	6	-	6	8	2000-02	-	477	-	477
11	1997-99	-	29	-	29	11	1997-99	-	2,442	-	2,442
14	1994-96	1	38	-	39	14	1994-96	79	3,145	-	3,224
17.5	1989-93	2	13	143	158	17.5	1989-93	161	1,039	11,610	12,810
22.5	1984-88	10	38	18	66	22.5	1984-88	797	3,068	1,426	5,291
35	To 1983	-	-	10	10	35	To 1983	-	-	902	902
Total		17	130	171	318	Total		1,392	10,645	13,938	25,976

The difference between the final correction and the original selection (Table 2) is shown in Table 11:

Table 11 - Change to Survey Results

Change					Weighted Change						
Corrected Age		High	Mid	Std	Total	Corrected Age		High	Mid	Std	Total
2	2006-09	2	2	-	4	2	2006-09	161	158	-	319
5	2003-05	2	4	-	6	5	2003-05	194	316	-	511
8	2000-02	-	6	-	6	8	2000-02	-	477	-	477
11	1997-99	-	29	(77)	(48)	11	1997-99	-	2,442	(6,383)	(3,941)
14	1994-96	1	38	(70)	(31)	14	1994-96	79	3,145	(5,763)	(2,539)
17.5	1989-93	2	13	31	46	17.5	1989-93	161	1,039	2,589	3,789
22.5	1984-88	(3)	(2)	18	13	22.5	1984-88	(243)	(149)	1,426	1,034
35	To 1983	(2)	(4)	10	4	35	To 1983	(230)	(322)	902	350
Total		2	86	(88)	-	Total		122	7,106	(7,229)	0
								0.1%	9.9%	-10.7%	

In the survey results, the number of standard furnaces will be reduced by 7,229 or 10.7%. The number of mid-efficiency furnaces will be increased by 7,106 or 9.9%, and the number of high-efficiency furnaces will be increased by 122 or 0.1%. The final corrected survey results are in Table 12, below:

Table 12 - Final Corrected Survey Responses

Final Corrected Survey Responses					Weighted Responses						
Corrected Age		High	Mid	Std	Total	Corrected Age		High	Mid	Std	Total
2	2006-09	594	119	-	713	2	2006-09	48,305	9,901	-	58,205
5	2003-05	218	171	-	389	5	2003-05	17,806	14,093	-	31,899
8	2000-02	109	175	-	284	8	2000-02	8,905	14,287	-	23,192
11	1997-99	62	191	-	253	11	1997-99	5,148	15,831	-	20,979
14	1994-96	27	157	-	184	14	1994-96	2,200	12,852	-	15,051
17.5	1989-93	33	111	143	287	17.5	1989-93	2,633	8,928	11,610	23,171
22.5	1984-88	10	38	169	217	22.5	1984-88	797	3,068	13,759	17,624
35	To 1983	-	-	418	418	35	To 1983	-	-	34,959	34,959
Total		1,053	962	730	2,745	Total		85,793	78,958	60,329	225,080
								0.1%	9.9%	-10.7%	

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- u) Explain the difference in the reports of unaided awareness between the report for the Period Ending Sept. 30, 2012 (Filing, Appendix 7.3 at 82) and all earlier reports.**

ANSWER:

Unaided awareness in all reports prior to the Period Ending Sept. 30, 2012 includes Unaided Recall –Program Details and Unaided Recall – Program Name. This includes those that were aware of the details of LIEEP without prompting but could not recall the program name itself, and those that were aware of the program name without prompting.

There was a typographical error in the unaided awareness results for the April 2011 survey that was carried forward into the recent reports. Unaided awareness was previously shown to be 31% for the April 2011 period and was corrected to 29% in the report for the Period Ending September 30, 2012.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- v) For each calendar quarter beginning in 2009, provide all (a) marketing materials (in PDF, Word, JPEG, MPG format, please), indicating the date(s) and place(s) each was used, and (b) all expenditures, by category as delineated in the quarterly reports Marketing sections (Filing, Appendix 7.3). By way of example, but not by way of limitation, in response to (a), include all posters, print advertisements, web site advertisements and banners, television advertisements, calling scripts, canvassing scripts and hand-out materials, letters, post cards, newsletters, bill inserts, flyers, direct mail pieces, and outside advertisements.

ANSWER:

Centra reports on a fiscal year from April 1 to March 31 of the following year. Quarters are broken down as such: Quarter 1 (April 1 to June 30), Quarter 2 (July 1 to September 30), Quarter 3 (October 1 to December 31) and Quarter 4 (January 1 to March 31). Please note that all attachments to this response are being provided in electronic format only at: http://www.hydro.mb.ca/regulatory_affairs/gas/gra_2013/index.shtml.

a)

2009/10:

The requested information was filed in response to PUB/Centra I-43(c) from the 2010/11 Cost of Gas Application. Copies of the relevant portions can be found as Attachments 1 and 2 to this response.

2013 04 12

2010/11:

Quarter 1

- Recycling Bins (Silver Boxes) –In lower income neighbourhoods from May to October 2010 – Attachment 3 to this response.
- Bill Insert – May 2010 – Province wide – Attachment 4 to this response.
- Radio – Weeks of May 10 and 17 2010 - NCI Radio and CKJS Ethnic Radio – Attachment 5 to this response.
- Direct Mail (Canada Post Unaddressed Ad mail) May 2010 to 11,279 households in lower income neighbourhoods in Winnipeg – Attachment 6 to this response.
- Promotional Brochure sent to Community Groups – May 2010 - Attachment 7 to this response.
- Ethnic Newspaper Ad – June, August, September and October – Attachment 8 to this response

Global Eyes Magazine

Manitoba Indochina News

Manitoba China Times

Manitoba Chinese Tribune

The Link

Indo-Cdn Telegram

The Journal

The Phillipines Times

Pilipino Express

Korean-Canadian Newsletter

Logberg-Heimskringla

Post & News

CZAS-The Polish Times

Progress Postup

The Voice

Visnyk (The Herald)

O Mundial

The Dutch Connection -Newsletter

IL Sole-Nuovo

The Southern Yarn (DUCW)

Quarter 2

- Recycling Bins (Silver Boxes) – In lower income neighbourhoods in Winnipeg May to October 2009 – Attachment 3 to this response.
- The Broadcaster West Broadway News & Views Ad – July 2010, West End Biz Ad – August 2010, West Central Streets – September 2010 – Attachment 8 to this response.
- Bus Benches – In lower income neighbourhoods in Winnipeg from August 2010 to March 2011 - Attachment 9 to this response.
- Transit Shelters – In lower income neighbourhoods in Winnipeg from August 2010 to November 2010 – Attachment 10 to this response.
- Radio –August 2010 to October 2010 - NCI Radio and CKJS Ethnic Radio – Attachment 5 to this response.
- Radio – September 2010 CFQX-FM, CFWM-FM, CITI-FM, CJKR-FM, CKMM-FM CKY-FM, and CJOB – Attachment 5 to this response.
- Ethnic Newspaper Ad – June, August, September and October –list as previously stated - Attachment 8 this response
- Direct Mail (Canada Post Unaddressed Ad mail) August 2010 to 16,931 households in lower income neighbourhoods in Winnipeg – Attachment 11 to this response.

- Rural Newspaper and CanStar Weekly Ad – 1 insert in August 2010, September 2010, and October 2010 – Attachment 8 to this response.
- MSOS Magazine Ad – September 2010 – Attachment 12 to this response.
- CTV Interstitial Piece – September 2012 to February 2011 – Attachment 13 to this response.

Quarter 3

- Interior Transit Ad – October 2010 – Attachment 14 to this response.
- Recycling Bins (Silver Boxes) – In lower income neighbourhoods May to October 2010 in lower income neighbourhoods – Attachment 3 to this response.
- The Point – Point Douglas Community News, October 2010, Spence Neighbourhood Association, November 2010 – Attachment 8 to this response.
- Bus Benches – In lower income neighbourhoods from August 2010 to March 2011 - Attachment 9 to this response.
- Transit Shelters – In lower income neighbourhoods from August 2010 to November 2010 – Attachment 10 to this response.
- Radio – August 2010 to October 2010 - NCI Radio and CKJS Ethnic Radio – Attachment 5 to this response.
- Ethnic Newspaper Ad – June, August, September and October – list as previously stated - Attachment 8 this response
- Winnipeg Free Press Ad and Winnipeg Sun Ad – October 2010 – Attachment 15 to this response.
- Direct Mail (Canada Post Unaddressed Ad mail) October 2010 to 15,435 households in lower income neighbourhoods in Winnipeg – Attachment 11 to this response.

Quarter 4

- Bus Benches – In lower income neighbourhoods from August 2010 to March 2011 - Attachment 9 to this response.
- Transit Shelters – In lower income neighbourhoods from January 2011 to February 2011 – Attachment 10 to this response
- MCNA and Rural Newspapers and CanStar Weekly Ad – January 2011 and February 2011– Attachment 8 to this response.
- Radio – January 2011 and February 2011 – in Winnipeg on CJOB-AM, CFQX-FM and CJNU-FM – Attachment 5 to this response.
- MSOS Magazine Ad – January 2011 – Attachment 12 to this response.
- Energy Matters article distributed to customers province wide – February 2011 – Attachment 16 to this response.
- CTV Interstitial Piece – September 2012 to February 2011 – Attachment 13 to this response.
- City TV – Closed Captioning – February 2011 to June 2011 - Attachment 17 to this response.
- Pre-Canvassing Letter to 750 residents in the Daniel McIntyre area of Winnipeg – February 2011. Canvassing March 2011 to June 2011 - Attachment 18 to this response.
- CNDC website – March 2011 to August 2011 – Attachment 19 to this response.
- The Broadcast West Broadway News & Views Ad – March 2011 – Attachment 20 to this response.
- Direct Mail and Free Standing Insert – March 2011 to 50,000 households in low income neighbourhoods in Winnipeg and insert into MCNA Publications for rural Manitoba disbursement to 192,000 households - Attachment 21 to this response.

2011/12:

Quarter 1

- Recycling Bins (Silver Boxes) –In lower income neighbourhoods April 2011 to June 2011 in lower income neighborhoods – Attachment 3 to this response
- Bus Benches – In lower income neighbourhoods from April 2011 to June 2011 - Attachment 9 to this response
- Transit Shelters – In lower income neighbourhoods from April 2011 to May 2011 – Attachment 10 to this response
- Direct Mail – April 2011 to 3,222 households in low income neighbourhoods in Winnipeg – Attachment 21 to this response.
- CNDC website – March 2011 to August 2011 – Attachment 21 to this response.
- City TV – Closed Captioning – February 2011 to June 2011 - Attachment 17 to this response.
- Energy Matters article distributed to customers province wide – May 2011 – Attachment 22 to this response.
- CNDC website – March 2011 to August 2011 – Attachment 18 to this response.
- Postcard delivered to 100 homes in Winnipeg (Collegiate and Ferry) for Pilot Outbound Calling Campaign – June 2011 – Attachment 23 to this response.
- Pilot Outbound Calling Script – June 2011 – Attachment 24 to this response.
- NACC Whispering Pines Newsletter Ad – June 2011 – Attachment 20 to this response.

Quarter 2

- Poster delivered to community & recreation centers, libraries and community associations, and Program Partners in Winnipeg - Attachment 25 to this response.
- Outbound calling to Water and Energy Saver past participants – September 2011 – April 2012 – Attachment 26

Quarter 3

- Recycling Bins (Silver Boxes) – December 2011 – Attachment 27 to this response.
- Bus Benches – Winnipeg December 2011 – Attachment 28 to this response.
- Transit Shelters Brandon and Winnipeg – December 2011 – Attachment 29 to this response.
- Letter - October 2011 - Customers in Winnipeg with the potential of a standard efficiency natural gas furnace – Attachment 30 to this response.
- Bill insert – October 2011 – All customers in Manitoba with an active Natural Gas account – Attachment 31 to this response.
- Convenience stores street level posters – December 2011- Attachment 32 to this response.
- Canstar Weekly Newspapers Ad – November and December – Attachment 33 to this response.
- CNDC web banner – December – Attachment 34 to this response.
- Postcard – December 2011 - 203 customers living in the Chalmers neighbourhood Winnipeg – Attachment 35 to this response.
- Manitoba Northwestern Ontario Synod of the Evangelical Lutheran Church – Online newsletter - October 2011 – Attachment 36 to this response.
- Web banner – November 2011 on Manitoba Hydro website - Attachment 37 to this response.
- Energy Matters article distributed to customers province wide – November 2011 – Attachment 38 to this response.
- CTV Interstitial Piece – December 2011 to January 2012 – Attachment 13 to this response.

Quarter 4

- Manitoba Healthy Living Seniors Guide – March 2012 – Attachment 39 to this response.
- CJOB web banner – March 2012 – Attachment 40 to this response.
- Silver Boxes (recycling bins) – January 2012 to April 2012 – Attachment 27 to this response.
- Bus Benches – January 2012 to April 2012 – Attachment 28 to this response.
- Transit Shelters Winnipeg & Brandon – January 2012 to March 2012 – Attachment 29 to this response.
- Convenience stores street level posters – January 2012 to April 2012 - Attachment 32 to this response.
- Canstar Weekly Newspaper Ad – February 2012 – Attachment 33 to this response.
- CNDC web banner – January 2012 and March 2012 – Attachment 34 to this response.
- Central Citizen CNDC Newsletter Ad – January 2012 – Attachment 33 to this response.
- The Broadcast West Broadway News & Views and The Point Newsletter Ad – February 2012 and March 2012 – Attachment 33 to this response.
- Web banner – February 2012 on Manitoba Hydro website - Attachment 37 to this response.
- MCNA Insert - January 2012 to households in Brandon, Steinbach, Flin Flon, Morden, Portage, Selkirk, Winkler and Thompson – Attachment 41 to this response.

2012/13

Quarter 1

- Winnipeg Free Press Seniors Housing Expo Supplement – April 2012– Attachment 42 to this response.
- Transit Shelters – April 2012 Winnipeg and Brandon – Attachment 29 to this response
- Bus Benches – January 2012 to April 2012 – Attachment 28 to this response
- Convenience stores street level posters – January 2012 to April 2012 - Attachment 32 to this response.
- Web banner –May 2012 on Manitoba Hydro website - Attachment 37 to this response.
- Brochures and posters sent to Program Partners and Community Groups – April 2012 Attachment 43 and Attachment 25 to this response.
- Outbound calling to Water and Energy Saver past participants – September 2011 – April 2012 – Attachment 26

Quarter 2

- Asian Community Guide Editorial – July 2012 - Attachment 44 to this response.

Quarter 3

- CJOB web banner – October 2012 – Attachment 40 to this response
- Asian Community Guide – November 2012 – Attachment 45 to this response.
- Silver boxes, Winnipeg – October 2012 to December 2012 - Attachment 27 to this response.
- Bus benches, Winnipeg – October 2012 to December 2012 - Attachment 28 to this response.
- Convenience stores street level posters – October 2012 to December 2012 - Attachment 32 to this response.
- Transit shelters, Winnipeg – October – December – Attachment 29 to this response.
- CNDC web banner – October - Attachment 34 to this response.
- MCNA Newspaper Insert (Brandon, Morden, Winkler, Portage. Selkirk, Steinbach, Flin Flon, Dauphin) – November - Attachment 41 to this response.
- Direct Mail to Natural Gas customers – October 2012 – Attachment 46 to this response.
- Neighbourhood Power Smart –William Whyte Neighbourhood Kickoff November 2012–Direct mail to area residents – Attachment 47 to this response.
- Neighbourhood Power Smart – William Whyte Neighbourhood November 2012 – Lawn sign – Attachment 48 to this response
- Neighbourhood Power Smart – William Whyte Neighbourhood November 2012– Program Brochure –Attachment 49 to this response.
- Neighbourhood Power Smart – William Whyte Neighbourhood November 2012 – Banner – Attachment 50 to this response.

- Postcard – October 2012 to December 2012 - 700 customers living in the Chalmers neighbourhood Winnipeg – Attachment 35 to this response.

Quarter 4

- Silver boxes, Winnipeg – January 2013 to February 2013 - Attachment 27 to this response.
- Bus benches, Winnipeg – January 2013 - Attachment 28 to this response.
- Transit shelters, Winnipeg – January 2013 – Attachment 29 to this response.
- CNDC web banner – January 2013 - Attachment 34 to this response.
- MCNA Newspaper Insert (Brandon, Morden, Winkler, Portage. Selkirk, Steinbach, Flin Flon, Dauphin) – January - March - Attachment 41 to this response.
- Neighbourhood Power Smart –Brandon Kickoff February 2012–Direct mail to area residents – Attachment 51 to this response.
- Neighbourhood Power Smart –Brandon February 2012 – Lawn sign – Attachment 52 to this response
- Neighbourhood Power Smart – Brandon February 2012– Program Brochure – Attachment 53 to this response.
- Neighbourhood Power Smart – Brandon February 2012 – Banner – Attachment 54 to this response.
- Bill Insert – February 2013 – All customers in Manitoba – Attachment 55 to this response.

b)

See part a) of this response for 2009/10 marketing expenditures.

Please see Attachment 56 to this response for marketing expenditures for 2010/11, 2011/12 and 2012/13.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- w) Beginning in 2009, provide all (a) quarterly and (b) annual marketing calendars (See e.g., Filing, Appendix 7.3 at 99).**

ANSWER:

The media calendar for 2009 can be found as an attachment to this response and was provided in Centra's response to PUB/Centra 43(d) of the 2010/11 Cost of Gas proceeding. No advertising was in field during Quarter 4 of 2009/10 as Centra was awaiting the outcome of a customer focus group study as referenced in Centra's response to CAC/Centra I-20(hh).

Media calendars for 2010/11, 2011/12 and 2012/13 can be found as an attachment to this response.

MEDIA CALENDAR

Media

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC		% of media
QTY	COST														
15	\$ 1,800.00	-	-	1 - 2 wks	4 wks	2 - 3 wks	-	-	4 wks	4 wks	4 wks	4 wks	-	\$ 10,800.00	7%
15	\$ 1,545.00	-	-	-	-	4 wks	4 wks	4 wks	4 wks	-	-	-	-	\$ 6,180.00	4%
25,000	\$ 10,000.00	-	-	x	x	x	-	-	x	x	x	-	-	\$ 60,000.00	40%
30	\$ 500.00	-	-	1 - 2 wks	2 wks	1 - 2 wks	-	-	2 wks	2 wks	2 wks	-	-	\$ 5,500.00	4%
30	\$ 500.00	-	-	1 - 2 wks	2 wks	1 - 2 wks	-	-	2 wks	2 wks	2 wks	-	-	\$ 5,500.00	4%
TBD	\$ 2,500.00	-	-	x	x	-	-	-	x	x	x	-	-	\$ 12,500.00	8%
TBD	\$ 5,000.00	-	-	x	x	x	-	-	x	x	x	-	-	\$ 30,000.00	20%
2	\$0	-	-	-	-	x	x	-	-	-	-	-	-	\$ -	0%
														\$ 130,480.00	

Production

15	-	-	-	\$ 1,200.00	-	-	-	\$ 1,200.00	-	-	-	-	-	\$ 2,400.00	2%
15	-	-	-	-	\$ 1,200.00	-	-	-	-	-	-	-	-	\$ 1,200.00	1%
25,000	-	-	-	\$ 2,500.00	\$ 1,000.00	\$ 500.00	-	\$ 2,500.00	\$ 500.00	\$ 500.00	\$ 500.00	-	-	\$ 8,000.00	5%
30 sec	-	-	-	\$ 3,000.00	-	-	-	\$ 3,000.00	-	-	-	-	-	\$ 6,000.00	4%
TBD	-	-	-	\$ 250.00	-	-	-	-	-	-	-	-	-	\$ 250.00	0%
														\$ 17,850.00	

TOTAL **\$ 148,330.00**

* Media Calendar contains high level estimates that are subject to change

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- x) **Demonstrate the calculation of the SCT, TRC, RIM, and LUC for each lower income DSM program and measure. Include all values used.**

ANSWER:

The following demonstrates the calculation of the cost effectiveness tests for each component of the Lower Income Energy Efficiency Program in the 2011 Power Smart Plan.

1. Insulation and Low-cost/No-cost measures – including Power Smart and Affordable Energy Fund expenditures

$$\begin{aligned}
 \text{TRC} &= \frac{\text{PV of Marginal Benefits} + \text{PV of Non-Energy Benefits}}{\text{PV of Utility Admin Costs} + \text{PV of AEF Admin Costs} + \text{PV of Incremental Product Costs}} \\
 &= \frac{\$14,107,809 + \$11,288,666}{\$822,959 + \$4,192,030 + \$15,911,631} \\
 &= 1.2
 \end{aligned}$$

$$\begin{aligned}
 \text{SCT} &= \frac{(\text{PV of Marginal Benefits} + \text{PV of Non-Energy Benefits}) + 10\%}{\text{PV of Utility Admin Costs} + \text{PV of AEF Admin Costs} + \text{PV of Incremental Product Costs}} \\
 &= \frac{(\$14,107,809 + \$11,288,666) \times 1.1}{\$822,959 + \$4,192,030 + \$15,911,631} \\
 &= 1.3
 \end{aligned}$$

$$\begin{aligned}
 \text{RIM} &= \frac{\text{PV of Marginal Benefits} + \text{PV Revenue Gain}}{\text{PV of Utility Admin Costs} + \text{PV of AEF Admin Costs} \\
 &\quad + \text{PV of Utility Incentives} + \text{PV of AEF Incentives} \\
 &\quad + \text{PV of Revenue Loss}} \\
 &= \frac{\$14,107,809 + \$337,088}{\$822,959 + \$4,192,030 + \$2,226,324 + \$10,004,379 + \$16,544,985} \\
 &= 0.4
 \end{aligned}$$

$$\begin{aligned}
 \text{LUC} &= \frac{\text{PV of Utility Admin Costs} + \text{PV of AEF Admin Costs} \\
 &\quad + \text{PV of Utility Incentives} + \text{PV of AEF Incentives}}{\text{PV of Energy}} \\
 &= \frac{\$822,959 + \$4,192,030 + \$2,226,324 + \$10,004,379}{39,271,483} \\
 &= 43.9 \text{ ¢}
 \end{aligned}$$

2. Furnace and boiler component - Furnace Replacement Program expenditures

$$\begin{aligned}
 \text{TRC} &= \frac{\text{PV of Marginal Benefits} + \text{PV of Non-Energy Benefits}}{\text{PV of FRP Admin Costs} + \text{PV of Incremental Product Costs}} \\
 &= \frac{\$3,121,519 + \$0}{\$3,000,670 + \$3,603,953} \\
 &= 0.5
 \end{aligned}$$

$$\begin{aligned}
 \text{SCT} &= \frac{(\text{PV of Marginal Benefits} + \text{PV of Non-Energy Benefits}) + 10\%}{\text{PV of FRP Admin Costs} + \text{PV of Incremental Product Costs}} \\
 &= \frac{(\$3,121,519 + \$0) \times 1.1}{\$3,000,670 + \$3,603,953} \\
 &= 0.5
 \end{aligned}$$

$$\begin{aligned}
 \text{RIM} &= \frac{\text{PV of Marginal Benefits} + \text{PV Revenue Gain}}{\text{PV of FRP Admin Costs} + \text{PV of FRP Incentives} + \text{PV of Revenue Loss}} \\
 &= \frac{\$3,121,519 + \$0}{\$3,000,670 + \$7,286,337 + \$3,762,281} \\
 &= 0.2
 \end{aligned}$$

$$\begin{aligned}
 \text{LUC} &= \frac{\text{PV of FRP Admin Costs} + \text{PV of FRP Incentives}}{\text{PV of Energy}} \\
 &= \frac{\$3,000,670 + \$7,286,337}{9,307,000} \\
 &= 110.5 \text{ ¢}
 \end{aligned}$$

3. Entire Lower Income Energy Efficiency Program

$$\begin{aligned}
 \text{TRC} &= \frac{\text{PV of Marginal Benefits} + \text{PV of Non-Energy Benefits}}{\text{PV of Utility Admin Costs} + \text{PV of AEF Admin Costs} + \text{PV of FRP Admin Costs} + \text{PV of Incremental Product Costs}} \\
 &= \frac{\$17,229,328 + \$11,288,666}{\$822,959 + \$4,192,030 + \$3,000,670 + \$19,515,584} \\
 &= 1.0
 \end{aligned}$$

$$\begin{aligned}
 \text{SCT} &= \frac{(\text{PV of Marginal Benefits} + \text{PV of Non-Energy Benefits}) + 10\%}{\text{PV of Utility Admin Costs} + \text{PV of AEF Admin Costs} + \text{PV of FRP Admin Costs} + \text{PV of Incremental Product Costs}} \\
 &= \frac{(\$17,229,328 + \$11,288,666) \times 1.1}{\$822,959 + \$4,192,030 + \$3,000,670 + \$19,515,584} \\
 &= 1.1
 \end{aligned}$$

$$\begin{aligned}
 \text{RIM} &= \frac{\text{PV of Marginal Benefits + PV Revenue Gain}}{\text{PV of Utility Admin Costs + PV of AEF Admin Costs} \\
 &\quad + \text{PV of FRP Admin Costs + PV of Utility Incentives} \\
 &\quad + \text{PV of AEF Incentives + PV of FRP Incentives} \\
 &\quad + \text{PV of Revenue Loss}} \\
 &= \frac{\$17,229,328 + \$337,088}{\$822,959 + \$4,192,030 + \$3,000,670 + \$2,226,324 + \$10,004,379 + \\
 &\quad \$7,286,337 + \$20,307,266} \\
 &= 0.4
 \end{aligned}$$

$$\begin{aligned}
 \text{LUC} &= \frac{\text{PV of Utility Admin Costs + PV of AEF Admin Costs} \\
 &\quad + \text{PV of FRP Admin Costs + PV of Utility Incentives} \\
 &\quad + \text{PV of AEF Incentives + PV of FRP Incentives}}{\text{PV of Energy}} \\
 &= \frac{\$822,959 + \$4,192,030 + \$3,000,670 + \$2,226,324 + \$10,004,379 + \\
 &\quad \$7,286,337}{48,578,295} \\
 &= 56.7 \text{ ¢}
 \end{aligned}$$

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- y) List each program or initiative included within (a) the Lower Income/Community Based Initiative, (b) Community Support and Outreach, and (c) the Lower Income Furnace Replacement Program (see Filing, Appendix 7.2 at j, 85).**

ANSWER:

Under LIEEP eligible customers can receive basic energy efficiency measures, insulation and furnace upgrades. A number of initiatives/approaches are offered under this overall program.

Under the Individual Approach, lower income customers are marketed to directly through general advertising and may apply directly to the program.

Under the Community Approach, Centra partners with community and neighborhood associations who work through social enterprise contractors such as BUILD and BEEP to reach lower income customers. The First Nations Power Smart Program, branded separately to better reach its target market, is based upon a community support and outreach model where the Corporation works with Band Councils and Band Housing Coordinators through dedicated internal resources to improve the efficiency of homes in the community.

Funding for LIEEP comes from two sources; the Furnace Replacement Program and the Affordable Energy Fund (“AEF”). Within the AEF, two category funds are used; Lower Income/Community Based Initiative and Community Support and Outreach.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- z) For the year 2011/12, provide (a) the Power Smart Annual Review (when it is available if it is not available now), (b) Power Smart expenditures for (i) the Lower Income/Community Based Initiative and (ii) Community Support and Outreach, and (c) the Lower Income Furnace Replacement Program (see Filing, Appendix 7.2 at j, 85).

ANSWER:

The 2011/12 Power Smart Annual Review will be filed once it is available.

The 2011/12 Lower Income Energy Efficiency Program expenditures are as follows:

LIEEP Expenditures	2011/12
NG Power Smart	\$ 822,410
NG Affordable Energy Fund	\$ 2,504,786
Furnace Replacement Program	\$ 1,627,033
TOTAL	\$ 4,954,228

There were no expenditures for Community Support & Outreach under the Affordable Energy Fund in 2011/12 related to natural gas DSM initiatives.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

aa) State the calendar months covered by each program year as reported in the Power Smart Annual Review (Filing, Appendix 7.2).

ANSWER:

The calendar months covered in each program year are based on Centra's fiscal year. As an example, the 2010/11 Power Smart Annual Review reports on program results for the period of April 1, 2010 to March 31, 2011.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- bb) Provide Total Resource Cost test results for the latest period available for (a) Lower Income Furnace Replacements, (b) Lower Income Boiler Replacements, (c) Lower Income Insulation (See Filing, Appendix 7.2 at 89). For each, show the detailed calculation, including costs (showing detail, i.e., measure cost, administration, each other category) and benefits (with benefits detailed, i.e., avoided cost of purchasing natural gas, avoided transportation costs, the value of reduced greenhouse gas emissions and measurable non-energy benefits).**

ANSWER:

The following outlines the actual Total Resource Cost test results for LIEEP for the 2010/11 year.

The present value of the marginal benefits is not broken down into the various elements. A proxy for the breakdown is 94% of the value arising from the avoided cost of purchasing natural gas and avoided transportation costs and 6% arising from the value of reduced greenhouse gas emission reductions.

Lower Income Furnace Replacement Program (including boilers)

$$\begin{aligned}
 \text{TRC} &= \frac{\text{PV of Marginal Benefits} + \text{PV of Non-Energy Benefits}}{\text{PV of FRP Admin Costs} + \text{PV of Incremental Product Costs}} \\
 &= \frac{\$1,125,152 + \$0}{\$448,364 + \$1,764,156} \\
 &= 0.5
 \end{aligned}$$

Lower Income Insulation and Low-cost/No-cost Measures

$$\begin{aligned}
 \text{TRC} &= \frac{\text{PV of Marginal Benefits} + \text{PV of Non-Energy Benefits}}{\text{PV of Utility Admin Costs} + \text{PV of AEF Admin Costs} + \text{PV of Incremental Product Costs}} \\
 &= \frac{\$5,082,198 + \$505,323}{\$466,458 + \$798,202 + \$1,838,595} \\
 &= 1.8
 \end{aligned}$$

CAC/CENTRA I-20

Reference: Tab 7 – DSM

cc) State and quantify each measurable non-energy benefit (Filing, Appendix 7.2 at 89).

ANSWER:

Currently, the only measurable non-energy benefit captured in the calculation of the Total Resource Cost test is water savings. For the unit cost of water used in the calculations, please see Centra's response to PUB/Centra I-58(b). For the present value of water benefits by program, please see Centra's response to PUB/Centra I-57(a).

The Societal Cost test also includes water savings as a measurable non-energy benefit in addition to a 10% adder to represent additional indirect benefits.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

dd) (a) Describe each element of the Lower Income Energy Efficiency Program, e.g., furnace replacement, insulation upgrade (Filing, Appendix 7.3). (b) Explain the budget relationship between the Lower Income Energy Efficiency Program and the Affordable Energy Fund Lower Income Expenditures (Filing, Appendix 7.2, at 85), e.g., state whether one is included in the report of the other. (c) Provide the expenditures, by element of the Lower Income Energy Efficiency Program (e.g., furnace replacement, insulation upgrade), for each program year from program outset.

ANSWER:

a) The Lower Income Energy Efficiency Program is designed to assist and encourage lower income Manitobans in implementing energy efficiency measures that include insulation upgrades, furnace and boiler upgrades and basic energy efficiency materials.

Furnace Upgrades:

For eligible participants, a standard natural gas efficiency furnace can be replaced with a high efficiency natural gas furnace under the Furnace Replacement Program. The customer contribution for this furnace replacement is \$19 per month over a five year term for a total of \$1 140. The Furnace Replacement Program covers the remainder of the furnace cost.

Boiler Upgrades:

For eligible participants, a standard efficient boiler can be upgraded to a high efficient boiler. The customer receives a \$2 500 rebate and if required, can finance the remainder of the boiler upgrade through a Low Income Power Smart Loan, up to \$10 000 over a 15 year term. The \$2 500 incentive is funded from the Furnace Replacement Program.

Insulation Upgrades:

For eligible participants, insulation can be upgraded in a household in the attic, walls and basement. There is no cost to the customer for qualifying insulation upgrades. All insulation upgrade costs are funded from the Affordable Energy Fund less any insulation rebates available under the Power Smart Home Insulation Program.

Basic Energy Efficiency Upgrades:

For eligible participants, basic energy efficiency measures are provided to customers such as CFLs, pipe wrapping, low-flow faucet aerators, low-flow shower head, caulking and where applicable, door and window sealing. All of these measures are at no cost to the customer. The basic energy efficiency measures are funded from the Affordable Energy Fund less any rebates available under the Water and Energy Saver Program

- b) Funding for the Lower Income Energy Efficiency Program is provided through Manitoba Hydro's Power Smart Programs, the Affordable Energy Fund, and the Furnace Replacement Program. For reporting purposes, the Furnace Replacement Program is reported separate from the Affordable Energy Fund. Power Smart funding, such as where Centra has an established offering (e.g. Home Insulation Program), is reported under Power Smart. All other components of the Lower Income

Energy Efficiency Program, such as supporting the insulation and basic measures components, community outreach, etc. that are not funded through Power Smart Programs, are reported under the Affordable Energy Fund.

c) Expenditures

	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	Total
Insulation and Low-cost/No-cost Improvements (LCNC)							
NG Power Smart	\$ 52,218	\$ 149,791	\$ 204,830	\$ 737,437	\$ 791,255	\$ 822,410	\$ 2,757,941
NG Affordable Energy Fund	\$ 204,458	\$ 175,474	\$ 714,402	\$ 1,337,233	\$ 2,132,918	\$ 2,504,786	\$ 7,069,271
<i>Total Insulation and LCNC</i>	\$ 256,676	\$ 325,265	\$ 919,233	\$ 2,074,669	\$ 2,924,173	\$ 3,327,196	\$ 9,827,212
Furnaces and Boilers							
Furnace Replacement Program	\$ -	\$ -	\$ 264,258	\$ 815,205	\$ 1,311,620	\$ 1,627,033	\$ 4,018,116
Total	\$ 256,676	\$ 325,265	\$ 1,183,491	\$ 2,889,875	\$ 4,235,793	\$ 4,954,228	\$ 13,845,327

CAC/CENTRA I-20

Reference: Tab 7 – DSM

ee) Provide the amount of external funding, by source, (a) included (b) not included in Lower Income Energy Efficiency Program expenditures (See Filing, Appendix 7.1 at 49).

ANSWER:

There are two sources of external funding that relate to the Lower Income Energy Efficiency Program, Federal EcoEnergy rebates and training, labour and support funding from the Provincial Government.

EcoEnergy Grants, when the program was in effect, contributed to a reduction in LIEEP expenditures.

While a forecast for funding provided by the Provincial Government is presented in the 2011 Power Smart Plan, these funds are not distributed or administered by Centra and as such, this funding is not included within LIEEP expenditures.

External Funding : Natural Gas	2009/10	2010/11	2011/12
Provincial Government Support	1,538,287	2,419,780	1,981,189
Federal EcoEnergy Program	623,376	1,401,681	449,110

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- ff) (a) Describe and quantify all actions taken by Centra in response to Order 128/09 (at 42 et seq.) regarding the Bill Assistance Program, including but not limited to (i) referrals to Neighbors Helping Neighbors, (ii) promotion of Neighbors Helping Neighbors, (iii) making eligibility less restrictive, and (iv) providing more than a one-time payment . (b) State the number of customers assisted by the program, by year, since the Order (including the year of the Order). (c) State the number and percentage of residential customers in arrears, by month, since the Order (including the year of the Order). (d) State the amount of bad debt by year since the Order (including the year of the Order). (e) State and document all the considerations with respect to one-time v more frequent payments, including the justification and rationale for the choice the Company made in this respect.**

ANSWER:

- a) Neighbours Helping Neighbours (NHN) has been made available to all customers who meet the eligibility criteria as defined by the Corporation in partnership with the program administrator, The Salvation Army.
- (i) Referrals to the NHN program are predominantly provided by Centra staff working with customers whose accounts are in arrears, with over 4,300 families having contacted and utilized the program to date.

(ii) Promotion of the program includes newspaper advertisements (annually), bill inserts (twice annually), awareness sessions with other resource centres/organizations and website ads.

(iii) Applicants are eligible for assistance once per year, and

(iv) To a maximum of two financial grants. If the customer is a home owner, they are encouraged to apply for LIEEP. If they own their home and are requesting a second grant, they are required to enroll in Manitoba Hydro's Lower Income Energy Efficiency Program to receive the second grant.

b) The table below presents the number of customers assisted by the program by year since inception (and prior to the Order), including grants awarded, the number of referrals to community support services, counselling and/or job training, and total and average grant amounts.

Year	\$ Amount Distributed	# of Grants Awarded	# of Referrals	Average Grant \$
2004/05	\$19 175.00	146	170	\$131
2005/06	\$55 611.62	309	487	\$180
2006/07	\$74 698.00	274	446	\$273
2007/08	\$95 564.00	330	510	\$290
2008/09	\$120 835.00	469	594	\$258
2009/10	\$189 000.00	608	2182	\$311
2010/11	\$271 030.33	707	1983	\$383
2011/12	\$399 332.90	946	2343	\$422
Apr-Dec 2012/13	\$227 086.93	540	1243	\$421
Program Total	\$1 452 333.70	4329	9958	\$335

Note: one participant may receive more than one referral based upon the nature of their situation - for example, the customer may be referred to a local food bank, to social

assistance and to budget counselling. Each referral is counted separately in the above table.

(c) The following table presents the number and percentage of residential customers in arrears, by month, since fiscal year 2010/11.

Month	2013		2012		2011		2010	
	#	%	#	%	#	%	#	%
January	26,661	10.91	24,552	10.13	25,698	10.67		
February	24,692	10.09	24,974	10.29	26,109	10.83		
March	27,688	*	26,885	11.07	29,662	12.30		
April			26,614	10.96	27,881	11.56	29,514	12.32
May			26,663	10.97	28,348	11.76	27,538	11.49
June			24,902	10.25	27,145	11.25	27,979	11.67
July			24,614	10.12	27,818	11.53	26,254	10.95
August			23,567	9.69	27,026	11.19	25,386	10.58
September			23,494	9.65	26,487	10.96	26,115	10.88
October			25,369	10.41	25,563	10.57	28,042	11.67
November			23,962	9.82	25,343	10.47	25,077	10.43
December			22,428	9.18	24,180	9.98	24,187	10.05

* March 2013 total customer count is not yet finalized.

(d) Please see Centra's response to PUB/Centra I-48(d).

(e) Customers can access emergency funding once per year for a maximum of two events.

The primary objective of the emergency bill assistance is to look beyond the energy bill and to assist the customer through referrals by The Salvation Army to community support services, counselling, job training and other resource agencies. The belief is that by working to connect customers with available support services, they will be in a better position to manage possible future events.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

gg) (a) Explain and quantify the impact on the Lower Income programs of the ending of the ecoEnergy incentive and the Home Renovations Tax Credit. (b) List all currently available federal and provincial programs, if any, that have a material impact on the Lower Income programs and quantify that impact, e.g., dollars, participants.

ANSWER:

a) Through the re-instated Federal ecoENERGY program, federal rebates contributed \$1,850,791 for upgrades under the Lower Income Energy Efficiency Program in the years 2010/11 and 2011/12. The discontinuation of the Federal ecoENERGY program has not impacted participation in LIEEP as the Corporation provides the funding to customers which was previously provided under ecoENERGY.

The ending of the Home Renovations Tax Credit had no quantifiable impact on LIEEP.

b) Currently, there are no available Federal programs which have an impact on this program. Through the program partners, external funding is provided by the Province of Manitoba. However, as stated in Centra's response to CAC/Centra 1-20(ee), the funds are not distributed or administered by Centra and as such, Centra is not aware of the funding levels or how the funds are allocated.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

hh) Provide all documents regarding the program designs for each Lower Income program and measure.

ANSWER:

Please refer to the Affordable Energy Program Marketing Plan previously filed February 3, 2010 (Response to Directive 6 from PUB Order 128/09), Affordable Energy Program Focus Group Research previously filed July 20, 2010 (PUB/MH II-187) and High Efficient Furnace Replacement Program for Lower Income Manitobans filed November 7, 2008 (Response to PUB Order 116/08), which are attached to this response. While enhancements have been made to the Lower Income Energy Efficiency Program, updates to the referenced documents have not been undertaken. The enhancements include:

- i. Increased mass media marketing efforts, targeted marketing to natural gas furnace customers, outbound phone calls and canvassing door-to-door. For further information, please see Centra's response to CAC/Centra I-20(v).
- ii. Under the Community approach, the Neighbourhood Power Smart Project, a community led initiative which launched in late 2012, builds upon the Lower Income Energy Efficiency Program with the goal of completing energy efficiency upgrades on a block-by-block basis in lower income neighbourhoods. For further information, please see Centra's response to CAC/Centra 1-20(e), (i).

Further details on the energy efficiency measures provided can be found in Centra's response to CAC/Centra I-20(dd).

PO Box 815 • Winnipeg Manitoba Canada • R3C 2P4
Street Location for DELIVERY: 22nd floor 360 Portage Ave
Telephone / N° de téléphone : (204) 360-3468 • Fax / N° de télécopieur : (204) 360-6147
mmurphy@hydro.mb.ca

February 3, 2010

PUBLIC UTILITIES BOARD OF MANITOBA
400-330 Portage Avenue
Winnipeg, Manitoba
R3C 0C4

ATTENTION: Mr. G. Gaudreau, Executive Director

Dear Mr. Gaudreau:

**Re: Centra Gas Manitoba Inc. (“Centra”)
Response to Directive 6 from Order 128/09: Revised Marketing and Promotional
Plan for the Affordable Energy Program**

In Order 128/09 issued on September 16, 2009 with respect to Centra’s 2009/10 & 2010/11 General Rate Application, the Manitoba Public Utilities Board (“PUB”) directed Centra “to develop and file with the Board a revised marketing and promotional plan for the LIEEP and FRP, designed to educate and encourage lower income customers to participate”. Accordingly, Centra is enclosing herewith a copy of the Affordable Energy Program Marketing Plan.

If you have any questions with respect to this submission or require a paper copy, please contact the writer at 360-3468, or Greg Barnlund at 360-5243.

Yours truly,
MANITOBA HYDRO LAW DEPARTMENT
Per:



Marla D. Murphy
Barrister and Solicitor
Att.

cc: Mr. B. Peters, Fillmore Riley
Mr. R. Cathcart, Cathcart Advisors Inc.
Mr. B. Ryall, Energy Consultants Inc.

AFFORDABLE ENERGY PROGRAM MARKETING PLAN

1 BACKGROUND

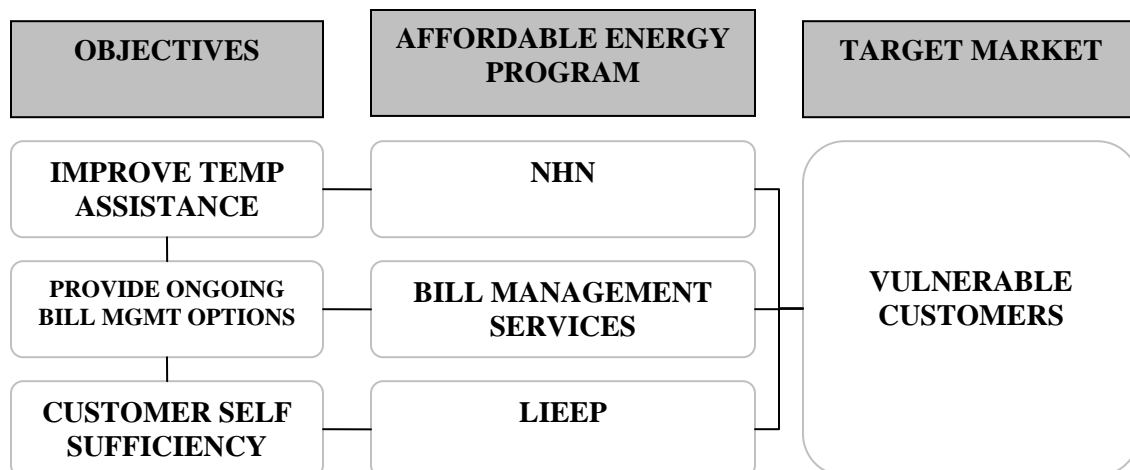
1.1 Bill Assistance Program Enhancement

Manitoba Hydro is consolidating and enhancing its three main bill assistance program components under one umbrella program called the Affordable Energy Program (AEP). Current programming is comprehensive, and will only become more effective as a result of these enhancements. Recently, the LIEEP has been identified as a leader in the country for lower income energy efficiency programs.

Through this consolidation, all program components that target lower income households will work together to create customized solutions to aid program participants in managing their bills and reducing their energy burdens.

The overall objective for the enhanced AEP is to improve the affordability of energy for lower income customers while maintaining efficient operations of Manitoba Hydro. To that end, an enhanced marketing plan has been developed to promote the AEP and ensure qualified customers are aware and can easily participate in the program, as described in Section 2.

Below is a table outlining the three key components of the AEP and the program objectives they are designed to satisfy. Neighbours Helping Neighbours (NHN) will focus on providing temporary financial assistance, as well as reducing outstanding arrears. Bill Management Services will focus on providing customers with tools to help them better manage their energy bills such as equal payment plans and pick your payment date options. The Lower Income Energy Efficiency Program (LIEEP) will anchor the overall AEP offering sustainable solutions to help customers move towards self sufficiency through energy efficiency upgrades which will reduce their energy bills.



Manitoba Hydro has a strong history of collaborating with various government, social and community organizations including the Salvation Army which is responsible for operating the NHN program. Manitoba Hydro currently refers a large number of customers to various program partners to seek aid that falls outside Manitoba Hydro's scope of assistance. The AEP team has identified the opportunity to gain valuable referrals from its program partners by actively and reciprocally encouraging them to include the AEP as part of their toolkit used in assisting their clients facing financial hardship. Manitoba Hydro believes that increasing two-way communication between the AEP team and the program partners will help to further solidify the AEP as a key element of a broad social services portfolio. Research of other jurisdictional programming illustrates that this holistic approach to customer aid is more effective at creating sustainable change in customers' financial situations that would not be possible without the cooperation of multiple parties.

1.2 Existing Marketing

A key area of the program that is being enhanced is the marketing plan. Manitoba Hydro currently uses community newsletters and magazines, bill inserts, corporate website, targeted mail drops, and public service announcements. In addition, the program is currently promoted through Manitoba Hydro customer service staff and other community groups and stakeholders. This marketing approach has generated over 1 700 customer applications since the start of the program. In order to increase the participation, consultations have taken place with other lower income programs and stakeholders. The findings of this research are presented in Section 1.3 of this report.

1.3 Existing Research

a) Demographics

i. Manitoba Hydro Residential Survey

Manitoba Hydro uses 125% of the federal government Low Income Cut Off (LICO) to define the lower income customer base. The following information summarizes the current demographic data on lower income households in Manitoba. Approximately 93 000 customers are directly paying their own utility bills and are within the LICO x 125% threshold, with approximately 70% owning their dwelling.

LICO x 125% DWELLING TYPES			
	OWN	RENT	TOTAL
Single	54 426	5 696	60 122
Multiplex	4 705	3 001	7 706
Townhouse	1 510	3 067	4 577
Mobile	2 993	507	3 500
Subtotal (Net Apartments)	63 634	12 271	75 905
Apartment	2 145	15 147	17 292
Total	65 779	27 418	93 197
Total %	71%	29%	100%

It is important to note that the demographic information listed above is based on information collected in 2003. This information will be updated early in 2010 pending the results of the 2009 Manitoba Hydro Residential Customer Survey. The updated information is not expected to affect the overall direction of the strategy outlined in this plan, but will be reviewed and applied as necessary.

ii. Statistics Canada

The City of Winnipeg, in partnership with local community organizations, other levels of government and the Community Social Data Strategy group, matched 2006 Statistics Canada Census Data to Winnipeg neighbourhood geographic areas. Aggregate household income data by neighbourhood was analyzed and was used to identify areas in which to target communications within the City of Winnipeg.

b) Key Learnings from other Utilities & Stakeholders

Manitoba Hydro has been invited to present its Lower Income Energy Efficiency Program at various Canadian and United States lower income energy efficiency conferences, including Chartwell's Best Practices Summit on Serving Low Income Customers in April 2009 and Chartwell's Webinar on Low-Income Energy Efficiency Programs in December 2009. As a result, Manitoba Hydro has been able to gain learnings from other presenting utilities that have been delivering lower income programs for many years. A prime example is San Diego Gas & Electric (SDG&E) that started its lower income energy efficiency program in the 1980's. Its program has grown substantially since its inception with it serving over 20 000 lower income customers a bundled offering of services in 2009. Another example is Entergy, a utility that was able to help over 17 000 customers through its Power To Care fund in 2008. Discussions have also taken place with Chartwell, an independent information services company that facilitates knowledge exchange among utility professionals. Consultations with their researchers have emphasised

the importance of building upon Manitoba Hydro's existing bill assistance structure and slowly ramping up initiatives and promotion as experience is gained. It should be noted that the organizations listed above are just a small sample of the numerous entities Manitoba Hydro has been working with to further refine its program and marketing efforts.

Below is a set of barriers to participation and marketing tactics that were identified during the research process.

Barriers to Participation

The barriers to participation listed below are addressed by the marketing strategy outlined later on in this plan:

- i. Confusion & Lack of program understanding - Bill Assistance programs can often be complex with multiple offerings which can lead to customers having difficulty understanding which program to utilize and/or how it can help them reduce their energy bills.
- ii. Lack of Trust - Due to the intrusive nature of some bill assistance programs, specifically those that involve home visits, customers are occasionally hesitant to participate as they do not trust strangers to come into their homes. A common example would be an energy audit. In addition, customers may be sceptical of "free" energy upgrades, and may be less sceptical if they heard this message delivered by a community group, which is a trusted source.
- iii. Not a priority, set aside and later forgotten - Lower income customers face numerous challenges on a daily basis, and energy efficiency and reducing energy bills is not always top priority. As a result, the marketing message must be relevant and motivational to lead customers to act upon it quickly, or risk that it will be forgotten.
- iv. Ineffective Messaging - Marketing messages and the mediums that are used to communicate messages must be carefully selected to ensure they appeal to the target audience.

Marketing Tactics

Below is a list of marketing tactics that are commonly used by utilities to promote their bill assistance offerings, some of which are already in use by Manitoba Hydro. Those not currently in use have been reviewed, and where applicable, have been incorporated into the marketing strategy laid out later on in the report.

- i. Direct mail, Bill Messaging, Email Campaign, Automated Outbound Calling
 - o Allows for targeted messaging to specific customer groups
 - o Offers one of the highest response rates of all mediums
 - o Used by Dominion Virginia Power, San Diego Gas & Electric, Entergy, Pacific Gas & Electric, TXU Energy

- ii. Program Partners/Social Networks
 - Use newsletters, seminars, meetings, and leadership summits to build relationships with partners
 - Provide unique training opportunities to educate them on the lower income programs
 - Partners include social agencies, community leaders, etc.
 - Used by Entergy, San Diego Gas & Electric, NV Energy, Pacific Gas & Electric, Public Service Enterprise Group
- iii. Neighbourhood Approach/Targeted Canvassing
 - Targeted message and delivery channel for specific customer segments
 - Used by San Diego Gas & Electric
- iv. Internal marketing campaign
 - Elicit employee “buy in” to programming in an effort to improve program delivery
 - Used by Entergy, Public Service Enterprise Group, Clark Public Utilities
- v. Internet/Electronic Marketing (Text, Facebook, Twitter, etc.)
 - Using emerging communication forms to deliver program marketing messages
 - Used by San Diego Gas & Electric
- vi. Annual low income report
 - Tool used for disseminating program results on an annual basis that works well for internal and external marketing, not necessarily for program participants, but for program partners and internal/external stakeholders
 - Used by Entergy
- vii. Community Events/Public Relations Activities
 - Hold events for communities where residents are invited to learn about the lower income programming.
 - Used by Pacific Gas & Electric

2 MARKETING OBJECTIVE & STRATEGY

It is critical to build awareness of the comprehensive Affordable Energy Program through a solid marketing strategy. Manitoba Hydro must expand its understanding of the motivators and barriers within the lower income market segment, and promote the program in a way that will minimize barriers and maximize participation. Below is a summary of the marketing strategy including the steps that will be taken to implement it.

2.1 Objective

The marketing objective of the Affordable Energy Program is to increase awareness and participation in Manitoba Hydro's enhanced and comprehensive Affordable Energy Program resulting in reduced energy burdens for lower income Manitobans.

2.2 Target Market

The overall target market for Manitoba Hydro's Affordable Energy Program is lower income households, particularly those that are struggling with managing their energy bills. The target market becomes more narrow at the point where emergency assistance is required through the NHN program, where more specific criteria is used to identify vulnerable customers in genuine need.

This target market faces key barriers related to participation in lower income programs, specifically a general lack of awareness of energy conservation and bill management options. As mentioned earlier in the Key Learnings section, additional research has revealed more barriers including lack of program understanding, security fears related to energy audits, program participation not being made a priority by the individual and then later forgotten, and ineffective messaging.

2.3 Marketing Strategy

The marketing strategy for the Affordable Energy Program is to create a simple yet compelling umbrella education and communication program that positions the "Affordable Energy Program" as an easy way for Manitobans to save energy and manage their utility bills. The common bond between all program communications will be the elements of reliability and trust, which will be communicated by personalizing the "Affordable Energy Program" as caring, considerate, approachable, friendly and knowledgeable. Under this umbrella, targeted messaging will be developed to address the needs of individual market segments.

2.4 Marketing Research

Both quantitative and qualitative research will assist in developing communications that provide compelling messaging to appropriate market segments as follows.

a) Updated Demographic Study

Manitoba Hydro is currently completing the 2009 Residential Customer Survey. This survey has been designed to provide detailed information on the number of lower income consumers, family size, income levels, types of heating equipment, types of housing, target market geographical information, and any relationship that may exist between income and consumption. Completion of the survey as well as the tabulation and review of the results is expected early in 2010.

b) Qualitative Pre-testing of Messaging and Materials

Focus group testing will be performed to provide feedback on messaging and potential market acceptance of the advertising materials. Lower income participants will be shown different versions of advertising materials, and will be probed to determine the most relevant, understandable and motivating messages. As this is still a relatively new target market for Manitoba Hydro, it is important to ensure that the messages and “look and feel” of the campaign materials are compelling and address any communication barriers presented by this “hard to reach” group. In the absence of focus groups, there is the potential for a substantive media investment to be placed behind a message that is either not understood, believable, trusted, or motivating, resulting in a poor response to the campaign.

Benefits/strengths of group discussions include data and insights that would be less accessible without the interaction found in a group setting, as listening to others’ verbalized experiences stimulates memories, ideas, and experiences in participants. Probing on an issue of interest when group members engage can result in an increased elaboration on a topic and broader insight into understanding an issue.

c) Quantitative Monitoring of Program Awareness through Omnibus Study

Equally important to pre-testing the marketing materials through focus groups is continuously monitoring the response of the campaign. It is critical to continuously measure the breakthrough of the media campaign to ensure the target group is aware of the advertising and main message is being conveyed. In addition, the impact of the advertising can be tracked to determine whether the creative is motivating to the target group, thus providing an indication as to whether the target group may respond to the advertising by participating in the AEP and potentially identifying the barriers to participation. This would be achieved by asking four to five questions on an omnibus survey every four to six months during the first year of the campaign, with a baseline survey performed prior to the campaign being launched.

An omnibus survey is a quantitative survey that interviews a large and representative sample of people with a view to find the results to represent the whole population. It allows clients to share the costs of research by pooling questions. All the questions for a given wave are then put to a representative sample as part of a single questionnaire. Each individual client's questions are of course confidential, and results are processed in such a way as to ensure that each party only sees their own data. An omnibus survey is conducted on a set timetable, and takes place regularly throughout the year - typically on a monthly basis.

d) Ongoing Research

Throughout the life of the program, ongoing evaluation will be performed through a number of metrics as outlined in Section 4 of this plan. Information will be gleaned from these metrics to continuously evolve the marketing plan. Manitoba Hydro will also work closely with program partners such as the Social Planning Council to get their feedback on the marketing strategy and incorporate it into future initiatives.

2.5 Marketing Tactics

A two pronged marketing approach that focuses on education and communication will be used to achieve the objective of increased awareness and participation in the AEP. Tactics in both areas will support the comprehensive and holistic nature of the AEP and leverage working with program partners to extend the reach of the campaign across all communities in Manitoba.

a) Education

Education will be a valuable component of the Affordable Energy Program, not just education of the customer, but also education of the service providers and program partners. Other successful programs such as Energy's Lower Income Program have shown that energy efficiency programs increase energy savings and enhance the persistence of savings by providing customer education and training to staff. Education also helps the customer feel more committed to the program and gives the customer a degree of control over their energy usage and related savings.

The following marketing activities will be introduced into the Affordable Energy Program:

- i. Develop a team of "Affordable Energy Champions"

A team of "Affordable Energy Champions" comprised of key staff within Manitoba Hydro and program partners will be developed. The team will be trained on the key components of the program through a "train the trainer" model. Through this network, opportunities for community educational workshops will be identified where information can be disseminated.

ii. Develop supporting customer educational materials

Supporting materials will be developed to promote the program offerings and encourage energy efficient behaviour. An example would be a “leave behind” document left with a participating homeowner that explains the importance of energy efficient behaviours such as turning off the lights when leaving the room or lowering the thermostat when leaving the home for an extended period of time.

iii. Develop an educational component related to renting

An educational component specifically targeted to lower income tenants/owners who pay their own utility bills, similar to the “before you rent” campaign in Quebec will be developed to help customers avoid renting accommodations with energy bills that do not fit their budget.

iv. Investigate tenant/owner led neighbourhood education programs

Consultations with community groups will take place to determine other educational opportunities specific to lower income neighbourhoods where tenant/owner led neighbourhood “Affordable Energy Action Plans” may be developed, similar to tenant led community animation models that have been developed in Ontario.

b) Communication

i. Enhance Manitoba Hydro Communications: Increased awareness of the Affordable Energy Program will be achieved through the following communication vehicles:

o Mass Media:

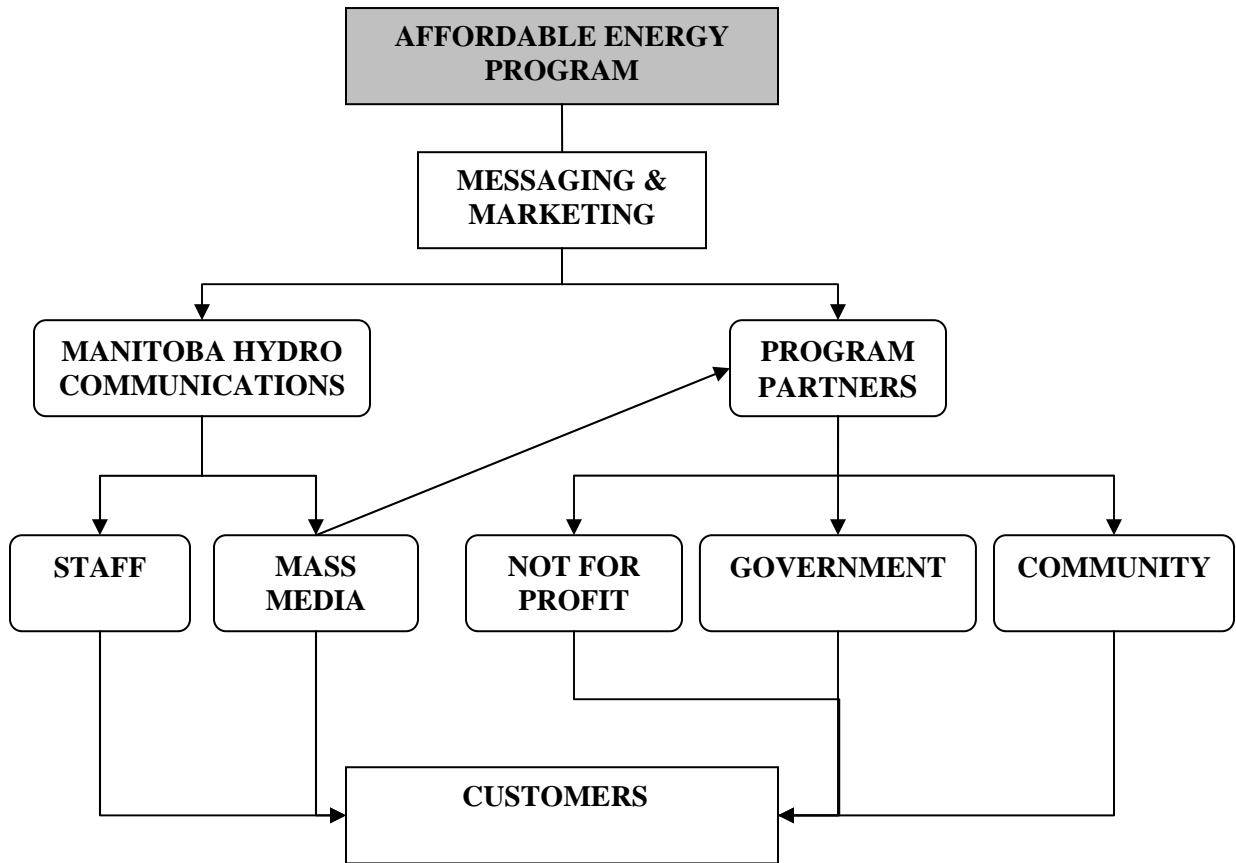
- A layered mass media approach will be used to communicate the Affordable Energy Program offering to the lower income market, with special focus on using media vehicles that can reach the target group. This includes bus benches (Feb-May, Aug-Nov) and public recycling bins (May-Aug) in an attempt to provide top of mind awareness of the AEP. Direct mail (Feb-May, Aug-Oct), radio (Feb-June, Aug-Oct), and select community newspapers (Feb-Apr, Aug-Oct) will be used to reinforce the message and provide a “call to action” where targeted customers will contact Manitoba Hydro to inquire into the program.
- Supporting promotional materials will consist of bill inserts, Manitoba Hydro website, and messages heard while “on hold” when calling the Manitoba Hydro customer service line.
- Targeted activities in partnership with communities may include promotional brochure drops and presentations will take place in communities/areas with high penetration of lower income households.

- Outbound calls to targeted customers.
- Note: A media calendar is included in Appendix A. A media development calendar is included in Appendix B.
- Manitoba Hydro Staff:
 - As indicated earlier, a team of “Affordable Energy Champions” will be developed within Manitoba Hydro which will consist of representatives from all departments which interact with lower income customers including: Bill Management Services, Call Centre, District Offices, and the Affordable Energy Unit. Additional training will be provided for these key staff members, who in turn, will train staff within each department to ensure the program offerings are communicated to all customers at all relevant opportunities.
- ii. Strengthen marketing support from program partners:
 - The use of trusted sources in the community is common amongst other jurisdictional lower income programming and has been affirmed as an important strategy by stakeholders to deliver messages to lower income customers. Therefore, in addition to targeting the lower income customer, it will also be important to increase the awareness of the Affordable Energy Program to potential program partners who can promote the program through direct customer contact, community events, etc. Manitoba Hydro will also attend lower income conferences, seminars and events throughout the province to promote the program to other stakeholders. The objective will be to broaden the team of “Affordable Energy Champions” to include external stakeholders that can act as ambassadors to promote the program, and provide constant reinforcement of bill management and energy efficiency behaviours. Program partners will disseminate AEP promotional materials to their clients and provide specific offerings tailored to meet their clients’ needs.
 - Program partners will include, and not be limited to the following:
 - Not for profit groups (NGO’s) such as Habitat for Humanity, Winnipeg Harvest, Winnipeg Foundation, United Way, and Salvation Army will be instrumental in promoting the program to lower income Manitobans with whom they already interface.
 - Government services such as the Province of Manitoba Public Trustee, Winnipeg Housing & Homelessness Initiative, and Manitoba Housing Authority.
 - Community groups such as the Westminster Housing Society, Spence Neighbourhood Association, Thompson Neighbourhood Renewal Corporation, Dakota Ojibway Tribal Council Housing Authority, and the North End Housing Project.

- Private Sector corporations and retailers, such as Giant Tiger, that service lower income customers will also be approached to distribute supporting materials, such as brochures and posters, to their customers.

Note: The AEP's program partners are constantly evolving and the AEP team is eager to grow the number of partners associated with the program.

The chart below illustrates the communication path of the Educational and Awareness messages delivered through various tactics flowing down to the customer.



3 BUDGET

Estimated Lower Income Budget Proposal*

	2009-2010	2010-2011	Total
Research			
Pre-Program Focus Groups	\$10,000	\$0	\$10,000
Customer Satisfaction Tracking Study**	\$0	\$0	\$0
OmniBus	\$5,000	\$10,000	\$15,000
Total	\$15,000	\$10,000	\$25,000
Creative Development & Production	\$11,950	\$10,900	\$22,850
Media			
Bus Benches / Transit Shelters	\$900	\$9,900	\$10,800
Recycling Bins (Silver Boxes)	\$0	\$6,180	\$6,180
NCI Radio	\$1,000	\$4,500	\$5,500
CKJS Ethnic Radio	\$1,000	\$4,500	\$5,500
City targeted newspaper/magazine	\$2,500	\$10,000	\$12,500
MCNA Rural (select markets)	\$5,000	\$25,000	\$30,000
Power Smart**	\$0	\$0	\$0
Total	\$10,400	\$60,080	\$70,480
Direct Marketing			
Canvassing	\$0	\$5,000	\$5,000
Phone Calls (outbound)	\$0	\$10,000	\$10,000
Community Initiatives	\$1,000	\$4,000	\$5,000
Direct Mail	\$10,000	\$50,000	\$60,000
Total	\$11,000	\$69,000	\$80,000
OVERALL TOTAL	\$48,350	\$149,980	\$198,330

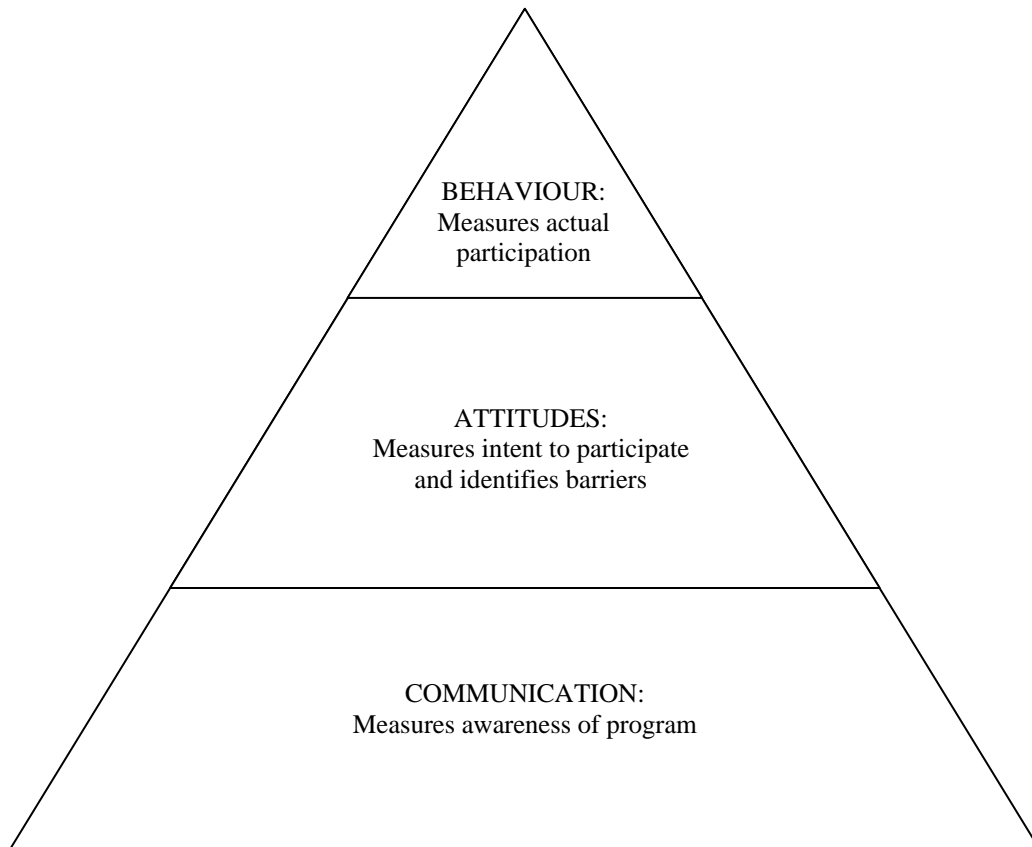
* Subject to change based on media availability and cost of proposed activities

** No cost to Affordable Energy Program

4 MARKETING EVALUATION

The following pyramid provides a high level overview of the components of the evaluation of the AEP marketing program. The evaluation begins with measuring against the goal of increasing the awareness of the AEP to the entire target market, then builds up to the to the ultimate goal of increasing their participation in the program, as described below.

- The first level measures the awareness of the program. Customers will be asked if they are aware of the program, and if so, asked where they heard about the AEP.
- The second level measures the intent of the target group to participate in the program, and asks those that are aware of the program if they intend to participate. If customers do not intend to participate, they are asked about their barriers to participation which will provide insight into their attitudes about the program.
- The third level measures the actual behavioural changes that result from the marketing, which is measured through the actual participation of the target group.



5 CONCLUSION

Manitoba Hydro is enhancing and consolidating the design, delivery and marketing of its current bill assistance and Lower Income Energy Efficiency Program under one comprehensive program called the Affordable Energy Program. Current programming is comprehensive, and will only become more effective through these enhancements. Recently, the LIEEP has been identified as a leader in the country for lower income energy efficiency programs. In addition, approximately 1 700 applications have been received for the LIEEP program which were generated through past promotional activity such as bill inserts, advertisements in targeted magazines, targeted mail drops and very importantly, through partnerships with community groups and other stakeholders.

Based on extensive consultations held with these stakeholders and utilities in other jurisdictions, key learnings have been incorporated into an enhanced umbrella marketing plan that that will position the Affordable Energy Program as an easy way for lower income Manitobans to save energy and manage their utility bills. Enhanced marketing tactics focusing on education and communication will be supported through a media campaign that targets lower income households, community groups and other program partners. Ongoing research will be performed to ensure the messaging is relevant and motivating to the target group. Through this consolidation of programming, enhanced marketing strategy, and continuous evaluation, Manitoba Hydro will continue to evolve the Affordable Energy Program to improve accessibility and program awareness, ultimately leading to reducing the energy burden of Manitoba Hydro's lower income customers.

APPENDIX A

MEDIA CALENDAR

Media

	QTY	COST	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC		% of media
Bus Benches / Transit Shelters	15	\$ 1,800.00	-	-	1 - 2 wks	4 wks	2 - 3 wks	-	-	4 wks	4 wks	4 wks	4 wks	-	\$ 10,800.00	7%
Recycling Bins (Silver Boxes)	15	\$ 1,545.00	-	-	-	-	4 wks	4 wks	4 wks	4 wks	-	-	-	-	\$ 6,180.00	4%
Direct Mail	25,000	\$ 10,000.00	-	-	x	x	x	-	-	x	x	x	-	-	\$ 60,000.00	40%
NCI Radio	30	\$ 500.00	-	-	1 - 2 wks	2 wks	1 - 2 wks	-	-	2 wks	2 wks	2 wks	-	-	\$ 5,500.00	4%
CKJS Ethnic Radio	30	\$ 500.00	-	-	1 - 2 wks	2 wks	1 - 2 wks	-	-	2 wks	2 wks	2 wks	-	-	\$ 5,500.00	4%
City targeted newspaper/magazine	TBD	\$ 2,500.00	-	-	x	x	-	-	-	x	x	x	-	-	\$ 12,500.00	8%
MCNA Rural (select markets)	TBD	\$ 5,000.00	-	-	x	x	x	-	-	x	x	x	-	-	\$ 30,000.00	20%
Radio - Power Smart Campaign	2	\$0	-	-	-	-	x	x	-	-	-	-	-	-	\$ -	0%
															\$ 130,480.00	

Production

Bus Benches	15	-	-	-	\$ 1,200.00	-	-	-	\$ 1,200.00	-	-	-	-	-	\$ 2,400.00	2%
Recycling Bins (Silver Boxes)	15	-	-	-	-	\$ 1,200.00	-	-	-	-	-	-	-	-	\$ 1,200.00	1%
Direct Mail	25,000	-	-	-	\$ 2,500.00	\$ 1,000.00	\$ 500.00	-	\$ 2,500.00	\$ 500.00	\$ 500.00	\$ 500.00	-	-	\$ 8,000.00	5%
Radio	30 sec	-	-	-	\$ 3,000.00	-	-	-	\$ 3,000.00	-	-	-	-	-	\$ 6,000.00	4%
Newspaper	TBD	-	-	-	\$ 250.00	-	-	-	-	-	-	-	-	-	\$ 250.00	0%
															\$ 17,850.00	

TOTAL \$ 148,330.00

* Media Calendar contains high level estimates that are subject to change

APPENDIX B

DEVELOPMENT CALENDAR

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
QTY	COST													
Research														
Pre-Program Focus Groups	1	\$ 10,000.00	-	x	-	-	-	-	-	-	-	-	-	\$ 10,000.00
Customer Satisfaction Tracking Study		\$ -	-	-	-	-	-	-	x	-	-	-	-	\$ -
OmniBus	3	\$ 5,000.00	-	-	x	-	-	x	-	-	x	-	-	\$ 15,000.00
Direct Marketing														
Canvassing	2/year	\$ 2,500.00	-	-	-	-	x	-	-	-	-	x	-	\$ 5,000.00
Phone Calls (call centre)	2/year	\$ 5,000.00	-	-	-	-	x	-	-	-	-	x	-	\$ 10,000.00
Community Initiatives														
		\$ 5,000.00	-	-	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	\$ 5,000.00
Manitoba Hydro Communications														
Hydro Gram		\$ -	-	-	x	-	-	-	-	-	-	-	-	\$ -
Energy Matters		\$ -	-	-	-	x	-	-	-	x	-	-	-	\$ -
Website		\$ -	-	x	x	x	x	x	x	x	x	x	x	\$ -
Bill Insert		\$ -	-	-	-	x	-	-	-	-	x	-	-	\$ -
Please Hold Canada		\$ -	-	-	-	-	x	x	x	x	x	x	-	\$ -
Develop Creative Concept														
	1	\$ 5,000.00	-	x	-	-	-	-	-	-	-	-	-	\$ 5,000.00
													TOTAL	\$ 50,000.00

* Development Calendar contains high level estimates that are subject to change

Tom Powell Design

Manitoba Hydro

Affordable Energy Program

Focus Group Research

Prepared by:

NRG Research Group

Llisa Morrow

Telephone: 204-989-8954

Email: lmorrow@nrgresearchgroup.com

July 16th, 2010

Table of Contents

EXECUTIVE SUMMARY	4
Key Findings	4
Recommendations	7
PROJECT BACKGROUND AND OBJECTIVES	8
Project Background	8
Objectives	8
SURVEY METHODOLOGY	9
Sample and Recruitment	9
Discussion Guide and Moderation	10
Context of Qualitative Research	10
DETAILED FINDINGS	11
Perceptions of LIEEP and the NHN Program	11
Outdoor Creative	12
Direct Message - <i>In tough times money is tight</i>	13
LIEEP Participants	13
NHN Participants	14
General Population Participants	17
Informational Message – <i>Do you need help with your Hydro bill?</i>	18
LIEEP Participants	18
NHN Participants	19
General Population Participants	20
Testimonial Message – <i>Manitoba Hydro helped me with my bill</i>	21
LIEEP Participants	22
NHN Participants	23

General Population Participants	23
Illustrated Message – <i>Need help with your hydro bill?</i>	24
LIEEP Participants	24
NHN Participants	25
General Population Participants	26
Direct Mail	27
LIEEP Participants – Testimonial Message Direct Mail	27
NHN Participants – Illustrated Message Direct Mail	28
General Population Participants – Direct Message Direct Mail	30
Key Word Exercise	31
LIEEP Participants – Testimonial Message Direct Mail	31
NHN Participants – Illustrated Message Direct Mail	32
General Population Participants – Direct Message Direct Mail	32
Addressing Communication Barriers	32
Using the Term ‘Lower Income’	32
Affordable Energy Program	34
The Umbrella Concept	34
Reading Flyers	34
Making Participation Easy	35
Additional Material Review	35
LIEPP Direct Mail	35
Neighbours Helping Neighbours Direct Mail	36
APPENDIX 1: LIEEP SCREENER	37
APPENDIX 2: NHN SCREENER	41
APPENDIX 3: GENERAL POPULATION SCREENER	45
APPENDIX 4: DISCUSSION GUIDE	51
APPENDIX 5: KEY WORD EXERCISE	56
APPENDIX 6: TEST CREATIVE	57

Executive Summary

Tom Powell Design and Manitoba Hydro commissioned NRG Research Group to conduct a qualitative research study with Manitoba Hydro Customers. The primary purpose of the research project was to gather feedback on proposed marketing materials for the Affordable Energy Program.

A total of three focus groups were conducted in Winnipeg, Manitoba on February 24th and February 25th, 2010. One group was comprised of participants who took part in the Lower Income Energy Efficiency Program (LIEEP), one group was comprised of participants who took part in the Neighbours Helping Neighbours Program (NHN) and one group was randomly recruited from the general public. All general public recruits qualified as lower income households. A total of 28 individuals participated in the study.

Focus groups are a qualitative research method, where participants are led through a discussion by a moderator. Participants are encouraged to provide open-ended and detailed responses to questions that allow for probing of thoughts and feelings with the possibility of discovering deeper unconscious attitudes.

Key Findings

The LIEEP and NHN Program are viewed as excellent programs that offer help to Manitobans in need. Those who have participated in these programs have positive feedback about the programs and most have had positive experiences. One participant praised Manitoba Hydro staff and emphasized to the group that they need to “call” if they run into difficulty with their bill, otherwise they can’t help you. Some of the NHN Program participants have had negative experiences dealing with Manitoba Hydro, and as a result, have the view that Manitoba Hydro is an untrustworthy organization. This can be attributed partly to the fact that to be eligible for the NHN program, the customer must have received a disconnection of service notice or already be disconnected, thus resulting in a negative perception of the corporation.

LIEEP participants and general population participants have a positive impression of the Direct Message outdoor advertisement (Appendix 6.1). The advertisement is attention grabbing and is clear and easy to understand. The message appeals to those who are struggling with their Manitoba Hydro bill. The advertisement will not necessarily get people to think about the different Manitoba Hydro programs that are available to the public. NHN participants have a much less positive view of the Direct Message outdoor advertisement. The advertisement's message is negative and untrustworthy. NHN participants are in agreement they will not call Manitoba Hydro to find out more information after seeing a Direct Message outdoor advertisement.

The Informational Message outdoor advertisement (Appendix 6.2) must be more specific in order to grab people's attention and to clearly express the main message of the advertisement. The message is believed to be vague and unclear. The word "Help" is eye catching and the phrase "We can help", grabs your attention.

The Testimonial Message outdoor advertisement (Appendix 6.3) is positive but also confusing. It is not clear if the main message is in regards to lowering Manitoba Hydro bills or if Manitoba Hydro will help you to understand your actual bill when it arrives in the mail. The Testimonial Message grabs your attention but may be more effective if the word "lower" was added so that the main headline reads "Manitoba Hydro helped me lower my Hydro bill".

The Illustrated Message outdoor advertisement (Appendix 6.4) resonates with participants, although several adjustments should be made. The image used was not well suited and did not fit the advertisement. Adding additional text to the advertisement for further clarification on the program is preferred.

Reactions to the direct mail advertisements (Appendix 6.5, 6.6, 6.7, 6.8) are positive for the most part. The direct mail advertisements were thought to be clear and easy to read, contain

enough information and will encourage people to call or go online to find out more information. It is important to include a program name, such as the Affordable Energy Program on the direct mail advertisements. Reactions to the direct mail advertisements from the NHN participants are fairly negative. They felt the definitions of the different programs were vague and unclear. They also viewed the advertisements as untrustworthy with incorrect information. The “incorrect information” statement is a result of a copy error that will be described later in the report. Note: One of the eligibility criteria for the emergency funding component of the NHN program is that the customer must have received a utility notification that they are subject to disconnection or be disconnected. Therefore, it is expected that some of the NHN clients may have prior negative perceptions of Manitoba Hydro as their services were at risk of disconnection at a point where they were experiencing personal hardships.

Both the outdoor and direct mail advertisements are not viewed as advertisements targeted towards lower income individuals or households. The advertisements are believed to be targeted to anyone who may need assistance with their Manitoba Hydro bill.

Using the term “lower income” is seen as inappropriate by some and appropriate by others. There are very mixed views regarding using this term to clarify who may or may not qualify for a Manitoba Hydro program.

The program name “Affordable Energy Program” will work to encompass all three individual programs under the umbrella concept. Using the umbrella concept to bring the current three programs together under one program name will work. People feel the concept is clear and easy to understand.

Programs that have well laid out qualifying criteria, that are easy to understand and to access, are the programs that people find easy to use. Ensuring that Manitoba Hydro customer service employees are well informed of the AEP will also lend to the programs success and ease of use for participants.

The LIEEP (Appendix 6.9, 6.10) and NHN Program (Appendix 6.11, 6.12) direct mail advertisements contain enough information and are clear and easy to understand. The direct mail advertisements with images of mother and child are preferred and testimonial quotes are not favoured.

Recommendations

- Include the name of the umbrella program (AEP) on outdoor and direct mail advertisements.
- Use the word “Help” in advertisements.
- Messages that use positive sounding headlines are more often preferred and more effective.
- Be sure all customer service employees are familiar and informed of the programs available.
- Include some information to let people know there are income qualifications. This may be a simple statement such as “Income qualifications required”.
- Have income qualifications easily accessible, either on a brochure or on the website.
- Offer coupons or rebates with the direct mail flyers so people will read them.
- Ensure that program information is clear and easy to understand.
- The NHN group is a different population and may not be reachable using the same campaign that is geared towards the general public. The NHN participants indicated they are more comfortable learning about a program through a secondary agency such as the Salvation Army. Reaching this population will be difficult and the campaign will need to be very specific:
 - Provide clear and direct information. Use numbers such as dollar amounts or percentages to express the amount of help that can be provided.
 - Make sure all customer service employees, including those in delinquent accounts, are familiar with the programs.
 - Have the program name on all advertising materials so the program can be easily referenced.

- Avoid overly dramatic statements such as “Light at the end of the Tunnel” and testimonials.
- Include images of men, women and families. Avoid using animated characters.

Project Background and Objectives

Project Background

Manitoba Hydro is consolidating and enhancing its three main billing assistance programs under one umbrella program called the Affordable Energy Program (AEP). Through this consolidation, program components that target lower income households will work together to create customized solutions to aid participants in managing their Manitoba Hydro bills and reduce their energy burdens.

Using an umbrella concept, the AEP will be made up of three currently existing programs; Neighbours Helping Neighbours, the Lower Income Energy Efficiency Program and Bill Management Services.

Objectives

The overall objective for the enhanced AEP is to improve the affordability of energy for lower income customers while maintaining efficient operations of Manitoba Hydro.

The key research objectives to be addressed in this project are as follows:

- Gather feedback on marketing materials for the AEP.
- Determine that one umbrella campaign resonates and motivates all potential customers for the AEP.
- Test outdoor creative materials to ensure that they resonate with participants.
- Test direct mail creative to determine that enough/too much information has been included, as well as to ensure the creative resonates with participants.

- Determine if the messages of the campaign materials as well as the look and feel of the materials are compelling and address any communication barriers.
- Determine if the key elements are being portrayed in the advertising materials.

Survey Methodology

Sample and Recruitment

A qualitative research methodology (focus groups) was used in this study. This methodology was selected because it allowed for in-depth probing and facilitates two-way exchange of information and views. A total of ten participants were recruited for each group.

Sample for the recruitment was provided by Manitoba Hydro and consisted of individuals who had participated in the LIEEP or NHN programs. The sample for the general population group was randomly generated by NRG Research Group. The recruitment was conducted entirely from NRG's Winnipeg field facility using a recruitment questionnaire designed by NRG staff in consultation with Tom Powell Design and Manitoba Hydro.

A key criterion for the recruit was ensuring that all participants in the study qualified as lower income households. The full screening criteria can be found in the screening documents appended to this report. For all groups a mix of gender and ages were represented. The table below provides an overview of when the groups were held and the composition:

Group Type	Date/Time	# of Participants	Gender Split
LEIPP Participants	Feb 24 (Winnipeg) 5:30	10	7 Female/3 Male
NHN Participants	Feb 24 (Winnipeg) 7:30	9	5 Female/4 Male

General Population	Feb 25 (Winnipeg) 5:30	9	5 Female/4 Male
Participants			
	Three Groups	28 participants	17 Female/11 Male

All the focus groups were conducted at NRG’s downtown Winnipeg focus group facility. All individuals were provided a \$75 cash honorarium at the conclusion of the group in appreciation for their attendance and participation.

Discussion Guide and Moderation

The discussion guide used for these focus groups was designed by NRG in consultation with Tom Powel Design and Manitoba Hydro. The guide was structured in a manner to encourage conversational responses with appropriate follow-up questions from the moderator. A copy of the guide is appended to this report. Each group lasted approximately 2 hours and was moderated by Lliisa Morrow, a research professional with NRG Research Group.

Context of Qualitative Research

The primary benefit of focus group discussions is that they allow for in-depth probing that qualifies participants’ behaviour, habits, usage patterns, perceptions and attitudes related to the subject matter. The group discussion allows for flexibility in exploring other areas that may be pertinent to the investigation.

Rather than collecting quantitatively precise data or absolute measures, the focus group technique is used in marketing research as a means of gaining insight and direction.

Detailed Findings

Perceptions of LIEEP and the NHN Program

The discussion with the LIEEP and NHN participants began with a few general questions about their perception of the program in which they had participated.

The LIEEP participants had a lot of positive feedback about the LIEEP. They indicated the program had been very helpful in helping them make their home more energy efficient as well as save money on their Manitoba Hydro bills. A few participants did mention they had been waiting for their new furnace or insulation for a few months. Overall, the LIEEP participants' impressions and experiences with the program were positive.

LIEEP participants indicated they heard about LIEEP through a variety of sources. These sources include Manitoba Hydro customer service, through friends, family members and coworkers.

The NHN participants felt the program was very helpful in providing emergency assistance when they needed it most. Participants stated they were very glad the program was available since it did help them in a time of crisis. It should be noted that the intent of the NHN program is to assist customers in connecting with available social agencies that they may be unaware of or have difficulty accessing and provide support to help them in managing through their crisis/emergency. The program also provides relief by temporarily suspending the pending disconnection, through financial assistance for their energy bill. This allows the client time to take advantage of the referrals provided by the Salvation Army. Customer feedback indicates that their focus is on the financial assistance provided instead of the referrals which are intended to help them create long term improvements to their financial situation. This could explain why participants expressed concern that the program did not cover their entire Manitoba Hydro bill and that there was a "cap" on what they could receive. They said this made it difficult to "catch up" on paying their Manitoba Hydro bill in full. Several participants expressed having very negative experiences dealing with Manitoba Hydro customer service

employees and billing agents, and were therefore very weary of Manitoba Hydro in general. Although participants spoke highly of the NHN program itself, they also expressed that they did not feel Manitoba Hydro was a trustworthy company and they felt very hesitant to contact Manitoba Hydro for any reason.

NHN participants indicated they heard about the NHN program through a variety of sources. These sources include the Family First Program, Manitoba Hydro customer service, at school, the Salvation Army, as well through friends, family members, coworkers and landlords.

The general population group was asked if they had heard about the LIEEP or the NHN program. The group was not overly familiar with either program, although a couple of participants did indicate they had heard of the programs but were not sure of the program details. It is noteworthy to mention that during the recruitment process, any individual who had participated in either program, LIEEP or NHN, was not invited to attend the general population group.

Outdoor Creative

A total of four outdoor creative messages were tested in all three focus groups. Each message was shown to the group as a bus bench advertisement and a recycling bin advertisement. Each group was shown the four messages one at a time and asked to provide specific feedback for each message. The LIEEP and NHN participants were provided with an explanation of the AEP umbrella concept and told the messages they were about to see were in fact new advertising and communication materials for the AEP. Participants in the general population group were not told about the AEP umbrella concept until after the outdoor ads were presented. This approach was taken so that feedback could be gathered from those who had some familiarity with the AEP programs (LIEEP and NHN) and those who had no familiarity with the programs (general population). The order in which the messages were presented was randomized for each group to avoid an order bias.

Direct Message - *In tough times money is tight (Appendix 6.1)*

The LIEEP and general population participants had a fairly positive first impression of the Direct Message advertisement. The NHN participants had a less positive reaction.

LIEEP Participants

When the LIEEP participants were asked what would come to mind if they saw this advertisement in their neighbourhood, several participants said they thought the advertisement meant that Manitoba Hydro would help pay their Manitoba Hydro bill if needed. Others indicated that the advertisement created more questions than answers. One participant commented, *“I would have a whole lot of questions, like what does Hydro mean specifically?”*

Other first impression comments included:

- *It might be hard to read if you were driving by.*
- *This would be good to include in your Hydro bill, like as a flyer.*
- *It says they would help you with your bill.*

When asked what the Direct Message wording said to them, participants felt the message meant that Manitoba Hydro would provide a different way to pay your bill, perhaps like a budget plan.

Participants in the LIEEP group agreed that the Direct Message advertisement did grab their attention. Specifically they said the word “Money” stood out, as well as the words “We can help with your Hydro bill”. Some participants commented that the phrase “We can help you with your Hydro bill” might make a better headline and should be in larger letters.

The participants did not think the Direct Message advertisement would get them thinking about different Manitoba Hydro programs that are available. A few participants said that the advertisement might get them to call or go online for more information but the majority of the

group felt the advertisement was vague and needed more information to get them to call, such as specific information on how Manitoba Hydro could help with their bill.

The LIEEP group participants were also undecided as to whether the Direct Message advertisement would appeal to someone struggling with their Manitoba Hydro bill and if seeing the advertisement would be enough to encourage someone who was struggling to find out more information.

Participant's comments included:

- *No, I would not. This is not enough to get me to look into it. I would need to know what they could help with specifically.*
- *If I was struggling maybe, but I'm not sure I would remember it.*
- *I don't think people would call.*
- *I think it might be enough to get me to call, it's colourful.*
- *I might call or go online.*

When asked about the image on the advertisement the LIEEP group felt the image was a good way to portray someone who was struggling. A few participants felt the concerned look on the woman's face was appropriate for the advertisement. A few participants commented the image looked like it belonged to a credit counselling advertisement, which was seen as negative.

Additional comments also included feedback on the "In tough times money is tight" headline. In general the group was not keen on this headline. They did not like its negative feel and several participants suggested that it be made into a smaller headline and the "We can help with your Hydro bill" be made larger.

NHN Participants

When the NHN participants were asked what would come to mind if they saw this advertisement in their neighbourhood, the group had mixed reactions but their reactions were

generally negative. Participants said they would want to “*know what the catch is*” and if they would need to call Manitoba Hydro to find out.

Other first reactions included:

- *That looks familiar, I've been there before.*
- *What's the catch?*
- *It says that Manitoba Hydro charges too much.*
- *I would put the positive phrase first- lead with the positive.*
- *This sounds really negative.*

When asked what the Direct Message wording said to them, NHN participants felt the message meant that Manitoba Hydro might help with a bill payment plan or give you energy saving tips.

The participants agreed the Direct Message advertisement did grab their attention. However, they felt the message had a negative feel associated to it. The group was in agreement that making the smaller headline, “We can help you with your Hydro bill” larger, would improve the advertisement and make it more attention grabbing.

As mentioned earlier, the NHN participants were very weary and sceptical of Manitoba Hydro in general. They expressed concern regarding the trustworthiness of Manitoba Hydro and their willingness to contact Manitoba Hydro for any reason. Participants were asked if they felt the Direct Message advertisement would get them thinking about different Manitoba Hydro programs and perhaps get them to call or go online to find out more information. All participants in the group said they would definitely not call Manitoba Hydro to find out more information.

Participant's comments included:

- *I would not call. I don't trust Manitoba Hydro.*
- *I don't want to call them when I am behind on my account.*

- *It means that I would have to call Hydro and I don't like talking to their customer service people.*
- *I would want to know their definition of "helping" before I call.*
- *I would be afraid they would ask me for a financial commitment.*

Some participants did indicate they may go online to find out more information but they would need to be given a direct link so they would not have to spend a lot of time searching for information.

The NHN participants were asked what would get them to call Manitoba Hydro to find out more information after seeing an advertisement like the Direct Message. One participant said *"The first thing I see is 'In tough times money is tight', I know that, it's not news to me. But if you had in big bold letters 'We can help you with your Hydro bill' then I know Hydro might be able to help"*. Other participants commented that having a headline that read *"Help is just a call away"* might be effective. Others suggested getting rid of the Manitoba Hydro symbol or at least making it smaller.

When asked about the image on the Direct Message advertisement the group did not feel the image was appropriate. They felt the image was negative (a positive image and message was preferred) and they also felt that the image was *"depressing"*.

The NHN participants were in agreement that it is very important to include a program name or a reference name on any sort of advertising for Manitoba Hydro programs. They felt this was important so they would be able to call in and ask for information on a program by name. It is important to mention that the group indicated repeatedly that having the AEP name on the advertisements was extremely important to them.

General Population Participants

When the general population participants were asked what would come to mind if they saw this advertisement in their neighbourhood, the group's reaction was positive. Participants said the advertisement grabbed their attention and they also thought the phrase "We can help you with your Hydro bill" stood out.

The general population participants felt the main message of the Direct Message advertisement was clear and easy to understand. They felt the main message was simply that Manitoba Hydro can help with paying your bill when you are having a hard time. Some participants thought this meant providing help in the form of a bill reduction, or providing a budget plan. Although participants did think the advertisement was directed at people who were behind on their Manitoba Hydro bill, no one suggested that Manitoba Hydro would provide a grant to help cover the cost of an outstanding bill.

First impression comments included:

- *This tells you that if you're having problems paying your bill, they'll help.*
- *Hydro is doing something to help people who are on a tight budget or can't make their payments.*
- *I'm surprised, like Hydro will lend money? I'm surprised.*
- *I thought, wow, Manitoba Hydro cares.*
- *This would get my attention; it would get me to call.*
- *I think it's all very clear; the wording, the picture, the concern in her face, the past due bill that she's lifting up, and it's self-explanatory.*
- *Too many 'T' words.*

Participants also felt the Direct Message advertisement would get them thinking about different Manitoba Hydro programs. Several participants agreed they would call the phone number or go online to find out more information about available programs.

The general population group felt the Direct Message advertisement would appeal to those who were struggling with their Manitoba Hydro bill. The visual image was thought to do a very good job in showing that people who are “*past due*” on their bill may be able to receive help from Manitoba Hydro in some form.

Informational Message – *Do you need help with your Hydro bill? (Appendix 6.2)*

Participants in all three groups had a fairly positive first impression of the Informational Message. However, all three groups also felt this advertisement needed to be more specific in order to be affective, and that the current wording of the advertisement was somewhat vague and unclear.

LIEEP Participants

The LIEEP participants were asked what would come to mind if they saw this advertisement in their neighbourhood. Participants said they would think of the word “*budget*”, and that Manitoba Hydro was offering some sort of program related to bill management or budgeting help.

When asked what the wording said to them, the LIEEP participants thought the main message was that Manitoba Hydro would help with their bill in some way, but were unclear and wondered how Manitoba Hydro could help.

The group agreed that the advertisement did grab their attention. Specifically, the word ‘Help’ was seen as attention grabbing. The participants also agreed that the phrase “We can help” was a positive message, as well as eye catching.

The majority of the group agreed the Informational Message would get them thinking about the different Manitoba Hydro programs that were available and possibly get them to call for more information. The participants also commented that the advertisement should be more

specific and give a bit more explanation of how Manitoba Hydro could help with their Hydro bill.

Participant's comments included:

- *It makes me wonder what kind of programs are out there, but this ad should really give a bit more detail.*
- *It should at least say what they can help you with- your bill, energy efficiency, or something else, or all of it.*
- *It should be a bit more specific.*

When asked if the Information Message would appeal to those who were struggling with their Manitoba Hydro bill, the LIEEP group in general thought it would be appealing, but should be more specific as to whom the advertisement was directed towards.

The image used for the Information Message was not favoured by the LIEEP participants. Most commented the image was "*not the best*" and that the image made the advertisement less personal. One participant commented "*The image makes the message less personal- it's just a mouth with a hand, not even a whole person*". Others in the group did not like the image because they felt it portrayed a call-center environment which was seen as negative.

NHN Participants

The NHN participants felt the Information Message was definitely more positive than the Direct Message. The group's first impression of the advertisement was that the message needed to be more specific. A few participants also mentioned they felt the headline "Do you need help with your Hydro bill" really stood out.

The group felt the wording was straightforward and meant that Manitoba Hydro would help them with their Hydro bill in some way, although they were not sure how Manitoba Hydro would help.

When the NHN group was asked if the Informational Message would get them thinking about the different programs Hydro had to offer, the majority said it would not. Again, the group wanted the advertisement to be more specific and include a program name they could easily reference. The participants expressed their hesitance in contacting Manitoba Hydro for any reason.

The participants were asked if they felt someone who was struggling with their Manitoba Hydro bill would be influenced by the Informational Message to call Manitoba Hydro for more information. The group did agree that because the advertisement was more positive, perhaps there was more incentive for people to contact Manitoba Hydro to find out more information.

The NHN group did not favour the image on the Informational Message. One participant commented *“I don’t like the picture because it reminds me of a calling a call center and not getting a real person on the line”*. Others in the group were in agreement with this statement.

General Population Participants

When the general population participants were asked what would come to mind if they saw the Informational Message in their neighbourhood, the majority of the group said they think it would mean that Manitoba Hydro was going to offer some sort of billing assistance program or financial support. Some participants said they would wonder what the advertisements were all about since it did not specify.

Participants felt the wording may mean that Manitoba Hydro would help you understand your bill, or that it means Manitoba Hydro was offering a payment plan option. One participant thought it might have something to do with the Power Smart Program. Some participants were not sure what the wording meant and suggested adding some additional text to clarify.

Participants did agree that the word ‘Help’ grabbed their attention. When asked if the advertisement would encourage them to call Manitoba Hydro or go online to find out more

information, a few participants said they would call and a few said they would seek out information online.

The general population participants were in agreement that the advertisement would most likely not get them to investigate different programs offered by Manitoba Hydro, stating that the advertisement was too vague and needs more specifics. Several felt the lack of specific information made it unmemorable.

When asked if they felt the Informational Message would encourage those who were struggling with their bill to contact Manitoba Hydro, the general population participants had mixed views. Several felt that those who were struggling would contact Manitoba Hydro and some felt the advertisement was simply too vague to get people to call.

Some comments included:

- *It would, yes, if you were struggling.*
- *Maybe with different wording.*
- *Maybe if you said 'Are you struggling to pay your Hydro bill?' That way you know it's about the financial part of it.*

Overall the group was not fond of the image used in the Informational Message. They felt it was impersonal and that the image was not clear or easy to see. One participant commented "*It's just a mouth, I don't get it*".

Testimonial Message – *Manitoba Hydro helped me with my bill (Appendix 6.3)*

The participants in all groups had mixed feelings and impressions of the Testimonial Message advertisement. Although they felt the message was positive, there was some confusion on what the advertisement was all about. Participants were not sure if the advertisement was meant to advertise a program to help lower their Manitoba Hydro bill, or a program to help explain the actual bill itself in case you were confused once you received your bill.

LIEEP Participants

The LIEEP participants were asked what would come to mind if they saw the Testimonial Message advertisement in their neighbourhood. First thoughts that came to mind were that Manitoba Hydro would help people interpret their bill or possibly help with their meter reading.

The LIEEP participants commented they felt a word was “*missing*” from the headline message. When asked what word could be added, participants agreed the word “*lower*” should be added to the headline to make the headline read “Manitoba Hydro helped me lower my Hydro bill”.

LIEEP participants agreed somewhat that the Testimonial Message would grab their attention. Most participants felt the advertisement was not as attention grabbing as the Direct Message advertisement.

Participants also felt that the Testimonial Message would not necessarily get them, or others, thinking about the different programs that Manitoba Hydro offers. They also felt that those who were struggling with their Manitoba Hydro bill would not be motivated to contact Manitoba Hydro to find out more information. Again, several participants felt changing the headline to include the word “*lower*” would make the message more effective.

The LIEEP participants felt the image used for this message was weak and did not do a good job of encouraging people to contact Manitoba Hydro to find out more information.

It is also noteworthy to mention that the LIEEP participants did not think this particular advertisement would be targeted towards lower income households.

NHN Participants

When the NHN participants were asked what would come to mind if they saw the Testimonial Message advertisement in their neighbourhood, most agreed that they would wonder what Manitoba Hydro could help with? Was it bill related, or perhaps related to interpreting their actual bill?

Participants in the group did not feel the Testimonial Message advertisement would encourage them, or others who were struggling with their Manitoba Hydro bill to contact Manitoba Hydro to find out more information. They also felt the advertisement would not encourage people to investigate other programs offered by Manitoba Hydro.

The NHN participants did not feel the image suited the advertisement. They questioned what the woman was doing. They could not tell if she was filling out paper work or writing cheques. Several participants commented that the image was boring and did not give any information about the program.

General Population Participants

The general population participants had similar views regarding the Testimonial Message advertisement. They felt if they saw the advertisement in their neighbourhood they would question what the advertisement was trying to say. They also agreed that the advertisement was not specific enough to encourage them to call for more information.

The group did not feel there was anything particularly eye catching or attention grabbing about the advertisement. Several participants did say they noticed the word “Help” right away and that the word stood out.

General population participants also agreed that due to the limited information included in the Testimonial Message, they did not feel they or others would be motivated or encouraged to contact Manitoba Hydro for more information.

Similar to the previous two groups, the general population participants were not fond of the image used on this advertisement. Several participants suggested if the Direct Message image was used instead of the current image, the advertisement would be much more attention grabbing and interesting.

Illustrated Message – *Need help with your hydro bill?* (Appendix 6.4)

The majority of participants felt the Illustrated Message advertisement resonated with them, although there were several things they would adjust. Almost all participants agreed that the image was not suited for the advertisement and *“did not fit the headline”*. They did prefer the headline message *“Need Help with your Hydro bill?”* but also felt that some follow up text underneath the main headline was necessary to clarify what type of help is available.

LIEEP Participants

When asked for their first impression if they saw the Illustrated Message advertisement in their neighbourhood, LIEEP participants said they would think that Manitoba Hydro had a program to help with their bill, but they were not sure how Manitoba Hydro would help. Participants agreed the message was eye catching and attention grabbing. One participant commented *“It’s short and to the point. It would be easy to see and read if you were driving by”*.

LIEEP participants also commented that the word *“Help”* stood out and grabbed their attention. Several participants said that another line of text information should be added in order to clarify the program specifics.

Participants had mixed views on whether the advertisement would encourage people to call to find out more information. Some participants felt the headline was *“catchy”* but too vague to get people to call. A few said that if you added the word *“lowering”* to the headline it would entice people to seek out more information.

Impressions of the image were only somewhat positive. Some participants did not like the image simply because it did not give any information about the program, while others thought the image was “cute” and liked the bright blue color.

NHN Participants

When asked what the Illustrated Message would bring to mind if they saw it in their neighbourhood, the NHN participants said they would notice the advertisement. Although there was still a great deal of hesitation in trusting Manitoba Hydro, participants did express that they resonated with this advertisement.

Comments included:

- *I like it because it's simple.*
- *I would be interested but it means I would have to call Hydro and I would like more information first. I am more inclined to call the Salvation Army because I know that they will help me.*
- *I like this ad, it's to the point.*
- *It bothers me that Hydro says they can help but I have had such a negative experience. When I have asked for help, it makes me feel like I am begging and I don't like that. But this ad gets me thinking there might be another program that can help me.*

Participants in the NHN group agreed that if the Illustrated Message advertisement was shown with a different image, included a program reference name (such as the AEP) and had a second smaller message underneath with details on program, they would contact Hydro to find out more information.

General Population Participants

When asked about their first impressions of the Illustrated Message advertisement, the general population group felt the advertisement was targeted towards all types of people and not just those who are struggling with their Manitoba Hydro bill. Several people commented they thought the advertisement was straight forward and easy to understand. One participant commented *“It does not matter who you are, what level you are. If you need help just give us (Hydro) a call.”*

General population participants agreed the advertisement was eye catching and easy to read since the headline was short.

Several participants felt the advertisement needed to be more specific. Some suggested adding the word “lowering” so the main headline read “Need help with lowering your Hydro bill?” while others suggested including a headline with *“Payment help, Financial help”*.

In general, the group agreed the Illustrated Message advertisement would get them to seek out more information and possibly encourage those who are struggling with their Manitoba Hydro bill to call or go online for more information.

The general population group did not like the image. The group suggested using the Direct Message Image instead.

When the general population group was asked if they felt the Illustrated Message advertisement was directed at those who have a lower income, the participants were not sure if this was the target population for this message. Some felt that the advertisement was targeted towards those who were struggling to pay their Manitoba Hydro Bill and therefore in a lower income bracket. Others felt that the advertisement did not specifically target any one group of individuals.

Direct Mail

Each group of participants reviewed and discussed a direct mail advertisement. The LIEEP group was shown the Testimonial Message mail advertisement; the NHN group was shown the Illustrated Message mail advertisement; and the general population group was shown the Direct Message mail advertisement. Each group was asked which one of the four outdoor advertisements they felt was the strongest and the advertisement they would choose. This was the direct mail advertisement that each group then discussed.

Although each group did choose a “favourite” outdoor advertisement, the participants did not feel there was one clear winner, and that each advertisement required some adjustments.

LIEEP Participants- Testimonial Message Direct Mail (Appendix 6.7)

Note: An error was made in the copy of this ad that read, “receive a one-time emergency funding that will cover your Hydro bill payment”. It should have read “emergency funding to prevent disconnection of energy services”.

The LIEEP group was divided on which of the outdoor advertisements they preferred. There was definitely no clear favourite choice. The group leaned towards the Testimonial Message outdoor advertisement, but repeatedly suggested the word “Lower” be added so the headline to read “Manitoba Hydro helped me lower my bill”.

The group was shown the Testimonial direct mail advertisement and was told that this would be something they may receive in the mail. Participants were asked what stood out and what their first impressions were. The reactions to the direct mail were very positive.

Direct feedback included:

- *It says to me that Hydro has programs that can help.*
- *This is great- easy to understand and enough information.*
- *The word ‘lower’ stands out.*

- *The quote stands out- it's a strong statement.*

All LIEEP participants were in agreement that the Testimonial Message direct mail gave enough information, was clear and easy to read, and would encourage them to call or go online to find out more information. They did not feel that any of the information was confusing or difficult to understand.

Some direct comments included:

- *I would call, even if I was not going through a difficult time.*
- *I think it gives everybody something to think about- if you're going through a tough time or not, maybe you just want to make some home renovations.*
- *I think it says everything about the program. This would be the best way to get the information out there.*

Several participants questioned if this advertisement was intended for lower income households only. Participants were not sure who might qualify. Some thought it would be beneficial to include some type of disclaimer that clarified that there are income requirements necessary to qualify.

NHN Participants- Illustrated Message Direct Mail (Appendix 6.8)

Note: An error was made in the copy of this ad that read, "receive a one-time emergency funding that will cover your Hydro bill payment". It should have read "emergency funding to prevent disconnection of energy services".

The NHN participants generally agreed the Illustrated Message outdoor advertisement would be the one they preferred. However, participants also stated the image would need to be changed, the program name (AEP) must be included and a sub-header with a bit more detail added.

The group was shown the Illustrated Message direct mail and was told this would be something they would receive in the mail. Participants were asked what stood out and what their first impressions were. The reactions to the direct mail were fairly negative. The group's first reaction was that the information on the direct mail was incorrect and false. Participants did not agree with the bullet point "receive a one-time emergency funding that will cover your Hydro bill payment". Participants said that the money you receive through the NHN program is not enough to cover your payment and that you only receive a certain amount. One participant said "Where it says 'receive a one-time emergency funding that will cover your Hydro bill payment' it does not cover your Hydro bill, it only covers part of it". Participants in the group were in agreement with this statement. They indicated that they felt the direct mail was misleading and not truthful. The feelings and attitudes presented can be linked to the copy mistake that did not accurately describe the funding available through participation in the program.

Other comments included:

- *Well here it says 'replacing your furnace' but if you're having money issues, you can't do things like this. You need to have all your bills paid with Hydro before they will help you with any of this stuff.*
- *Yeah, and you can't have bad credit either.*
- *The other thing is that applying for programs like a new furnace or insulation is that Hydro requires you to have a good credit record, which you may not have if you're having financial problems.*
- *The words 'most' or 'all' is not an amount or a percentage- I would rather see a dollar amount or a percentage shown.*
- *If you're a renter, a lot of this does not apply to you.*

The NHN participants were asked if there was any information on the Illustrated Message direct mail that they did not understand or that was confusing. Participants said they felt the

definitions of the different programs, specifically the emergency funding, were not clear. They also felt that not giving a dollar amount or a percentage was misleading and confusing.

Participants also felt that the name of the program must be included on the direct mail so that people would be able to reference the programs and explain why they were calling.

General Population Participants- Direct Message Direct Mail (Appendix 6.5)

Note: An error was made in the copy of this ad that read, “receive a one-time emergency funding that will cover your Hydro bill payment”. It should have read “emergency funding to prevent disconnection of energy services”.

The general population group was also divided on which of the outdoor advertisements they preferred. The group was divided between the Direct Message and the Illustrated Message. When asked to choose one outdoor advertisement, the group leaned towards the Direct Message outdoor advertisement.

The group was shown the Direct Message mail advertisement and were told that the advertisement would be something they would receive in the mail. Participants were asked what stood out and what their first impressions were. The reactions to the direct mail were positive.

Direct feedback included:

- *It's just enough information; it would get me to call.*
- *It's to the point; you don't want too much info on there.*
- *This would be a flyer I would read and not just toss aside.*

The group did not think the advertisement was specifically targeted towards lower income households, they felt the advertisement targeted anyone who may need help with their

Manitoba Hydro bill. One participant said *“It seems to be targeted to those who may be facing challenges and challenges can be anything- not just limited to lower income people”*.

The group was asked if the direct mail gave enough information or if there was any information that was missing or confusing. Participants were in agreement that enough information was included on the advertisement, and that the information would get them to seek out more details. A few participants thought the last bullet point “choose flexible bill payment options” was somewhat vague.

The general population participants agreed that if they received the direct mail at home they would either call Manitoba Hydro or go online for more information. Participants agreed the direct mail grabbed their attention and made them want to find out more.

Key Word Exercise

A key word exercise was conducted with each group. The purpose of the exercise was to give the participants a way to apply key elements to the direct mail advertisement they were shown. Each participant was given a worksheet that contained eighteen descriptive attributes, nine positive attributes and their antonyms. A copy of this worksheet is appended to this report. Participants were asked to choose five words that in their opinion would best describe the direct mail advertisement. They were told that when choosing the five descriptive words, to think of all the elements of the advertisement such as the main message, the wording and what the advertisement looked like.

LIEEP Participants- Testimonial Message Direct Mail (Appendix 6.7)

The key words chosen by the LIEEP participants included:

- Approachable
- Appealing
- Easy to understand
- Friendly
- Trustworthy

- Considerate

NHN Participants- Illustrated Message Direct Mail (Appendix 6.8)

The key words chosen by the NHN participants included:

- Considerate
- Approachable
- Dishonest
- Confusing
- Not attractive
- Uninformed
- Unimaginative
- Unreliable

General Population Participants- Direct Message Direct Mail (Appendix 6.5)

- Easy to understand
- Approachable
- Caring
- Appealing
- Friendly
- Considerate

Approachable, considerate, easy to understand, and friendly were the most common words that were chosen among the groups, with the exception of the NHN group.

Addressing Communication Barriers

Using the Term ‘Lower Income’

The participants in all groups were asked if they thought that using the term ‘lower income’ to help define the program, whether it be on outdoor advertisements or on direct mail advertisements, was appropriate. The participants in the LIEEP and the general population

groups were somewhat divided. Participants in the NHN group were all in agreement that using the term 'lower income' was not appropriate.

A few participants in the LIEEP group felt that using the term 'lower income' was labelling a group of people, and the term had a negative stigma. Others in the group felt that using the term was fine because it was clarifying who qualified for the program. One participant commented *"If you're lower income, you're lower income. If it said 'lower income' on the flyer I would know that it would apply to me. It's not negative"*. Some participants suggested including *"various income requirements necessary"* or *"income requirements needed"* on the advertisements so people were aware that income requirements were a part of the program.

The general population group was also fairly divided on whether the term 'lower income' should be used. Some participants felt using the term was just fine since it helped clarify who qualified. Others felt the term carried a negative implication. It is noteworthy to mention that participants in the general population group were confused on what would qualify someone as lower income. One participant said *"What does lower income mean? How much do you have to make?"* Another participant commented *"What constitutes lower income? Is that welfare?"*

When the general population group was asked what could be said instead of 'lower income' to express the same idea, some suggestions included:

- *I think if you just put the minimum qualifying amount like 10k or 20k, whatever it is, so that people who qualify could just see the figure and know if they qualify.*
- *Yes, you could just give an amount. You don't have to call it 'lower income'.*
- *You could just say 'income bracket' instead of lower income.*

The NHN participants had a very clear view on whether using the term 'lower income' was appropriate. The group felt using the term 'lower income' or any wording that clarified the program was for lower income households, was inappropriate. They felt that by including this information on advertisements Manitoba Hydro was *"singling out that group"*, and this was

seen as very negative. The group also felt that including any type of information about income requirements was not necessary and should be avoided. The group felt the advertisements gave enough information, and that people could find out if they qualify on their own.

Affordable Energy Program

The participants were asked if they felt the name 'Affordable Energy Program' would work to encompass all three individual programs under the umbrella concept. Participants in all groups were in agreement that naming the program the Affordable Energy Program made sense to them. Participants in the NHN group and the general population group stated that including the AEP name on advertising materials was very important.

The Umbrella Concept

The umbrella concept was explained to all participants. Each group was asked if they felt bringing the three current programs together to function as one program would work. All groups were in agreement that the umbrella concept would work and they understood the concept. Participants stated it would be important to make sure that all Manitoba Hydro customer service employees were familiar with the AEP program in case people enquire about the programs as a whole or separately.

Reading Flyers

Each group was asked about the different elements a mail advertisement must have to get them to stop and read it and not just toss it aside. Participants in all three groups had similar responses that included:

- Coupons
- Mail-in rebates
- Bright colors
- Different shapes
- Catchy headlines
- Free samples

- Fridge magnets

Making Participation Easy

Each group was asked what could be done so that participating in a program like AEP was made easy for them. Everyone agreed that making the information about the program, as well as the qualifying criteria easy to understand and easy to access was the best way to make participation easy. Participants also agreed that making sure the Manitoba Hydro customer service employees were well informed about the program so they can answer questions.

Some additional comments included:

- *Send something out in the mail.*
- *Outline who qualifies so we know before we call.*
- *Make the information easy to find online.*

The NHN Group also gave the following suggestions:

- *Put the information on your bill.*
- *Have one point of contact when you call in.*
- *Make sure the information is clear and accurate.*
- *Don't include the Manitoba Hydro symbol.*
- *Include some contacts for different agencies, like the Salvation Army so people don't have to call Manitoba Hydro.*
- *Have a separate customer service that could help you with your bill that is not related to accounts receivable.*
- *Don't ask me for money when I call to ask about the program.*

Additional Material Review

LIEPP Direct Mail (Appendix 6.9, 6.10)

The LIEPP and general population participants were shown two potential direct mail advertisements specifically for LIEPP. Participants from both groups felt the direct mail

advertisements gave enough information about LIEEP. They also felt the information was straightforward and easy to understand. Participants in both of these groups resonated more with the first LIEEP direct mail (image of female and child – Appendix 6.9). Some participants stated they did not like the term ‘nest egg’ and said that those who may be lower income or struggling with their bill may not even have a nest egg.

Neighbours Helping Neighbours Direct Mail (Appendix 6.11, 6.12)

The NHN and the general population participants were shown two potential direct mail advertisements for the NHN Program. Participants from both groups felt the direct mail advertisements were clear and easy to understand. Participants stated they preferred the first advertisement (young female and baby boy – Appendix 6.11). Participants were not fond of the testimonial statement on the second advertisement (with older male - Appendix 6.12).

The NHN participants had some very specific feedback regarding the direct mail. They preferred the image of the young mother and baby over the older male, and they noticed the Neighbours Helping Neighbours title immediately. Participants also agreed the first advertisement was more friendly and approachable. When asked if there was any other information that should be included, several felt having a contact for the Salvation Army was required.

Appendix 1: LIEEP Screener

Affordable Energy Program – LIEEP Participants (Group 1)

Recruit 12 for 10 to show

ASK TO SPEAK DIRECTLY WITH THE CUSTOMER NAME ON THE PARTICIPATING CUSTOMER LIST TO NRG. WE ONLY WANT TO SPEAK WITH THIS PERSON, AS THIS IS THE PERSON THAT HAS SIGNED THE FORMS AGREEING TO LET US USE THEIR NAME.

Intro:

Hello, may I please speak with [MUST ASK AND SPEAK WITH NAME ON SAMPLE]

Hello, my name is _____. I'm calling from NRG Research Group, a national public opinion research firm. We're organizing a discussion group (a focus group) to explore issues an affordable energy program offered by Manitoba Hydro. Manitoba Hydro has provided us with a list of people who have participated in the Lower Income Energy Efficiency Program, and would like your feedback on some advertising and promotional materials to further develop the program. All participants who are invited to the group and attend will receive a **\$75** cash honorarium as a thank you. About ten people like yourself will be taking part.

ASK ALL

But before we invite you to attend, we need to ask you a few questions to ensure that we get a good mix/variety of people. Is now a good time?

- Yes **CONTINUE**
- No **THANK & TERMINATE**

READ TO ALL

Participation is voluntary and all your answers will be kept confidential and will be used for research purposes only. We are simply interested in hearing your opinions – no attempt will be made to sell you anything. The format is a “round table” discussion lead by a research professional. An audio/video tape of the group session will be produced for research purposes. The tapes will be used only by the research professional to assist in preparing a report on the research findings and will be destroyed once the report is completed.

1. Have I reached you at your home phone number?

- Yes **CONTINUE**
- No **MAY I SPEAK WITH SOMEONE WHO DOES LIVE
HERE? – IF NO- THANK & TERMINATE**

2. Has your household participated in Manitoba Hydro's Lower Income Energy Efficiency Program?

- Yes- has participated in the program **[CONTINUE]**
- No- has not participated in the program **[THANK & TERMINATE]**
- Don't know/ Ref **[THANK & TERMINATE]**

3. And how do you pay for your heating costs each month? **[READ LIST AS NEEDED]**

- You pay your Manitoba Hydro Bill each month **[CONTINUE]**
- Your hydro bill is paid directly through another third party group **[THANK & TERMINATE]**
- Your heating cost is included in your rent or common services **[THANK & TERMINATE]**
- OTHER **[THANK & TERMINATE]**

4. Please tell me if you or anyone in your household works in, or is employed with:

[READ ALL ITEMS]

- The Media ,
- Advertising
- Market Research
- Manitoba Hydro

[THANK AND TERMINATE IF 'YES' TO ANY OF THE ABOVE]

5. RECORD GENDER [AIM FOR 50-50 PER GROUP]

- Female
- Male

6. Into which of the following ranges does your age fall?

- 18 to 34
- 35 to 44
- 45 to 54
- 55 to 64
- 65+

Age Quotas: Must Recruit 4 to 5 per group who are 65+.

7. Do you currently own or rent your place of residence?

- Own residence **[CONTINUE]**
- Rent residence **[THANK & TERMINATE]**
- Other **[THANK & TERMINATE]**
- DK/ Ref **[THANK & TERMINATE]**

8. And how would you describe your home, is it a... [READ LIST AS NEEDED]

- Single detached house **[CONTINUE]**
- A semi detached house (townhouse, row houses, or multiplex) **[CONTINUE- NEED TO HAVE 1]**
- An apartment suite **[THANK & TERMINATE]**
- A Condominium **[THANK & TERMINATE]**
- Other **[THANK & TERMINATE]**
- DK/Ref **[THANK & TERMINATE]**

9. What is the primary type of energy used in heating your house? Is it ...?

- Natural Gas **[CONTINUE]**
- Electric **[CONTINUE]**
- Other **[THANK & TERMIANTE]**
- Dk/Ref **[THANK & TERMIANTE]**

10. What is the highest level of education you have obtained? Is it ...?

- Less than high school
- High school graduate
- Some college or university
- College or university graduate

11. What is your current occupation? RECORD _____
Please specify if retired.

12. As I mentioned earlier you are being invited to a group discussion with approximately 10 other people. How comfortable are you in participating and speaking out in group discussions of this size? Would you say you are very comfortable, somewhat comfortable, not very comfortable or not at all comfortable?

	✓	Instruction
Very comfortable		CONTINUE
Somewhat comfortable		CONTINUE
Not very comfortable		THANK & TERMINATE
Not at all comfortable		THANK & TERMINATE
Don't know		THANK & TERMINATE

13. Have you ever attended a consumer group discussion, an interview or survey which was arranged in advance and for which you received a sum of money?

Yes [**CONTINUE TO Q14**]

No [**SKIP TO 15**]

14. When was the last time you attended a focus group? **PLEASE SPECIFY** _____

15. Sometimes participants are also asked to write out their answers to a questionnaire, read or watch a TV commercial during the discussion. Is there any reason why you could not participate?

Yes [**THANK & TERMINATE**]

No [**CONTINUE**]

Appendix 2: NHN Screener

Affordable Energy Program – NHN Participants (Group 2)

Recruit 12 for 10 to show

ASK TO SPEAK DIRECTLY WITH THE CUSTOMER NAME ON THE PARTICIPATING CUSTOMER LIST TO NRG. WE ONLY WANT TO SPEAK TO THIS PERSON, AS THIS IS THE PERSON THAT HAS AGREED TO LET US USE THEIR NAME.

Intro:

Hello, may I please speak with [MUST ASK AND SPEAK WITH NAME ON SAMPLE]

Hello, my name is _____. I'm calling from NRG Research Group, a national public opinion research firm. We're organizing a discussion group (a focus group) to explore issues an affordable energy program offered by Manitoba Hydro. We understand that the Salvation Army has recently contacted you to ask if you would be interested in being in a focus group to provide feedback on some advertising and promotional materials to promote the Neighbours Helping Neighbours Program as well as Manitoba Hydro's Lower Income Energy Efficiency Program.

I just wanted to confirm that you are interested in talking about the possibility of joining a group like this.

Yes **CONTINUE**

No **THANK & TERMINATE**

All participants who are invited to the group and attend will receive a \$75 cash honorarium as a thank you. About ten people like yourself will be taking part.

But before we invite you to attend, we need to ask you a few questions to ensure that we get a good mix/variety of people. Is now a good time?

Yes **CONTINUE**

No **THANK & TERMINATE**

READ TO ALL

Participation is voluntary and all your answers will be kept confidential and will be used for research purposes only. We are simply interested in hearing your opinions – no attempt will be made to sell you anything. The format is a "round table" discussion lead by a research professional. An audio/video tape of the group session will be produced for research purposes. The tapes will be used only by the research professional to assist in

preparing a report on the research findings and will be destroyed once the report is completed.

1. Have I reached you at your home phone number?

- Yes **CONTINUE**
- No **MAY I SPEAK WITH SOMEONE WHO DOES LIVE
HERE? – IF NO- THANK & TERMINATE**

2. Has your household participated in the **Neighbours Helping Neighbours Program**?

- Yes- has participated in the program [**CONTINUE**]
- No- has not participated in the program [**THANK & TERMINATE**]
- Don't know/ Ref [**THANK & TERMINATE**]

3. And how do you pay for your heating costs each month? [**READ LIST AS NEEDED**]

- You pay your Manitoba Hydro Bill directly yourself each month [**CONTINUE**]
- Your hydro bill is paid directly through another third party group [**THANK & TERMINATE**]
- Your heating cost is included in your rent or common services [**THANK & TERMINATE**]
- OTHER [**THANK & TERMINATE**]

4. Please tell me if you or anyone in your household works in, or is employed with:

[READ ALL ITEMS]

- The Media ,
- Advertising
- Market Research
- Manitoba Hydro

[THANK AND TERMINATE IF 'YES' TO ANY OF THE ABOVE]

5. RECORD GENDER [AIM FOR 50-50 PER GROUP]

- Female
- Male

6. Into which of the following ranges does your age fall?

- 18 to 34
- 35 to 44
- 45 to 54
- 55 to 64
- 65+

Age Quotas:

Recruit 2-3 who are 18-34

Recruit 6-7 who are 35 to 54

Recruit 2-3 who are 65+

7. Do you currently own or rent your place of residence?

- Own residence **[CONTINUE- NEED 6 OWNERS]**
- Rent residence **[CONUTINE- NEED 6 TENANTS]**
- Other **[THANK & TERMINATE]**
- DK/ Ref **[THANK & TERMINATE]**

Need a 50/50 split in of Home Owners & Tenants (Renters) in this group. This information is also in the sample

8. And how would you describe your home, is it a..... [READ LIST AS NEEDED]

- Single detached house **[CONTINUE- MINIMUM OF 3 NEEDED]**
- A semi detached house (townhouse, row houses, or multiplex) **[CONTINUE- MINIMUM OF 3 NEEDED]**
- An apartment suite **[CONUTNIE- MINIMUM OF 3 NEEDED]**
- Other **[THANK & TERMINATE]**
- DK/Ref **[THANK & TERMINATE]**

Please recruit at minimum of 3 of each type of residence for this group (Single detached house, Semi detached house/ apartment suite)

9. What is the primary type of energy used in heating your house? Is it ...?

- Natural Gas **[CONTINUE]**
- Electric **[CONTINUE]**

- Other [THANK & TERMIANTE]
- Dk/Ref [THANK & TERMIANTE]

10. What is the highest level of education you have obtained? Is it ...?

- Less than high school
- High school graduate
- Some college or university
- College or university graduate

11. What is your current occupation? RECORD _____
Please specify if retired.

12. As I mentioned earlier you are being invited to a group discussion with approximately 10 other people. How comfortable are you in participating and speaking out in group discussions of this size? Would you say you are very comfortable, somewhat comfortable, not very comfortable or not at all comfortable?

	✓	Instruction
Very comfortable		CONTINUE
Somewhat comfortable		CONTINUE
Not very comfortable		THANK & TERMINATE
Not at all comfortable		THANK & TERMINATE
Don't know		THANK & TERMINATE

13. Have you ever attended a consumer group discussion, an interview or survey which was arranged in advance and for which you received a sum of money?

- Yes [CONTINUE TO Q14]
- No [SKIP TO 15]

14. When was the last time you attended a focus group? PLEASE SPECIFY _____

15. Sometimes participants are also asked to write out their answers to a questionnaire, read or watch a TV commercial during the discussion. Is there any reason why you could not participate?

- Yes [THANK & TERMINATE]
- No [CONTINUE]

Appendix 3: General Population Screener

Affordable Energy Program – General Population Recruit (Group 3)

Recruit 12 for 10 to show

Intro:

Hello, my name is _____. I'm calling from NRG Research Group, a national public opinion research firm. We're organizing a discussion group (a focus group) to explore issues related to an affordable energy program offered by Manitoba Hydro. All participants who are invited to the group and attend will receive a **\$75** cash honorarium as a thank you. About ten people like yourself will be taking part, all of them randomly recruited by telephone just like you.

ASK ALL

But before we invite you to attend, we need to ask you a few questions to ensure that we get a good mix/variety of people. Is now a good time?

- Yes **CONTINUE**
 No **THANK & TERMINATE**

READ TO ALL

Participation is voluntary and all your answers will be kept confidential and will be used for research purposes only. We are simply interested in hearing your opinions – no attempt will be made to sell you anything. The format is a “round table” discussion led by a research professional. An audio/video tape of the group session will be produced for research purposes. The tapes will be used only by the research professional to assist in preparing a report on the research findings and will be destroyed once the report is completed.

1. Have I reached you at your home phone number?

- Yes **CONTINUE**
 No **MAY I SPEAK WITH SOMEONE WHO DOES LIVE
HERE? – IF NO- THANK & TERMINATE**

2. For this discussion group we are looking for the individuals who are responsible or jointly responsible for paying the household bills. Would that be you?

- Yes **[CONTINUE]**
 No **[ASK TO SPEAK TO PERSON RESPONSIBLE]**

3. And how do you pay for your heating costs each month? **[READ LIST AS NEEDED]**

- You pay your Manitoba Hydro Bill directly by yourself each month **[CONTINUE]**
- Your hydro bill is paid directly through another third party group **[THANK & TERMINATE]**
- Your heating cost is included in your rent or common services **[THANK & TERMINATE]**
- OTHER **[THANK & TERMINATE]**

4. Please tell me if you or anyone in your household works in, or is employed with:

[READ ALL ITEMS]

- The Media ,
- Advertising
- Market Research
- Manitoba Hydro

[THANK AND TERMINATE IF 'YES' TO ANY OF THE ABOVE]

5. RECORD GENDER [AIM FOR 50-50 PER GROUP]

- Female
- Male

6. Into which of the following ranges does your age fall?

- 18 to 34
- 35 to 44
- 45 to 54
- 55 to 64
- 65+

Age Quotas: Must Recruit 4 to 5 per group who are 65+.

7. Including yourself and all children in the household, how many people live in your household?

RECORD # _____

8. Including yourself, how many **adults** (18 years of age or older) live in your household?

RECORD: # _____

9. For the focus group, we are looking for a wide variety of different types of households. What range would your annual household income fall into if you considered the **income from all the adults** in your home? **[READ LIST]**? [REMIND RESPONDENT IF NECESSARY THAT WE ARE JUST LOOKING FOR A BROAD RAND, NOT AN EXACT AMOUNT]

- Under \$28,000 per year
- \$28,000 to just under \$35,000
- \$35,000 to just under \$43,000
- \$43,000 to just under \$52,000
- \$52,000 to just under \$59,000
- \$59,000 to just under \$66,000
- \$66,000 to just under \$74,000
- \$74,000 or more
- DK **[THANK & TERMINATE]**
- Refused **[THANK & TERMINATE]**

Qualification Table: **[Using number of people in the household from Question 7 and household income from Question 9) ... follow these guidelines**

- 1 person in Household- Must have a HH income of <\$28,000
- 2 people in Household- Must have a HH income of <\$35,000
- 3 people in Household- Must have a HH income of <\$43,000
- 4 people in Household- Must have a HH income of <\$52,000
- 5 people in Household- Must have a HH income of <\$59,000
- 6 people in Household- Must have a HH income of <\$66,000
- 7 people in Household- Must have a HH income of <\$74,000

10. Do you currently own or rent your place of residence?

- Own residence **[CONTINUE]**
- Rent residence **[CONTINUE- RECRUIT A MAX OF 3 RENTERS]**
- Other **[THANK & TERMINATE]**
- DK/ Ref **[THANK & TERMINATE]**

11. And how would you describe your home, is it a..... [READ LIST AS NEEDED]

- Single detached house [CONTINUE]
- A semi detached house (townhouse, row houses, or multiplex) [CONTINUE- RECRUIT A MAX OF 3]
- An apartment suite [THANK & TERMINATE]
- Other [THANK & TERMINATE]
- DK/Ref [THANK & TERMINATE]

12. What is the primary type of energy used in heating your house? Is it ...?

- Natural Gas [CONTINUE]
- Electric [CONTINUE- MAX OF 2]
- Other [THANK & TERMINATE]
- Dk/Ref [THANK & TERMINATE]

13. Are you familiar with Manitoba Hydro's Lower Income Energy Efficiency Program?

- Yes- Familiar
- No- Not familiar
- Don't know

14. Are you familiar with Manitoba Hydro's Neighbours Helping Neighbours Program?

- Yes- Familiar
- No- Not familiar
- Don't know

[IF FAMILIAR IN Q13 AND/OR Q14- ASK Q15]

[IF 'NOT FAMILIAR/DK TO BOTH Q13 & Q14- SKIP TO Q16]

15. Has your household participated in Manitoba Hydro's Lower Income Energy Efficiency Program or Neighbours Helping Neighbours Program? [IF YES] Which Program?

- Yes- has participated Lower Income Energy Efficiency Program [RECRUIT TO STAND-BY FOR NOW]
- Yes- has participated in Neighbours Helping Neighbours Program [RECRUIT TO STAND-BY FOR NOW]
- No- has not participated in either program [CONTINUE]
- Don't know [THANK & TERMINATE]

16. Manitoba Hydro has created an Affordable Energy Program to improve affordability of energy for lower income households. The program is designed to help Manitobans save money on their energy bills and improve the energy efficiency of their homes. Assuming you could learn all about the program, how interested would you be in participating in a program like this? Would you say....

	✓	Instruction
Very interested		CONTINUE- RECRUIT FOR GROUP 3
Somewhat interested		CONTINUE- RECRUIT FOR GROUP 3
Not very interested		THANK & TERMINATE
Not at all interested		THANK & TERMINATE
Don't know		THANK & TERMINATE

17. What is the highest level of education you have obtained? Is it ...?

- Less than high school
- High school graduate
- Some college or university
- College or university graduate

18. What is your current occupation? RECORD _____
 Please specify if retired.

19. As I mentioned earlier you are being invited to a group discussion with approximately 10 other people. How comfortable are you in participating and speaking out in group discussions of this size? Would you say you are very comfortable, somewhat comfortable, not very comfortable or not at all comfortable?

	✓	Instruction
Very comfortable		CONTINUE
Somewhat comfortable		CONTINUE
Not very comfortable		THANK & TERMINATE
Not at all comfortable		THANK & TERMINATE
Don't know		THANK & TERMINATE

20. Have you ever attended a consumer group discussion, an interview or survey which was arranged in advance and for which you received a sum of money?

- Yes [CONTINUE TO Q21]
- No [SKIP TO 22]

21. When was the last time you attended a focus group? **PLEASE SPECIFY** _____

22. Sometimes participants are also asked to write out their answers to a questionnaire, read or watch a TV commercial during the discussion. Is there any reason why you could not participate?

Yes **[THANK & TERMINATE]**

No **[CONTINUE]**

Appendix 4: Discussion Guide

Manitoba Hydro

Affordable Energy Program Marketing Material

Focus Groups February 24th & 25th - FINAL

Schedule

Group guidelines & Introductions (10 minutes)

Intro of the AEP (10 minutes)

Out Door Creative (30 minutes)

Additional Headlines (If necessary)

Direct Mail Piece (20 minutes)

Addressing Communication Barriers (10 minutes)

Additional Headlines (Time permitting- 10 minutes)

Wrap-up (5 minutes)

Objectives

1. Gather feedback on marketing materials for the AEP.
2. Determine that one umbrella campaign resonates and motivates all potential customers for the AEP.
3. Test outdoor creative materials to ensure that they resonate with participants.
4. Test direct mail creative to determine that enough/too much information has been included, as well as to ensure the creative resonates with participants.
5. Determine if the messages of the campaign materials as well as the look and feel of the materials are compelling and address any communication barriers.
6. Determine if the key elements are being portrayed in the advertising materials.

Interview Guidelines

- Use this document as a guide, it is meant to be a semi-structured discussion with focus group participants
- Ask additional questions for clarification
- It is not necessary to answer the questions in order
- Keep discussion informal and conversational
- Summarize notes, comments and conclusions at the end of the discussion
- Avoid discussion of a general nature. Participants should be talking about themselves, their behaviours and attitudes. They should not be expressing opinions about the general population or others.
- Guide participants (remind) to talk about their own household experiences.

Introduction, Guidelines & Warm-Up (10 min)

- Introduce the moderator and NRG
- Introduce assignment and role of the focus group
 - *We discuss some materials and get your reactions.*
 - *Discussion focused on **new advertising materials for the Affordable Energy Program***
 - *Only talking with a few groups of Winnipeg residents, thus your observations and opinions are important.*
- Conduct of the discussion
 - *Not all at once, but do not need to wait for me to call on you*
 - *Respect one another*
 - *No right or wrong answers.*
 - *Want to get individual thoughts and opinions—we're not looking for a consensus.*
 - *Encourage individual group members to participate.*
- Audio/Video recording and presence of observers.
 - *Assure participants we are not selling anything; this meeting is strictly for research purposes.*
 - *Colleagues behind the mirror who are observing.*
 - *Confirm that individual responses will be kept confidential. The purpose is not to report on individuals, but instead to get a better understanding of opinions among Winnipeg households.*
- Roundtable Intros

What I'd like you to do is go around the room and introduce yourself, first name is fine, and tell me what keeps you busy these days. Whether it be work, family hobbies, school, etc.

Introduction of the Affordable Energy Program (10 min)

[READ TO GROUP 3 AFTER OUTDOOR MESSAGES] Manitoba Hydro is consolidating and enhancing its three main bill assistance programs under one umbrella program called the Affordable Energy Program (AEP). Essentially, the current three programs will now be combined to form one program. The overall objective for the enhanced Affordable Energy Program is to improve the affordability of energy for lower income Manitoba Hydro customers.

The three programs being combined are:

- The Lower Income Energy Efficiency Program
- The Neighbours Helping Neighbours Program
- The Bill Management Services Program

For Groups 1 & 2

1. I understand that you have participated in the [Lower Income Energy Efficiency Program / Neighbours Helping Neighbours Program]. What are some top-of mind impressions of the program— what did you like/dislike? [FLIP CHART—BUILD QUICK LIST]

For Group 3

2. How many of you have heard about either of these programs [Lower Income Energy Efficiency Program / Neighbours Helping Neighbours Program]?

Out Door Creative (30 min)

The purpose of today's focus group is to take a look at some new advertising & communication materials for the Affordable Energy Program that we just talked about. I am really looking to gather some specific feedback from you and we have a lot of materials to look at so I am going to guide the discussion along and I may jump in if I think we are getting off track.

The first thing we are going to look at is something you may see on a bus bench advertisement or on one of those large recycling bins, all out doors.

Go through each version (rotate for each group):

Group 1

- Direct Message
- Information Message
- Testimonial Message
- Illustrated Message

Group 2

- Illustrated Message
- Testimonial Message
- Information Message
- Direct Message

Group 3

- Information Message
- Direct Message
- Testimonial Message
- Illustrated Message

3. If you saw this ad in your area, what would your thoughts be? What would come to mind?
4. What does this ad say to you? What do you think it means?
 - a. What stands out? PROBE: A particular word that stands out to you?
 - b. What grabs your attention?

5. Would it get you thinking about the different Hydro programs that are available? How come?
6. If you were someone who was struggling with your Hydro bill, would seeing this be enough to get you to find out more? What would you do? PROBE: Call? Go online?
7. How about the picture? What are your impressions

[Note: If participants are focused on the visual in this section, guide them back to the text. It's important to get feedback on the image but the text is more important]

[Note: If participants are focused on the Outdoor creative not having enough information, guide them back to focus on what is in front of them and explain a second part will be examined in the next section]

9. [Moderator to summarize key points for all three... So what I am hearing...]. As a group choose the first choice or if group is divided top two.

Additional Headlines (If necessary)

10. [If participants are not resonating with one of the three headlines, go over list provided and see if group can choose one they prefer. List on flip chart]

Direct Mail Piece [Review Top Choice] (20 mins)

The next thing we are going to look at is a mail advertisement that you would receive at home in the mail. Please take a moment to read it over.

11. After reading this over, what stands out to you? PROBE: Particular word or piece of info? What makes this stand out?
12. Does this give you enough information to find out more about the program? Too much information?
13. What other information should be included/ taken out?
14. Is there any information on here that is confusing or that you do not understand?
15. Next, I would like to fill out a quick work sheet [Explain work sheet]. Fill this out on your own and don't discuss yet. We will talk as a group once everyone is done.
16. Alright, let's discuss the words you circled. Let's start with words in the first column. [Discuss as a group] **PROBE:**
 - a. What is specifically about the ad that made you choose that word? How does the word [INSERT] describe the ad?
 - b. Is there a word that you would have chosen but it's not on the list?

17. Let's move on to the words in the second column. [Discuss as a group] **PROBE:**
- c. What is specifically about the ad that made you choose that word? How does the word [INSERT] describe the ad?
 - d. Is there a word that you would have chosen but it's not on the list?
18. If you received this in the mail, would it motivate you to investigate the program? Or would you put it aside and forget about it?

Addressing Communication Barriers [10 min]

19. What element would an advertisement need to have in order to make sure that you did not simply throw into the recycling bin or toss aside? What would you want to see / need to see to motivate you to find out more?
20. What could Manitoba Hydro do so that participating in a program like this was made easy for you? **PROBE:** only need to make one call to sign up/ can sign up online.
21. So today I have used the term 'Lower Income'. I'm just wondering if term is ok to use to help define programs like this. Is this seen as negative? In what way?

Additional Materials Review (Only if time permits)

22. [For group 1- review LIEEP advertisement] [For group 2- review NHN advertisement]
- These are some additional advertisements, specifically for the [INSERT PROGRAM NAME] program. What stands out to you? **PROBE:** Particular word or piece of info? What makes this stand out?
 - Does this give you enough information to find out more about the program? Too much information?
 - What other information should be included/ taken out?
 - Anything confusing or that you do not understand?

Wrap-Up [5 min]

I am going to check with my colleagues if there are any last questions.

It's very important to stack all your papers together in a nice neat pile at your seat and on top, please put your name tag. Again, we don't link any personal information with our research, but this will help me know your general demographics- like if your male or female etc.

Any other last thoughts or comments? That completes my questions for this evening. Thank you very much for you input and your time. Good night.

Appendix 5: Key Word Exercise

In the table below, please circle five words, that in your opinion, would best describe this advertisement.

When choosing the five words to describe the advertisement, think of all the elements of the advertisement such as the main message, the wording and what the advertisement looks like.

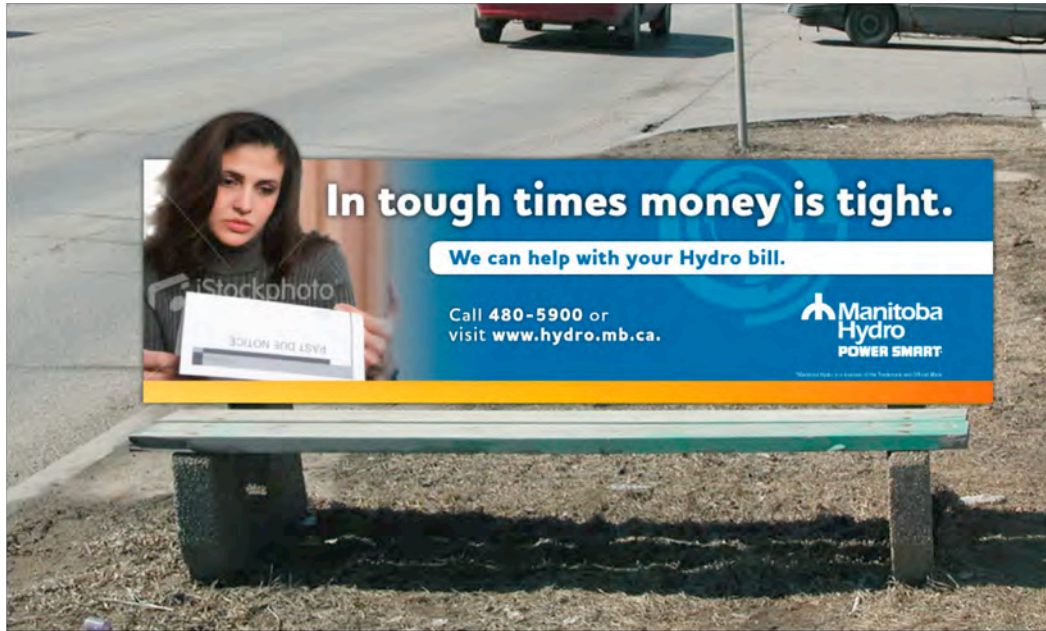
You can chose words from either column.

Choose the first five words that come to mind- don't think to hard!

Trustworthy	Dishonest
Reliable	Unreliable
Caring	Uncaring
Considerate	Inconsiderate
Approachable	Inaccessible
Friendly	Cold /Unfriendly
Knowledgeable	Uninformed
Easy to Understand	Confusing
Appealing	Not Attractive
Creative	Unimaginative

APPENDIX 6

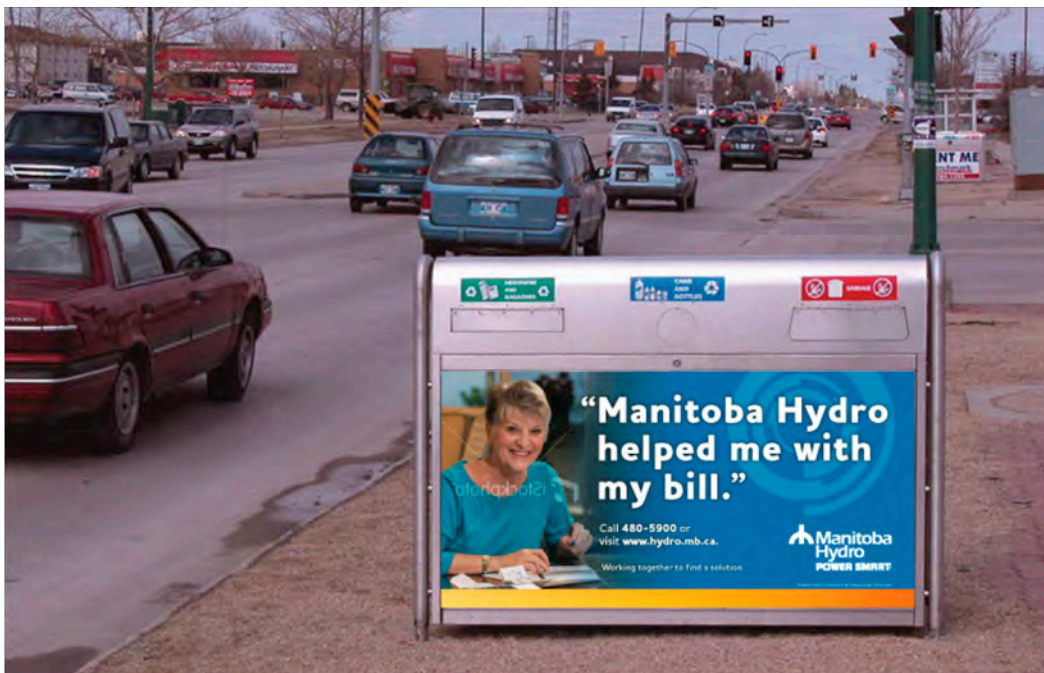
Appendix 6.1: Creative (Outdoor - Direct)



Appendix 6.2: Creative (Outdoor - Informational)



Appendix 6.3: Creative (Outdoor - Testimonial)



Appendix 6.4: Creative (Outdoor - Illustrative)



Appendix 6.5: Creative (Direct Mail – Direct)



In tough times money is tight.

We can help with your Hydro bill.

We understand that our customers may face challenges and that certain circumstances can affect your ability to pay your Hydro bill. If you're having difficulty paying your bill or want to learn how you can reduce your Hydro bill call us.

We have programs that can help you:


- lower your Hydro bill by replacing your furnace and/or insulation with most or all of the costs covered;
- receive a one-time emergency funding that will cover your Hydro bill payment;
- choose flexible bill payment options.

Working together to find a solution.
Call **1-888-MBHYDRO** (1-888-624-9376),
in Winnipeg **480-5900** or visit www.hydro.mb.ca.



*Manitoba Hydro is a licensee of the Trademark and Official Mark.

Appendix 6.6: Creative (Direct Mail – Informational)



Do you need help with your Hydro bill?

We can help.

If you are having trouble with your Hydro bill payments, we can work together to find a solution. We have programs that can help you lower your Hydro bill.

Call to find out how you can:

- lower your Hydro bill by replacing your furnace and/or insulation with most or all of the costs covered;
- receive a one-time emergency funding that will cover your Hydro bill payment;
- choose flexible bill payment options.

Working together to find a solution.

Call **1-888-MBHYDRO** (1-888-624-9376),
in Winnipeg **480-5900** or visit www.hydro.mb.ca.



*Manitoba Hydro is a licensee of the Trademark and Official Mark.

Appendix 6.7: Creative (Direct Mail – Testimonial)



“The programs they offer helped my family when we were going through a very difficult time. The burden feels lighter and I can see the light at the end of the tunnel.”

We have programs that can help you:

- lower your Hydro bill by replacing your furnace and/or insulation with most or all of the costs covered;
- receive a one-time emergency funding that will cover your Hydro bill payment;
- choose flexible bill payment options.

Working together to find a solution.
Call **1-888-MBHYDRO** (1-888-624-9376),
in Winnipeg **480-5900** or visit www.hydro.mb.ca.



*Manitoba Hydro is a licensee of the Trademark and Official Mark.

Appendix 6.8: Creative (Direct Mail – Illustrative)



Need help with your hydro bill?

If you are having trouble with your Hydro bill payments, Manitoba Hydro has programs that can help lower your Hydro bill.

Call to find out how you can:

- lower your Hydro bill by replacing your furnace and/or insulation with most or all of the costs covered;
- receive a one-time emergency funding that will cover your Hydro bill payment;
- choose flexible bill payment options.

Call 480-5900 or visit www.hydro.mb.ca



*Manitoba Hydro is a licensee of the Trademark and Official Mark.

Appendix 6.9: Creative (Direct Mail – LIEEP #1)

Are your energy bills cutting into your budget?

We may be able to help. Through the Lower Income Energy Efficiency program, qualifying homeowners can benefit from:

- an in-home energy evaluation and basic energy saving items at no cost;
- coverage of most of the costs to upgrade your home insulation to Power Smart levels;
- rebates and financing to upgrade your home's heating system.

“This program presented us with energy saving opportunities that we could not provide for ourselves. Thanks to the friendly staff at Manitoba Hydro, we are now living comfortably in a well insulated home.”



Working together to find a solution.
Call **1-888-MBHYDRO** (1-888-624-9376),
in Winnipeg **480-5900** or visit www.hydro.mb.ca.



*Manitoba Hydro is a licensee of the Trademark and Official Mark.

Appendix 6.10: Creative (Direct Mail – LIEEP #2)



**You shouldn't have to use your nest egg to heat your home.
We may be able to help you save energy and lower your Hydro
bills through our Lower Income Energy Efficiency Program.**

Through this program, qualifying homeowners can benefit from:

- an in-home energy evaluation and basic energy saving items at no cost;
- coverage of most of the costs to upgrade your home insulation to Power Smart levels;
- rebates and financing to upgrade your home's heating system.

Working together to find a solution.
Call **1-888-MBHYDRO** (1-888-624-9376),
in Winnipeg **480-5900** or visit www.hydro.mb.ca.



*Manitoba Hydro is a licensee of the Trademark and Official Mark.

Appendix 6.11: Creative (Direct Mail – NHN #1)



Do you need help with your Hydro bill?

We understand that it can be difficult for our customers to pay their Hydro bill by the due date. If you are having trouble with your Hydro bill payments, we can work together to find a solution.

Through our Neighbors Helping Neighbours program, we offer assistance to low income individuals, families, and seniors who are unable to pay their Hydro bill due to personal hardship or crisis with:

- referrals to community support services, counseling and job training;
- one-time emergency funding to assist with Hydro bills.

Working together to find a solution.
Call **1-888-MBHYDRO** (1-888-624-9376),
in Winnipeg **480-5900** or visit www.hydro.mb.ca.



*Manitoba Hydro is a licensee of the Trademark and Official Mark.

Appendix 6.12: Creative (Direct Mail – NHN #2)

“Manitoba Hydro helped me with my bill.”

We understand that it can be difficult for our customers to pay their Hydro bill by the due date.

Through our Neighbours Helping Neighbours program, we offer assistance to low income individuals, families, and seniors who are unable to pay their Hydro bill due to personal hardship or crisis with:

- referrals to community support services, counseling and job training;
- one-time emergency funding to assist with Hydro bills.

“This program helped my family when we were going through a very challenging time. The burden feels lighter and I can see the light at the end of the tunnel.”



Working together to find a solution.
Call **1-888-MBHYDRO** (1-888-624-9376),
in Winnipeg **480-5900** or visit www.hydro.mb.ca.



*Manitoba Hydro is a licensee of the Trademark and Official Mark.



PO Box 815 • Winnipeg Manitoba Canada • R3C 2P4
Street Location for DELIVERY: 3rd Floor - 820 Taylor Avenue
Telephone / N^o de téléphone : (204) 474-3468 • Fax / N^o de télécopieur : (204) 474-4947
mmurphy@hydro.mb.ca

November 7, 2008

PUBLIC UTILITIES BOARD OF MANITOBA
400-330 Portage Avenue
Winnipeg, Manitoba
R3C 0C4

ATTENTION: Mr. G. Gaudreau, Executive Director

Dear Mr. Gaudreau:

**RE: CENTRA GAS MANITOBA INC. & MANITOBA HYDRO
RESPONSE TO DSM LOW-INCOME DIRECTIVES**

On July 22, 2007 the Public Utilities Board (“PUB”) issued Order 99/07 which, in part, provided direction to Centra Gas Manitoba Inc. (“Centra”) as to various DSM initiatives. In particular, at page 141, the PUB directed Centra to “amend its loan program to create a Furnace Replacement and Weatherization Program for qualified low-income customers and qualified fixed income seniors”.

On July 29, 2008, the PUB issued Order 116/08 to Manitoba Hydro which, at page 349, directed the Corporation to “provide an update on the status of the current natural gas furnace replacement program (including actual and forecast take-up rates), as well as reports of possible changes to the program relative the suggestions put forward by Mr. Dunsky,”.

The attached report constitutes the Corporations’ response to the directives outlined above.

Copies of this submission have also been provided to the PUB advisors. Should you have any questions regarding this submission, or prefer a paper copy, please contact the writer at 474-3468 or Greg Barnlund at 480-5243.

Yours truly,
MANITOBA HYDRO LAW DEPARTMENT

Per: 

Marla D. Murphy
Barrister and Solicitor

Att.

cc: Mr. B. Peters, Fillmore Riley
Mr. R. Cathcart, Cathcart Advisors Inc.
Mr. B. Ryall, Energy Consultants Inc.

**HIGH EFFICIENT FURNACE
REPLACEMENT PROGRAM
FOR LOWER INCOME
MANITOBANS**

PROGRAM OVERVIEW AND BACKGROUND

Manitoba Hydro (or “the Corporation”) launched a province-wide Lower Income Energy Efficiency Program on December 14, 2007. The program is designed to assist lower income Manitobans implement cost-effective energy efficiency measures including basement/attic insulation, furnace upgrades and basic energy efficient upgrades including compact fluorescent lighting. The program works both with individuals as well as with community groups. This is seen as one of the more progressive initiatives in Canada.

Since the launch, Manitoba Hydro has enhanced the design of the furnace component of the program to further assist customers in upgrading their existing conventional natural gas furnace or boiler, which is expected to increase participation substantially.

In July 2007, PUB issued Board Order 99/07 requiring that Centra Gas Manitoba Inc. provide \$2.3 million and \$3.8 million for 2007/08 and 2008/09 respectively (after providing for a minimum of \$3.0 million of net income in each of those years) as funding in support of a program to target the replacement of low efficiency gas furnaces with high efficiency gas furnaces for qualifying low-income households and qualifying fixed-income seniors.

The Corporation has developed the High Efficient Furnace Replacement Program for Lower Income Manitobans (“HEFRP”). Program costs of approximately \$5.3 million¹ have been identified to support the replacement of standard natural gas furnaces and boilers with the installation of high efficiency heating systems for lower income owner-occupied residences. The program is designed to be in effect until March 31, 2011 and is planned to provide:

- Installed furnaces at a cost to the customer of \$19 per month for 5 years (\$1,140). The installation includes the cost of housing stock infrastructure upgrades in order to convert from a standard efficiency natural gas furnace to a high efficiency natural gas furnace, and
- An increase in program rebates to \$2,500 for customers whose residences are heated by conventional natural gas boilers.

PROGRAM OBJECTIVES

Manitoba Hydro’s objective in offering the High Efficient Furnace Replacement Program for Lower Income Manitobans (HEFRP) is to make it easier for these customers to participate in energy efficient upgrades which will result in reduced energy burden and increased comfort.

¹ For further information, please see the Program Budget on Page 5 of this report.

MARKET ENVIRONMENT

There are approximately 64,000 lower income² owner-occupied dwellings in Manitoba. Of all Manitobans, approximately 59% heat their home with natural gas and approximately 57% of these furnaces are conventional standard efficiency appliances. Applying these appliance installation percentages to the lower income market, it is estimated that approximately 22,000 customers have a conventional natural gas furnace or boiler. With increased incentives, it is forecasted that participation in the furnace/boiler portion of the program will result in a total of 1,900 customers. As this number is a forecast, it will be re-assessed as the program evolves. In the event that the customer response turns out to be higher than the forecasted estimate, they will be adjusted accordingly.

OPPORTUNITIES & CHALLENGES

Challenges:

The target market for the HEFRP program is difficult to reach for the following reasons:

- energy efficiency is not top-of-mind;
- there may be language and education barriers;
- mass media is not an effective promotional tool;
- customers may be confused by the difference in appliance options and by the range of pricing associated with each option; and
- there may be structural limitations within the existing housing stock which may restrict the ability to convert from a standard efficiency furnace to a high efficiency furnace, or significantly increase the cost of doing so.

Opportunities:

- community groups are established within many low income neighborhoods and can be leveraged to provide assistance; and
- many lower income customers reside in older homes where there are increased opportunities for energy savings.

MARKETING PLAN

Manitoba Hydro has established many relationships with neighborhood-based groups that provide housing support to lower income families. This has allowed for a grass roots approach to marketing the program which is key to the success of this initiative. In order to overcome some of the challenges associated with the program, and increase customer awareness and participation, Manitoba Hydro will further engage in marketing and outreach activities as follows:

- leverage current relationships and develop new relationships with community groups and not-for-profit agencies by providing hands-on support in promoting the program within their communities;

² “Lower Income” is defined as an income level represented by 125% of the Low Income Cut Off or LICO.

- leverage internal resources through the staff such as Energy Service Advisors, District Office personnel, Aboriginal Relations staff, Credit and Collections representatives and the Neighbors Helping Neighbors Program where there may be current relationships which have already been established with low income individuals and community groups;
- advertise in local community newspapers. The target market for the Lower Income Energy Efficiency Program is difficult to reach through mass market media. Many community groups, churches and related social groups have local papers and newsletters which will be used to reach this marketplace;
- work with an Advisory Group made up of stakeholders which has been set up to provide support and feedback for the program;
- leverage Manitoba Legislative Assembly newsletters; and
- work alongside social assistance and social services to reach people who are benefiting from these programs. Example: Workers' Compensation, Employment and Income Assistance, Disability, etc.

Implementation Plan:

Manitoba Hydro issued an Expression of Interest (EOI) in September 2008, inviting submissions of information packages by parties who may have an interest in participating as a contractor in the program. Several submissions of interest were received and currently Manitoba Hydro is in the process of reviewing and evaluating those submissions. The Corporation intends to meet with short-listed contractors to negotiate and finalize contractual terms and conditions by the end of November 2008.

This process is expected to result in an average cost of approximately \$3,500 to install a high efficiency natural gas furnace, where no additional in-home upgrades are required to accommodate the installation. The Federal ecoENERGY grant for High Efficiency Natural Gas Furnaces is currently \$300 to \$500 and the customer contribution will be \$1,140 to be paid back over a 5 year period. The residual cost of installing a high efficiency furnace will be funded through incentives provided by the Corporation at approximately \$1,860 per installation. Energy savings resulting from the upgrade are expected to more than cover the \$19 monthly payment, making this a relatively simple decision for homeowners.

In some homes there is a requirement to upgrade household infrastructure in order to convert from a conventional natural gas furnace to a high efficiency gas furnace. Such upgrades are required to meet ventilation and other safety specifications. For many lower income customers, these costs can be prohibitive and therefore, these costs will be covered by the program. It is estimated that the cost for such an upgrade may be approximately \$620 per home.

Under the new customer-friendly streamlined process whereby furnace installations will be coordinated by Manitoba Hydro for customers from participating contractors, it is anticipated that furnace installations will commence in November 2008, although Lower Income Program participants since December 2007 will be eligible to retroactively participate. Marketing and outreach is currently taking place and will be augmented to further promote the program and increase participation.

Program Budget:

Overall program costs for the HEFRP are forecast to be:

PROGRAM COMPONENTS	COST
Funding as per PUB Order 99/07, directive 2.b. (p. 139)	
Incentives ¹	\$3,400 000
Financing ²	\$440 000
Household upgrades	\$1,200 000
Marketing & Outreach	\$260 000
Sub-Total	\$5,300 000
Contingency³	\$800 000
TOTAL⁴	\$6,100 000
Funding as provided by the Affordable Energy Fund	
ecoENERGY costs ⁵	\$350 000
Total	\$350 000

¹ Incentive costs are net of existing Power Smart Incentives.

² Cost to finance customer portion (\$1,140) over 5 years.

³ Additional costs related to participation above forecast and unforeseen household upgrades

⁴ The funding total of \$6,100,000 assumes that \$3,800,000 will be available over-and-above Centra Gas Manitoba Inc.'s minimum net income of \$3,000,000 in 2008/09.

⁵ The Affordable Energy Fund will support the costs for ecoENERGY audits and some portion of general administration cost.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

ii) Provide the income eligibility guidelines for the Lower Income programs.

ANSWER:

Please see Centra's response to PUB/Centra I-56(b).

CAC/CENTRA I-20

Reference: Tab 7 – DSM

jj) (a) State the required Lower Income co-payment for (i) a furnace, (ii) a boiler, and (iii) insulation. Include the formula, if any, and the average co-payment. (b) Provide the Company’s estimate of the number of customers who declined to participate with respect to each of the aforementioned measures because of the customer co-payment required. Include all studies, surveys, and analyses.

ANSWER:

a) The following table outlines the customer contribution under the Lower Income Energy Efficiency Program:

Customer Payment	
i. Replacement of a Standard Furnace	\$1,140
ii. Replacement of a Standard Boiler	\$6,445
iii. Insulation Upgrade	\$0

- i. Under the Furnace Replacement Program, qualifying customers pay \$19/month for 5 years.
- ii. A \$2,500 rebate is provided to qualifying low income customers for high efficiency boiler upgrades. Boiler replacement costs can range depending on the home and contractor. The customer payment noted above is based on the average invoice boiler replacement costs incurred by participating customers.
- iii. Under LIEEP, insulation upgrades are provided at no cost to qualifying customers.

b) To date under LIEEP, there have been 18 furnace, 28 boiler and 177 insulation recommendations where customers chose not complete the recommended upgrade.

It is not possible to estimate the number of customers who declined to participate based upon the customer co-payment for each of the measures as the reasons for not participating are not tracked and no studies have been undertaken.

However, as a customer contribution is not required for insulation upgrades, this is not a reason to decline to proceed. In addition, the customer contribution under the Furnace Replacement Program is \$19 per month over 5 years for a total of \$1,140, which is approximately the same dollar value of bill savings a customer could achieve annually by upgrading to a high efficiency furnace. Therefore, Centra would suggest that this is most likely not the primary reason for declining to proceed.

The boiler upgrade is the only measure in which the upfront customer contribution would be significant. However, to mitigate this upfront contribution, customers can choose to finance the remaining cost after the \$2,500 incentive through the LIEEP over a period of up to 15 years. This allows the customer to convert their contribution to more manageable monthly payments.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

kk) State the average program participant annual heating bill (a) before and (b) after participation in the program with respect to each of the three aforementioned measures.

ANSWER:

Centra is unable to compile the specific information requested within the timeframe of the application due to the substantive effort involved. Centra can, however, provide a reasonable estimate of the average participant's annual heating bill along with the estimated average savings per measure.

(a) The average gas bill in 2009 for a LICO 125 gas customer including taxes was \$1,306. About 70% or \$914 would be the heating portion of the bill, with the rest being for others uses, e.g. water heating and the basic monthly charge.

Note that primary gas prices were higher in 2009 than they are today. The average gas bill today for a LICO 125 customer would be 36% less or about \$836, with the heating portion being \$585.

- (b) With respect to energy efficiency measures available through LIEEP, a participant can save an estimated annual \$278 for an insulation upgrade, \$285 for a furnace upgrade, \$272 for a boiler upgrade and \$31 for the basic low cost/no cost package of installed measures.

A LIEEP target insulation participant, more specifically a home indicated as having Poor or Fair insulation levels, would save an estimated \$414 annually for an insulation upgrade.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

- II) State the Company's free rider and spillover assumptions, if any, with respect to the Furnace Replacement Program and provide all documentation that supports the assumption(s).**

ANSWER:

The Furnace Replacement Program accounts for free riders through the exclusion of energy savings resulting from emergency furnace replacement. Emergency furnace replacements account for approximately 6% of the furnaces replaced under the Furnace Replacement Program.

The Furnace Replacement Program does not assume spillover.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

mm) (a) Provide the average gas heating bill of the Company's residential customers for the latest year available. (b) Provide the median household income in the Company's service territory for the latest year available. (Note: provide these data for the same year.)

ANSWER:

(a) The average natural gas bill for all residential customers in 2009 including taxes was \$1,328. About 70% or \$930 would be the heating portion of the bill, with the remaining being for others uses, such as water heating and the basic monthly charge.

Since gas prices are lower today than they were in 2009, the average residential natural gas bill today would be approximately 36% less, and the heating portion would be correspondingly lower.

(b) The average household income of residential natural gas customers in 2009 was \$76,739. The median income was \$63,627.

CAC/CENTRA I-20

Reference: Tab 7 – DSM

nn) Provide the average heating bill for residential gas customers in Manitoba for the latest year available. (b) Provide the median Manitoba household income for the latest year available. (Note: provide these data for the same year.)

ANSWER:

Please see Centra's response to CAC/Centra I-20(mm).

CAC/CENTRA I-21

Subject: Optionality in Centra's supply and transportation portfolio and Centra's gas supply planning and dispatching procedures.

Reference: Tab 10 - General

Preamble: As Centra's supply and transportation portfolio has evolved, and especially with the imminent implementation of the new long-term ANR/GLGT storage and transportation arrangements, it appears to the CAC that Centra has acquired increasing flexibility or "optionality" with respect to the transportation and supply assets that it has available to it to meet Manitoba requirements, e.g. winter storage refill opportunities under the new annual storage service, accessing gas at Michigan, Chicago, and Emerson, receipt and delivery point flexibility with its U.S. transportation services, delivered services for both Primary and Supplemental Gas, the use of STFT service on TransCanada, and "exchange" transactions with marketers. The CAC is interested in how Centra manages that flexibility and ensures that its decisions result in optimal outcomes in terms of minimizing overall cost subject to maintaining system reliability and minimizing operational and financial risk.

- a) Provide an overview of Centra's supply planning process in both the long term (e.g. annual planning and decisions to enter into annual or seasonal fixed-cost commitments for transportation or supply) and in the short run (e.g. monthly or daily dispatch and purchasing decisions). Please include discussions of Centra's objectives, including cost-minimization objectives, the basis for

deciding between Primary Gas and Supplemental Gas resources when both are available, and the processes involved in both long and short term planning.

ANSWER:

Centra's planning is influenced by the nature of the market it serves. Manitoba is predominantly a space heating market, which results in a load that is highly variable on both a daily and seasonal basis. Because of this variability, not all of Centra's supply and transportation portfolio can be used at a high load factor, and this influences the arrangements that Centra puts in place. In general, higher cost transportation (such as transportation from Western Canada) is intended to be used at a higher load factor, while lower cost transportation (such as transportation from the south via Emerson) may be used at a lower load factor while providing for the necessary capacity to respond to weather-driven load variation. Centra's arrangements must also combine reliability and flexibility in providing for the ability to respond to day-to-day and intra-day load variation such that the Manitoba market requirement for natural gas is met. In addition to reliability, cost and flexibility, other factors are considered such as the availability of and renewal rights associated with transportation capacity; supplier, supply basin, and transportation path diversity; summer storage refill requirements; the management of winter storage inventory levels; and the ability to mitigate unutilized demand charges (UDC).

Depending on the season, Centra has varying options with respect to sources of supply. In winter, TCPL FT and STFT (and/or Primary Gas Delivered Service ("PGDS")) is utilized at a high load factor to deliver WCSB supply to Manitoba. During colder weather, this capacity is supplemented with a combination of gas from storage and US supplies acquired from the

contracts, Chicago supply acquired at Joliet may also be used to manage the level of storage inventory. Decisions to buy at Michigan, Emerson, or Chicago will be influenced by a combination of economics and operational requirements such as the need to manage storage inventory levels with injections during colder winters.

In summer, Centra is generally flowing gas from Western Canada to both serve the market and flow to storage via its GLGT and ANR summer transportation contracts, thus using TCPL transportation from Empress (FT and STFT) at as high a load factor as practical given the weather-driven variability of the Manitoba load. In addition to supply sourced from the WCSB, storage may be filled by acquiring gas at Emerson, Joliet, and/or at storage in the Michigan market. Decisions are made on a monthly basis by evaluating futures prices and the potential value in releasing capacity, or on a daily basis by using live market prices at the different supply hubs available to Centra. Supply acquired at Emerson and Peaking Delivered Services are used to serve the load during colder weather, as required.

On an annual basis, Centra determines appropriate levels of annual TCPL FT capacity from Empress and Emerson giving consideration to the range of potential loads which may be experienced, its longer term contracts with ANR and GLGT, and shorter term arrangements which may be available such as STFT and/or PGDS. As relatively higher cost transportation, Centra seeks to use Empress-MDA FT at a high load factor, while recognizing that seasonal and daily weather variability will result in less than 100% capacity utilization at times. The tradeoff is that higher contract levels result in greater risk of UDC while lower contract levels require other types of transportation to meet the deliverability requirement, which either have no flexibility to respond to weather-driven load variation and “must flow” (such as PGDS) or have no mechanism to mitigate UDC (such as STFT). Emerson-MDA FT allows for a reduction in the amount of TCPL transportation held from Western Canada, and provides the lowest cost firm transportation available to serve the

2013 04 12 Page 3 of 4

MDA. This transportation also provides Centra with renewal rights and the potential to mitigate UDC. Centra uses STFT at varying monthly contract levels to supplement its ability to serve Manitoba's seasonal natural gas requirements to the extent that it can be used at a high load factor. PGDS may also be used as an alternative to STFT to provide a measure of supplier diversity, provided it is cost comparable to STFT.

Centra's supply decisions are not driven by whether the supply is categorized as Primary or Supplemental Gas but, rather, by the variety of factors discussed above. In summary, at a high level Centra balances the objectives of reliability, cost effectiveness, diversity, and rate stability.

CAC/CENTRA I-21

Subject: Optionality in Centra's supply and transportation portfolio and Centra's gas supply planning and dispatching procedures.

Reference: Tab 10 - General

Preamble: As Centra's supply and transportation portfolio has evolved, and especially with the imminent implementation of the new long-term ANR/GLGT storage and transportation arrangements, it appears to the CAC that Centra has acquired increasing flexibility or "optionality" with respect to the transportation and supply assets that it has available to it to meet Manitoba requirements, e.g. winter storage refill opportunities under the new annual storage service, accessing gas at Michigan, Chicago, and Emerson, receipt and delivery point flexibility with its U.S. transportation services, delivered services for both Primary and Supplemental Gas, the use of STFT service on TransCanada, and "exchange" transactions with marketers. The CAC is interested in how Centra manages that flexibility and ensures that its decisions result in optimal outcomes in terms of minimizing overall cost subject to maintaining system reliability and minimizing operational and financial risk.

b) Does Centra utilize the SENDOUT model (described and discussed in Centra's 2012 Gas Supply Portfolio proceeding) or similar tools for the purpose of optimizing (i) its asset portfolio (e.g. annual or seasonal decisions re TransCanada services and/or seasonal or annual gas purchases) or (ii) its day-to-day dispatch decisions? If not, explain why not, given that Centra had

access to SENDOUT for the Supply Portfolio proceeding. If so, explain how Centra utilizes SENDOUT or similar or analogous tools to ensure that it makes economically sound and cost-minimizing purchasing and dispatching decisions.

ANSWER:

Centra uses SENDOUT to assist with the determination of potential market requirements in its seasonal and monthly planning. Key inputs to the modeling exercises in SENDOUT are Centra's annual volume (load) forecast and historical actual weather data.

Centra assesses its range of potential deliverability requirements for a particular month or season, including Peaking Delivered Services. As discussed in part (a) of this response, decisions about Centra's annual, seasonal, and monthly asset portfolio are made considering a variety of factors which cannot be modeled in SENDOUT. Daily decisions are made using current market information, thus SENDOUT is not used for daily dispatch.

CAC/CENTRA I-22

Subject: TransCanada Emerson-to-MDA FT contract

Reference: Tab 10, page 10 at line 15; Appendix 10.7

Preamble: At page 10 of Tab 10 Centra indicates that as of November 1, 2012 it holds TransCanada Mainline FT service from Emerson to the MDA. Appendix 10-7 indicates that the service is for 21,000 GJ/d, and at page 10 Centra indicates that this service "...helps offset deliverability foregone by de-contracting FT from Empress to the MDA..."

- a) Explain in detail Centra's rationale for contracting for the 21,000 GJ/d of annual FT service from Emerson to the MDA. Please include a discussion of the need to 'match' firm transportation between Emerson and the MDA with Centra's winter firm entitlement on Great Lakes to Emerson and an explanation of how service from Emerson 'offsets' the loss of deliverability associated with de-contracting of Empress-to-MDA FT service.**

ANSWER:

Emerson-MDA FT is the lowest cost firm transportation available to serve the MDA, and allowed for the reduction of Empress-MDA FT of 20,000 GJ/day for an annual TCPL FT forecast cost reduction of \$3.5 million. At the same time, Centra's firm winter transportation capacity from Emerson increased to 236,614 GJ/day (when combined with 215,614 GJ/day STS capacity) to approximately match its winter GLGT capacity to Emerson, thus enabling Centra to utilize gas purchases in Michigan and/or Emerson in addition to its storage deliverability (and purchases in addition to its storage deliverability and Oklahoma Supply in 2013 04 12

the recently expired portfolio). Gas supplied from the south via Emerson provides Centra with supply basin and transportation path diversity. Emerson-MDA FT allows for the reduction of Empress-MDA FT during the summer, as gas sourced at Emerson can be used to serve the load during colder weather in the summer season, which includes the shoulder months.

In addition to providing the lowest cost firm transportation available to serve the MDA, Emerson-MDA FT provides access to an exchange-traded natural gas hub (Emerson), UDC mitigation opportunities, and renewal rights which protect Centra's access to U.S. supplies on a TCPL path that has limited available capacity. In response to declining flows from Western Canada to eastern markets on its Mainline system, TCPL has increasingly transported gas on GLGT to Emerson, north into Manitoba on the Mainline, and then east into Ontario in order to meet its eastern delivery obligations. Centra's Emerson-MDA FT contract has annual renewal rights, thus securing Centra's access to this path under these changing market conditions and pipeline flow patterns.

CAC/CENTRA I-22

Subject: TransCanada Emerson-to-MDA FT contract

Reference: Tab 10, page 10 at line 15; Appendix 10.7

Preamble: At page 10 of Tab 10 Centra indicates that as of November 1, 2012 it holds TransCanada Mainline FT service from Emerson to the MDA. Appendix 10-7 indicates that the service is for 21,000 GJ/d, and at page 10 Centra indicates that this service "...helps offset deliverability foregone by de-contracting FT from Empress to the MDA..."

b) If not explained in the response to (a), explain why Centra did not contract for either (a) winter STFT from Emerson to the MDA or (b) additional STS winter delivery service on that path, given that the upstream firm GLGT service is only available during the winter period and that Centra is unlikely to require physical flows from Emerson to the MDA during the summer period.

ANSWER:

As discussed in Centra's response to CAC/Centra I-22(a), the available capacity on TCPL from Emerson is limited, and TCPL's future use of this path for operational reasons is uncertain and dependent upon prevailing market conditions. Winter STFT from Emerson to MDA provides no renewal rights and therefore no assurance that this capacity will be available to Centra in the future.

Additional winter STS capacity of 21,000 GJ/day to MDA would require 21,000 GJ/day of summer STS capacity to Emerson, which would far exceed Centra's summer storage

injection requirements from Western Canada when combined with Centra's current 54,000 GJ/day summer STS capacity to Emerson.

With either winter STFT or additional STS, the 20,000 GJ/day reduction in annual Empress-MDA FT would require other deliverability to the MDA to be added in the summer season, as the Emerson-MDA FT can be used to serve the MDA during colder weather in the summer season, which includes the shoulder months.

CAC/CENTRA I-22

Subject: TransCanada Emerson-to-MDA FT contract

Reference: Tab 10, page 10 at line 15; Appendix 10.7

Preamble: At page 10 of Tab 10 Centra indicates that as of November 1, 2012 it holds TransCanada Mainline FT service from Emerson to the MDA. Appendix 10-7 indicates that the service is for 21,000 GJ/d, and at page 10 Centra indicates that this service "...helps offset deliverability foregone by de-contracting FT from Empress to the MDA..."

- c) Discuss what opportunities, if any, Centra has to dispose of the 21,000 GJ/d of Emerson-to-MDA FT capacity in the secondary market using FT-RAM, diversions, and alternate receipt points on the Mainline.**

ANSWER:

Centra will divert gas on behalf of counterparties to eastern markets on the Mainline and/or deliver gas to counterparties in the MDA when such market opportunities arise and the capacity is not needed for Centra's own market requirement.

CAC/CENTRA I-22

Subject: TransCanada Emerson-to-MDA FT contract

Reference: Tab 10, page 10 at line 15; Appendix 10.7

Preamble: At page 10 of Tab 10 Centra indicates that as of November 1, 2012 it holds TransCanada Mainline FT service from Emerson to the MDA. Appendix 10-7 indicates that the service is for 21,000 GJ/d, and at page 10 Centra indicates that this service "...helps offset deliverability foregone by de-contracting FT from Empress to the MDA..."

d) To the extent that the opportunities to dispose of this capacity during the summer period are limited under the Mainline tariff, explain Centra's reasoning in choosing to contract for FT on this path as opposed to relying on STFT or STS.

ANSWER:

Please see Centra's responses to CAC/Centra I-22(b) and CAC/Centra I-22(c).

CAC/CENTRA I-22

Subject: TransCanada Emerson-to-MDA FT contract

Reference: Tab 10, page 10 at line 15; Appendix 10.7

Preamble: At page 10 of Tab 10 Centra indicates that as of November 1, 2012 it holds TransCanada Mainline FT service from Emerson to the MDA. Appendix 10-7 indicates that the service is for 21,000 GJ/d, and at page 10 Centra indicates that this service "...helps offset deliverability foregone by de-contracting FT from Empress to the MDA..."

e) Appendix 10.5 indicates that under Centra's "old" ANR/GLGT U.S. transportation arrangements Centra's firm winter GLGT capacity to Emerson exceeded Centra's winter STS take-away capacity from Emerson by approximately 21 TJ/d. If not explained in the responses to (a)-(d), explain how, if at all, Centra was able to utilize the extra upstream capacity on Great Lakes and accordingly move a full 237.4 TJ/d along the Michigan/Emerson/MDA path.

ANSWER:

For the majority of the term of Centra's former US transportation and storage portfolio, flows from western Canada on the TCPL Mainline were such that all of Centra's gas was physically delivered from the WCSB – either on its transportation contracts from western Canada or via displacement on its winter US transportation and STS contracts. Thus, Centra was reasonably assured that any scheduled quantities on its winter US transportation contracts in excess of its STS capacity on the Emerson to MDA path would flow via Interruptible Transportation on the Mainline from Emerson. The distinction between

2013 04 12 Page 1 of 2

whether any part of the path from Emerson to the load was interruptible was of less relevance at that time and Centra had the ability to utilize all of its upstream capacity on GLGT accordingly. Additionally, Centra has always had the option of executing Emerson for MDA exchanges in the marketplace, as required, to utilize all of its winter transportation on GLGT and to move a full 237.4 TJ/day along the Michigan to Emerson path.

In recent years, however, flows on the Mainline out of the WCSB have markedly declined and in response to declining flows from western Canada to eastern markets on its Mainline system, TCPL has increasingly physically transported gas on GLGT to Emerson, north into Manitoba on the Mainline, and then east into Ontario in order to meet its eastern delivery obligations. As gas scheduled from Emerson to the MDA is no longer solely accomplished by displacement, there is less assurance that gas scheduled on Interruptible Transportation on this path will flow.

CAC/CENTRA I-22

Subject: TransCanada Emerson-to-MDA FT contract

Reference: Tab 10, page 10 at line 15; Appendix 10.7

Preamble: At page 10 of Tab 10 Centra indicates that as of November 1, 2012 it holds TransCanada Mainline FT service from Emerson to the MDA. Appendix 10-7 indicates that the service is for 21,000 GJ/d, and at page 10 Centra indicates that this service "...helps offset deliverability foregone by de-contracting FT from Empress to the MDA..."

f) What is the initial term of the FT contract from Emerson to the MDA?

ANSWER:

The term of Centra's Firm Transportation ("FT") contract from Emerson to the MDA is one year from November 1, 2012 to October 31, 2013. As outlined in Centra's response to CAC/Centra I-22 (a), contracting for FT provides Centra with annual renewal rights for this capacity.

CAC/CENTRA I-23

Subject: Delivered Service – Definition of Primary Gas vs. Supplemental Gas

Reference: Tab 10, pgs 6 (Primary Gas Delivered Service), 7 (Supplemental Gas - Peaking Delivered Service), 30 (discussion of Supplemental Gas PGVA); Schedule 10.4.1 line 3, Schedule 10.4.2(a) line 5, Schedule 10.8.1 line 3, Schedule 10.8.2(a) line 5.

Preamble: At Tab 10, page 30, section 10.4.2, Centra indicates that effective April 1, 2011 it “reclassified” certain Delivered Service volumes and costs from Supplemental Gas to Primary Gas. The referenced Schedules for the 2010/11 and 2011/12 gas years appear to indicate a split between Primary and Supplemental Delivered Service volumes after April 1, 2011.

a) Provide a more detailed discussion of Centra’s basis for now allocating Delivered Service volumes and costs between Primary Gas and Supplemental Gas cost pools, including a discussion of:

- (i) why Centra decided to reclassify only certain Delivered Service volumes as Primary Gas,**
- (ii) whether and how that procedure is consistent with Centra’s gas purchase arrangements with ConocoPhillips at Empress,**
- (iii) how Centra defines or determines which Delivered Service volumes are Primary Gas and which are Supplemental Gas, and**
- (iv) Centra’s rationale for that definition or determination.**

ANSWER:

Primary Gas is the natural gas received from western Canadian sources at the Alberta border (Empress), whether supplied by Centra or a marketer. Centra currently sources its Primary Gas for system supplied customers under a two-year gas contract with ConocoPhillips that became effective November 1, 2012 and expires on October 31, 2014.

Supplemental Gas constitutes all supply sources other than Primary Gas. Prior to the introduction of Centra's new portfolio of U.S. storage and transportation assets on April 1, 2013, Supplemental Gas typically included U.S. supplies from both the Oklahoma and Louisiana supply basins and Supplemental Gas Peaking Delivered Service supplies.

Historically, Centra's purchases of Delivered Service supplies were a relatively small component of its overall supply portfolio and were routinely categorized as Supplemental Gas. In recent years however, Centra placed a much greater reliance on baseload supplies of Delivered Service in order to mitigate exposure to the continued escalation of tolls on the TransCanada Mainline. In 2010, Centra de-contracted 25,000 GJ/day of Firm Mainline capacity to the Manitoba Delivery Area in order to mitigate TransCanada Mainline toll exposure. At the commencement of the 2010/11 Gas Year, Centra's planned purchases of these increased amounts of Delivered Service supplies, in lieu of holding equivalent amounts of firm transportation capacity on the TransCanada Mainline, were classified as

Supplemental Gas.

However, once the 2010/11 winter season was complete, it was increasingly apparent that there would be negative impacts on marketers as a result of categorizing these supplies as “Supplemental Gas”. In addition, continued utilization of baseload Delivered Services through the remainder of the 2010/11 Gas Year had the potential of reducing Firm customers’ Primary Gas billing percentage to less than 50%, which would not only negatively impact marketers, but could also have led to significant communication challenges with Firm customers who were not accustomed to such wide variations in billing percentages. It was determined that these Delivered Service volumes should be re-categorized as “Primary Gas Delivered Service”. Had Centra not de-contracted from its previous levels of TransCanada Mainline capacity, those same volumes would have been purchased as Primary Gas and thus, the re-categorization of these Delivered Service volumes was reasonable. Centra elected to re-categorize baseload Delivered Service supplies as Primary Gas Delivered Service for purchases made from April 1, 2011 and subsequent periods. Peaking Delivered Service supplies have continued to be classified as Supplemental Gas as they were in the past.

CAC/CENTRA I-24

Subject: Calculation of Imputed Transportation Costs for Delivered Services.

Reference: Tab 10, pages 36-37; (to a similar effect for 2011/12 at page 52)

Preamble: Centra indicates that “in the past” it did not allocate Delivered Gas costs between transportation and the relevant Primary and Supplemental gas costs, but that it now does so because of the increasing role of Delivered Services in Centra’s Portfolio. In the paragraphs on page 36 beginning at lines 15 and 21 Centra describes the calculation of Imputed Transportation Costs for Supplemental Gas and Primary Gas Delivered Services, respectively.

- a) Confirm that for Supplemental Peaking Delivered Service the intended calculation is: Imputed Transportation Cost = (Delivered Price) – (AECO Price) – (AECO to Empress Differential), where a negative AECO to Empress differential is therefore added to the first two terms and the net Transportation Cost is the difference between the delivered price in the MDA and an imputed (from the AECO to Empress differential) Empress price. If not confirmed, explain and provide a simple numerical example that illustrates the intended calculation.**

ANSWER:

Confirmed.

CAC/CENTRA I-24

Subject: Calculation of Imputed Transportation Costs for Delivered Services.

Reference: Tab 10, pages 36-37; (to a similar effect for 2011/12 at page 52)

Preamble: Centra indicates that “in the past” it did not allocate Delivered Gas costs between transportation and the relevant Primary and Supplemental gas costs, but that it now does so because of the increasing role of Delivered Services in Centra’s Portfolio. In the paragraphs on page 36 beginning at lines 15 and 21 Centra describes the calculation of Imputed Transportation Costs for Supplemental Gas and Primary Gas Delivered Services, respectively.

b) Confirm that for Primary Gas Delivered Services the intended calculation is the same as described in (a), except that variable transportation costs on the TransCanada Mainline are also deducted, reducing the imputed transportation cost. If not confirmed, explain and provide a simple numerical example that illustrates the intended calculation.

ANSWER:

Confirmed, subject to the clarification that the only TransCanada Mainline variable transportation costs that are deducted in the Primary Gas Delivered Service calculation are those for Mainline compressor fuel from Empress to Centra’s city gate.

CAC/CENTRA I-24

Subject: Calculation of Imputed Transportation Costs for Delivered Services.

Reference: Tab 10, pages 36-37; (to a similar effect for 2011/12 at page 52)

Preamble: Centra indicates that “in the past” it did not allocate Delivered Gas costs between transportation and the relevant Primary and Supplemental gas costs, but that it now does so because of the increasing role of Delivered Services in Centra’s Portfolio. In the paragraphs on page 36 beginning at lines 15 and 21 Centra describes the calculation of Imputed Transportation Costs for Supplemental Gas and Primary Gas Delivered Services, respectively.

c) Assuming that the CAC’s understanding as reflected in (a) and (b) is correct, explain why it is appropriate to deduct variable Mainline transportation costs for Primary Gas but not Supplemental Gas.

ANSWER:

Mainline compressor fuel costs are included as a component in the determination of Primary Gas Delivered Service Imputed Transportation Costs in order to allocate those costs to the Primary Gas PGVA to maintain consistency with the principles underlying the design of the quarterly Primary Gas rate. The costs of TCPL Mainline compressor fuel are included in Centra’s Primary Gas rate, and the Primary Gas rates charged by natural gas marketers in Manitoba under the Western Transportation Service.

CAC/CENTRA I-25

Subject: 2012/13 Gas Cost Forecast – Emerson Supply

Reference: Schedules 10.12.1, 10.12.2, 10.12.3(a) and (b); Tab 10, section 10.12.4 at page 59.

Preamble: In the referenced Schedules Centra forecasts volumes, prices and total costs for “Emerson supply” for the 1012/13 gas year, with volumes up to a maximum for January (Schedule 10.12.2, line 39) that appear to reflect daily average volumes of Emerson supply of approximately 21 TJ/d. At page 59 of Tab 10 Centra explains the forecast pricing of Emerson supply.

- a) Provide a detailed narrative description of how the “Emerson supply” notion fits into Centra’s gas supply portfolio, including whether these volumes are treated as Primary Gas or Supplemental Gas (and why), whether Emerson supply might be purchased during the summer for storage injection (Primary or Supplemental) purposes, under what kinds of arrangements (e.g. daily, monthly, seasonal, annual) Centra expects to acquire Emerson supply, and how Emerson supply volumes will be dispatched relative to, for example, Primary Gas storage withdrawals, Supplemental Gas storage withdrawals, “Chicago” supply, and Primary Gas and Supplemental Gas Delivered Services.**

ANSWER:

The weather normalized forecast of “Emerson Supply” as outlined in Schedule 10.12.2 at line 39 is a proxy for U.S. supplies which may be purchased at Emerson or in Michigan in winter; and at Emerson in summer. These supplies are categorized as Supplemental Gas as they are not sourced from western Canada at the Alberta border (Empress) and they are not a baseload Delivered Service to the load. Winter purchases of Emerson/Michigan supply may take the form of a monthly or seasonal swing supply allowing variable daily quantities, or day-ahead purchases in the spot market. Emerson and Michigan futures prices or live market prices would be used by Centra to determine the most cost effective supply. The 2012/13 Gas Year forecast is for Emerson Supply to flow before storage in the dispatch queue in the first three months of the winter (November, December, and January) to preserve storage inventory levels and mitigate the extent of curtailment for Interruptible customers. In February and March, the forecast is for Emerson Supply to shift in the dispatch queue to flow after storage, hence the reduction in forecast volumes of Emerson Supply in those months.

Emerson Supply is forecast to flow sporadically during the summer season to help serve the load on days in which colder weather is experienced and recognizing that the forecast is weather normalized. Emerson supply to serve the load in the summer may take the form of a monthly swing supply allowing variable daily quantities, or day-ahead purchases in the spot market. Emerson supply to serve the load in summer would be dispatched after Western Canadian supply and depending on the price at Emerson relative to any Peaking Delivered Service arrangements Centra may have in place.

Emerson Supply may also be required in summer in the event that WCSB gas destined for storage is required at the load and the injection plan must be maintained with day-ahead

spot purchases. This is a daily decision driven by weather, in which case Centra uses live market prices at the different supply hubs available to it (Emerson, Chicago, Michigan) to obtain the most cost-effective supply.

CAC/CENTRA I-25

Subject: 2012/13 Gas Cost Forecast – Emerson Supply

Reference: Schedules 10.12.1, 10.12.2, 10.12.3(a) and (b); Tab 10, section 10.12.4 at page 59.

Preamble: In the referenced Schedules Centra forecasts volumes, prices and total costs for “Emerson supply” for the 1012/13 gas year, with volumes up to a maximum for January (Schedule 10.12.2, line 39) that appear to reflect daily average volumes of Emerson supply of approximately 21 TJ/d. At page 59 of Tab 10 Centra explains the forecast pricing of Emerson supply.

b) If not explained in the response to (a), do forecast Emerson supply volumes necessarily reflect actual purchases by Centra at Emerson, or could the forecast requirement reflected in Schedule 10.12.2 at line 39 also be met using supply purchased in Michigan, Chicago, or elsewhere on the combined ANR/Great Lakes system? If so, explain how Centra will determine its purchasing and transportation strategy and how Centra will optimize that strategy on a day-to-day basis.

ANSWER:

Please see Centra’s response to CAC/Centra I-25(a).

CAC/CENTRA I-25

Subject: 2012/13 Gas Cost Forecast – Emerson Supply

Reference: Schedules 10.12.1, 10.12.2, 10.12.3(a) and (b); Tab 10, section 10.12.4 at page 59.

Preamble: In the referenced Schedules Centra forecasts volumes, prices and total costs for “Emerson supply” for the 1012/13 gas year, with volumes up to a maximum for January (Schedule 10.12.2, line 39) that appear to reflect daily average volumes of Emerson supply of approximately 21 TJ/d. At page 59 of Tab 10 Centra explains the forecast pricing of Emerson supply.

- c) Confirm that the Emerson supply prices shown at Schedule 10.12.1 line 48 reflect forward market prices for one-month firm supply at Emerson, i.e. without addition or subtraction of actual or imputed transportation costs or other adjustments. If not confirmed, explain what the forecast numbers represent.**

ANSWER:

It is confirmed that Emerson Supply commodity prices on Schedule 10.12.1 line 48 reflect solely futures market prices with no other adjustments for the months of December 2012 through October 2013. The Emerson Supply price for the month of November 2012 is the settled Emerson Index price.

CAC/CENTRA I-26

Subject: Forecast basis and underlying data for 2012/13 Gas Cost Forecast

Reference: Schedule 10.12.1, lines 43, 48, and 49

Preamble: Centra sets out its forecast prices for various categories of gas delivered direct to Manitoba.

- a) For line 43 (Primary Supply Direct to System Supply), provide the monthly settled (November) or forward-market AECO monthly index prices and the monthly forward AECO to Empress Transportation Basis for the 2012/13 gas year.**

ANSWER:

Please see the attachment to this response.

CAC/CENTRA I-26

Subject: Forecast basis and underlying data for 2012/13 Gas Cost Forecast

Reference: Schedule 10.12.1, lines 43, 48, and 49

Preamble: Centra sets out its forecast prices for various categories of gas delivered direct to Manitoba.

- b) Confirm that the monthly entries at lines 48 and 49 for “Emerson Supply” and “Chicago Supply” reflect monthly forward-market indices for those points. If not confirmed, indicate the source of the information provided and explain how Centra derived the prices shown in the forecast.**

ANSWER:

The Emerson Supply price for the month of November 2012 is the settled Emerson index price. All other Emerson Supply and Chicago Supply prices on Schedule 10.12.1, lines 48 and 49 are monthly futures market prices specific to Emerson and Chicago, respectively.

CAC/CENTRA I-26

Subject: Forecast basis and underlying data for 2012/13 Gas Cost Forecast

Reference: Schedule 10.12.1, lines 43, 48, and 49

Preamble: Centra sets out its forecast prices for various categories of gas delivered direct to Manitoba.

- c) Do the Primary Supply Direct to System Supply monthly price forecasts at line 43 reflect only expected Empress supply prices under Centra's Primary Gas arrangements with ConocoPhillips, or do they include forecast prices of Primary Gas Delivered Services?**

ANSWER:

The Primary Supply Direct to System Supply monthly price forecasts at line 43 reflect only expected Empress supply prices under Centra's Primary Gas arrangements with ConocoPhillips.

CAC/CENTRA I-26

Subject: Forecast basis and underlying data for 2012/13 Gas Cost Forecast

Reference: Schedule 10.12.1, lines 43, 48, and 49

Preamble: Centra sets out its forecast prices for various categories of gas delivered direct to Manitoba.

- d) If the response to (c) is that the monthly price forecasts reflect a blend of Empress prices and Primary Gas Delivered Service prices, describe how Centra forecasts Primary Gas Delivered Service prices and provide a table showing volumes and forecast prices for both Empress-sourced Primary Gas and Primary Gas Delivered Service. If Centra forecasts the cost (i.e. the Empress price or for Delivered Service the “commodity” cost component) of Empress-sourced Primary Gas and Primary Gas Delivered Service at the same level for each period, confirm that and explain why Centra considers that approach to be reasonable.**

ANSWER:

Please see Centra's response to CAC/Centra I-26(c).

CAC/CENTRA I-26

Subject: Forecast basis and underlying data for 2012/13 Gas Cost Forecast

Reference: Schedule 10.12.1, lines 43, 48, and 49

Preamble: Centra sets out its forecast prices for various categories of gas delivered direct to Manitoba.

- e) To the extent that Primary Gas Delivered Service prices are reflected in the price forecasts for Primary Gas Direct to load in Schedule 10.12.1, is the cost reflected in the Schedule the “net” or “commodity” cost of that supply, after deducting the Imputed Transportation Cost” as discussed at page 36-37 of Tab 10?

ANSWER:

Please see Centra’s response to CAC/Centra I-26(c).

CAC/CENTRA I-27

Subject: 2012/13 Gas Cost Forecast

Reference: Schedule 10.12.2

Preamble: At lines 24 and following Centra forecasts its supply requirements to Manitoba from various sources

- a) For the 2012/13 gas year is Centra forecasting (i.e. based on normal weather) any use of Primary Gas Delivered Service as part of the Primary Gas direct to load volume forecast at line 27 of Schedule 10.12.2? If so, break out the figures on line 27 between Primary Gas purchased at Empress and Primary Gas Delivered Service volumes. If not, confirm that Centra is forecasting zero use of Primary Gas Delivered Service for the 2012/13 gas year.**

ANSWER:

It is confirmed that the use of Primary Gas Delivered Service is not forecast for the 2012/13 gas year.

CAC/CENTRA I-27

Subject: 2012/13 Gas Cost Forecast

Reference: Schedule 10.12.2

Preamble: At lines 24 and following Centra forecasts its supply requirements to Manitoba from various sources

- b) Confirm that for the 2012/13 gas year Centra is not forecasting (i.e. based on normal weather) any use of Supplemental Gas Peaking Delivered Service. If not confirmed, explain why no volumes in that category are reflected in the section of Schedule 10.12.2 at lines 34-42.**

ANSWER:

Confirmed.

CAC/CENTRA I-27

Subject: 2012/13 Gas Cost Forecast

Reference: Schedule 10.12.2

Preamble: At lines 24 and following Centra forecasts its supply requirements to Manitoba from various sources

- c) From an operational and economic perspective, are Supplemental Gas Delivered Services essentially equivalent to Emerson Supply, or are they interchangeable for the purposes of Centra's day-to-day dispatch planning? Discuss.**

ANSWER:

Supplemental Gas Delivered Services are distinct from Emerson Supply. Supplemental Gas Delivered Services are delivered to the load rather than transported on Centra's transportation contracts. Emerson Supply is a source of Supplemental Gas but it is not a Supplemental Gas Delivered Service.

There are two types of Supplemental Gas Delivered Services:

- Supplemental Gas Peaking Delivered Services for Firm customers; and
- Alternate Supply Service for Interruptible customers.

CAC/CENTRA I-28

Subject: Fixed Rate Primary Gas Service Results

Reference: Tab 13 and Appendices

Preamble: The reported results for the FRPGS program reflect consistent financial losses for Centra, which appear to have been driven primarily by hedging losses arising from under-subscription of the various offerings combined with continuously declining market prices.

a) Does Centra disagree with the characterization of Centra's results set out in the Preamble?

ANSWER:

Centra recognizes that the total settled results associated with the unsubscribed financial instruments, at March 31, 2012, account for approximately \$516.0 or 40% of the negative financial results incurred since the inception of the FRPGS program in 2009.

Generally speaking, the financial results of the program to date were driven by the lower than forecast uptake of program offerings, which Centra views as being predominantly influenced by the sustained decline in natural gas prices that has occurred during this time period.

CAC/CENTRA I-28

Subject: Fixed Rate Primary Gas Service Results

Reference: Tab 13 and Appendices

Preamble: The reported results for the FRPGS program reflect consistent financial losses for Centra, which appear to have been driven primarily by hedging losses arising from under-subscription of the various offerings combined with continuously declining market prices.

b) What is Centra's understanding of why, as indicated at Tab 13, page 7, 3rd full paragraph, the majority of its service offerings have been under-subscribed? Is Centra aware of any flaw in its forecasting mechanism that led to Centra consistently over-forecasting subscriptions? Alternatively, does this result simply reflect chance?

ANSWER:

Centra is not aware of any flaw in its forecasting mechanism that would result in offerings being under-subscribed. Centra is aware of the following factors which may have contributed to under-subscription of the offerings:

- 1) Primary Natural Gas prices have been steadily declining since the inception of FRPGS in 2009. This decline is unprecedented and not anticipated within the industry. This factor, in combination with the large price gap between fixed rate products and Centra's quarterly rate, led to low customer interest in FRPGS. This trend is consistent with participation under the WTS service. When analyzing the

history of WTS customer counts, it is apparent that most customer growth in this sector occurred when natural gas prices were rising.

- 2) Centra did not have previous direct experience offering Fixed Rate products prior to the launch of FRPGS in 2009. Although Centra conducted customer surveys and analyzed WTS customer counts, the company did not have historical data to use in forecasting customer uptake of such a product.
- 3) During each offer period Centra ensured adequate volumes were available to accommodate customers in each class – residential, commercial and LGS. As such, if no LGS customers signed up, significant volumes were left unsubscribed. However, if an LGS customer signed up and Centra had not forecasted any uptake for this customer group, the offer may have been over-subscribed or unavailable to other customers.

CAC/CENTRA I-28

Subject: Fixed Rate Primary Gas Service Results

Reference: Tab 13 and Appendices

Preamble: The reported results for the FRPGS program reflect consistent financial losses for Centra, which appear to have been driven primarily by hedging losses arising from under-subscription of the various offerings combined with continuously declining market prices.

- c) Given the relatively low level of up-take for the program (e.g. see Appendix 13.2 at page 8, where the first graph indicates that the program has almost always had less than 450 customers), does Centra consider that continuation of the program is worthwhile, assuming that the program's methodological and financial issues can be resolved? Why or why not?**

ANSWER:

Centra believes continuation of the FRPGS is worthwhile for the following reasons:

- FRPGS provides customers with greater choice in terms of rate and supplier options for purchasing Primary Gas; and
- Centra's FRPGS rates offer customers a benchmark by which to compare third party offers available in the market.

CAC/CENTRA I-29

Subject: Centra's proposal to modify the RSM for FRPGS

Reference: Tab 13, section 13.2.3, pages 7-8.

Preamble: In this section Centra describes the calculation of a WACOG for each contract term as of the beginning of each offer period, to which would be added an 8% risk premium or "SRP" and the Program Cost Rate or "PCR" to derive an offer price for each product. The WACOG would include "the forecast impacts of storage on Centra's average cost", pipeline transportation costs from AECO to Empress, and fuel charges on the Mainline.

- a) Is the base number for the WACOG calculation a forward AECO monthly strip for the relevant term for each product offering? Describe in detail the base or underlying commodity cost component of the calculated WACOG.

ANSWER:

The WACOG under Centra's proposed methodology for each relevant term for each product offering is calculated in the same manner as that currently used to derive Centra's quarterly Primary Gas rate. The only difference for the FRPGS is that the length of the forward terms would exceed 12 months for term offerings of 2 to 5 years.

CAC/CENTRA I-29

Subject: Centra's proposal to modify the RSM for FRPGS

Reference: Tab 13, section 13.2.3, pages 7-8.

Preamble: In this section Centra describes the calculation of a WACOG for each contract term as of the beginning of each offer period, to which would be added an 8% risk premium or "SRP" and the Program Cost Rate or "PCR" to derive an offer price for each product. The WACOG would include "the forecast impacts of storage on Centra's average cost", pipeline transportation costs from AECO to Empress, and fuel charges on the Mainline.

b) Explain how Centra would calculate the expected impact of storage on Centra's average cost and its rationale for the suggested approach.

ANSWER:

The expected impact of storage on Centra's forecast WACOG under the proposed methodology for each relevant term for each product offering is calculated in the same manner as that currently used to derive Centra's quarterly Primary Gas rate, the only difference being the length of the forward terms used to calculate the WACOG's for the different FRPGS product terms. For forward years 2, 3, 4 and 5, Centra's average cost of Primary Gas from storage is forecast assuming volumetric withdrawals and injections under normal weather conditions.

Centra considers this approach appropriate given the impact of the cost of Primary Gas storage withdrawals on the actual WACOG charged against FRPGS program revenues.

CAC/CENTRA I-29

Subject: Centra's proposal to modify the RSM for FRPGS

Reference: Tab 13, section 13.2.3, pages 7-8.

Preamble: In this section Centra describes the calculation of a WACOG for each contract term as of the beginning of each offer period, to which would be added an 8% risk premium or "SRP" and the Program Cost Rate or "PCR" to derive an offer price for each product. The WACOG would include "the forecast impacts of storage on Centra's average cost", pipeline transportation costs from AECO to Empress, and fuel charges on the Mainline.

- c) Explain how Centra would calculate pipeline transportation costs from AECO to Empress, e.g. would this reflect NGTL FT-D tolls, forward market AECO-Empress price differentials, or some other measure? Explain the rationale for the suggested approach.

ANSWER:

Primary Gas transportation costs from AECO to Empress are calculated based on Centra's western Canadian Primary Gas supply contract pricing terms in effect from time to time. This is consistent with the approach used to determine Centra's quarterly Primary Gas rate.

CAC/CENTRA I-29

Subject: Centra's proposal to modify the RSM for FRPGS

Reference: Tab 13, section 13.2.3, pages 7-8.

Preamble: In this section Centra describes the calculation of a WACOG for each contract term as of the beginning of each offer period, to which would be added an 8% risk premium or "SRP" and the Program Cost Rate or "PCR" to derive an offer price for each product. The WACOG would include "the forecast impacts of storage on Centra's average cost", pipeline transportation costs from AECO to Empress, and fuel charges on the Mainline.

d) Explain how Centra would estimate compressor fuel costs on the Mainline, and why it is appropriate to include those variable costs in the calculation.

ANSWER:

Mainline compressor fuel costs are calculated in a manner similar to the approach used to determine Centra's quarterly Primary Gas rate. This is appropriate given that Mainline compressor fuel costs make up part of the overall WACOG charged against FRPGS program revenues.

CAC/CENTRA I-29

Subject: Centra's proposal to modify the RSM for FRPGS

Reference: Tab 13, section 13.2.3, pages 7-8.

Preamble: In this section Centra describes the calculation of a WACOG for each contract term as of the beginning of each offer period, to which would be added an 8% risk premium or "SRP" and the Program Cost Rate or "PCR" to derive an offer price for each product. The WACOG would include "the forecast impacts of storage on Centra's average cost", pipeline transportation costs from AECO to Empress, and fuel charges on the Mainline.

e) Provide a sample calculation of the WACOG for a representative term, e.g. 3 years, under current conditions for a representative forward period.

ANSWER:

Please see the attachment to this response for a representative sample calculation of the forecast WACOG underlying an FRPGS offering for a 3-year term for flows commencing May 1, 2013, along with the resulting billed rate, under the proposed Self-Insurance methodology.

CENTRA GAS MANITOBA INC.
 2013/14 General Rate Application
 Fixed Rate Primary Gas Service - Sample Calculation
 Primary Gas Weighted Average Costs & TCPL Compressor Fuel Costs
 For Gas Flow Effective May 1, 2013

1 (based on forward market strip as at January 25, 2013 close)

2	Month	AECO Futures Price (\$/GJ)	Empress-AECO/NIT Market Differential Futures	Forecast Average Western Cdn. Supply Price at Empress (\$/GJ)	Primary Gas Direct to Load (GJ's)	Primary Gas Direct to Load (\$'s)	Forecast Primary Gas in Storage Unit Cost (\$/GJ)	Primary Gas Storage Requirement to Load (GJ's)	Primary Gas Storage Requirement to Load (\$'s)	Primary Gas Direct to Load (GJ's)	TCPL Compressor Fuel Volumes (GJ's)	TCPL Compressor Fuel Costs (\$'s)
3	May-13	\$3.0000	(\$0.0550)	\$2.9700	1,856,801	\$5,514,765				1,856,801	10,315	\$30,636
4	Jun-13	\$3.0000	(\$0.0550)	\$2.9657	1,062,611	\$3,151,407				1,062,611	5,898	\$17,493
5	Jul-13	\$3.0450	(\$0.0550)	\$3.0075	917,760	\$2,760,127				917,760	5,096	\$15,327
6	Aug-13	\$3.0775	(\$0.0550)	\$3.0404	994,216	\$3,022,851				994,216	5,522	\$16,789
7	Sep-13	\$3.0950	(\$0.0550)	\$3.0614	1,378,780	\$4,220,979				1,378,780	7,662	\$23,456
8	Oct-13	\$3.1700	(\$0.0550)	\$3.1413	3,174,920	\$9,973,405				3,174,920	17,641	\$55,415
9	Nov-13	\$3.3675	(\$0.0150)	\$3.3792	3,030,104	\$10,239,411	\$3.0299	1,618,519	\$4,903,950	3,030,104	16,830	\$56,874
10	Dec-13	\$3.5250	(\$0.0150)	\$3.5320	4,991,992	\$17,631,904	\$3.0299	1,960,877	\$5,941,261	4,991,992	27,759	\$98,048
11	Jan-14	\$3.5750	(\$0.0150)	\$3.5807	4,991,992	\$17,874,993	\$3.0299	2,729,992	\$8,271,603	4,991,992	27,768	\$99,430
12	Feb-14	\$3.5850	(\$0.0150)	\$3.5930	4,508,896	\$16,200,286	\$3.0299	2,417,510	\$7,324,814	4,508,896	25,079	\$90,109
13	Mar-14	\$3.5675	(\$0.0150)	\$3.5795	3,129,169	\$11,200,874	\$3.0299	72,647	\$220,112	3,129,169	17,387	\$62,236
14	Apr-14	\$3.4400	(\$0.0100)	\$3.4566	3,361,142	\$11,618,098				3,361,142	18,683	\$64,580
15	May-14	\$3.4375	(\$0.0100)	\$3.4525	1,856,801	\$6,410,671				1,856,801	10,315	\$35,614
16	Jun-14	\$3.4500	(\$0.0100)	\$3.4607	1,062,611	\$3,677,400				1,062,611	5,898	\$20,412
17	Jul-14	\$3.4875	(\$0.0100)	\$3.4950	917,760	\$3,207,536				917,760	5,096	\$17,812
18	Aug-14	\$3.5075	(\$0.0100)	\$3.5154	994,216	\$3,495,103				994,216	5,522	\$19,412
19	Sep-14	\$3.5275	(\$0.0100)	\$3.5389	1,378,780	\$4,879,347				1,378,780	7,662	\$27,114
20	Oct-14	\$3.5700	(\$0.0100)	\$3.5863	3,174,920	\$11,386,245				3,174,920	17,641	\$63,265
21	Nov-14	\$3.6975	(\$0.0325)	\$3.6917	3,030,104	\$11,186,319	\$3.4304	1,618,519	\$5,552,167	3,030,104	16,830	\$62,134
22	Dec-14	\$3.8675	(\$0.0325)	\$3.8570	4,991,992	\$19,254,301	\$3.4304	1,960,877	\$6,726,593	4,991,992	27,759	\$107,069
23	Jan-15	\$3.9550	(\$0.0325)	\$3.9432	4,991,992	\$19,684,590	\$3.4304	2,729,992	\$9,364,964	4,991,992	27,768	\$109,496
24	Feb-15	\$3.9325	(\$0.0325)	\$3.9230	4,508,896	\$17,688,221	\$3.4304	2,417,510	\$8,293,026	4,508,896	25,079	\$98,385
25	Mar-15	\$3.8650	(\$0.0325)	\$3.8595	3,129,169	\$12,077,041	\$3.4304	72,647	\$249,207	3,129,169	17,387	\$67,105
26	Apr-15	\$3.6625	(\$0.0325)	\$3.6566	3,361,142	\$12,290,326				3,361,142	18,683	\$68,316
27	May-15	\$3.6850	(\$0.0325)	\$3.6775	1,856,801	\$6,828,452				1,856,801	10,315	\$37,934
28	Jun-15	\$3.6625	(\$0.0325)	\$3.6507	1,062,611	\$3,879,296				1,062,611	5,898	\$21,533
29	Jul-15	\$3.6775	(\$0.0325)	\$3.6625	917,760	\$3,361,260				917,760	5,096	\$18,665
30	Aug-15	\$3.6950	(\$0.0325)	\$3.6804	994,216	\$3,659,149				994,216	5,522	\$20,323
31	Sep-15	\$3.7200	(\$0.0325)	\$3.7089	1,378,780	\$5,113,740				1,378,780	7,662	\$28,416
32	Oct-15	\$3.7650	(\$0.0325)	\$3.7588	3,174,920	\$11,933,919				3,174,920	17,641	\$66,308
33	Nov-15	\$3.8725	\$0.0500	\$3.9492	3,030,104	\$11,966,570	\$3.6736	1,618,519	\$5,945,791	3,030,104	16,830	\$66,467
34	Dec-15	\$4.0150	\$0.0500	\$4.0870	4,991,992	\$20,402,459	\$3.6736	1,960,877	\$7,203,478	4,991,992	27,759	\$113,454
35	Jan-16	\$4.1175	\$0.0500	\$4.1882	4,991,992	\$20,907,629	\$3.6736	2,729,992	\$10,028,899	4,991,992	27,768	\$116,299
36	Feb-16	\$4.0950	\$0.0500	\$4.1680	4,508,896	\$18,792,901	\$3.6736	2,417,510	\$8,880,965	4,508,896	25,079	\$104,529
37	Mar-16	\$4.0250	\$0.0500	\$4.1020	3,129,169	\$12,835,864	\$3.6736	72,647	\$266,875	3,129,169	17,387	\$71,321
38	Apr-16	\$3.8200	\$0.0500	\$3.8966	3,361,142	\$13,097,000				3,361,142	18,683	\$72,800
39												
40	Sub-Total				100,195,152	\$371,424,439		26,398,634	\$89,173,705	100,195,152		\$2,064,578
41					36-Month Weighted Average Primary Gas Direct to Load Cost (\$/GJ)	\$3.7070		36-Month Weighted Average Primary Gas Storage Requirement to Load (\$/GJ)	\$3.3780		36-Month Weighted Average TCPL Compressor Fuel Cost per Unit of Primary Gas Direct to Load Supply (\$/GJ)	\$0.0206
42												
43	36-Month FRPGS Weighted Average Cost of Gas Including Fuel (\$/GJ)								\$3.6590			

CENTRA GAS MANITOBA INC.
2013/14 General Rate Application
Fixed Rate Primary Gas Service - Sample Calculation
For Gas Flow Effective May 1, 2013

CAC/Centra I-29(e)
Attachment - Page 2 of 2
April 12, 2013

		<u>3-Year Fixed</u>
1		
2		
3	36-Month FRPGS Weighted Average Cost of Gas Including Fuel	\$/GJ \$3.6590
4	36-Month FRPGS Weighted Average Cost of Gas Including Fuel	\$/10 ³ m ³ \$138.30
5		
6	Self-Insurance Risk Premium - 8%	\$/10 ³ m ³ \$11.10
7		
8	Program Cost Rate (as applied for per 2013/14 GRA)	\$/10 ³ m ³ <u>\$31.40</u>
9		
10	Fixed Rate Primary Gas Service Billed Rate	<u><u>\$/10³m³ \$180.80</u></u>

CAC/CENTRA I-29

Subject: Centra's proposal to modify the RSM for FRPGS

Reference: Tab 13, section 13.2.3, pages 7-8.

Preamble: In this section Centra describes the calculation of a WACOG for each contract term as of the beginning of each offer period, to which would be added an 8% risk premium or "SRP" and the Program Cost Rate or "PCR" to derive an offer price for each product. The WACOG would include "the forecast impacts of storage on Centra's average cost", pipeline transportation costs from AECO to Empress, and fuel charges on the Mainline.

f) Is it correct that for accounting and rate purposes Centra's "cost" for the gas that it would sell under the proposed RSM would be Centra's actual WACOG for Primary Gas from time to time? If not, explain.

ANSWER:

Confirmed for accounting and financial reporting purposes. However, rates will be established using the forecast WACOG as described in Centra's response to CAC/Centra I-29(a) and CAC/Centra I-29(b).

CAC/CENTRA I-30

Subject: Centra's proposal to modify the RSM for FRPGS.

Reference: Tab 13, section 13.2.4, Determination of the SRP; Appendix 13.5

Preamble: Centra indicates that it conducted "randomized market simulation studies in order to determine the estimated ranges of financial results that would have been experienced historically under a range of SRP's."

- a) Provide a more detailed explanation and description of the "randomized market simulation studies" that Centra conducted.

ANSWER:

Please see Centra's responses to PUB/Centra I-122(a), PUB/Centra I-122(e), and PUB/Centra I-128(a).

CAC/CENTRA I-30

Subject: Centra's proposal to modify the RSM for FRPGS.

Reference: Tab 13, section 13.2.4, Determination of the SRP; Appendix 13.5

Preamble: Centra indicates that it conducted "randomized market simulation studies in order to determine the estimated ranges of financial results that would have been experienced historically under a range of SRP's."

b) Having regard to the explanation provided in response to (a), provide Centra's understanding of the reasons for the results shown in Appendix 13.5, including in particular the fact that over the first 5 years of the program all results (mean, best, worst) appear to cluster around a cumulative risk margin gain or loss of zero, but for the last five years the cumulative risk margin trends sharply upwards under all scenarios.

ANSWER:

For the period from May 2000 through November 2005, natural gas market prices demonstrated a pronounced rising trend, culminating in the market price spike following hurricanes Katrina and Rita in the late summer of 2005 and their deleterious effects on Gulf of Mexico natural gas production. During this period, monthly settled AECO index prices rose nearly 315% from approximately \$3.85/GJ in May 2000, to over \$12.00/GJ in November 2005. From November 2005 through March 2011, with the exception of the commodity price spike that occurred during the spring and summer of 2008, market prices for natural gas maintained a pronounced downward trend, falling by over 70% to approximately \$3.35/GJ by March 2011.

The dramatic fall in natural gas prices in the last half of Centra's study period would have generated risk margin gains for the FRPGS as Centra's self-insured contracts with customers would have participated in these progressively falling prices, whereas they would not have benefited from lower natural gas market prices had hedging instruments instead been used.

CAC/CENTRA I-30

Subject: Centra's proposal to modify the RSM for FRPGS.

Reference: Tab 13, section 13.2.4, Determination of the SRP; Appendix 13.5

Preamble: Centra indicates that it conducted "randomized market simulation studies in order to determine the estimated ranges of financial results that would have been experienced historically under a range of SRP's."

c) Does Centra believe that the objective of the pricing scheme for FRPGS should be to generate for Centra a consistently positive risk margin under all market scenarios, as shown in the graph in Appendix 13.5 for 2005 onwards? Why or why not?

ANSWER:

Centra's Fixed-Rate Primary Gas Service is intended to offer cost-based products to consumers, recognizing that short term profits and losses will accrue to retained earnings. Centra's objective, in the longer term, is that the impact of the program on retained earnings would be negligible.

Centra recognizes that program results will vary from year to year, and that it is not necessary to structure the program to provide a positive risk margin under all market scenarios. Centra views this as appropriate because its long-term objective is to cover its costs associated with making these products available to customers, as well as to make these products available to customers at reasonable prices.

Centra notes that the positive risk margins shown for 2005 to 2011 in the graph in Appendix 13.5 are the result of the strong and continued decline in natural gas prices over that time period.

CAC/CENTRA I-31

Subject: TransCanada Mainline FT Capacity

Reference: Tab 10, section 10.1.2 at pages 15-16.

Preamble: Centra explains that since the 2010/11 gas year it has reduced its contracted Empress-to-MDA FT capacity on the Mainline from 135,000 GJ/d in 2010/11 to 110,000 GJ/d in 2011/12 to 90,000 GJ/d in 2012/13, and says that it has replaced that deliverability with Delivered Service and, in the current gas year, STFT service, which has allowed it to “load shape” without incurring the fixed costs associated with FT.

- a) Provide an estimate of the net cost saving generated in the 2011/12 and 2012/13 gas years, relative to the previous year in each case, by Centra’s strategy of de-contracting long-haul FT service from Empress, where “net” saving is the absolute saving on FT service less the cost (or imputed transportation cost) of the Delivered Services and STFT services that were substituted for the de-contracted FT, and taking account of any other costs or benefits that were relevant to Centra’s decision.**

ANSWER:

The net cost savings generated in the 2010/11, 2011/12, and 2012/13 Gas Years were as follows:

2010/11 Gas Year:	\$6.6 million
2011/12 Gas Year:	\$9.6 million
2012/13 Gas Year (to March 31, 2013):	\$0.2 million

CAC/CENTRA I-32

Subject: Detailed reporting of capacity management revenues and activity.

Reference: Tab 10, page 25, lines 13 to 22.

Preamble: Centra references and describes the Board's direction in Order 112/12 concerning a the provision of a more detailed breakdown of Centra's capacity management transactions, and indicates that it is in the process of extracting information from its systems and organizing data in order to comply with the direction.

- a) When does Centra expect to complete the work described in the referenced section of the Application and file the information that the Board requested?

ANSWER:

As outlined in Tab 10, page 25, lines 19 to 22 and in Appendix 15.2, page 5 of 5, Centra is developing the necessary reporting to provide the monthly breakdown of Capacity Management revenue as directed in Order 112/12. Centra expects to provide this information to the PUB prior to the commencement of the oral portion of the 2013/14 GRA proceeding.

CAC/CENTRA I-33

Subject: Depreciation

Reference: Appendix 5.8 pages 1-5

Preamble: Centra indicates that effective April 1, 2011 it implemented new depreciation rates, modified from the rates approved in 2007, that reflect revised services lives for various accounts. Centra also indicates that it plans to implement further revised depreciation rates effective April 1, 2014 (or April 1, 2015) that will (a) use the Equal Life Group or ELG procedure and (b) eliminate asset retirement costs from depreciation rates.

a) Please indicate the date on which Centra proposes to implement new depreciation rates reflecting the ELG procedure and the elimination of asset retirement costs.

ANSWER:

Please see Centra's responses to PUB/Centra I-36 and PUB/Centra I-37(a).

CAC/CENTRA I-33

Subject: Depreciation

Reference: Appendix 5.8 pages 1-5

Preamble: Centra indicates that effective April 1, 2011 it implemented new depreciation rates, modified from the rates approved in 2007, that reflect revised services lives for various accounts. Centra also indicates that it plans to implement further revised depreciation rates effective April 1, 2014 (or April 1, 2015) that will (a) use the Equal Life Group or ELG procedure and (b) eliminate asset retirement costs from depreciation rates.

b) Please confirm that since April 1, 2011 Centra has been recording depreciation calculated on the basis of “April 1, 2011” depreciation rates shown on the table at page 5 of Appendix 5.8.

ANSWER:

Confirmed.

CAC/CENTRA I-33

Subject: Depreciation

Reference: Appendix 5.8 pages 1-5

Preamble: Centra indicates that effective April 1, 2011 it implemented new depreciation rates, modified from the rates approved in 2007, that reflect revised services lives for various accounts. Centra also indicates that it plans to implement further revised depreciation rates effective April 1, 2014 (or April 1, 2015) that will (a) use the Equal Life Group or ELG procedure and (b) eliminate asset retirement costs from depreciation rates.

- c) (i) Did Centra seek prior approval from the Board to implement that change?**
- (ii) If so, please indicate when and in what Board Order the change was approved.**
- (iii) If not, explain why not.**

ANSWER:

By letter dated January 19, 2012, Centra advised the PUB that it had completed a depreciation study and would be implementing new depreciation rates, as determined from this study, effective April 1, 2011. Centra provided the new depreciation rates, as well as a comparison to the previously approved depreciation rates, as attachments to this letter. The PUB subsequently indicated that the matter would be considered at the next General Rate

Application. As such, Centra is seeking approval from the PUB of the April 1, 2011 depreciation rates as part of this Application.

CAC/CENTRA I-33

Subject: Depreciation

Reference: Appendix 5.8 pages 1-5

Preamble: Centra indicates that effective April 1, 2011 it implemented new depreciation rates, modified from the rates approved in 2007, that reflect revised services lives for various accounts. Centra also indicates that it plans to implement further revised depreciation rates effective April 1, 2014 (or April 1, 2015) that will (a) use the Equal Life Group or ELG procedure and (b) eliminate asset retirement costs from depreciation rates.

d) Is Centra seeking approval of the April 1, 2011 depreciation rates in this proceeding?

ANSWER:

Please see Centra's response to CAC/Centra 33(c).

CAC/CENTRA I-33

Subject: Depreciation

Reference: Appendix 5.8 pages 1-5

Preamble: Centra indicates that effective April 1, 2011 it implemented new depreciation rates, modified from the rates approved in 2007, that reflect revised services lives for various accounts. Centra also indicates that it plans to implement further revised depreciation rates effective April 1, 2014 (or April 1, 2015) that will (a) use the Equal Life Group or ELG procedure and (b) eliminate asset retirement costs from depreciation rates.

- e) (i) Is Centra seeking approval of the April 1, 2014 (or April 1, 2015) depreciation rates in this proceeding?**
- (ii) Is Centra seeking approval in this proceeding of the proposed adoption of the ELG procedure and the elimination of asset retirement costs from depreciation rates?**

ANSWER:

Centra is not seeking approval in this Application of accounting changes associated with the implementation of IFRS, including the move to the ELG methodology of depreciation or the removal of net salvage from depreciation rates.

CAC/CENTRA I-35

Subject: Depreciation – Increases for 2012/13 and 2013/14

Reference: Tab 5, Schedule 5.7.0 (Depreciation Expense) at page 24; Tab 5 (variance analysis) at page 26.

Preamble: The referenced table at Schedule 4.7.0 shows total depreciation expense for 2011/12 slightly lower than the previous year, which Centra indicates is the result of implementing lower depreciation rates associated with revised service life/lowa curve estimates implemented in April 2011. The forecast 2012/13 and 2013/14 depreciation expenses show increases of approximately \$2 million and \$2.5 million, respectively, which represent 8.3% and 8.9% increases. These are explained at page 26 of Tab 5 as being the result of “additional depreciation and amortization on the in-service amounts of DSM programs, and SCADA.”

Please provide a complete explanation of the DSM and SCADA-related drivers of the large percentage increases in depreciation expenses for 2012/13 and 2013/14, including descriptions of the additional investments, references to where they are discussed in the application, and information showing the derivation of the increases.

ANSWER:

The depreciation and amortization of the DSM program additions do not begin to depreciate until the start of the following fiscal year. The 2011/12 additions of \$10.3 million provided in Tab 5, Appendix 5.9, Schedule 5.9.4, would start amortization in 2012/13 which would drive an increase in depreciation and amortization expense over the previous year. Please refer to Tab 7, Appendix 7.2 pages 19 to 34 for descriptions of the DSM programs.

Please refer to Tab 9, Section 9.2.5 Plant Additions – 2010/11, pages 29 to 30 for a description of the SCADA system. The increase in depreciation as a result of SCADA is due to the original SCADA system becoming fully depreciated and retired in 2009/10. The replacement system was forecast to be placed in-service and start depreciating in 2012/13.

CAC/CENTRA I-36

Subject: Depreciation – Changes to depreciation rates effective April 1, 2011.

Reference: Tab 5, page 25 at line 20; Appendix 5.8 at pages 2-3.

Preamble: Centra indicates that the Gannett Fleming depreciation study recommended service life changes for various asset groups, which were implemented April 1, 2011. The selection of survivor curves is discussed in the Gannett Fleming report at pages II-24 through II-27 for Transmission-Mains, Distribution-Mains, and Distribution-Services and at page 8 of Appendix 5.8 there is a schedule showing the recommended survivor curves for all accounts.

- a) For each of the asset groups or classes for which survivor curves different from the ones applied in the 2007 depreciation study are now recommended by Gannett Fleming and adopted by Centra, please identify the accounts for which the survivor curves have changed and the old and new recommended survivor curves.**

ANSWER:

In the 2010 Depreciation Study, Gannett Fleming recommended changes to survivor curves for the following accounts:

Acct	Depreciable Group	Estimated Survivor Curve	
		2005 Depreciation Study ¹	2010 Depreciation Study ²
<u>TRANSMISSION</u>			
463.00	Structures & Improvements - M&R	45-R3	50-R5
464.00	Structures & Improvements - Other	45-R3	50-R5
465.00	Mains	65-S2.5	65-R4
467.00	Measuring & Regulating Equipment	40-S3	50-S2.5
<u>DISTRIBUTION</u>			
472.00	Structures & Improvements	40-R1	45-R1.5
473.00	Services	50-R2.5	55-R2.5
474.00	Regulators & Meter Installations	40-R4	45-R4
475.00	Mains	65-R3	65-R4
477.00	Measuring & Regulating Equipment	31-R2	35-R2
477.10	Telemetry Equipment	15-R3	16-S6
478.00	Meters	28-R3	26-S1.5
<u>GENERAL PLANT</u>			
482.00	Structures & Improvements	22-R3	45-R3
484.00	Transportation Equipment	8-R3	10-R5
485.00	Heavy Work Equipment	15-L1.5	20-R5

¹ Implemented April 1, 2007

² Implemented April 1, 2011

CAC/CENTRA I-36

Subject: Depreciation – Changes to depreciation rates effective April 1, 2011.

Reference: Tab 5, page 25 at line 20; Appendix 5.8 at pages 2-3.

Preamble: Centra indicates that the Gannett Fleming depreciation study recommended service life changes for various asset groups, which were implemented April 1, 2011. The selection of survivor curves is discussed in the Gannett Fleming report at pages II-24 through II-27 for Transmission-Mains, Distribution-Mains, and Distribution-Services and at page 8 of Appendix 5.8 there is a schedule showing the recommended survivor curves for all accounts.

b) For the major asset accounts for which new survivor curves were recommended (including Transmission-Mains, Distribution-Mains, Distribution-Services, Distribution-Measuring and Regulating Equipment, Distribution-Meters), please provide figures similar to those shown at pages II-20 through II-23 of the Gannett Fleming Report showing the original survivor curve, the lowa curve recommended by Gannett Fleming in 2010, and the lowa curve that was recommended for the account in the 2007 depreciation study.

ANSWER:

The following response was provided by Gannett Fleming.

For each of the accounts identified in the response to CAC/CENTRA I-36(a), the following graphs provide the observed life table (displayed as black dots), the lowa curve

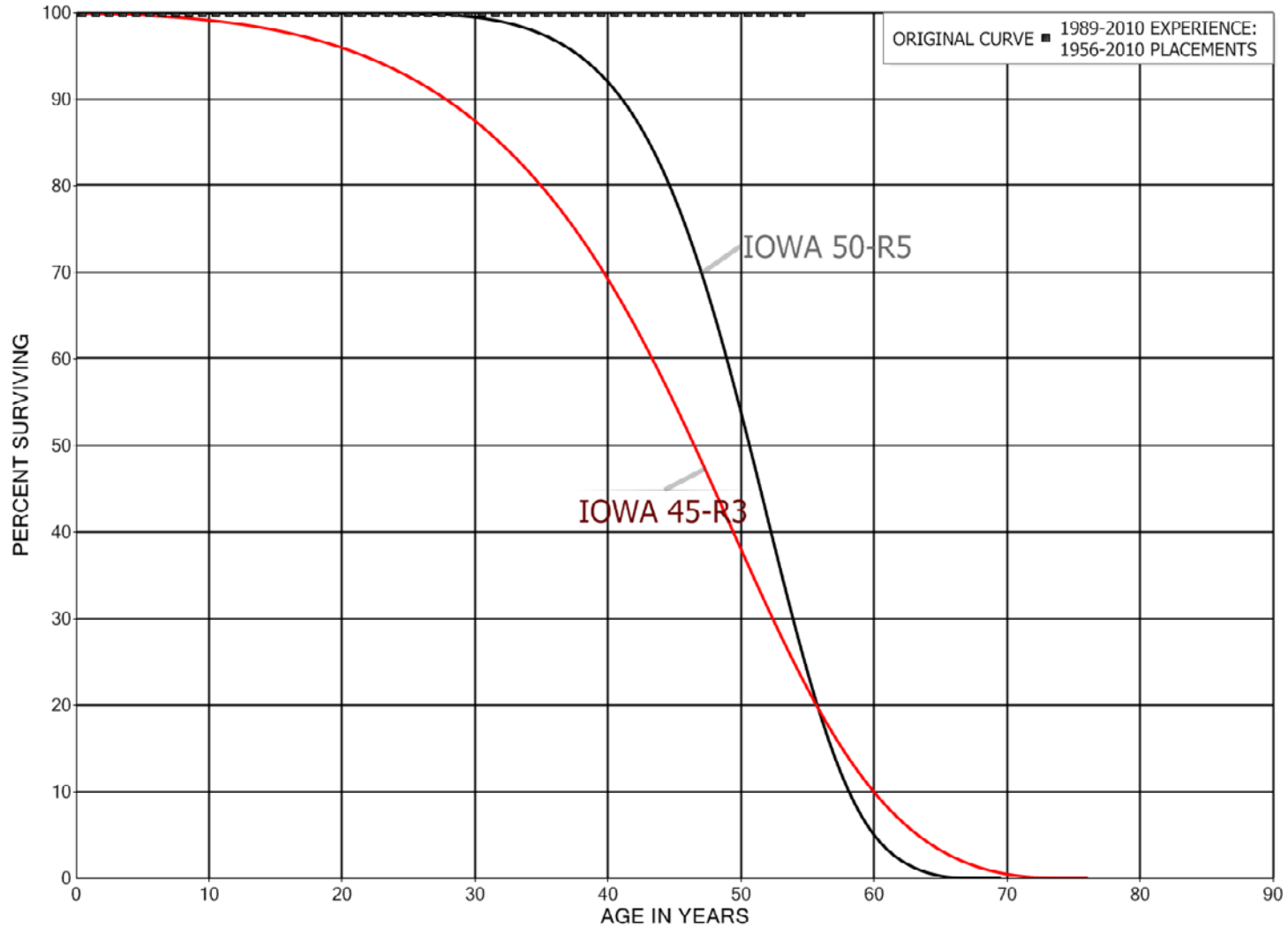
recommended by Gannett Fleming in the 2007 Depreciation Study (displayed as a red curve) and the Gannett Fleming recommendation from the 2010 Depreciation Study (displayed as a black curve).

Centra Gas Manitoba Inc. 2013/14 General Rate Application

CENTRA GAS MANITOBA INC.

ACCOUNT 463.00 - STRUCTURES AND IMPROVEMENTS - MEASURING AND REGULATING

ORIGINAL AND SMOOTH SURVIVOR CURVES

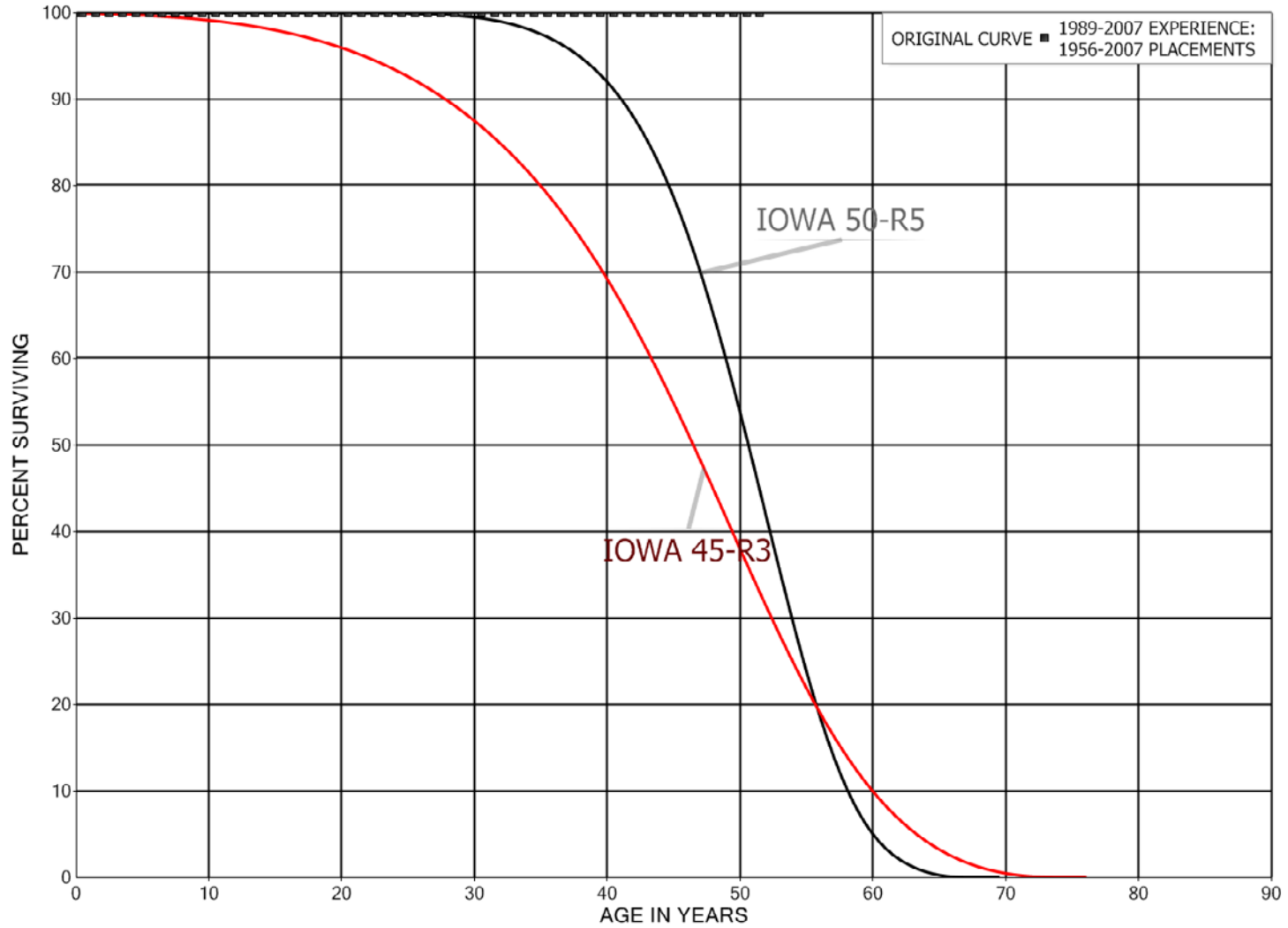


Centra Gas Manitoba Inc. 2013/14 General Rate Application

CENTRA GAS MANITOBA INC.

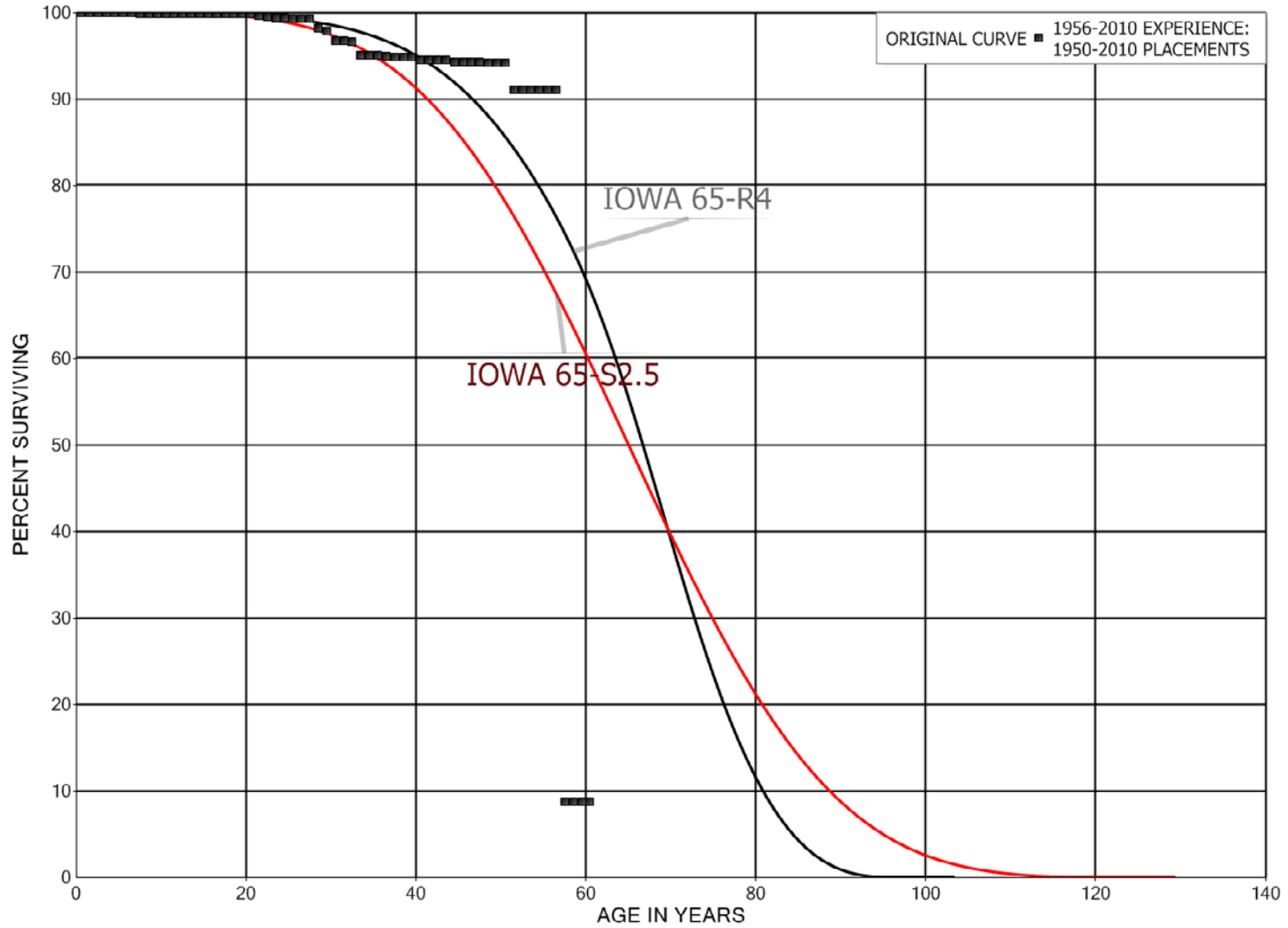
ACCOUNT 464.00 - STRUCTURES AND IMPROVEMENTS - OTHER

ORIGINAL AND SMOOTH SURVIVOR CURVES



Centra Gas Manitoba Inc. 2013/14 General Rate Application

CENTRA GAS MANITOBA INC.
ACCOUNT 465.00 - MAINS - TRANSMISSION
ORIGINAL AND SMOOTH SURVIVOR CURVES

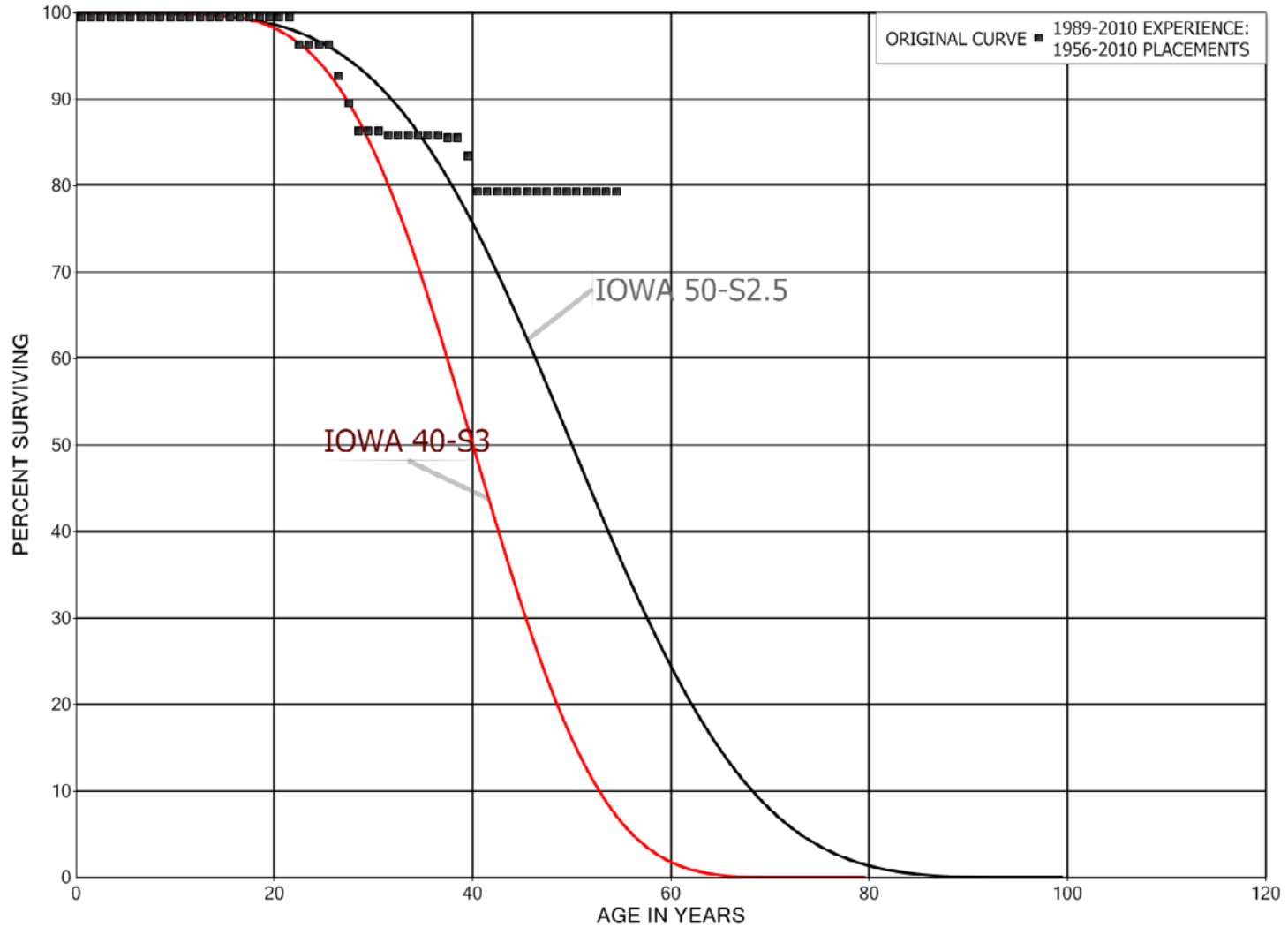


Centra Gas Manitoba Inc. 2013/14 General Rate Application

CENTRA GAS MANITOBA INC.

ACCOUNT 467.00 - MEASURING AND REGULATING EQUIPMENT

ORIGINAL AND SMOOTH SURVIVOR CURVES

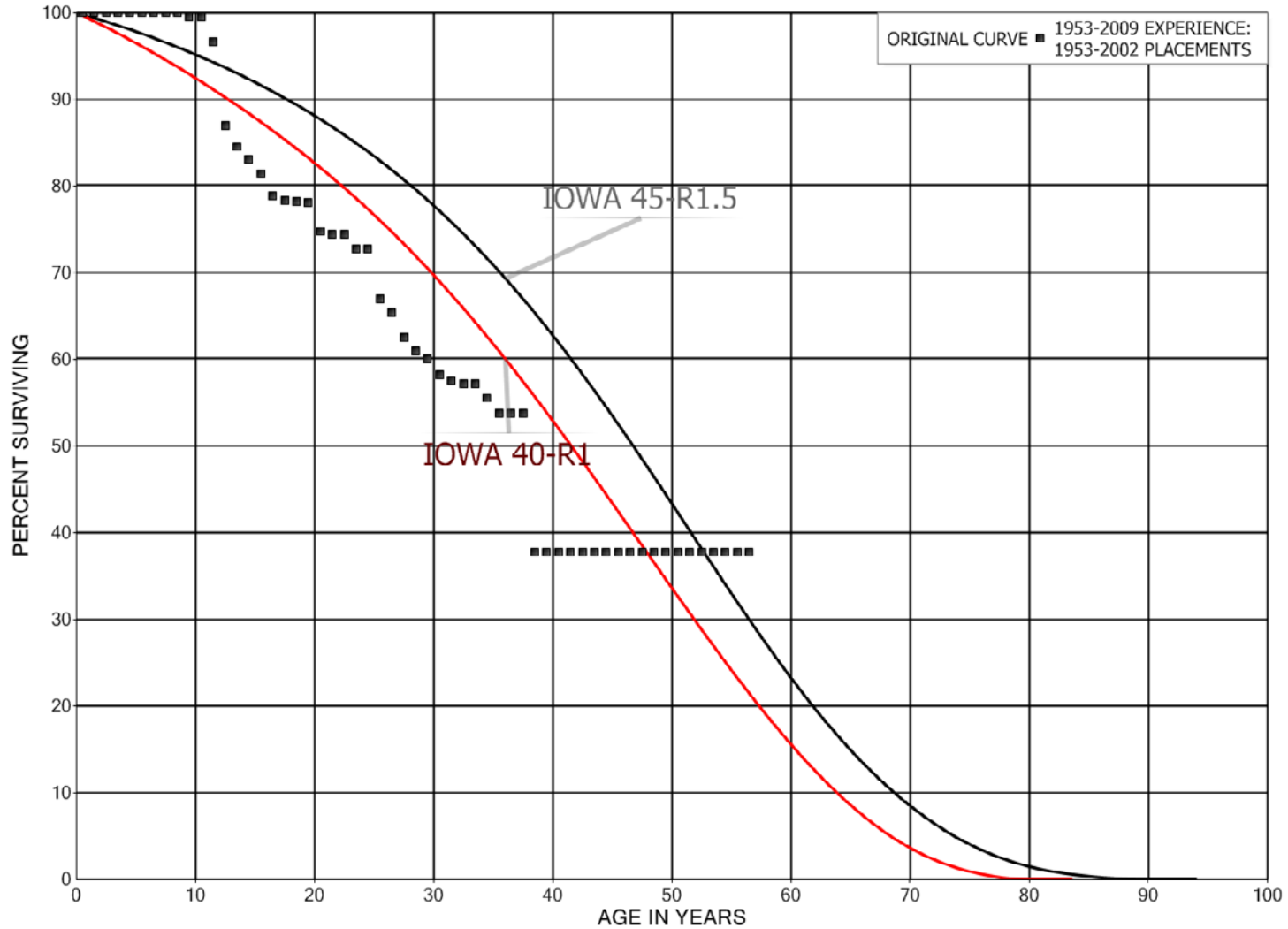


Centra Gas Manitoba Inc. 2013/14 General Rate Application

CENTRA GAS MANITOBA INC.

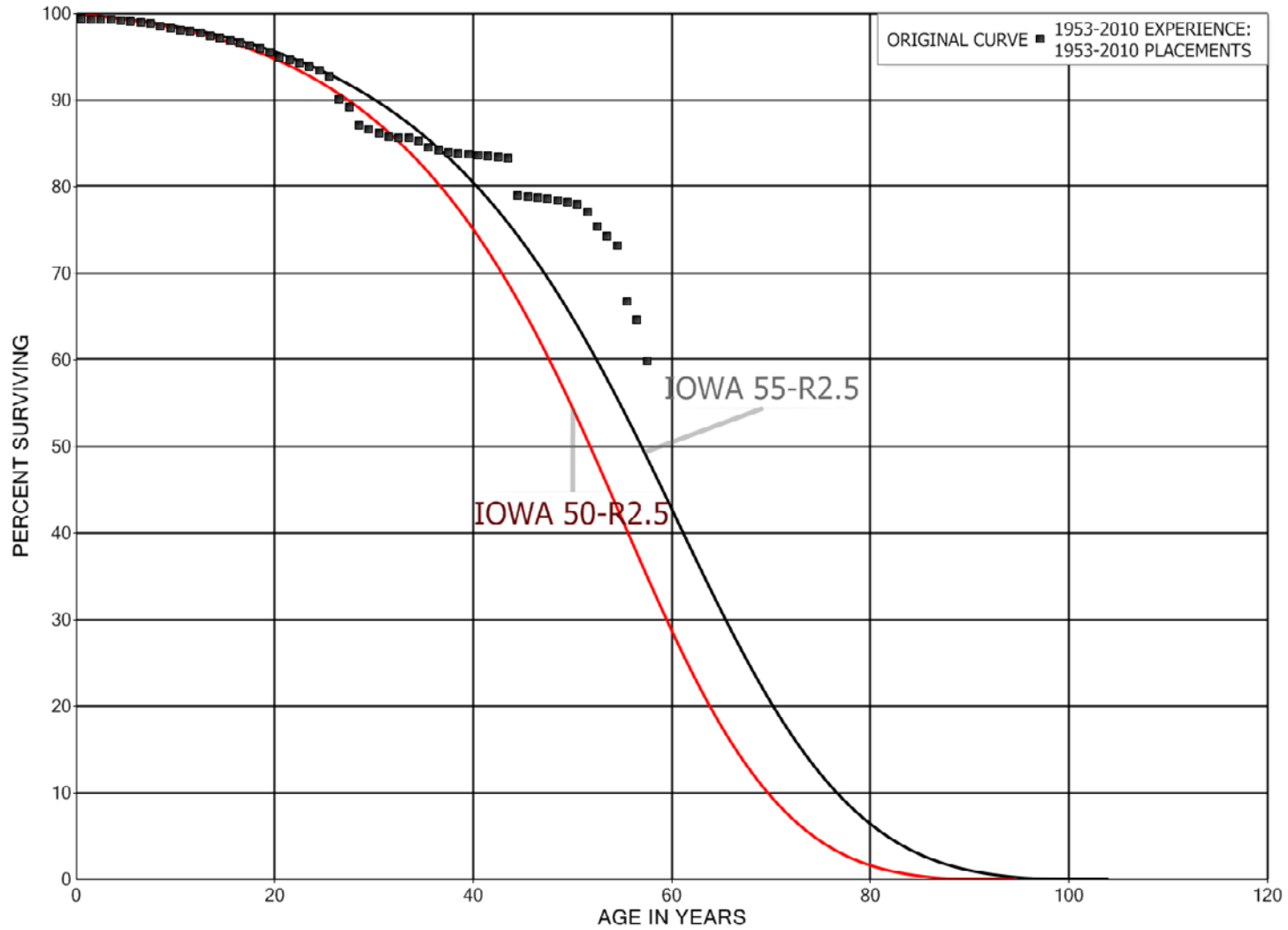
ACCOUNT 472.00 - STRUCTURES AND IMPROVEMENTS - TRANSMISSION

ORIGINAL AND SMOOTH SURVIVOR CURVES



Centra Gas Manitoba Inc. 2013/14 General Rate Application

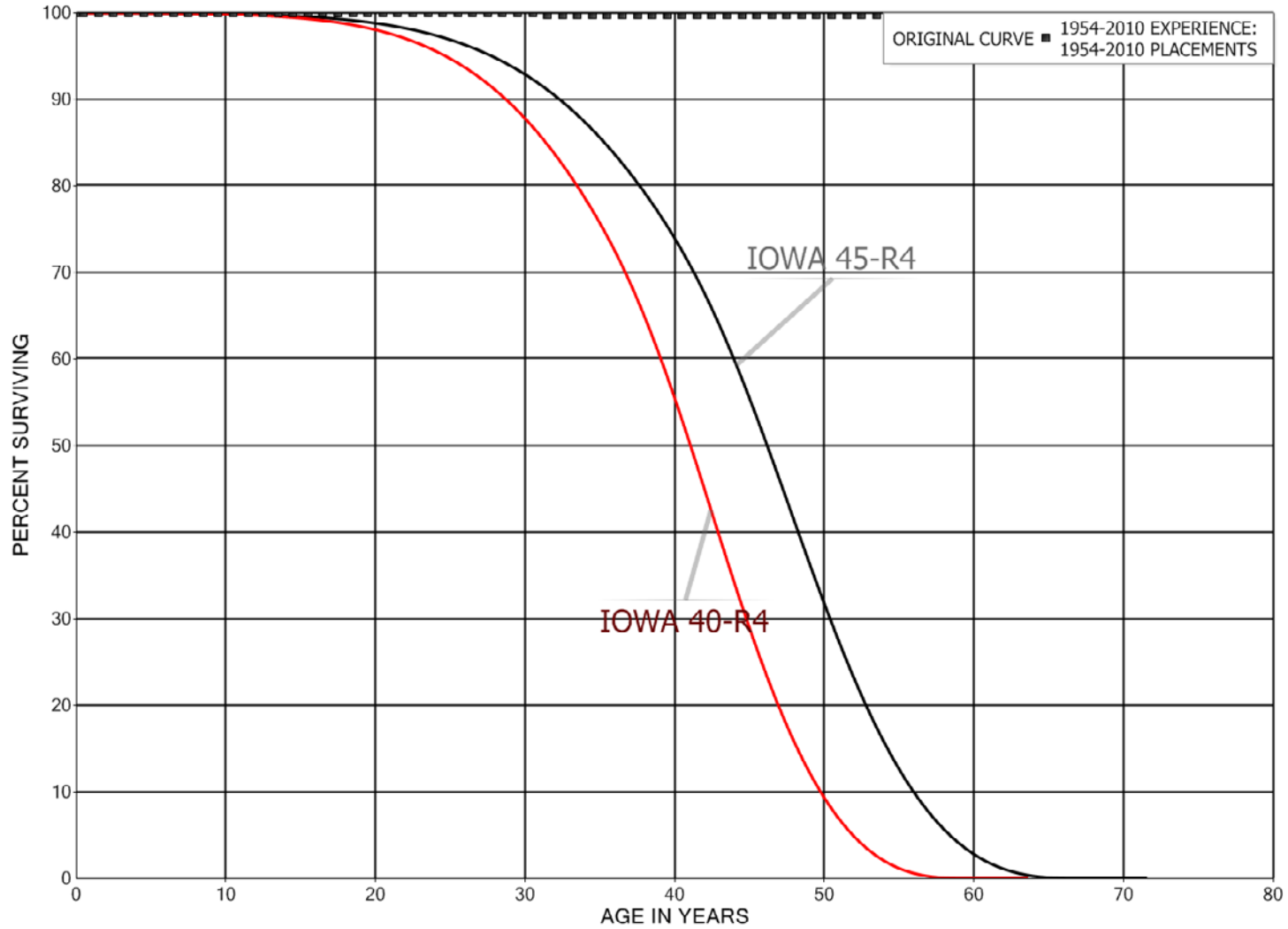
CENTRA GAS MANITOBA INC.
ACCOUNT 473.00 - SERVICES - DISTRIBUTION
ORIGINAL AND SMOOTH SURVIVOR CURVES



CENTRA GAS MANITOBA INC.

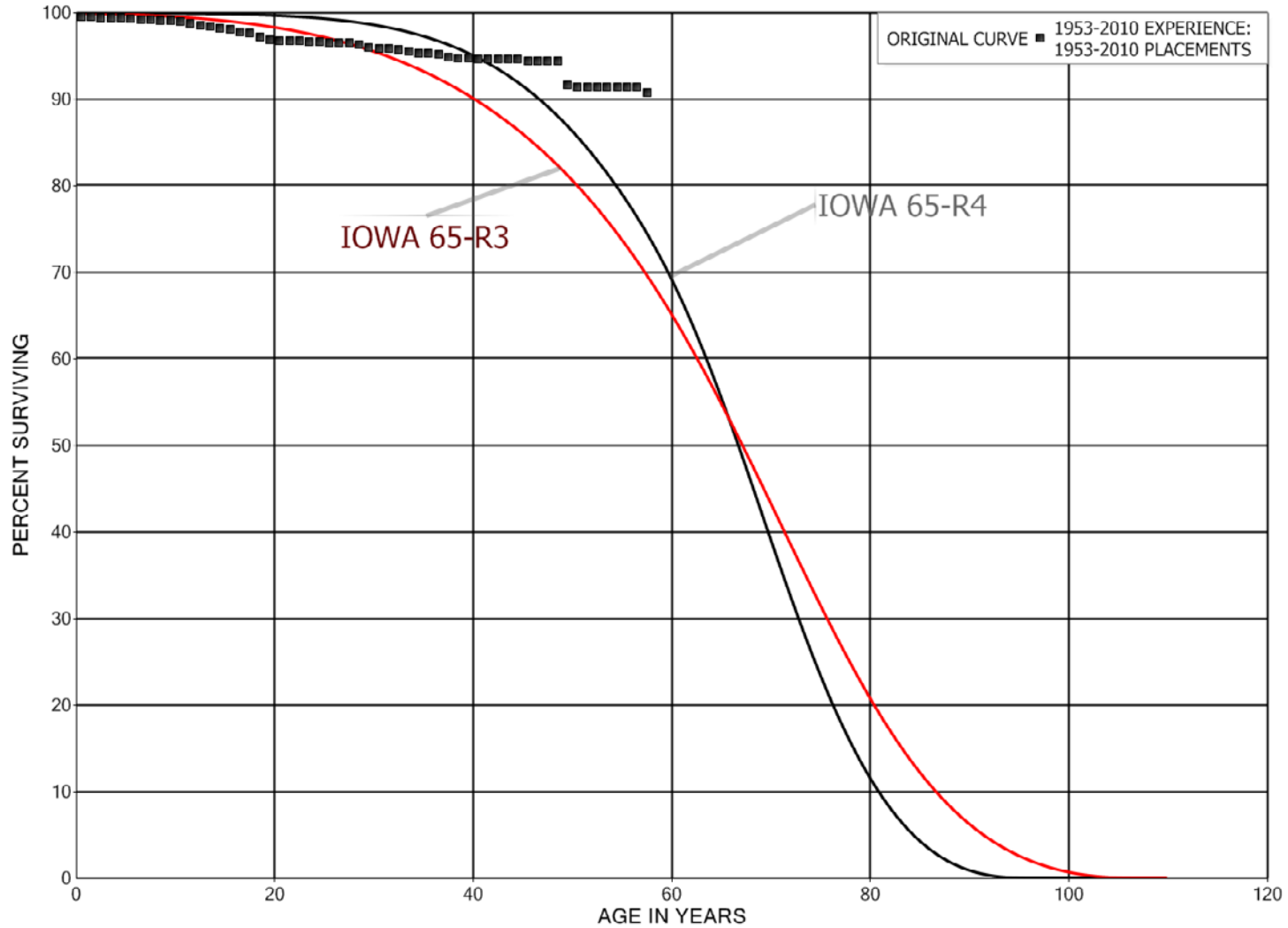
Centra Gas Manitoba Inc. 2013/14 General Rate Application

ACCOUNT 474.00 - REGULATORS AND METERS INSTALLATIONS - DISTRIBUTION
ORIGINAL AND SMOOTH SURVIVOR CURVES

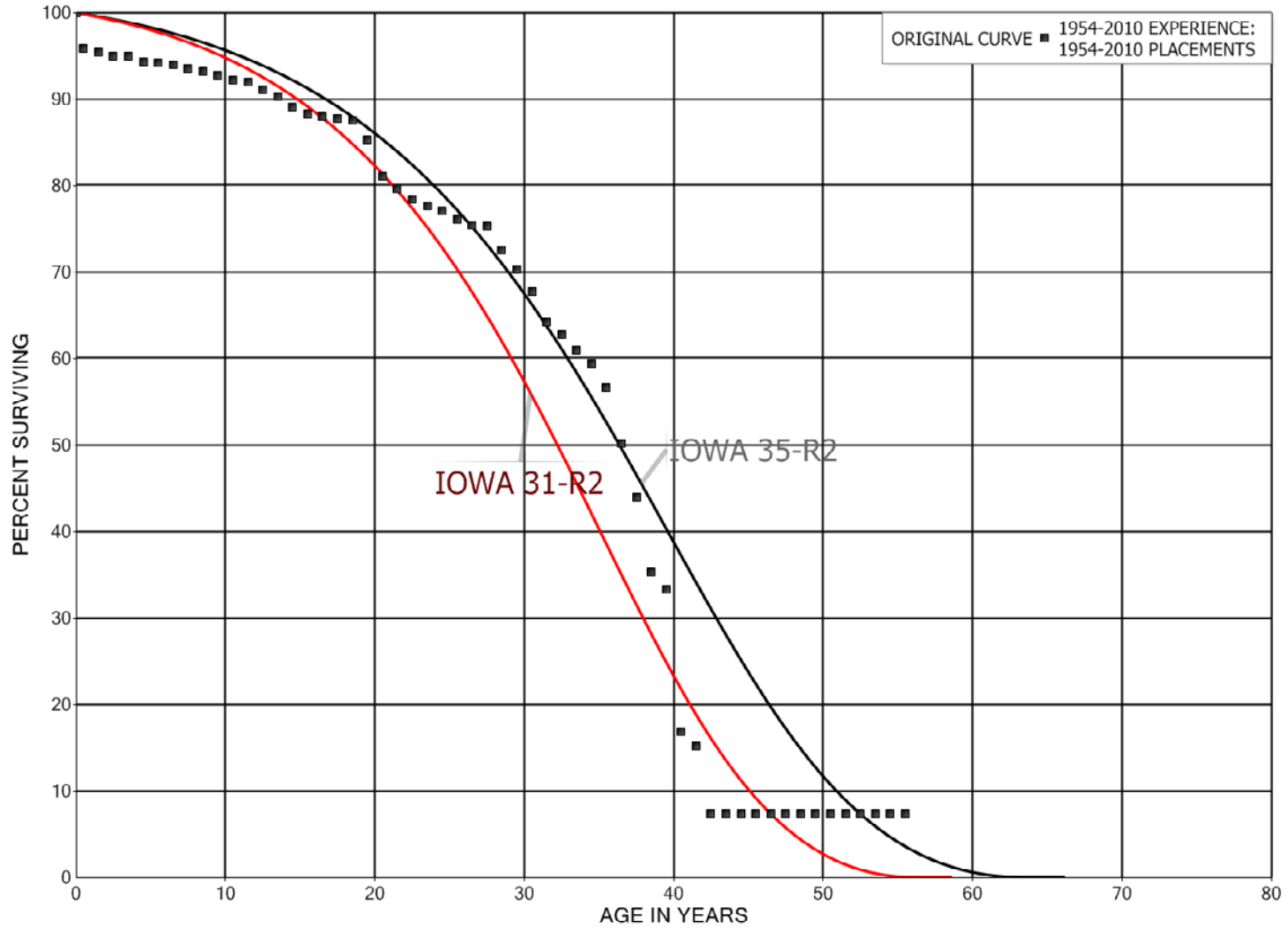


CENTRA GAS MANITOBA INC.
ACCOUNT 475.00 - MAINS - DISTRIBUTION

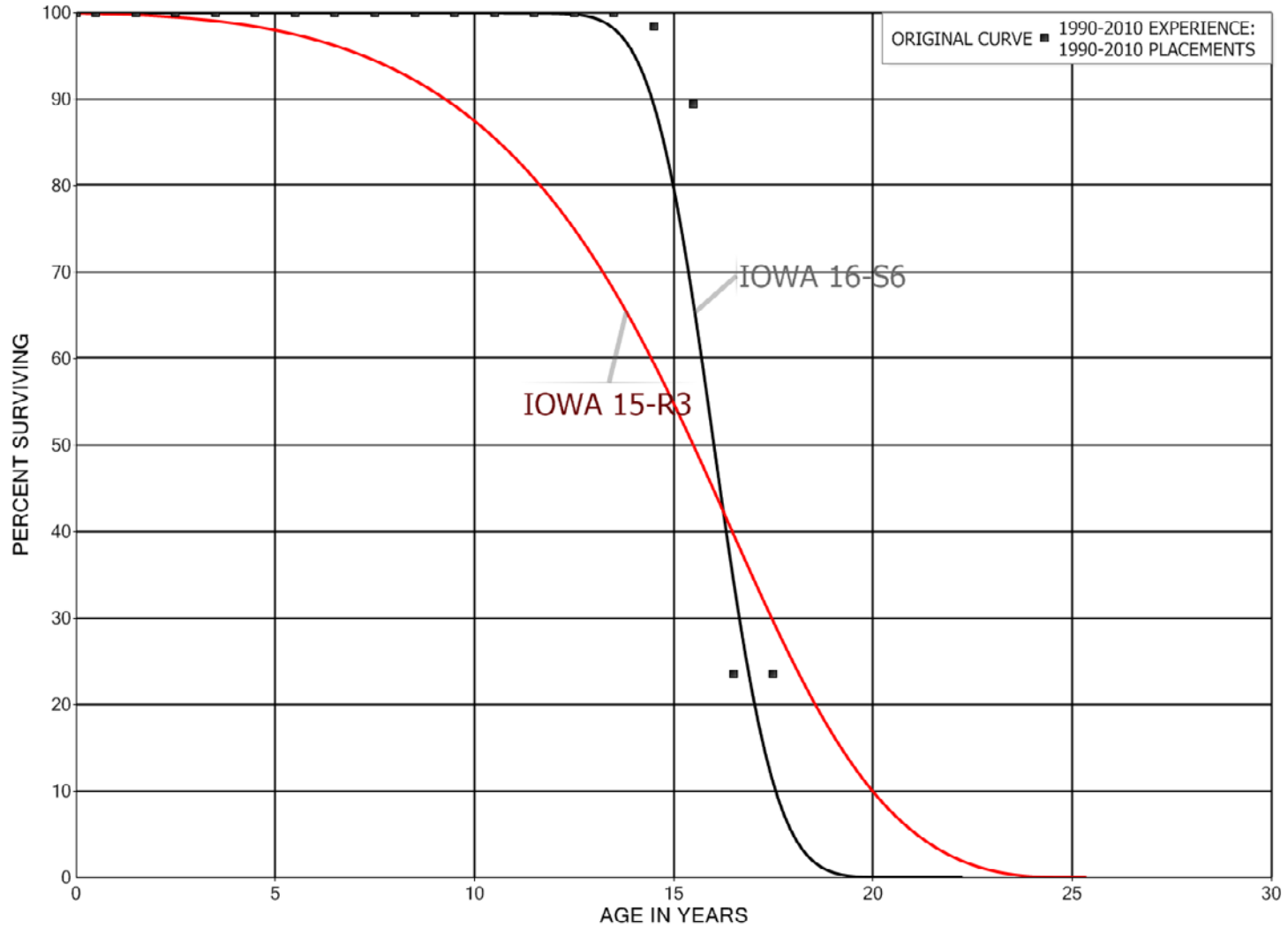
ORIGINAL AND SMOOTH SURVIVOR CURVES



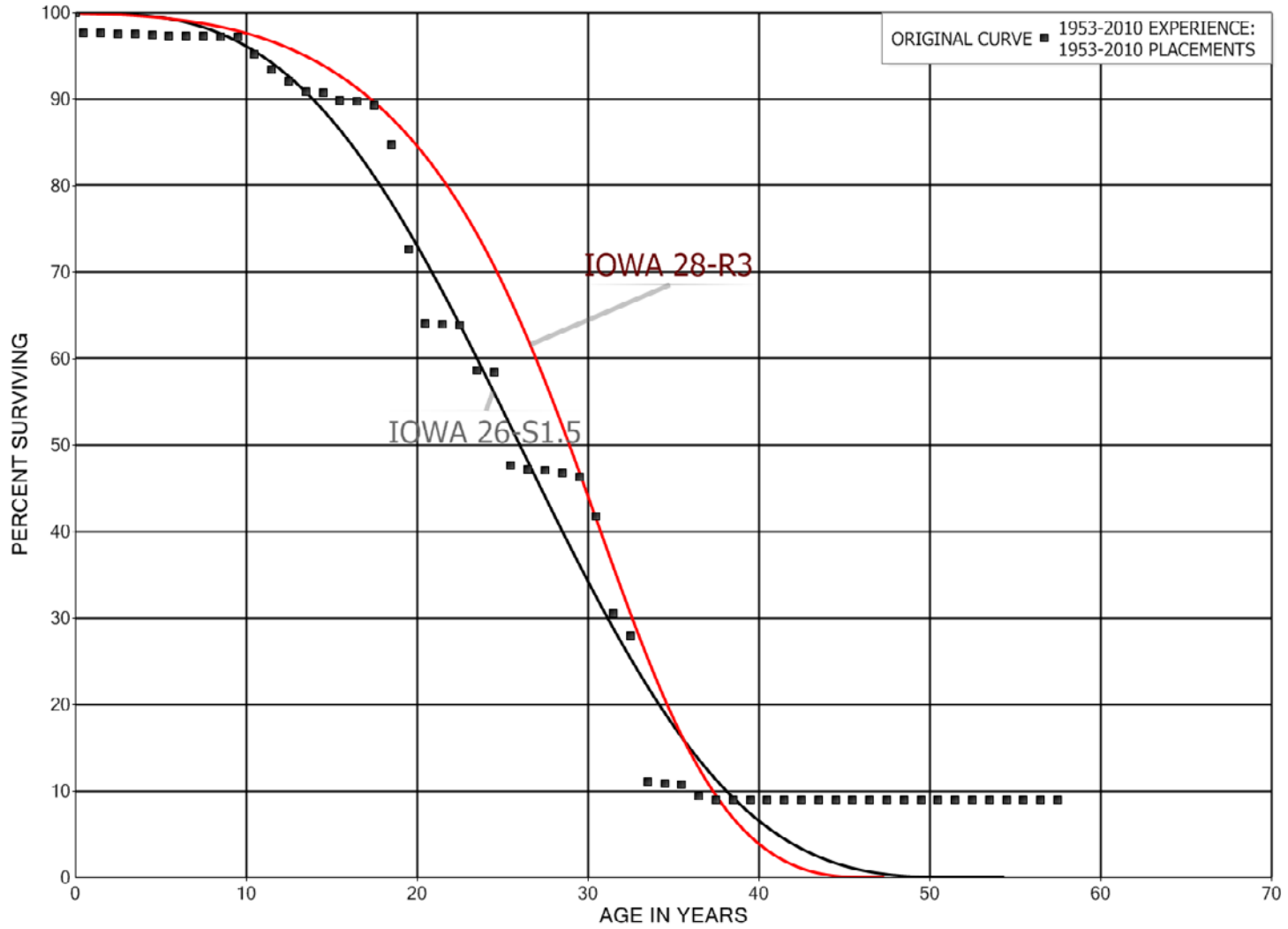
CENTRA GAS MANITOBA INC.
 ACCOUNT 477.00 - MEASURING AND REGULATING EQUIPMENT - DISTRIBUTION
 ORIGINAL AND SMOOTH SURVIVOR CURVES



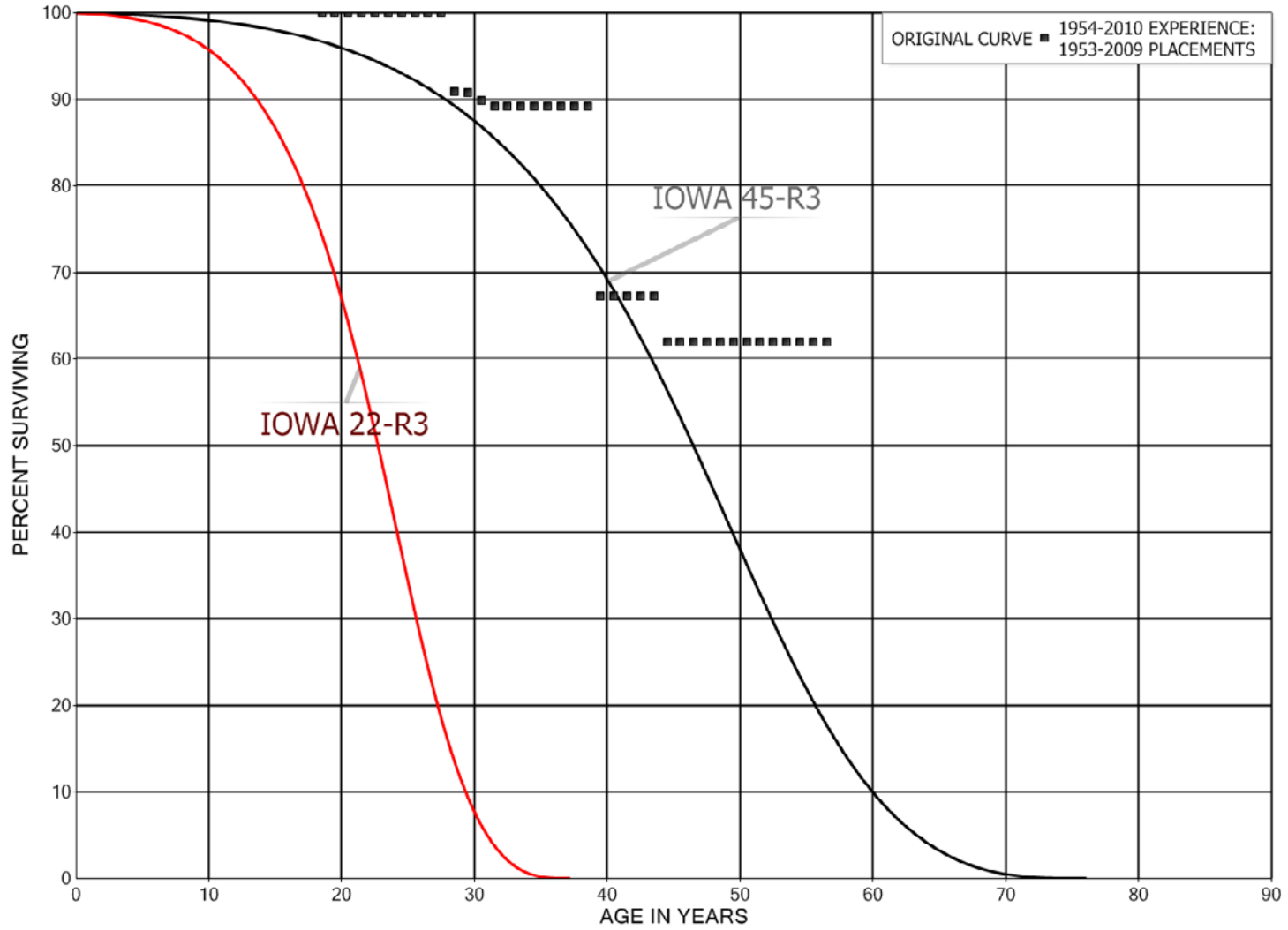
CENTRA GAS MANITOBA INC.
 ACCOUNT 477.10 - TELEMETRY EQUIPMENT - DISTRIBUTION
 ORIGINAL AND SMOOTH SURVIVOR CURVES



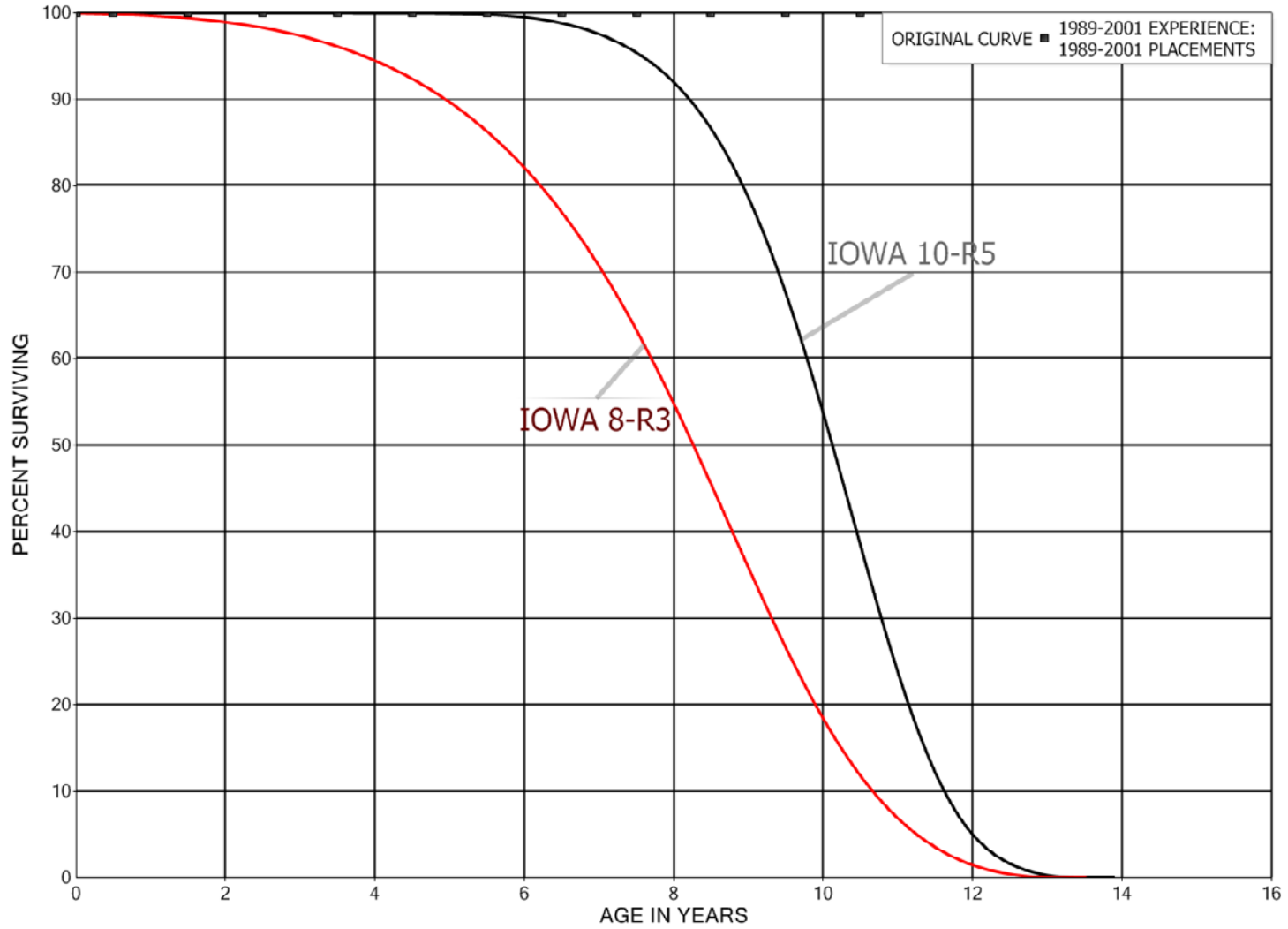
CENTRA GAS MANITOBA INC.
 ACCOUNT 478.00 - METERS - DISTRIBUTION
 ORIGINAL AND SMOOTH SURVIVOR CURVES



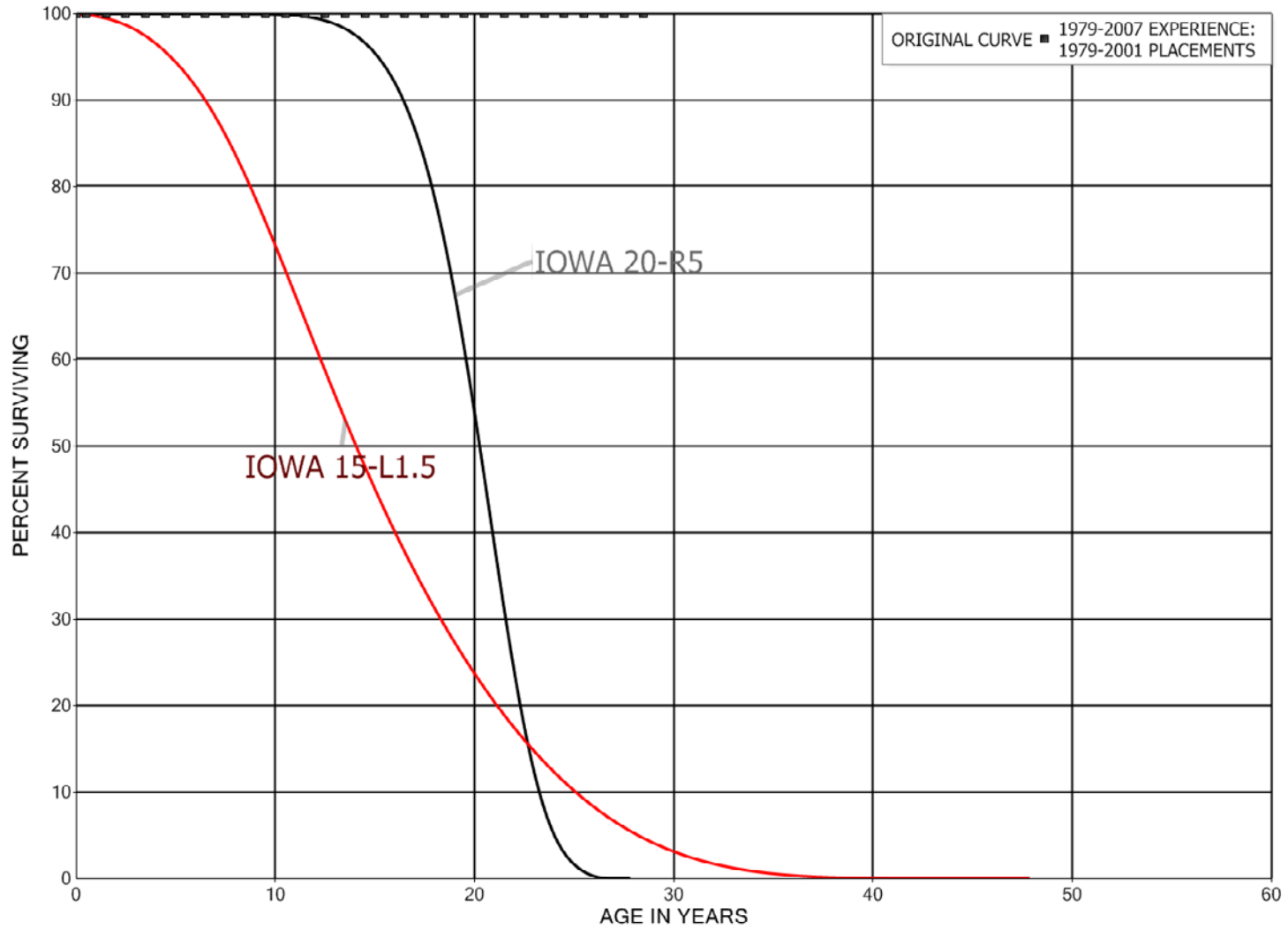
CENTRA GAS MANITOBA INC.
 ACCOUNT 482.00 - STRUCTURES AND IMPROVEMENTS - GENERAL PLANT
 ORIGINAL AND SMOOTH SURVIVOR CURVES



CENTRA GAS MANITOBA INC.
 ACCOUNT 484.00 - TRANSPORTATION EQUIPMENT
 ORIGINAL AND SMOOTH SURVIVOR CURVES



CENTRA GAS MANITOBA INC.
ACCOUNT 485.00 - HEAVY WORK EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES



CAC/CENTRA I-37

Subject: Cost Allocation – Changes

Reference: Tab 11, section 11-3 at page 6; Tab 11 at page 7, lines 6-15

Preamble: At page 6 Centra indicates that is not proposing any substantial changes in its cost allocation methodology, but says that s.11-3 provides discussion of “refinements made”. At page 7 Centra discusses the allocation of DSM related costs and says that it has moved to functionalizing DSM costs to the Transmission function and classifying them on the basis of volumes rather than number of customers, and that this change will result in a better alignment between costs and their driver and “avoid large increases in the Basic Monthly Charge (BMC) for classes with relatively few customers.

- a) Please provide a more complete explanation of the changes to the allocation of DSM-related costs that are described in this section, including a description of the costs being allocated, the level of those costs, the prior approaches to functionalizing and classifying those costs and the rationale for them, the rationale for the change, and the nature or direction of the resulting change in the allocation of these costs as amongst the various rate classes, and an estimate of the quantitative extent of the shift in cost allocation.**

ANSWER:

Please see Centra’s response to PUB/Centra I-104.

CAC/CENTRA I-37

Subject: Cost Allocation – Changes

Reference: Tab 11, section 11-3 at page 6; Tab 11 at page 7, lines 6-15

Preamble: At page 6 Centra indicates that is not proposing any substantial changes in its cost allocation methodology, but says that s.11-3 provides discussion of “refinements made”. At page 7 Centra discusses the allocation of DSM related costs and says that it has moved to functionalizing DSM costs to the Transmission function and classifying them on the basis of volumes rather than number of customers, and that this change will result in a better alignment between costs and their driver and “avoid large increases in the Basic Monthly Charge (BMC) for classes with relatively few customers.

b) Please explain how and why the proposed approach will “avoid large increases in the Basic Monthly Charge for classes with relatively few customers”.

ANSWER:

Please see Centra’s response to PUB/Centra I-104.

CAC/CENTRA I-37

Subject: Cost Allocation – Changes

Reference: Tab 11, section 11-3 at page 6; Tab 11 at page 7, lines 6-15

Preamble: At page 6 Centra indicates that is not proposing any substantial changes in its cost allocation methodology, but says that s.11-3 provides discussion of “refinements made”. At page 7 Centra discusses the allocation of DSM related costs and says that it has moved to functionalizing DSM costs to the Transmission function and classifying them on the basis of volumes rather than number of customers, and that this change will result in a better alignment between costs and their driver and “avoid large increases in the Basic Monthly Charge (BMC) for classes with relatively few customers.

c) Please identify and explain all other material refinements to Centra’s methodology for allocating system costs.

ANSWER:

Please see Centra’s response to PUB/Centra I-104.

CAC/CENTRA I-39

Subject: Operating, Maintenance, and Administrative (“OM&A”) costs – Building/rent expense.

Reference: Tab 5

Preamble: In its last GRA Centra was directed to include in its forecast expenses for rate purposes only amounts consistent with its prior premises at 444 St. Mary, rather than Manitoba Hydro’s new building.

- a) Please clarify whether the OM&A expenses forecast by Centra, e.g. as shown for a “program view” at Tab 5, Schedule 5.5.0 at page 16, reflect an allocation to Centra of the costs associated with Centra’s occupancy of space in the new Manitoba Hydro building, rather than the lower costs associated with Centra’s old premises.**

ANSWER:

Please see Centra’s response to PUB/Centra I-22(b) for an explanation of the Cost Allocation Methodology related to the new head office.

CAC/CENTRA I-39

Subject: Operating, Maintenance, and Administrative (“OM&A”) costs – Building/rent expense.

Reference: Tab 5

Preamble: In its last GRA Centra was directed to include in its forecast expenses for rate purposes only amounts consistent with its prior premises at 444 St. Mary, rather than Manitoba Hydro’s new building.

b) If the response to (a) is that the costs allocated to Centra reflect the full cost of occupying space in the Manitoba Hydro building, please explain why that is appropriate given the directions from the Board on this point in its decision on Centra’s last GRA.

ANSWER:

No incremental costs have been allocated to Centra for the new head office.

CAC/CENTRA I-39

Subject: Operating, Maintenance, and Administrative (“OM&A”) costs – Building/rent expense.

Reference: Tab 5

Preamble: In its last GRA Centra was directed to include in its forecast expenses for rate purposes only amounts consistent with its prior premises at 444 St. Mary, rather than Manitoba Hydro’s new building.

c) If the response to (a) is that the costs allocated to Centra reflect the full cost of occupying space in the Manitoba Hydro building, please indicate when that change is reflected in the OM&A figures shown in Schedule 5.5.0 and, for each year, the amount of the associated increase in Centra’s OM&A expense.

ANSWER:

Please see Centra’s response to CAC/Centra I-39(b).

CAC/CENTRA I-40

Subject: Impact of changes in capitalization policy on OM&A expenses

Reference: Appendix 5.7, table at page 4 showing details of “accounting changes”; table at page 2 showing OM&A and impact of accounting changes; Tab 4 at page 5, line 16.

Preamble: Centra indicates at page 2 of Appendix 5.7 that, in the absence of the identified accounting changes, Centra’s OM&A expenses would have increased modestly on an annual basis over the period shown, but with the accounting changes those expenses appear to increase by over 11% from 2010/11 to 2012/13. At Tab 4, page 5 Centra suggests that “the transition to IFRS has a minor impact on the overall revenue requirement as the increases in OM&A expenses will be more than offset by decreases in depreciation & amortization and capital & other taxes.”

- a) (i) Are the “reductions to costs capitalized” shown in the table at page 4 of Appendix 5.7 required by IFRS?**
- (ii) If not, what is the reason for the changes and why has Centra implemented those changes over the past several years?**
- (iii) If they are, why did Centra not wait until it actually adopts IFRS to implement those changes?**

ANSWER:

- (i) The reductions to costs capitalized as presented in the table at page 4 of Appendix 5.7 of this application are both consistent with the accounting practices of other utilities under current Canadian GAAP and would be required under IFRS as IFRS does not permit the capitalization of general and administrative overheads.

- (ii) Please see Centra's response to part (i).

- (iii) As indicated in the response to CAC/Centra I-8(a), changes made to Centra's capitalization practices with respect to general and administrative overhead were implemented so as to make the Corporation's practices consistent with those of other Canadian utilities under CGAAP.

CAC/CENTRA I-40

Subject: Impact of changes in capitalization policy on OM&A expenses

Reference: Appendix 5.7, table at page 4 showing details of “accounting changes”; table at page 2 showing OM&A and impact of accounting changes; Tab 4 at page 5, line 16.

Preamble: Centra indicates at page 2 of Appendix 5.7 that, in the absence of the identified accounting changes, Centra’s OM&A expenses would have increased modestly on an annual basis over the period shown, but with the accounting changes those expenses appear to increase by over 11% from 2010/11 to 2012/13. At Tab 4, page 5 Centra suggests that “the transition to IFRS has a minor impact on the overall revenue requirement as the increases in OM&A expenses will be more than offset by decreases in depreciation & amortization and capital & other taxes.”

- c) (i) Is it the case that, without the changes that have been made to capitalization over the period 2010/11 to 2012/13, Centra’s net income would have been higher by approximately \$2.0 million in each of the first two years and \$4.9 million in 2012/13?**
- (ii) If not, please explain why not and show the impact of the identified accounting changes on net income.**

ANSWER:

- (i) Centra confirms that without the changes that have been made to the capitalization of general and administrative overheads, Centra's net income would have been higher by approximately \$2.0 million in each of the years 2010/11 and 2011/12 and approximately \$4.9 million higher in 2012/13.

- (ii) Please see Centra's response to CAC/Centra I-40(c)(i).

CAC/CENTRA I-40

Subject: Impact of changes in capitalization policy on OM&A expenses

Reference: Appendix 5.7, table at page 4 showing details of “accounting changes”; table at page 2 showing OM&A and impact of accounting changes; Tab 4 at page 5, line 16.

Preamble: Centra indicates at page 2 of Appendix 5.7 that, in the absence of the identified accounting changes, Centra’s OM&A expenses would have increased modestly on an annual basis over the period shown, but with the accounting changes those expenses appear to increase by over 11% from 2010/11 to 2012/13. At Tab 4, page 5 Centra suggests that “the transition to IFRS has a minor impact on the overall revenue requirement as the increases in OM&A expenses will be more than offset by decreases in depreciation & amortization and capital & other taxes.”

d) With respect to Centra’s claim in Tab 4 at page 5 that OM&A changes related to “the transition to IFRS” will be “more than offset” by resulting reductions in other revenue requirement elements, does that assertion apply to the OM&A increases that have resulted or will result in 2013/14 from the changes in capitalization shown in Appendix 5.7 at page 4? Alternatively, does it apply only to changes that Centra anticipates will be made after IFRS is fully implemented?

ANSWER:

The assertion with respect to offsets of the IFRS changes applies to the IFRS transition year and onwards.

CAC/CENTRA I-40

Subject: Impact of changes in capitalization policy on OM&A expenses

Reference: Appendix 5.7, table at page 4 showing details of “accounting changes”; table at page 2 showing OM&A and impact of accounting changes; Tab 4 at page 5, line 16.

Preamble: Centra indicates at page 2 of Appendix 5.7 that, in the absence of the identified accounting changes, Centra’s OM&A expenses would have increased modestly on an annual basis over the period shown, but with the accounting changes those expenses appear to increase by over 11% from 2010/11 to 2012/13. At Tab 4, page 5 Centra suggests that “the transition to IFRS has a minor impact on the overall revenue requirement as the increases in OM&A expenses will be more than offset by decreases in depreciation & amortization and capital & other taxes.”

- e) Please provide an analysis showing the effects on the overall revenue requirement of any offsets to the OM&A increases shown at Appendix 5.7, page 4 that result from the indicated changes in capitalization practices, e.g. reductions in depreciation expense, capital taxes, financing costs, etc. If the “offsets” occur over an extended period, please provide a present-value analysis comparing the up-front OM&A costs to customers with the long-term benefit (in present value terms) associated with reductions in capital expenditures.**

ANSWER:

Please see Centra's response to PUB/Centra I-7(b) for a schedule (Schedule A) showing the effects on the overall revenue requirement of accounting changes under CGAAP and upon transition to IFRS.

The "offsets" (depreciation & amortization and capital & other taxes) as referenced on page 5 of Tab 4 occur in the first year of the transition to IFRS and continue throughout the forecast. As demonstrated in Schedules A & B of the response to PUB/Centra I-7(b), commencing in the IFRS transition year, reductions in annual expenses associated with depreciation & amortization and capital and other taxes more than offset increases to OM&A from the transition to IFRS. The offsets occur immediately in the year of transition to IFRS primarily as a result of the write-off of the rate-regulated accounts at the beginning of the transition year and the corresponding elimination of amortization on these accounts, the removal of the costs of gas meter exchanges from OM&A, as well as the removal of net salvage from depreciation rates upon transition to IFRS. Schedule B of PUB/Centra I-7(b), identifies that by fiscal 2022 (7 years after the transition to IFRS), the IFRS related offsets exceed the negative retained earnings impacts associated with the transition to IFRS by a total of \$7 million. Given that the negative retained earnings impacts of the transition to IFRS are recovered in net income over a relatively short time frame (i.e. 7 years) no net present value analysis has been undertaken.

CAC/CENTRA I-41

Subject: Impact of Accounting Changes on OM&A expense

Reference: Appendix 5.7, page 3, line 22.

Preamble: Centra says that the “increase to OM&A expense as a result of reduced capitalization of overhead will be partially offset by the removal of depreciation costs previously included in gas programs.”

Please explain what depreciation costs have been removed from gas programs, including discussions of the nature of the depreciation costs (i.e. depreciation of what assets?), the amounts that have been or will be removed, the timing of those removals, and from whom the costs that are removed from “gas programs” will be recovered (e.g. electric customers, gas customers through capital-related charges, etc.)

ANSWER:

Overhead and activity rates charged to gas programs previously included depreciation associated with building and IT infrastructure. Effective for the 2012/13 fiscal year, these costs were removed from overhead and activity charges and are no longer captured in the gas programs. Total depreciation expense removed related to Buildings is approximately \$800 thousand and related to IT Infrastructure is approximately \$1.3 million. Depreciation costs of administrative buildings and IT infrastructure are directly charged to Depreciation expense on Centra's income statement via the activity charges cost driver. Please refer to PUB/Centra I-20(b) for further information on cost drivers.

Please note that any of the depreciation that was previously charged to gas programs was removed in the line item entitled “less: depreciation, interest and taxes” in Schedule 5.5.0, line 14, as such these changes have no net effect on Centra’s OM&A costs.

CAC/CENTRA I-42

Subject: Accounting Changes – Intangible Assets

Reference: Appendix 5.7 at page 4, table; page 3 at line 10.

Preamble: For the period from 2008/09 through to 2013/14 the table indicates that Centra has reduced the capitalization of “intangible assets (costs)” by approximately \$1 million each year as “ineligible for capitalization”.

a) What are the intangible asset costs that are not eligible for capitalization? Why are they not eligible?

ANSWER:

The intangible asset costs not eligible for capitalization pertains to research and promotional expenditures related primarily to the Centra's DSM programs. As noted in the response to PUB/Centra I-7(b) (page 5 of 11), CICA section 3064 - *Goodwill and Intangible assets* does not permit the deferral of expenditures pertaining to research and promotion.

CAC/CENTRA I-42

Subject: Accounting Changes – Intangible Assets

Reference: Appendix 5.7 at page 4, table; page 3 at line 10.

Preamble: For the period from 2008/09 through to 2013/14 the table indicates that Centra has reduced the capitalization of “intangible assets (costs)” by approximately \$1 million each year as “ineligible for capitalization”.

b) Did Centra capitalize those costs for the purposes of fixing rates in the 2009/10 and 2010/11 GRA? If not, why does this increase in OM&A result from or represent an “accounting change” since the last GRA?

ANSWER:

Centra did capitalize research and promotion costs for setting rates in the 2009/10 and 2010/11 GRA. The CICA standard 3064 – *Goodwill & Intangible assets* was effective for Manitoba Hydro on April 1, 2009 and an analysis of the impacts of the new standard on Centra had not been performed as of the time of filing for the 2009/10 and 2010/11 GRA, which was based on the CGM08 forecast.

Section 3064 was implemented for Centra in 2009/10, and a retrospective adjustment as to the impact was applied in the 2008/09 fiscal year.

CAC/CENTRA I-43

Subject: Pension and Benefits – Change in discount rate

Reference: Appendix 5.7 at page 4, table; page 3 at line 10.

Preamble: Centra indicates that in 2011/12 it was necessary for Manitoba Hydro to “reduce its discount rate for the valuation of its pension and benefit obligations...”. The table at page 4 shows increases of \$0.9 million and \$1.1 million in OM&A expense for Centra for 2012/13 and 2013/14, respectively.

- a) Please confirm that the amounts indicated in the table represent Centra’s allocated portion of increases in Manitoba Hydro’s overall pension funding obligation for the referenced years, so are purely an added cost for Centra.**

ANSWER:

Centra confirms that the amounts indicated in the table represent Centra’s allocated portion of increases in Manitoba Hydro’s overall pension and benefit obligations for the referenced years and as a result of the change in accounting practice is an additional operating cost to Centra.

CAC/CENTRA I-43

Subject: Pension and Benefits – Change in discount rate

Reference: Appendix 5.7, page 4, table; page 3, line 13.

Preamble: Centra indicates that in 2011/12 it was necessary for Manitoba Hydro to “reduce its discount rate for the valuation of its pension and benefit obligations...”. The table at page 4 shows increases of \$0.9 million and \$1.1 million in OM&A expense for Centra for 2012/13 and 2013/14, respectively.

b) If not confirmed, please explain, and indicate where that OM&A cost increase for Centra is offset elsewhere.

ANSWER:

Please see Centra’s response to CAC/Centra I-43(a).

CAC/CENTRA I-44

Subject: Change in Classification – Operating Expense Recovery

Reference: Appendix 5.7, page 4, table

Preamble: The referenced table indicates that for 2012/13 and 2013/14 there is an approximately \$0.6 million increase in Centra’s OM&A because of the “reclassification” of Operating Expense Recovery.

a) (i) Please confirm that this change is neutral for Centra’s overall revenue requirement because the increase in OM&A is offset by an equal and offsetting increase in “other revenues”.

(ii) If not confirmed, please explain.

ANSWER:

Confirmed. This is a reclassification so there is no impact on Centra’s current revenue requirement.

CAC/CENTRA I-44

Subject: Change in Classification – Operating Expense Recovery

Reference: Appendix 5.7, page 4, table

Preamble: The referenced table indicates that for 2012/13 and 2013/14 there is an approximately \$0.6 million increase in Centra’s OM&A because of the “reclassification” of Operating Expense Recovery.

b) Please explain what “Operating Expense Recovery” amounts are and who they are recovered from.

ANSWER:

Operating Expense Recovery (previously classified as OM&A expense) consists of the recovery of expenses incurred or miscellaneous revenue collected from the following activities:

- Reconnection fee assessed on delinquent customer accounts which have had their service disconnected;
- NSF fees assessed on customer accounts;
- Large safe excavation and safety watches;
- Materials used when providing Burner Tip Services;
- Damage repairs to Centra property;
- Customer initiated meter moves;
- Spruce Siding Station testing and odourant checks;
- Third party billing for equipment financing; and

- Collection agency fees.

These amounts are recovered from the specific customer or third party who received the service and are now classified as Other Income on Centra's Income Statement.