Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Rates and revenues		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide the workpapers and electronic copies of the spreadsheets (with formulas intact) used to derive the Company's residential Proof of Revenue.

RATIONALE FOR QUESTION:

The impacts of rates on bills and revenues is to be considered.

RESPONSE:

Consistent with the PUB's ruling in Order 33/15 regarding the filing of electronic models, Manitoba Hydro is providing the Proof of Revenue schedules as an attachment in native Excel spreadsheet format.

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Topic:	Residential low-income needs and responses		
Subtopic:	Rates and revenues		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

For each rate category and subcategory shown in the Proof of Revenue, please provide:

i. The number of billing units assumed,
ii. The per unit charges under the current and proposed rates, and
iii. Total revenues from each unit charge, separately, under the current and proposed rates

RATIONALE FOR QUESTION:

The impacts of rates on bills and revenues is to be considered.

RESPONSE:

Please see Manitoba Hydro's responses to MIPUG/MH-I-4c and 4d.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Rates and revenues		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide the basis for the current and proposed DSM reduction.

RATIONALE FOR QUESTION:

The impacts of rates on bills and revenues is to be considered.

RESPONSE:

The DSM figures shown in Tab 6, Section 6.2 are proposed revenue reductions for the 2015/16 and 2016/17 forecast years.

As noted in the 2014 Electric Load Forecast (Appendix 7.1 page 58), the *"forecast reflects future DSM savings associated with existing Provincial building codes and improved equipment efficiency standards (Codes and Standards). This is the only DSM initiative that is specifically accounted for in the forecast…Future DSM savings arising from future Power Smart offerings and market engagement above the current level and incremental to the above mentioned Codes and Standards are treated as a supply-side resource and are not reflected in this forecast. They are accounted for separately in Manitoba Hydro's Power Smart."*

Since the Electric Load Forecast does not account for market-based Power Smart programs, the effects of these programs must be included in General Consumers Revenue separately. For this reason DSM revenues are shown as a separate line item in the Proof of Revenues provided in Appendixes 6.1 and 6.2.

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Topic:	Residential low-income needs and responses		
Subtopic:	Rates and revenues		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide the basis for the current and proposed "Misc. Rev & Adjs."

RATIONALE FOR QUESTION:

The impacts of rates on bills and revenues is to be considered.

RESPONSE:

"Misc. Rev" relates to revenues (fees) unrelated to energy consumption that are collected from customers by Manitoba Hydro. This includes such items as late payment charges, special meter read fees, reconnect fees and meter dispute fees, for example. "Adjs" refers to adjustments processed throughout the year that relate to items such as cycle billing adjustments and seasonal accrual adjustments given that seasonal accounts are billed only twice a year.

Revenues associated with "Misc. Rev & Adjs" may fluctuate from year to year. The forecast is comprised primarily of revenues associated with late payment fees and cycle billing adjustments. The forecast of Misc. Rev does give some consideration to the impact of future rate increases, as indicated in the Proof of Revenues provided in Appendixes 6.1 and 6.2.

Current "Misc. Rev & Adjs" may include other adjustments such as the $22.5 million associated with the 2010 rollback deferral included in the 2013/14 actuals (as shown in the value for Misc. Rev & Adjs in Manitoba Hydro's response to MIPUG/MH-I-4a.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide by month for January 2012 to present, the aging of residential arrears.

a) Provide the aging of arrears by dollar amounts in each aging bucket.
b) Provide the aging of arrears by number of accounts in each aging bucket.
c) Please provide total receivables.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

For the information requested in GAC/MH-I-2a and b, please see the response for MMF/MH-I-45a.

The response to GAC/MH-I-2c, total receivables, is provided in the following table:

Total Accounts Receivable - Electric ($1000s)			
	2014	*2013*	*2012*
January	$142,621	$135,282	$118,039
February	$163,176	$156,206	$124,323
March	$165,294	$151,121	$117,471
April	$164,519	$152,221	$119,691
May	$150,986	$133,529	$101,578
June	$129,983	$122,685	$92,088
July	$117,535	$114,717	$96,905
August	$116,982	$102,754	$87,611
September	$101,112	$104,419	$92,699
October	$94,280	$92,685	$91,991
November	$110,320	$106,715	$99,823
December	$120,144	$123,900	$114,863

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Credit and collections		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Assume for purposes of this Data Request that a residential bill is rendered on Day 1. Assume further the bill remains unpaid. Provide the timeline of each collection step until the bill is final-billed for nonpayment. Identify the Day on which each step of the collection process can be expected to occur.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

The following timeline assumes an energy bill is issued and no payment or payment arrangement is made throughout the entire process:

Day 1: Monthly energy bill is issued.
Day 15: The monthly bill is due.

Day 30:

Manitoba Hydro attempts to initiate contact with the customer by printing a "Friendly Reminder" message on their bill when there is a minimum of $20 in 30 day arrears. The purpose of the reminder is to prompt the customer to pay their bill or to contact Manitoba Hydro to make payment arrangements.

A "Social Services" Insert is sent to residential combined gas/electric accounts when there is a minimum of $50 in 30 day arrears as per PUB Order 14/08. A Social Services message is also printed on the bill along with the inclusion of a bill insert identifying where to obtain financial assistance, if required. The Social Services insert advises that, in the absence of a payment arrangement, their services could be subject to collection activity.

Day 60:

Without an active payment arrangement at 60 days, the "Important Past Due" message is printed on the bill when there is a minimum of $100 in 60 day arrears ($50 for apartments). The Important Past Due message advises the customer to pay their arrears or contact Manitoba Hydro to make a payment arrangement by the due date of the bill or their account will be subject to further collection action. An autodial call is also made to the customer if there is an active home or cell phone number on their account.

For electrically heated houses, the "Important Past Due" message is not printed during the voluntary weather moratorium period. Instead, the "Legal" bill message is printed. (See below).

Day 76:

Residential accounts without payment arrangements are listed in the Electronic Work Queue (EWQ) for outbound telephone collections at Day 76 (one day past the due date of the 60 Day bill) if there is a minimum of $100 in 60 day arrears ($50 for apartments).

If contact cannot be made with the customer by phone then the Disconnection/Load Limiting Notice will be mailed to the residence. This notice advises the customer that unless payment or payment arrangements are made their services will be subject to collection activity.

Day 83:

A Disconnection for Non-Payment (DNP)/Load Limiting Service Order will be issued if: records indicate contact was made with the customer within the last 60 days; if there is a minimum of $100 in 60 day arrears ($50 for apartments); and, there is a minimum account balance of $100.

The DNP/Load Limiting service order will print at Day 83 if the account cannot be resolved. During the heating season, load limiter service orders are manually generated for residential gas & combined gas/electric accounts.

Manitoba Hydro requires that customer contact be attempted prior to disconnection of service. The customer contact requirement is satisfied when the customer is contacted by phone, in person or when the Disconnection/Load Limiting Notice is mailed to the residence.

Day 90:

Without an active payment arrangement at 90 days, the "Urgent Notice of Disconnection" message is printed on the bill when there is a minimum of $100 in 90 day arrears ($50 for apartments). The "Urgent Notice of Disconnection" advises the customer that their service is subject to collection activity. The customer must have received the 60 day arrears message to receive the 90 day message. Customers are listed in the EWQ and Manitoba Hydro staff attempt to make contact for the purpose of establishing a payment arrangement.

For electrically heated houses, the "Urgent Notice of Disconnection" message is not printed during the voluntary weather moratorium period. Instead, the "Legal" bill message is printed. (See below).

Day 97:

DNP/Load Limiting Service Order will be issued if: our records indicate contact was made with the customer within the last 60 days; if there is a minimum of $100 in 90 day arrears ($50 for apartments); and, there is a minimum account balance of $100.

The DNP/Load Limiting service order will print at Day 97 if the account cannot be resolved. During the heating season, load limiter service orders are manually generated for residential gas & combined gas/electric accounts.

Manitoba Hydro requires that customer contact be attempted prior to disconnection of service. The customer contact requirement is satisfied when the customer is contacted by phone, in person or when the Disconnection/Load Limiting Notice is mailed to the residence.

After Disconnection and during the Voluntary Weather Moratorium: "Legal" bill message will print on Disconnected or Load Limited accounts and on electrically heated houses and townhouses during the voluntary weather moratorium period. This bill message advises the customer that their account is subject to legal action.
Final Account: When the customer moves out, the account status is changed to Final and a final bill is issued. If an account is opened for the customer at another premise, the outstanding final bill will be transferred to the new account.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

For the most recent 12-month period available, by month for residential accounts, please provide:

a) What percent of bills were paid by the due date of the bill.
b) What percent of bills were paid by the time the next month's bill is rendered.
c) What percent of those bills were paid by the time the second subsequent bill is rendered.
d) What percent of those bills were paid by the time the third subsequent bill is rendered.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Consistent with information provided at previous GRAs, the percent of bills paid by the due date of the bill is not maintained by Manitoba Hydro in the manner requested.

Payments for residential accounts are not segregated from other payments. The tables below provide payment application information for electric accounts.

Percentage of Payments ($s) Applied to Electric Accounts Receivable by Age Category of Receivable			
2014	*Current (b)*	*30 day (c)*	*60 day (d)*
January	86%	11%	2%
February	86%	10%	2%
March	86%	10%	3%
April	82%	11%	4%
May	82%	11%	4%
June	84%	10%	4%
July	81%	12%	4%
August	85%	9%	3%
September	85%	10%	2%
October	85%	10%	3%
November	88%	8%	2%
December	89%	8%	1%
2013	*Current (b)*	*30 day (c)*	*60 day (d)*
January	87%	10%	2%
February	87%	10%	2%
March	86%	9%	3%
April	84%	10%	3%
May	83%	11%	3%
June	82%	11%	3%
July	84%	9%	3%
August	85%	10%	2%
September	86%	10%	2%
October	86%	10%	2%
November	82%	14%	2%
December	88%	9%	1%

2012	*Current (b)*	*30 day (c)*	*60 day (d)*
January	86%	10%	2%
February	86%	10%	3%
March	84%	12%	3%
April	83%	11%	3%
May	84%	10%	3%
June	85%	9%	3%
July	85%	10%	3%
August	85%	10%	2%
September	85%	11%	2%
October	84%	12%	2%
November	88%	8%	2%
December	89%	8%	1%

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Credit and collections: fees		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide the dollars of residential late fee revenue collected by month for each month January 2012 to present.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Manitoba Hydro only tracks when late payment charges are applied, not when that revenue is collected. This information is presented below.

Residential Late Payment Charges - $ Billed Net of Adjustments			
	2014	*2013*	*2012*
January	$ 233,511	$ 258,367	$ 229,557
February	329,629	323,429	259,149
March	376,048	328,237	250,387
April	365,670	322,685	265,280
May	338,622	339,630	255,861
June	266,727	302,059	230,707
July	241,942	247,179	179,434
August	211,089	222,350	187,722
September	217,719	218,545	187,610
October	171,122	183,916	169,035
November	183,607	125,131	177,319
December	190,244	189,545	215,628
Annual Total	$ 3,125,932	$ 3,061,073	$ 2,607,689

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Credit and collections: fees		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide the number of residential accounts paying a late charge by month for each month January 2012 to present.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Manitoba Hydro only tracks when late payment charges are applied, not when they are paid. This information is presented below.

Residential Late Payment Charges - Number of Accounts Billed			
	2014	***2013***	***2012***
January	84,878	81,989	78,066
February	87,852	84,434	82,002
March	89,371	89,275	81,109
April	87,844	83,957	79,001
May	85,105	85,618	79,157
June	89,424	84,486	77,331
July	82,524	81,379	72,666
August	79,657	78,797	72,859
September	85,243	79,579	73,040
October	77,318	76,465	73,740
November	75,742	74,361	72,203
December	80,240	81,782	80,173

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Credit and collections		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide the most recent cost justification filed with the Manitoba Public Utilities Board of the current residential late payment fee imposed by Manitoba Hydro. Please indicate the date of the filing. For this filing, please provide a copy of all:

a) Pre-filed direct and rebuttal testimony filed in support of the filing; and
b) The final regulatory disposition of the request for the proposed rate.

RATIONALE FOR QUESTION:

The relationship between costs and fees is to be considered.

RESPONSE:

No cost justification has been filed by Manitoba Hydro with respect to late payment fees as these are not rates for the provision of power.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Rates and revenues / payment troubles		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Disaggregated by heating and non-heating residential customers, please provide by month for each month January 2012:

a) The average bill for all residential accounts;
b) The average arrears of residential accounts in arrears;
c) The average bill of residential accounts in arrears;
d) The total dollars of residential arrears
e) The percentage of residential dollars constituting arrears;
f) The percentage of billed residential accounts having arrears; and
g) The average arrears of all residential accounts disconnected for nonpayment in that month.

RATIONALE FOR QUESTION:

The impacts of rates on bills and revenues is to be considered.

RESPONSE:

Please see the following tables.

a)

Average Bill per Customer - Residential						
	2014		2013		2012	
Month	Heating	Non-heating	Heating	Non-heating	Heating	Non-heating
January	$289	$97	$254	$89	$211	$80
February	$270	$90	$252	$86	$206	$76
March	$241	$83	$205	$73	$177	$69
April	$214	$82	$205	$78	$146	$68
May	$141	$67	$127	$61	$103	$56
June	$92	$62	$85	$57	$79	$56
July	$79	$66	$77	$69	$79	$71
August	$83	$76	$74	$64	$73	$69
September	$77	$60	$80	$73	$73	$61
October	$108	$66	$102	$61	$106	$61
November	$153	$69	$154	$69	$153	$68
December	$222	$81	$224	$79	$200	$74

b)

	b) Average Arrears $ of Residential Accounts in Arrears					
	2012		2013		2014	
Month	Heating	Non-Heating	Heating	Non-Heating	Heating	Non-Heating
January	n/a	n/a	$506.59	$175.52	$512.79	$164.11
February	$507.82	$186.54	$568.94	$192.74	$575.63	$187.77
March	$549.88	$193.42	$620.56	$205.85	$634.53	$202.85
April	$537.89	$192.01	$619.48	$201.71	$633.73	$200.38
May	$509.34	$184.60	$591.08	$190.50	$591.26	$191.81
June	$465.30	$173.75	$526.99	$172.36	$532.73	$173.52
July	$437.46	$167.18	$493.61	$158.68	$495.04	$159.86
August	$427.62	$171.07	$460.60	$153.02	$451.95	$151.58
September	$412.41	$162.96	$427.27	$146.85	$429.92	$154.38
October	$418.32	$156.85	$417.55	$144.08	$429.76	$142.94
November	$433.18	$154.53	$416.29	$140.75	$413.76	$145.10
December	$450.26	$161.55	$444.57	$149.01	$445.73	$154.74

c)

	Average Bill of Residential Accounts in Arrears					
	2012		2013		2014	
Month	Heating	Non-Heating	Heating	Non-Heating	Heating	Non-Heating
January	n/a	n/a	$795.24	$278.91	$828.68	$272.88
February	$742.61	$275.85	$855.79	$295.32	$873.96	$295.08
March	$756.86	$273.48	$858.30	$292.92	$903.78	$300.02
April	$702.54	$264.94	$843.64	$287.12	$864.59	$290.00
May	$632.87	$245.78	$742.09	$258.98	$756.01	$265.92
June	$561.24	$231.05	$634.16	$233.81	$644.64	$239.15
July	$529.35	$237.50	$584.34	$228.32	$591.81	$228.22
August	$511.84	$238.89	$549.23	$218.65	$546.96	$226.94
September	$499.35	$225.36	$517.62	$218.48	$519.33	$216.76
October	$536.33	$219.75	$531.28	$208.15	$547.18	$209.95
November	$605.72	$227.50	$589.30	$214.85	$581.18	$218.10
December	$674.88	$245.68	$692.30	$238.08	$686.69	$243.55

d)

	d) Total $ of Residential Arrears ($1000s)					
	2012		2013		2014	
Month	Heating	Non-Heating	Heating	Non-Heating	Heating	Non-Heating
January	n/a	n/a	$12,358	$5,680	$12,834	$5,409
February	$12,618	$6,754	$15,605	$6,816	$16,475	$6,760
March	$13,134	$6,738	$17,355	$7,473	$18,125	$7,318
April	$13,231	$6,751	$16,505	$6,783	$17,699	$7,230
May	$11,998	$6,231	$16,037	$6,450	$16,717	$7,046
June	$10,663	$5,734	$14,522	$6,070	$14,485	$6,179
July	$9,713	$5,384	$12,025	$5,134	$12,098	$5,281
August	$8,808	$5,355	$10,778	$5,029	$10,668	$5,264
September	$8,506	$5,399	$9,765	$4,919	$9,632	$5,355
October	$8,158	$4,871	$8,731	$4,491	$8,475	$4,416
November	$8,818	$4,721	$9,107	$4,429	$9,086	$4,745
December	$10,865	$5,670	$10,883	$5,052	$10,661	$5,236

e) Manitoba Hydro has interpreted this question to be asking for the total dollars of residential arrears in each month divided by the revenue for that month. While the resulting ratio is expressed as a percentage, it is not truly a percentage as arrears are not a component of revenue.

	Ratio of Residential Arrears to Revenue					
	2012		**2013**		**2014**	
Month	**Heating**	**Non-Heating**	**Heating**	**Non-Heating**	**Heating**	**Non-Heating**
January	n/a	n/a	29.76%	20.24%	26.10%	17.72%
February	38.88%	28.08%	37.64%	25.08%	35.81%	23.67%
March	47.12%	30.97%	51.23%	32.46%	43.96%	27.91%
April	57.52%	31.45%	48.48%	27.58%	48.42%	28.00%
May	73.48%	34.93%	76.16%	33.81%	68.99%	33.49%
June	85.26%	32.47%	102.60%	33.78%	91.61%	31.47%
July	77.89%	23.95%	93.60%	23.51%	88.75%	25.27%
August	75.61%	24.56%	86.42%	24.89%	74.44%	21.84%
September	72.32%	27.95%	72.92%	21.40%	72.20%	28.00%
October	47.51%	25.17%	50.86%	23.21%	45.17%	20.98%
November	35.59%	22.04%	34.83%	20.28%	34.13%	21.64%
December	33.30%	24.22%	28.66%	20.21%	27.56%	20.29%

f)

	Percentage of Billed Residential Accounts in Arrears					
	2012		**2013**		**2014**	
Month	**Heating**	**Non-Heating**	**Heating**	**Non-Heating**	**Heating**	**Non-Heating**
January	n/a	n/a	5.09%	6.75%	5.15%	6.78%
February	5.24%	7.63%	5.72%	7.37%	5.89%	7.40%
March	5.03%	7.34%	5.82%	7.56%	5.87%	7.41%
April	5.18%	7.40%	5.54%	7.00%	5.73%	7.41%
May	4.96%	7.10%	5.64%	7.04%	5.80%	7.53%
June	4.82%	6.94%	5.72%	7.31%	5.57%	7.30%
July	4.66%	6.77%	5.06%	6.71%	5.01%	6.77%
August	4.32%	6.57%	4.85%	6.81%	4.83%	7.11%
September	4.32%	6.95%	4.73%	6.93%	4.58%	7.09%
October	4.08%	6.50%	4.32%	6.44%	4.02%	6.30%
November	4.26%	6.39%	4.51%	6.49%	4.48%	6.66%
December	5.04%	7.33%	5.04%	6.99%	4.87%	6.89%

g)

	Average Arrears of Residential Accounts Disconnected for Nonpayment					
	2012		**2013**		**2014**	
Month	**Heating**	**Non-Heating**	**Heating**	**Non-Heating**	**Heating**	**Non-Heating**
January	n/a	n/a	$239.14	$93.61	$256.07	$133.67
February	$244.80	$92.07	$198.75	$94.12	$157.80	$111.66
March	$291.97	$126.40	$519.33	$152.85	$289.58	$168.37
April	$257.22	$124.86	$231.29	$157.51	$327.30	$134.52
May	$689.15	$223.11	$216.30	$106.24	$569.37	$180.76
June	$1,229.93	$560.20	$998.06	$411.33	$798.48	$416.68
July	$1,227.45	$321.24	$1,113.70	$359.95	$778.82	$300.03
August	$907.97	$310.70	$958.92	$379.48	$691.18	$323.33
September	$1,671.40	$538.97	$806.11	$350.13	$687.84	$302.52
October	$1,301.62	$493.73	$918.23	$293.22	$455.07	$279.78
November	$1,411.48	$511.34	$513.05	$385.82	$476.17	$321.43
December	$185.44	$111.06	$200.92	$121.82	$175.73	$150.93

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Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Disaggregated by heating and non-heating residential customers, please provide by month for each month January 2012 to present, a distribution of the number of accounts in arrears by the size of arrears by the following bands: (1) $1 - $100; (2) $101 - $200; (3) $201 - $300; (4) $301 - $500; (5) $501 - $750; (6) $751 - $1,000; (7) $1,001 - $2,000; and (8) $2,001 and above. Separately state the number of accounts with $0 in arrears. If these bands are not available, please provide the numbers of accounts by which bands are available.

RATIONALE FOR QUESTION:

The impacts of rates on bills and revenues is to be considered.

RESPONSE:

This information for active residential customers is presented in the table below. All other customers are current or have arrears balances of less than $1. Please refer to Manitoba Hydro's response to GAC/MH-I-9 for the total number of customers. Please note that Manitoba Hydro only stores data on arrears for three years so the requested data is not available for January 2012.

	(1) $1 - $100		(2) $101 - $200		(3) $201 - $300		(4) $301-$500	
DATE	**Heating**	**Non-Heating**	**Heating**	**Non-Heating**	**Heating**	**Non-Heating**	**Heating**	**Non-Heating**
JAN-2012	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
FEB-2012	6,838	20,070	3,875	6,988	3,306	2,605	3,868	2,043
MAR-2012	6,455	19,386	3,565	6,631	3,020	2,533	3,681	1,869
APR-2012	7,001	20,169	4,064	6,394	3,204	2,379	3,386	1,906
MAY-2012	7,704	20,375	4,393	6,045	2,704	1,976	2,908	1,491
JUN-2012	8,627	20,650	4,683	5,926	2,392	1,791	2,348	1,335
JUL-2012	9,649	20,611	4,305	5,732	2,097	1,646	1,895	1,084
AUG-2012	9,369	18,450	4,106	6,872	1,909	1,981	1,586	1,082
SEP-2012	9,723	18,992	4,109	7,458	1,856	2,389	1,546	1,397
OCT-2012	9,167	19,097	4,024	6,167	1,688	1,993	1,449	1,204
NOV-2012	8,010	18,831	4,624	5,746	2,325	1,832	1,925	1,210
DEC-2012	7,334	20,144	4,949	7,244	3,532	2,369	3,446	1,717
JAN-2013	6,595	18,107	3,887	6,347	3,345	2,394	4,156	1,779
FEB-2013	6,632	18,615	3,709	7,303	3,384	2,725	4,852	2,275
MAR-2013	6,680	18,731	3,573	7,398	3,217	2,969	4,519	2,417
APR-2013	6,521	18,444	3,722	6,364	3,294	2,498	4,086	2,076
MAY-2013	7,507	19,649	4,140	6,197	3,292	2,235	3,803	1,724
JUN-2013	9,244	21,297	4,710	6,400	3,045	2,039	3,277	1,563
JUL-2013	10,182	19,928	4,197	5,997	2,085	1,765	2,198	1,128
AUG-2013	10,651	19,273	4,291	7,087	1,940	2,062	1,707	1,152
SEP-2013	11,045	19,694	4,381	7,101	1,822	2,303	1,506	1,310
OCT-2013	10,604	18,138	4,069	6,932	1,622	2,141	1,232	1,245
NOV-2013	9,688	19,002	4,863	6,280	2,147	1,938	1,590	1,228
DEC-2013	8,321	19,417	4,949	7,215	3,480	2,424	3,216	1,568
JAN-2014	7,054	18,026	4,060	6,683	3,146	2,544	4,108	1,866
FEB-2014	7,073	18,383	3,833	7,748	3,331	2,965	4,872	2,419
MAR-2014	6,867	17,939	3,584	7,841	3,155	3,196	4,671	2,594
APR-2014	7,157	18,691	3,701	7,326	3,302	2,996	4,280	2,424
MAY-2014	8,115	20,096	4,151	7,280	3,474	2,733	3,940	2,133
JUN-2014	8,981	20,111	4,913	7,260	3,075	2,571	3,400	1,823
JUL-2014	10,082	19,382	4,219	6,681	2,405	2,181	2,446	1,387
AUG-2014	10,917	19,899	4,450	7,583	2,145	2,529	1,759	1,376
SEP-2014	10,647	18,411	4,585	8,339	2,002	2,960	1,538	1,653
OCT-2014	9,923	18,167	4,021	6,400	1,651	2,286	1,207	1,339
NOV-2014	9,651	18,889	4,833	6,910	2,359	2,410	1,737	1,537
DEC-2014	8,093	18,665	4,918	7,159	3,332	2,731	3,144	1,911

	(5) $501 - $800		(6) $801 - $1,000		(7) $1,001 - $2,000		(8) $2,000 and above	
DATE	**Heating**	**Non-Heating**	**Heating**	**Non-Heating**	**Heating**	**Non-Heating**	**Heating**	**Non-Heating**
JAN-2012	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
FEB-2012	2,845	1,031	947	383	1,445	531	839	298
MAR-2012	2,620	1,017	1,009	359	1,745	613	963	310
APR-2012	2,513	986	912	337	1,752	619	990	332
MAY-2012	1,958	895	754	273	1,531	557	921	320
JUN-2012	1,531	696	623	231	1,143	464	832	287
JUL-2012	1,249	604	455	206	1,005	404	775	274
AUG-2012	995	556	356	177	830	380	715	261
SEP-2012	892	575	327	164	730	343	672	230
OCT-2012	786	514	322	142	640	289	652	220
NOV-2012	937	517	315	185	666	312	675	204
DEC-2012	1,882	774	434	218	883	374	714	220
JAN-2013	2,743	882	817	266	1,172	424	764	231
FEB-2013	3,621	1,245	1,328	388	2,135	593	963	273
MAR-2013	3,651	1,297	1,532	443	2,801	777	1,209	343
APR-2013	3,150	1,144	1,218	367	2,547	688	1,250	340
MAY-2013	2,833	1,027	1,111	325	2,353	678	1,253	335
JUN-2013	2,308	864	867	313	1,859	557	1,184	314
JUL-2013	1,612	616	600	210	1,355	433	1,038	271
AUG-2013	1,238	537	461	169	1,086	375	925	246
SEP-2013	912	489	356	163	888	320	831	224
OCT-2013	660	413	293	137	681	294	725	189
NOV-2013	773	441	271	143	646	291	739	205
DEC-2013	1,453	616	364	161	761	320	781	218
JAN-2014	2,754	858	798	224	1,115	374	835	246
FEB-2014	3,961	1,246	1,329	355	2,216	607	1,017	298
MAR-2014	3,845	1,333	1,513	421	2,916	668	1,217	360
APR-2014	3,339	1,284	1,312	428	2,625	703	1,359	362
MAY-2014	3,063	1,163	1,115	406	2,230	679	1,310	379
JUN-2014	2,258	905	812	283	1,653	531	1,150	324
JUL-2014	1,508	641	556	216	1,203	400	996	296
AUG-2014	1,126	552	401	181	896	357	872	266
SEP-2014	862	579	301	140	703	314	765	236
OCT-2014	581	476	231	105	556	238	659	211
NOV-2014	786	517	218	142	544	247	670	213
DEC-2014	1,556	729	338	169	661	281	678	219

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Topic:	Residential low-income needs and responses		
Subtopic:			
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Disaggregated by heating and non-heating customers, please provide the number of residential accounts by month for each month January 2012 to present.

RATIONALE FOR QUESTION:

The impacts of rates on bills and revenues is to be considered.

RESPONSE:

Number of Customers - Residential

	2014		*2013*		*2012*	
	Heating	Non-heating	Heating	Non-heating	Heating	Non-heating
January	170,370	315,535	163,617	315,643	157,057	316,877
February	170,639	315,590	164,471	315,332	157,384	316,919
March	170,753	315,901	165,265	314,989	157,662	316,999
April	171,119	316,045	165,920	314,720	157,827	317,032
May	171,408	316,110	166,415	314,618	158,209	317,124
June	171,579	316,248	166,874	314,559	158,400	317,192
July	171,810	316,342	167,373	314,541	158,729	317,216
August	172,063	316,572	167,807	314,671	159,371	317,084
September	172,672	316,645	168,217	314,928	160,190	316,787
October	173,129	316,967	168,770	315,193	161,412	316,190
November	173,493	317,129	169,307	315,389	162,191	316,142
December	173,888	317,308	169,736	315,535	162,800	316,045

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles / Credit and collection costs		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please identify all Manitoba Hydro accounts that include expenses for the following residential collection activities:

a) Late payment notices;
b) Notices of disconnection for nonpayment.
c) Disconnections for nonpayment.
d) Field collections not involving disconnection for nonpayment.

Separate these expenses by sub-accounts if available.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Manitoba Hydro's residential collection activities are part of the services provided through several Divisions including Business Support Services, Consumer Marketing & Sales, Customer Service Operations (South), and Customer Service Operations (Winnipeg & North). Manitoba Hydro records costs associated with collection activities in aggregate and does not record costs separately by residential, commercial, and industrial customers. See Manitoba Hydro's response to MKO-COALITION/MH-I-2d for total collection costs.

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Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles / Credit and collection costs		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

For Fiscal Year 2013 to date, please provide period-end totals of collection expenses booked to each account and sub-account identified in the Data Request immediately above.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Please see Manitoba Hydro's response to GAC/MH-I-10. Residential collection activities are part of the services provided by the separate Divisions identified in Manitoba Hydro's response to GAC/MH-I-10 and are not accounted for separately.

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Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

For Fiscal Years 2013 to date, please provide a copy of all Manitoba Hydro budget documents specifically identifying collection activities as a separately stated line-item.

a) Provide those budget documents indicating the budgeted expenditures year-to-date;
b) Provide those budget documents, if different, of actual expenditures year-to-date.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Residential collection activities are part of the overall customer and business support services provided individually by the various Divisions identified in Manitoba Hydro's response to GAC/MH-I-10.

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Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a single copy of all studies within the custody or control of Manitoba Hydro documenting the effectiveness of a late payment charge as an incentive to pay for:

a) Residential utility customers.
b) Low-income residential customers.

RATIONALE FOR QUESTION:

The relationship between costs and fees is to be considered

RESPONSE:

Manitoba Hydro has not conducted a formal study nor is it aware of any external studies specifically documenting the effectiveness of late payment charge as an incentive for residential customers to pay.

Manitoba Hydro regularly monitors industry practices in the use of late payment charges to ensure its practices are generally consistent with those practices deployed by other utilities and other similar type serice industries.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a list of all policies establishing whether or not residential customers may or may not enter into a levelized monthly Budget Billing plan (e.g., customer must have been a customer for at least 12-months; customer may not be in arrears; etc.).

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

The following is Manitoba Hydro's customer policy application for its Equal Payment Plan (EPP).

General

The Equal Payment Plan provides a convenient method of payment for electricity for customers in all service classifications except Seasonal services.

The monthly equal payment applies for 11 consecutive billings commencing with meters read on and after September 1 through to July 31. The amount includes:

a) the estimated annual electricity billing including monthly Basic Charge divided into 12 equal installments; and
b) monthly contract payments, flat-rate (unmetered) services and rental charges.

Settlement Payment

The settlement payment is due with the billing for meters read from August 1 to August 31 or upon customer request for termination. The settlement payment includes:

a) total of any unpaid electricity bills;
b) deferred balance (the difference between the installments and the actual charges billed);
c) monthly contract payments, flat-rate (unmetered) services and rental charges.

Full payment of the settlement billing is a condition of continuing with the Equal Payment Plan. When the net bill for the settlement period is a credit, it will be applied to offset the next equal payment or may be refunded at the customer's request.

Equal Payment Plan Arrears

Where a customer fails to pay the installments and has arrears exceeding 1.5 times but NOT exceeding three times the equal payment amount, the customer will be cautioned that participation is contingent on payment. When the arrears exceed three payments, the customer will be removed from the Equal Payment Plan.

Equal Payment Plan Review

Installment amounts will be reviewed and, if applicable, changed as follows:

a) annual review - prior to the start of each equal payment billing season, estimated annual electricity billing will be revised, recognizing the past year's use, weather conditions and any rate adjustments;
b) monthly review - the deferred balance will be monitored and where it appears that the balance for the settlement period will be excessive, the monthly equal payment amount will be adjusted accordingly.

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Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide the number of residential accounts using levelized monthly Budget Billing by month for each month January 2012 to present. For each month:

a) Provide the total number of customers on Budget Billing;
b) Provide the total number of customers newly entering into a levelized Budget Billing plan that month;
c) Provide the total number of customers removed from Budget Billing for collection-related reasons (i.e., having incurred an arrears);

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

a) Please see the table below for the total number of customers on Budget Billings. Please note that customers are removed from the Equal Payment Plan (EPP) in the balancing month (August billing month). The billing month begins on the third working day of each calendar month and ends on the second working day of the following month which affects the customer numbers reported below:

(a) Equal Payment Plan Customers			
	2014	*2013*	*2012*
January	117,141	113,494	111,309
February	117,814	114,045	111,459
March	117,889	113,932	111,219
April	117,584	113,608	110,655
May	116,613	112,933	109,746
June	115,402	111,946	108,494
July	114,025	110,449	107,128
August	10,847	5,450	10,223
September	111,160	108,182	104,729
October	118,906	115,254	111,979
November	119,677	116,023	112,665
December	120,357	116,705	113,177

b) Customers are re-enrolled in EPP at the start of the new plan year (September billing month). The billing month begins on the third working day of each calendar month and ends on the second working day of the following month.

(b) Equal Payment Plan Customers - New			
	2014	*2013*	*2012*
January	1,510	1,352	991
February	1,014	782	692
March	630	533	425
April	164	231	218
May	61	118	136
June	20	42	56
July	13	15	20
August	105,877	108,045	99,362
September	14,140	13,147	12,365
October	2,334	2,149	1,691
November	1,754	1,779	1,557
December	1,289	1,431	1,327

c) Manitoba Hydro does not record the reason for a customer leaving or being removed from the Equal Payment Plan (EPP). Therefore all removals are reported in the table below, including year end (affecting August and September), arrears and customer requests.

(c) Equal Payment Plan Customers - Removed			
	2014	*2013*	*2012*
January	959	1,002	963
February	854	815	858
March	925	895	910
April	922	856	993
May	1,093	891	1,099
June	1,278	1,081	1,352
July	1,383	1,548	1,438
August	107,852	109,779	101,100
September	7,685	7,073	6,765
October	1,840	1,431	1,029
November	1,583	1,399	1,112
December	1,168	1,047	1,046

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Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

For each month January 2012 to present, please provide:

a) the number of residential accounts for whom cash security deposits were held;
b) the dollar amounts of cash security deposits held for residential customers;
c) the number of cash security deposits applied to final bills; and
d) the dollars of cash security deposits applied to final bills.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

a) The following table presents the number of residential accounts for whom security deposits were held by month for the period of January 2012 to December 2014.

Number of Residential Deposits

	2014	**2013**	**2012**
December	3 783	1 536	2 051
November	3 356	1 584	2 021
October	2 003	1 651	1 878
September	2 229	1 729	1 704
August	2 083	1 808	1 565
July	1 983	1 905	1 579
June	1 718	2 010	1 603
May	1 643	1 974	1 558
April	1 536	2 061	1 340
March	1 460	2 109	1 289
February	1 457	2 133	1 175
January	1 501	2 054	1 117

b) The following table presents the dollar amount of security deposits held for residential customers by month for the period of January 2012 to December 2014.

Residential Security Deposits

	2014	**2013**	**2012**
December	$ 419 254	$ 160 032	$ 202 674
November	$ 366 704	$ 165 307	$ 200 124
October	$ 317 382	$ 171 756	$ 184 849
September	$ 238 882	$ 179 156	$ 166 250
August	$ 223 207	$ 189 106	$ 153 250
July	$ 213 307	$ 198 131	$ 155 375
June	$ 185 857	$ 208 681	$ 157 350
May	$ 175 182	$ 202 456	$ 151 425
April	$ 162 207	$ 212 481	$ 128 100
March	$ 152 782	$ 217 706	$ 122 825
February	$ 152 307	$ 217 525	$ 106 325
January	$ 156 857	$ 206 074	$ 98 000

c) The following table presents the number of residential accounts for whom security deposits were applied to final bills by month for the period of January 2012 to December 2014.

Number of Residential Deposits

	2014	**2013**	**2012**
December	78	45	45
November	63	64	71
October	111	92	72
September	85	96	52
August	60	87	66
July	55	96	69
June	58	84	35
May	52	77	36
April	44	59	32
March	29	61	23
February	55	55	29
January	32	59	20

d) The following table presents the dollar amount of security deposits held for residential customers applied to final bills by month for the period of January 2012 to December 2014.

Residential Security Deposits

	2014	2013	2012
December	$ 7 435	$ 5 429	$ 4 045
November	$ 7 531	$ 6 483	$ 8 320
October	$ 12 311	$ 8 982	$ 8 016
September	$ 9 072	$ 11 595	$ 5 278
August	$ 7 819	$ 8 325	$ 6 854
July	$ 5 747	$ 9 638	$ 7 359
June	$ 5 775	$ 8 642	$ 2 864
May	$ 4 960	$ 8 343	$ 3 621
April	$ 3 759	$ 6 155	$ 3 210
March	$ 3 375	$ 6 158	$ 2 135
February	$ 5 892	$ 4 111	$ 2 254
January	$ 2 975	$ 4 803	$ 1 414

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Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a copy of all written documents that explain, assess or otherwise discuss the criteria Manitoba Hydro uses to assess on an ongoing basis the effectiveness of its current credit and collection activities.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Manitoba Hydro does not have a document explaining or assessing the criteria used to assess the effectiveness of its credit and collection activities. Manitoba Hydro follows generally accepted industry practices and utilizes commonly accepted methods of monitoring and assessing the operational effectiveness of credit and collection activities. These measures include, but are not limited to:

- Yearly Write Off statistics
- Aging of Receivables statistics
- Monthly Bad Debt Assignment statistics
- Inbound and Outbound call volumes
- Payment arrangement statistics
- Daily work assignment volumes
- Disconnection/Reconnection statistics

These measures are regularly confirmed through discussions with other utilities, organizations such as Canadian Electric Association, etc. to ensure the measures continue to be relevant and to compare overall performance.

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Topic:			
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PREAMBLE TO IR (IF ANY):

QUESTION:

Separately provide any written assessment, evaluation, report or other written document of any nature prepared since January 1, 2010 which discusses the effectiveness of Manitoba Hydro's current credit and collection activities.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

In 2014, Manitoba Hydro conducted a third party review and assessment of credit and collections practices to improve its performance in accounts receivable management. This review was conducted by Monticello Consulting Group as part of a Predictive Analytics Information Technology Project. The report is presently under review by Manitoba Hydro. Please see the attachment to this response.

Please also see Manitoba Hydro’s response to GAC/MH-I-21.

Monticello Consulting Group

A Review and Assessment of Credit and Collections at Manitoba Hydro

April 1, 2014

Presented to:

Trevor Sinclair, PMP Project Leader, Customer Systems

Rosanne Sutton, Manager, Credit & Recovery Services

Zena Kavanagh, Business Solutions Leader

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Executive Summary

Manitoba Hydro ("Hydro") is seeking to improve its performance in accounts receivable management, including reducing bad debt (i.e., accounts "charged-off" the company's books as uncollectible). The Company believes that due to technology and resource constraints it does not reach all its delinquent accounts, thereby limiting its financial performance. The Company decided to obtain assistance from an industry consultant to help improve performance. In July 2013, Monticello Consulting Group ('Monticello") was awarded the bid contract to assist the Company with its project objectives.

Monticello worked with Hydro's staff to obtain historical data and other information on company policies, procedures, work practices, reports and volumes of collection activity. Monticello also conducted on-site interviews at Hydro's offices in Winnipeg, Manitoba. Data and other information were gathered from the Company's outside collection agencies. Monticello reviewed and analyzed the data and information gathered to determine the trends in charge-offs, Hydro's credit and collections performance and develop recommendations for improvement.

Monticello's analysis shows that during 2008-2013, Hydro charged-off 50,124 accounts totaling $32.1 million. Over 95% of the total accounts and 84% of the total dollars charged-off are on residential accounts. During the same period, the Company charged-off 14,939 residential accounts with balances greater than $500, totaling $21.7 million (average account balance of $1,454). A residential account with a charge-off balance of $1,454 represents, on average, about 6-7 months of worth of arrearage. During 2008-2013, the Company also charged-off 955 non-residential accounts with balances greater than $1,000, totaling $4.7 million (average account balance of $4,886). A non-residential account with a charge-off balance of $4,886 represents, on average, about 7-8 months of worth of arrearage.

Based on the volume of accounts and dollars charged-off annually, the Company's bad debt is relatively consistent, and not out of control. Nevertheless, one concern for the Company is certain high-balance residential and non-residential accounts. Specifically, Hydro annually charges-off about 2,500 residential accounts with an average balance of $1,454, totaling $3.6 million; and about 150 non-residential accounts with an average balance of $4,886, totaling $0.73 million. These 2,650 accounts represent about 82% of total annual dollars the Company charges-off.

The analysis shows that Hydro can reduce its annual bad debt by focusing collection efforts on a relatively small number of accounts. In theory, the Company can reduce bad debt by applying additional and/or earlier collection treatment to a small number of accounts before the accounts close. For example, if the average arrearage on the 2,500 residential and 150 non-residential accounts is reduced by an amount equal to one month's worth of usage, annual charge-offs can be reduced by over $550,000.

A review and analysis of Hydro's current credit and collection practices shows where additional and earlier account management and collection treatment can improve performance, including reducing arrearages and future bad debt. The account initiation process is first reviewed and evaluated. The account initiation process is the critical first step in effective customer management, billing and collections over the entire lifecycle of an account. There are a number of recommendations offered to improve the account initation process, including automating manual work processes, assessing credit risk of new applicants, fraud detection strategies and obtaining security deposits.

In addition, the Company's management of its active accounts receivable portfolios is reviewed and evaluated. Although Hydro effectively executes its current collection treatment strategies on active accounts, it has an opportunity to further improve performance. There are a number of

recommendations offered to improve performance, including enhancing and accelerating collection treatment strategies, automated payment options, assessing security deposits, performance measurement and reporting, as well as risk monitoring on large, commercial and industial customers.

Finally, the Company's inactive account management, collection and recovery programs are reviewed and evaluated. Although Hydro effectively executes its current inactive collection and recovery programs, it has an opportunity to further improve performance. There are a number of recommendations offered to improve the performance, including enhancing and accelerating collection treatment strategies, automating manual work processes, reducing in-house collection activity, enhancing collection agency management and reducing final bill mailings. Overall, there are 39 recommendations, which are summarized at the end of the report.

Background

Due to technology and resource constraints Hydro does not reach all its delinquent accounts. Early intervention in delinquent accounts improves collections and reduces write-offs. The Company centralized collections operations and is seeking technological and other solutions to further improve performance. Hydro decided to obtain assistance from an industry consultant to help focus its efforts and improve project efficiency. In July 2013, Hydro and Monticello entered into an Agreement for Monticello to conduct a review and assessment of Hydro's Credit & Collections performance and to provide recommendations for improvement.

Project Objectives

Hydro's original project objectives are as follows:

1. Decrease cost associated with collecting monies by increasing customer contacts
2. Decrease write-offs
3. Provide consistent treatment of delinquent accounts- the ability to tailor communications and target customer segments based on prior payment behaviour
4. Improve reporting- "real time" reports for monitoring will allow Credit and Recovery Services to allocate resources and access current customer data in a dashboard format. Provide data collection and reporting functionality to monitor the success of actions taken
5. Data-scrubbing of data will improve customer contact success rate and improve third parties (e.g. Collection agencies) ability to collect
6. Determine and use preferred and best method of customer contact-enable the use of social networking as a communication tool
7. Reduce number of disconnected accounts

Project Overview

After the contract award, Monticello worked with Hydro staff to obtain historical data and information on company policies, procedures, work practices, reports and volumes of collection activity. In addition, Hydro provided a historical data file containing account-level detail on all charged-off accounts

during 2008-2013. Monticello conducted on-site interviews and weekly conference calls with Hydro staff to obtain information and refine insights. In addition, Monticello assisted Hydro with the development of a behavioral scoring solution designed by NewComp, a third-party solution provider.

Project Approach

To achieve the project objectives, Monticello reviewed and analyzed the following historical data and information to determine the following:

1. Determine the historical, account-level gross charge-offs by account type, number, dollars & average balance
2. Determine historical, account-level collection activity applied by Hydro
3. Determine historical, account-level outcomes & customer behavior resulting from collection activity previously applied
4. Determine which types of accounts, collection activities & customer behavior contribute most to charge-off volumes (number & dollars)
5. Determine which rules, company policies, procedures, practices and systems contribute most to charge-off volumes

Charge-Off Summary, 2008-2013

During 2008-2013[1], Hydro charged-off 50,124 accounts totaling $32.1 million. Over 95% of the total accounts and 84% of the total dollars charged-off were on residential accounts. Conversely, less than 5% of the total accounts and 16% of the total dollars were on non-residential accounts. Attachment 1 shows the 2008-2013 summary data, residential vs. non-residential. In addition, Attachment 1 provides a further breakdown of charge-offs by balance range. The overall average balance of all charged off accounts for the period is $641. The average charge-off balance for residential and non-residential accounts is $565 and $2,204, respectively.

During 2008-2013, Hydro charged off 14,939 residential accounts with balances greater than $500, totaling $21.7 million (average balance of $1,454). During the same period, Hydro charged off 7,513 residential accounts with balances greater than $1,000, totaling $16.4 million (average balance of $2,185). The balance segmentation allows for comparison of the average arrearage compared to the average monthly bill. For example, in 2011, the average monthly bill for a residential account was $189. As a result, a residential account with a charge-off balance of $1,454 represents about seven months' worth of arrearage.[2]

During 2008-2013, Hydro charged off 1,335 non-residential accounts with balances greater than $500, totaling $4.9 million (average balance of $3,701). During the same period, Hydro charged off 955 non-residential accounts with balances greater than $1,000, totaling $4.7 million (average balance of

[1] The 2013 data is through October 2013 and includes closed accounts categorized as Bad Debt and sent to a collection agency for collection.

[2] Average residential monthly bill in 2011: $189. Therefore, an account with a charge-off amount of $1,454/$189 = 7.69 months (i.e., current bill + 6 month's past due = $189 + [$189 x 7] = $1,512)

$4,886). In 2011, the average monthly bill for a non-residential account was $560. As a result, a non-residential account with a charge-off balance of $4,886 represents about seven months of worth of arrearage.[3]

Trends in Charge-Offs, 2008-2013

Residential Accounts

Attachment 2 shows the annual trend in Hydro's residential charge-offs. Since 2008, the overall number of accounts charged-off is relatively consistent, while the total dollars charged-off is trending down. The average charge-off balance is up and down, ranging from a high of $647 to a low of $498. In contrast, when high-balance accounts are analyzed separately, there is an upward trend in average balances since 2011. Attachment 3 shows the annual trend in residential charge-offs with balances greater than $500. Although there is a downward annual trend in accounts and dollars, the average charge-off balance has been increasing since 2011. In fact, since 2011, there is a 7% increase in the average balance of these type of accounts (i.e., greater than $500). This trend in average balances suggests that the Company has an opportunity to apply additional or earlier collection efforts on these specific accounts before they close, either voluntarily or through disconnection for non-payment, to reduce the arrearage.

Non-Residential Accounts

Attachment 4 shows the annual trend in Hydro's non-residential charge-offs. Since 2008, the annual number of accounts and dollars charged-off are decreasing. The average charge-off balance is up and down, ranging from a high of $2,979 to a low of $1,538. Since 2011, there is a 48% decrease in the average balance of accounts.

Attachment 5 shows the annual trend in non-residential charge-offs with balances greater than $1,000. Since 2008, the annual number of accounts and dollars charged-off are decreasing. The average charge-off balance is up and down, ranging from a high of $6,230 to a low of $4,181. Since 2011, there is a 43% decrease in the average balance of accounts.

Charge-Offs by Service Type, 2008-2013

Residential Accounts

Attachment 6 shows annual residential charge-offs by the type of service. Since 2008, 62% of the accounts and 47% of the dollars charged-off are from electric only residential services. In comparison, since 2008, 32% of the accounts and 44% of the dollars charged-off are from combination residential services (i.e., electric and gas). Gas only services represent a small impact on charge-offs. The average balance of electric only service is 46% less than the combination service, yet impacts the total dollars charged-off due to the additional volume of accounts.

Non-Residential Accounts

[3] Average non-residential monthly bill in 2011: $560. Therefore, an account with a charge-off amount of $4,886/$560 = 8.73 months (i.e., current bill + 7 month's past due = $560 + [$560 x7] = $4,480)

Attachment 7 shows annual non-residential charge-offs by the type of service. Since 2008, 30% of the accounts and 28% of the dollars charged-off are from electric only non-residential services. In comparison, since 2008, 40% of the accounts and 41% of the dollars charged-off are from combination non-residential services (i.e., electric and gas). Gas only services represent a smaller impact on charge-offs. The average balance of a gas only service (i.e., $3,961) is nearly double an electric only service (i.e., $2,060).

Charge-Offs on First Nations Accounts, 2008-2013

Residential First Nations Accounts

Attachment 8 shows annual charge-offs on residential First Nations Accounts. Since 2008, the annual number and dollars on First Nations Accounts charged-off is relatively consistent. The average charge-off balance is also relatively consistent year over year. However, the average balance charged-off on First Nations Accounts is about 45% higher than other residential accounts.

Non-Residential First Nations Accounts

Attachment 9 shows annual charge-offs on non-residential First Nations accounts. Since 2008, the annual number and dollars on First Nations Accounts charged-off is low, compared to residential First Nations Accounts. On average the average balance charged-off on First Nations Accounts is about the same as other non-residential accounts.

Review and Analysis of Charge-Off Volumes and Trends

Based on the volume of accounts and dollars charged-off annually, the Company's bad debt is relatively consistent, and not out of control. As noted above, the annual number of residential accounts charged-off over the last 4 years has been level; and the annual dollars charged-off is trending down. Nevertheless, one concern for the Company is certain high-balance residential and non-residential accounts. Specifically, Hydro annually charges-off about 2,500 residential accounts with an average balance of $1,454, totaling $3.6 million; and about 150 non-residential accounts with an average balance of $4,886, totaling $0.73 million. More specifically, each year about 2,650 accounts charge-off totaling about $4.4 million, which represents about 82% of total annual dollars charged-off.

The analysis shows how Hydro can reduce its annual bad debt by focusing collection efforts on a relatively small number of accounts—reducing arrearage before the accounts close. In a theoretical example, if the Company had applied additional and/or earlier collection treatment to the same accounts before the accounts closed, the balances would be lower, which would reduce the total dollars charged-off. For example, if the Company can reduce the average arrearage on the 2,500 residential and 150 non-residential accounts by an amount equal to one month's worth of usage, annual charge-offs can be reduced by $556,500.[4] Further reductions in arrearages can increase the magnitude of the annual charge-off dollars.

[4] On average, there are 2,500 high-balance (i.e., >$500) residential accounts charged-off each year, with an average monthly bill of $189 (2011). In addition, there are, on average, 150 high-balance (i.e., >$1,000) non-residential accounts charged-off each year, with an average monthly bill of $560 (2011). Therefore, the total is $556,500 (2,500 x $189) + (150 x $560) = $556,500.

Review and Analysis of Hydro's Current Credit and Collection Practices

This section will highlight Hydro's current account management and collection practices, and where additional and earlier collection treatment can improve performance, including reducing arrearages and future bad debt.

Account Initiation (Residential Service)

The account initiation process is the critical first step in effective customer management, billing and collections over the entire lifecycle of an account. The Company's current account initiation process is similar to many other utility companies in U.S. and Canada, where new service applicants are asked a series of questions about identity, premise location and previous history with the company. The Company's current account initiation process flow is shown in Attachment 10. Based on the work flow and interviews with those conducting the day-to-day work, there are a number of potential issues, including:

- No detailed customer information is required to establish service (name and billing address are the only requirements)
- Deposits are assessed only on applicants who are property tenants with poor credit history with Hydro
- Much of the deposit process and work activity is manual and time consuming

The lack of detailed customer information often manifests itself downstream in the later stages of the customer delinquency lifecycle, making customer contact and collection more difficult. The manual work processes related to deposits suggest inconsistent application of an important risk mitigation strategy.

Attachment 11 shows a suggested account initiation process flow for the Company to improve performance, reduce risk and deploy a number of industry best practices. Each opportunity is discussed in more detail below:

1. Credit risk evaluation—Hydro could benefit from external tools and technologies designed to assess a new residential applicant's credit risk. These tools and technologies are widely available and commonly used throughout the utility industry. Real-time credit scoring is typically used to determine whether or not an applicant is assessed a security deposit and may be used to determine subsequent collection treatment strategies based on credit risk (i.e., risk of default). Typically, the large credit reporting bureaus (e.g., Experian, Equifax and LexisNexis) provide this type of solution.
2. Fraud detection technologies—Hydro could benefit from external tools, technologies and solutions that help detect fraudulent applications for new service, including name switching on premises with delinquent balances. For example, if the Company is not able to initially validate an applicant's identity, the applicant's previous address along with date of birth or driver's license can be sent (electronic, real-time) to a third-party provider (e.g., Experian, Equifax and LexisNexis) for an additional ID verification attempt.
3. Security deposits on residential accounts—although Hydro currently assesses a security deposit on some tenants for residential service, the Company could mitigate additional risk by assessing

a security deposit on other high-risk applicants. The estimated financial impact to Hydro is nearly $100K.[5]

4. Require two forms of ID for certain applicants—for those applicants the Company is not able to validate positive identification, Hydro could require an applicant to provide two forms of identification (e.g., driver's license, passport, Social Security Card, military ID, etc.)

5. Fraud investigation and strategies—on applicants suspected of fraudulent activity or on service locations with recent adverse conditions, such as termination notices, DNP, high outstanding balance due, usage on an inactive meter or theft of service. Where adverse conditions exist, Hydro could require applicants to demonstrate that they reside at the service location and have not benefited from the service provided to the previous accountholder. There are third-party solutions emerging to assist with this type of investigation (i.e., LexisNexis)

6. Denial of Service—Hydro should adhere to the policy of refusing service if the premise is disconnected for non-payment and the applicant is responsible.

Active Account Collection and Customer Management

Although Hydro effectively executes its current collection treatment strategies on active accounts, it has an opportunity to further improve performance. Specific recommendations and opportunities are discussed in more detail below:

1. Enhance and accelerate collection treatment strategies on high-risk accounts—Attachment 12 shows the Company's current collection treatment and timeline for a typical, residential account with no payments assumed for illustration purposes. The collection treatment timeline starts with a new account (i.e., "Account Created") and finishes with a closed delinquent account (i.e., "Bad & Doubtful"). A friendly reminder is sent after 30 days of arrearage and a past due notice is sent after 60 days of arrearage. Proactive collection treatment begins after 76 days of arrearage, when the account is placed in the active Electronic Work Queue ("EWQ").[6] The disconnection/load limiting process begins after 83 days of arrearage. The corresponding billing timeline to the left of the collection treatment timeline in Attachment 12 highlights the actual arrearage of the account example. Specifically, when the disconnection process starts on day 83, the typical account has about 113 days of usage, worth about $565.[7] An "Urgent Notice of Disconnection" is printed on the next bill, after about 90 days of arrearage and 120 days of usage.

   One issue for the Company is that the treatment timeline delays collection on certain accounts where the accountholder is unable or unwilling to pay their bill. In addition, once an account enters the active EWQ, much of the collection work is manual, with each credit representative

[5] On an annual basis, Hydro charges-off about 2,500 residential high-balance accounts (i.e., average balance of $1,454), totaling $3.6 million. Assuming 33% of these high-balance accounts are secured with security deposits, the total annual dollars charged-off is reduced by $91,575 (2,500 accounts x 33% = 825 x $111 average deposit = $91,575). The average deposit amount of $111 assumes a mix of premises consisting of home owners (deposit: $300), apartments with and without electric heat (deposits: $100 and $50, respectively).

[6] Accounts placed in Active EWQ for manual follow up by a credit representative.

[7] Example assumes an average monthly bill of $150 unpaid for 113 days. Therefore, $150/30 days = $5.00 per day; and 113 days x $5 per day = $565.

making individual decisions on account prioritization and follow up. As a result, collection treatment is potentially uneven and inconsistent. Clearly, many high-risk, high-balance accounts escape the Company's collection efforts as evidenced by the annual charge-off of about 2,500 accounts with an average balance of $1,454.

A recommended solution for Hydro is to accelerate the residential collection timeline by as much as 30 days for certain high-risk accounts.[8] Attachment 13 shows the same collection timeline example with the past due account potentially entering the active EWQ on day 46, a full month earlier. Also, for these high-risk accounts, the reminders and collection notices printed on the bill are accelerated. The Company's newly developed behavioral risk score model is potentially ideal in determining account risk and placement into the accelerated collection treatment strategy.

2. Enhance collection treatment strategies on medium-risk accounts—for accounts determined to be of medium-risk, it is recommended that Hydro add several collection treatment strategies designed to engage the accountholder while arrearage balances are still manageable. The company's planned use of an automated dialer and automated messaging are good potential strategies for these types of accounts.
3. Add automated payment options to customer contacts—all customer contact campaigns can offer an option to pay through an automated process. For example, dialer calls can prompt payment and the customer presses 1 to pay. The call is then routed to an IVR for payment options, including credit card payments. The average cost for this automated service is less than $0.10 per minute.
4. Payment arrangements—the Company should continue its recent performance relative to limiting the number of broken payment arrangements. Longer term, it is recommended that the Company consider automating payment arrangements into its CIS system, limiting the number and terms available that individual credit representatives can offer accountholders. Again, the Company's newly developed behavioral risk score model could be used in determining the number and terms of payment arrangements offered.
5. Security deposits on existing active accounts—Hydro has an opportunity to further mitigate risk by assessing security deposits on certain active delinquent residential and non-residential accounts.[9] For example, accounts with arrearage greater than 90 or 120 days can be automatically assessed a security deposit. Warning notices of the potential deposit assessment can be placed on bill notices or a separate mailed notice. In addition, accountholders disconnected for non-payment can be assessed a security deposit as a requirement for restoration of service.
6. Performance measurement, management & reporting—it is recommended that Hydro enhance its ability to measure and report its active customer accounts receivable arrearage buckets in 30-day increments beyond 120 days (i.e., measured to 360+ days) and separated by customer class. In addition, it is recommended that the Company enhance its measurement and reporting of collection treatment activities and outcomes by the number of accounts, dollars, and average

[8] High-risk account can be identified by total arrearage, internal behavioral risk score, external risk score or any number of other similar attributes of risk determined by the Company.
[9] See foot note 6 for potential financial impact.

balance, as well as by the type of account (i.e., residential vs. non-residential). For example, disconnections for non-payment should be measured and reported by

a. Number and dollars due of accounts eligible for DNP

b. Number and dollars due of service orders

c. Number and dollars due of actual disconnections

d. Number and dollars of service restorations[10]

e. Residential vs. non-residential

7. Close DNP accounts after 10 business days—it is recommended that Hydro close accounts where the service is not restored after a disconnection for non-payment. The Company's current process allows accounts disconnected for non-payment to remain open indefinitely. Some of these accounts fall off the Company's radar screen for months or years, allowing monthly billing to continue and account balances to increase. More importantly, collection action is delayed. Attachment 14 shows the number and dollars associated with these types of accounts. Specifically, in November 2013, a one-time query of the Company's CIS system revealed 1,060 accounts totaling over $1.5 million in accounts previously disconnected for non-payment, but not yet closed.

8. Risk monitoring on large commercial/industrial accounts— Hydro could benefit from external technologies and solutions that help detect credit risk (i.e., payment default and bankruptcy) of large commercial and industrial customers. Often large commercial and industrial customers that default unexpectedly have good payment histories and show no signs of credit problems. A typical process includes providing a monthly file of the Company's highest volume non-residential customers to a third-party solution provider for an independent assessment of credit risk and/or probability of bankruptcy. These risk solutions are commonly used throughout the utility industry, and offered by Dunn and Bradstreet, Equifax, Experian and others.

Inactive Account Collection and Recovery

Although Hydro effectively executes its current collection treatment strategies on inactive accounts, it has an opportunity to further improve performance. Specific recommendations and opportunities are discussed in more detail below:

1. Enhance and accelerate collection treatment strategies on high-risk accounts—Attachment 12 also shows the Company's current collection treatment on closed accounts. There are a number of potential issues related to the current closed account process. First, manual intervention is required by a credit representative to keep accounts moving through the sequential collection steps. Specifically, an account must first be closed manually by a credit representative before it receives "final" status. Accounts that remain delinquent after 30 days are then manually listed in the inactive EWQ.[11] Once an account enters the inactive EWQ, much of the collection work is manual, with each credit representative making individual decisions on account prioritization and follow up. Finally, after approximately 90 days, delinquent accounts are manually coded as

[10] It is recommended that Hydro close accounts disconnected for non-payment after 10 business days. After 10 days, accountholders requesting service should be treated as a new applicant and given a new account number.
[11] Accounts placed in inactive EWQ for manual follow up by a credit representative.

"bad debt" and sent to a collection agency. Clearly, the manual coding of accounts at each step allows for uneven, inconsistent and delayed collection treatment.

Another problem with the current process is that all accounts, regardless of risk, are treated with the same collection timeline and strategy. For example, high-risk, high-balance accounts which are disconnected for non-payment are treated the same as small balance accounts with no arrearage. As a result, collection action is delayed and costs are incurred with sending unnecessary reminder notices and bills.

A recommended solution for Hydro is to accelerate the collection timeline for certain high-risk accounts. Attachment 13 also shows where disconnected high-risk accounts are automatically closed after 10 days and then immediately listed in the inactive EWQ. A final bill demand letter is automatically sent three days after the close of the account. Accounts that remain delinquent for 30 to 60 days are then automatically sent to a collection agency.

2. Enhance and accelerate collection treatment strategies on all inactive accounts—additional recommendations for inactive accounts are as follows:
    a. Reduce the in-house collection work (i.e., inactive EWQ) to 60 days or less, thereby, sending accounts to agencies earlier
    b. Select the most "productive" accounts for in-house collection effort. For example, accounts with lower-risk scores provided by the Company's behavioral scoring model
    c. Automatically send accounts to collection agency after EWQ work effort
    d. Establish champion-challenger competitive programs between agencies in each program (i.e., primary and secondary placement)
    e. Consider a warehousing "trigger" program for accounts secondary agency program, where pro-active collection activity is delayed until the agency receives an automatic signal from a credit reporting bureau that the debtor's credit status has been updated.
    f. Measure all agency performance by monthly-batch comparison (i.e., agency spin-down or batch-track report)
    g. Establish consistent commission rates in each program (i.e., same fees for each agency within a program)
    h. Adjust the market share of placements to reward best-performing agencies
    i. Use Opportunity-Cost analysis to performance manage the agencies (i.e., calculation of the cost of placing accounts with a lower-performing agency compared to higher-performing agency over a period of time)
    j. Reduce time accounts worked by agencies in each program. The analysis of the current agency historical performance shows that 80-90% of the total collection is achieved within 6-8 months after placement to the agencies.
    k. Publish monthly KPIs/scorecards and share with agencies to promote agency competition, including collection percentages measured by monthly, quarterly and annual "batch-track" results.

l. Obtain consistent and uniform reports from agencies

m. Obtain data integrity reports from agencies

n. Use reports to develop future strategies to segment accounts (i.e., potentially, separate commercial account placements, placement by balance range, etc.)

o. Utilize a middleware collection software solution to help manage and audit agencies. The solution provides a connection between the creditor (i.e., utility) and agencies, allowing management of workflows, uniform reporting and access to account-level information for auditing and compliance verification. In the event, the Company does not deploy a middleware solution, it is recommended that the outside collection agencies be audited to verify compliance with work standards and financial and legal requirements. Audits can be conducted by the Company's internal auditing staff or an outside, third-party company.

p. Enhance the agency placement file to include additional information, including residential vs. commercial account and risk score

q. Eliminate the practice of allowing collection agencies assess additional interest charges on closed accounts. Adding interest charges on closed utility accounts is not a common practice for third-party collection agencies.

3. Separate loan balances from energy usage billing—the Company offers its customers financial loans as a means to promote energy efficiency. The loans are for equipment and services which are contractually separate from a customer's energy usage. Nonetheless, once a loan is executed, as service to the borrower, the Company adds the loan payment to the customer's monthly billing for energy usage. Although it is a convenient way to combine the bills into one monthly bill, the process has the potential to make downstream collections more difficult, particularly on larger balances. In addition, once an account closes with an outstanding balance, the loan dollars are combined for collection and write-off reporting purposes. As a result, the outstanding loan balances inflate the Company's annual charge-off dollars relative to energy usage.

   Attachment 15 shows annual charge-offs from residential accounts with loan balances. Since 2011, the annual number of loan accounts, dollars and average balances charged-off are increasing. In 2013, 147 accounts charged-off totaling $0.54 million. Nearly, 72% of the dollars charged-off on these accounts originate from loans. Since the loan obligations are distinct and separate from a customer's energy usage, it is recommended that once an account closes, outstanding loan balances be treated as a unique and separate portfolio of debt, separate from energy usage debt. As a result, the Company will be in a better position to understand the performance of its loan program, as well as its receivables management of energy usage.

4. Reduce or eliminate final bill mailings on closed accounts—after an account closes, Hydro continues to send final bills for up to 90 days (i.e., three billing cycles). In many cases, the bills do not reach the accountholder because of address changes. In other cases that are disconnected for non-payment, for example, the accountholder has ignored the Company's previous billing and collection efforts. As a result, the process of sending subsequent final bills is unlikely to illicit payment or a positive outcome from these types of accountholders. It is recommended that the Company reduce or eliminate the later stage bill mailings on many of its closed accounts.

5. Eliminate late payment charges on closed accounts—after an account closes, Hydro continues to assess late fees to closed accounts. Adding late payment on closed utility accounts is not a common practice for utility companies.

Summary of Recommendations

A summary of all recommendations is provided below:

Account Initiation

1. Assess the credit risk of new customer applicants by utilizing a credit score
2. Utilize fraud detection technologies and solutions
3. Obtain security deposits on certain high-risk residential accounts
4. Require two forms of identification for residential applicants not able to validate positive identification through tradition methods
5. Develop additional fraud investigation techniques and strategies, especially where adverse conditions exist
6. Continue to adhere to the policy of denying service for applicants with outstanding debt owed the Company

Active Account Collection and Customer Management

7. Accelerate collection timeline by 30 days on certain high-risk delinquent accounts
8. Utilize the newly developed behavioral scoring methodology to enhance collection treatment strategies, including accelerated timeline on active, accounts
9. Add low-cost collection treatment strategies for certain medium-risk accounts
10. Add automated payment options for customer contacts and calling campaigns, including credit card payment options
11. Continue to limit the number of renegotiated payment plans after broken by the customer
12. Require security deposits on certain delinquent active, residential and non-residential customers
13. Require payment of restoration fees and a security deposit before service reconnection after a DNP
14. Enhance measurement and reporting of AR buckets out to 360+ days past due
15. Enhance measurement and reporting of collection activities and outcomes by the number of accounts, dollars and average balances, as well as by type of account (residential vs. non-residential)
16. Utilize bankruptcy alerts and credit risk technologies and solutions for large commercial and industrial customers

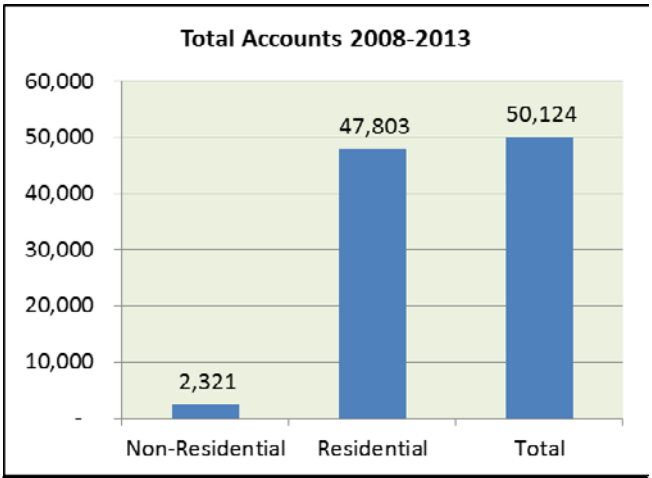
Inactive Account Collection and Recovery

17. Accelerate collection timeline on high-risk accounts and other accounts
18. Eliminate manual processes by automating status of accounts for treatment action

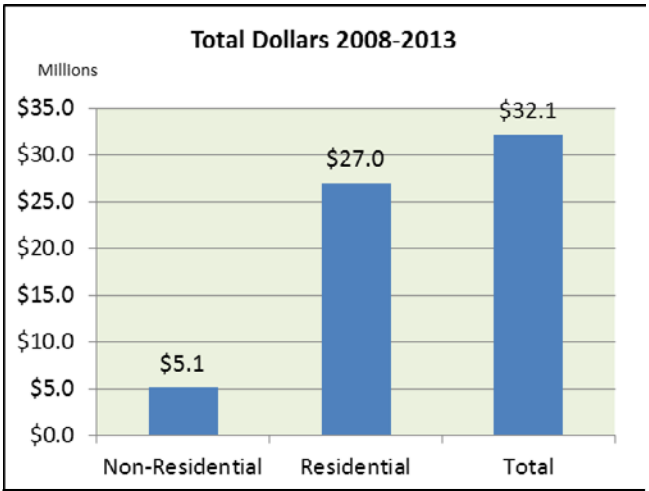
19. Automatically close accounts 10 days after DNP
20. Send final bill demand letter immediately on accounts disconnected for non-payment
21. Reduce the in-house collection work (i.e., inactive EWQ) to 60 days or less; and send accounts to outside collection agency sooner
22. Select the most "productive" accounts for in-house collection effort.
23. Automatically send accounts to collection agency after the in-house work effort (eliminate manual process)
24. Establish champion-challenger competitive programs between agencies in each program (i.e., Primary and Secondary programs)
25. Consider implementing a warehouse ("trigger") program after end of secondary program
26. Measure all agency performance by monthly-batch comparison (i.e., agency spin-down or batch-track report)
27. Establish consistent commission rates for each agency in each program
28. Adjust the market share of placements to reward best-performing agencies
29. Use Opportunity-Cost analysis to performance manage the agencies
30. Reduce time accounts worked by agencies in each program
31. Publish monthly KPIs/scorecards and share with agencies to promote agency competition
32. Obtain consistent and uniform reports from agencies
33. Obtain data integrity reports from agencies
34. Use reports to develop future strategies to segment accounts
35. Consider a third-party "middleware" collection agency management software solution
36. Enhance the agency placement file to include additional information to lift performance
37. Eliminate the practice of allowing collection agencies to assess additional interest charges on closed accounts. Adding interest charges on closed utility accounts is not a common practice for third-party collection agencies.
38. Reduce or eliminate final bill mailings on closed accounts
39. Eliminate late payment charges on closed accounts

Attachment 1

Gross Charge-Offs by Type, 2008-2013



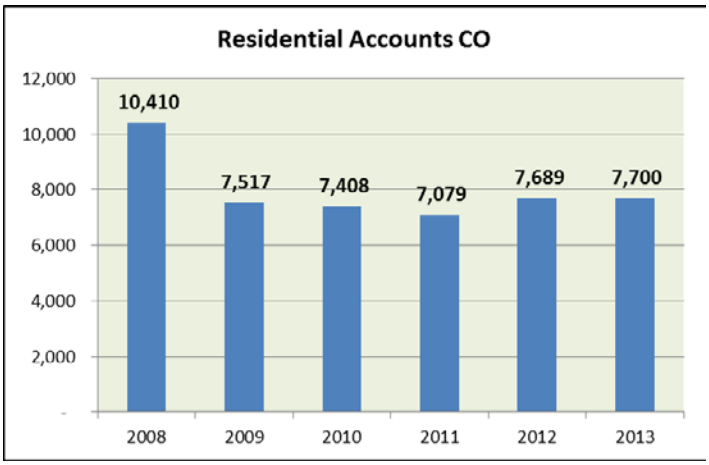
Residential Accounts	2008 - 2013				
	Accounts	%	Dollars	%	Avg. Balance
Total Residential:	47,803		$27.0		$565
Balance < $500:	32,864	69%	$5.3	20%	$161
Balance > $500:	14,939	31%	$21.7	80%	$1,454
Balance >$1000:	7,513	16%	$16.4	61%	$2,185

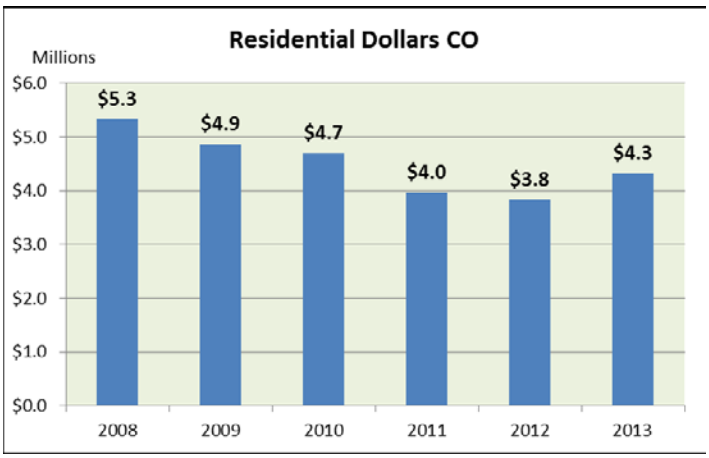


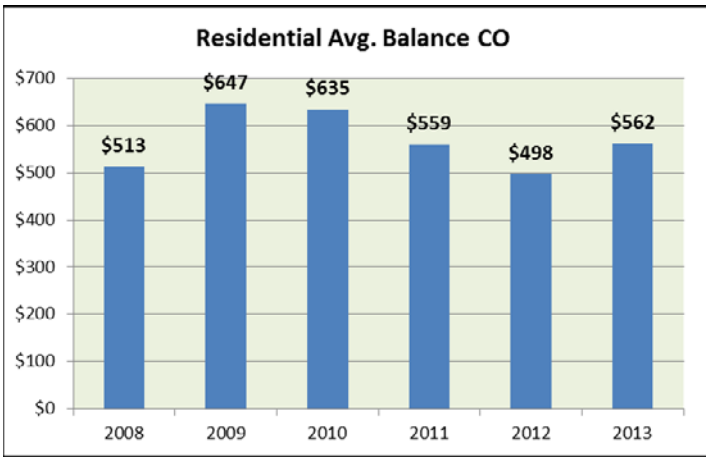
Non-Residential Accounts	2008 - 2013				
	Accounts	%	Dollars	%	Avg. Balance
Total Non-Residential	2,321		$5.1		$2,204
Balance < $500:	986	42%	$0.2	3%	$179
Balance > $500:	1,335	58%	$4.9	97%	$3,701
Balance >$1000:	955	41%	$4.7	91%	$4,886

Attachment 2

Residential Gross Charge-Offs, 2008-2013

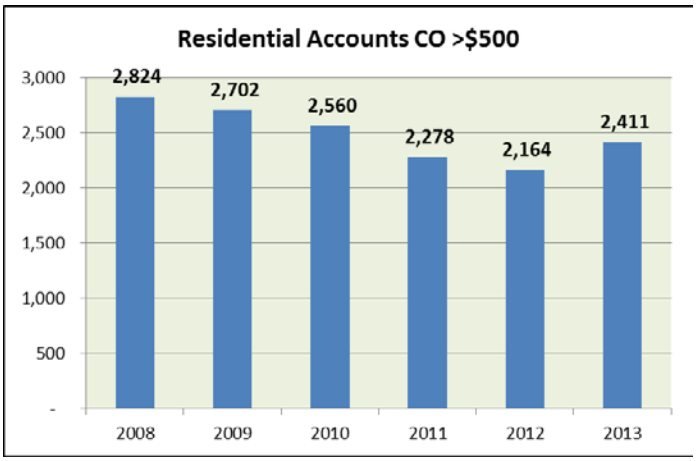


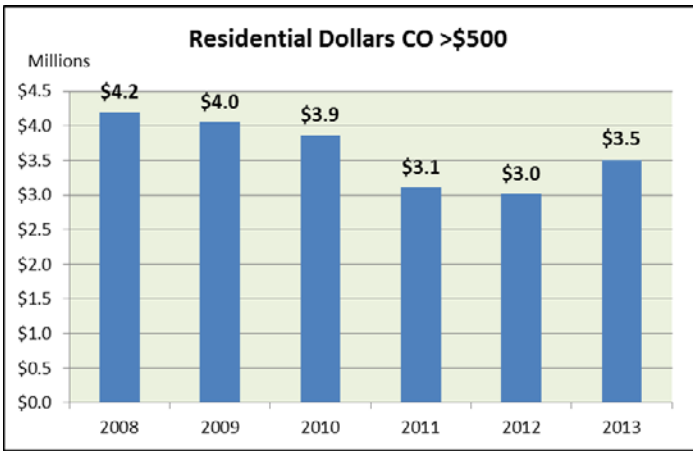


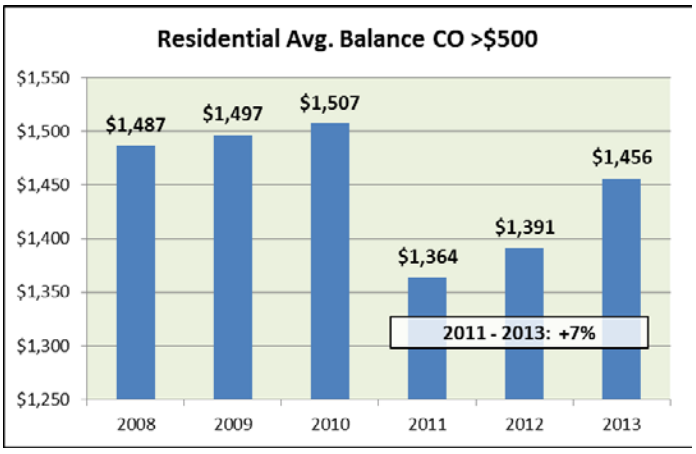


Attachment 3

Residential Gross Charge-Offs, Average Balances (>$500), 2008-2013

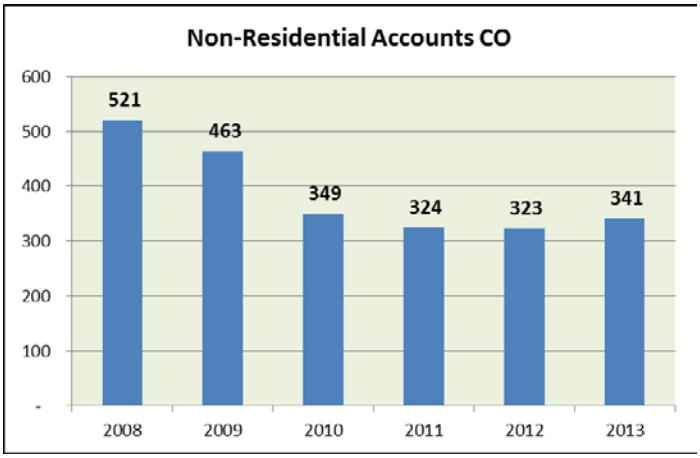


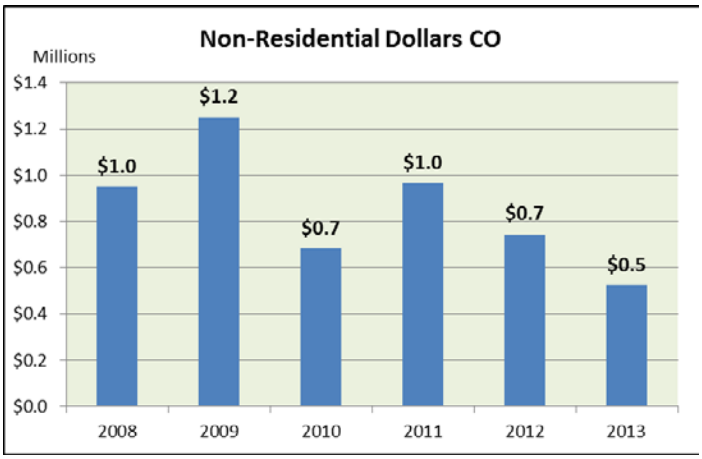


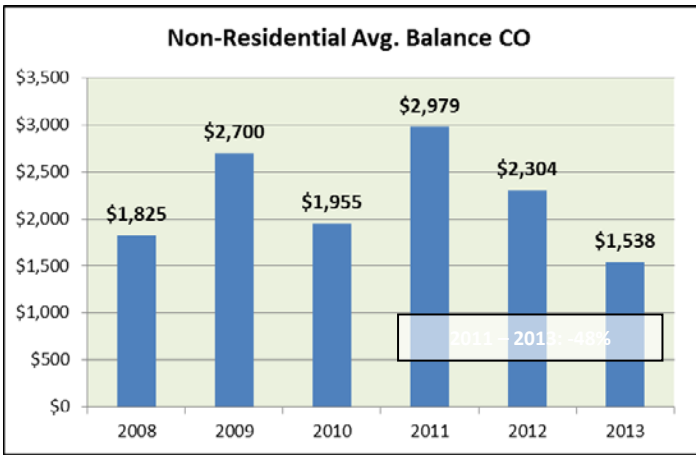


Attachment 4

Non-Residential Gross Charge-Offs, 2008-2013

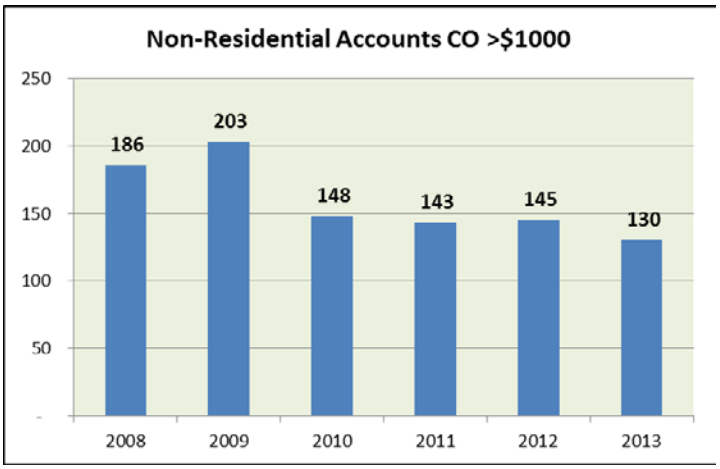


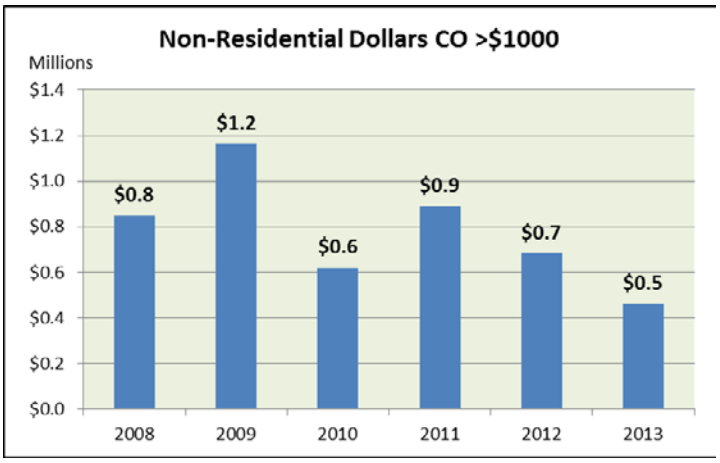


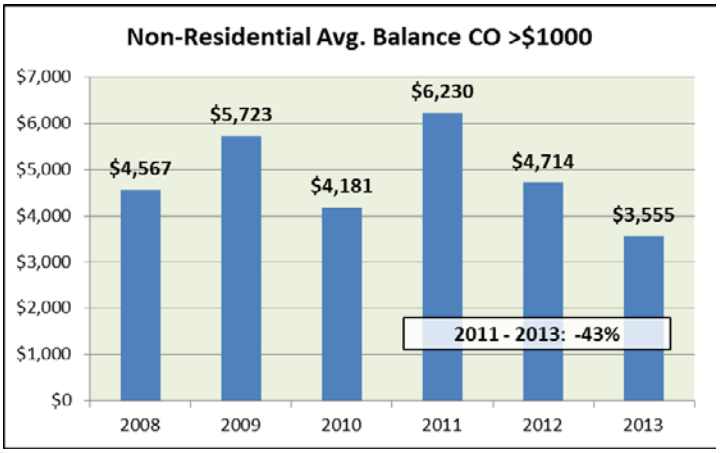


Attachment 5

Non-Residential Gross Charge-Offs, Average Balances (>$1,000), 2008-2013

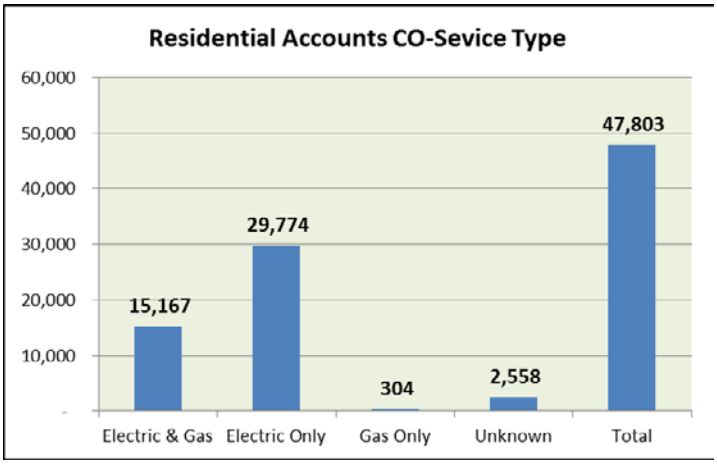


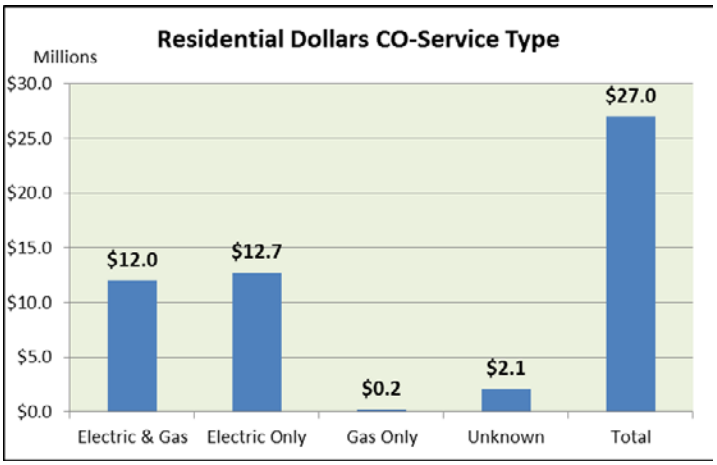


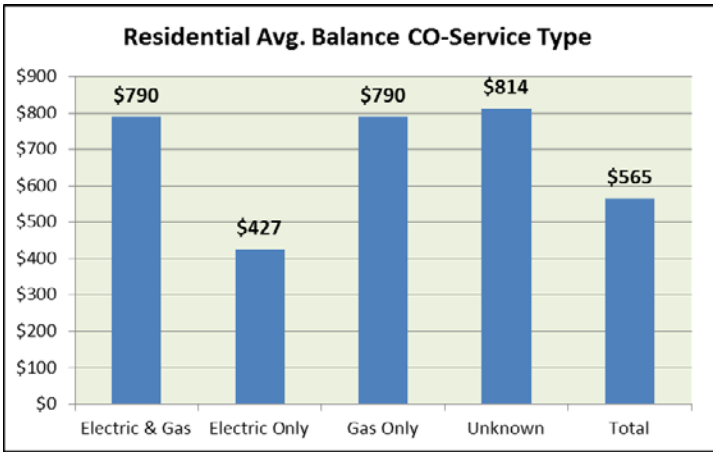


Attachment 6

Residential Charge-Offs by Service Type, 2008-2013

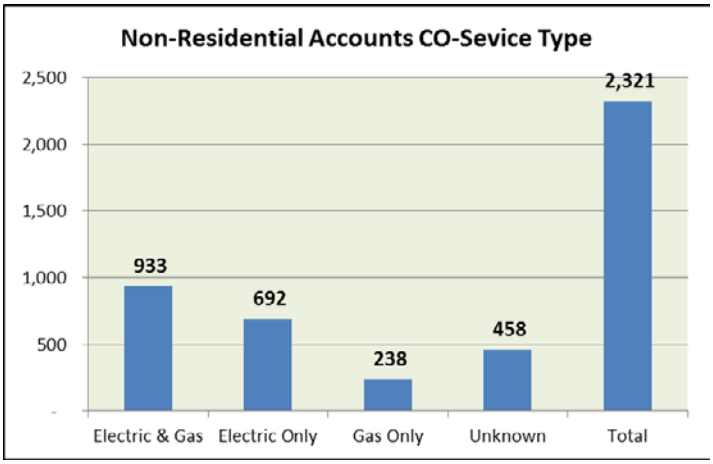


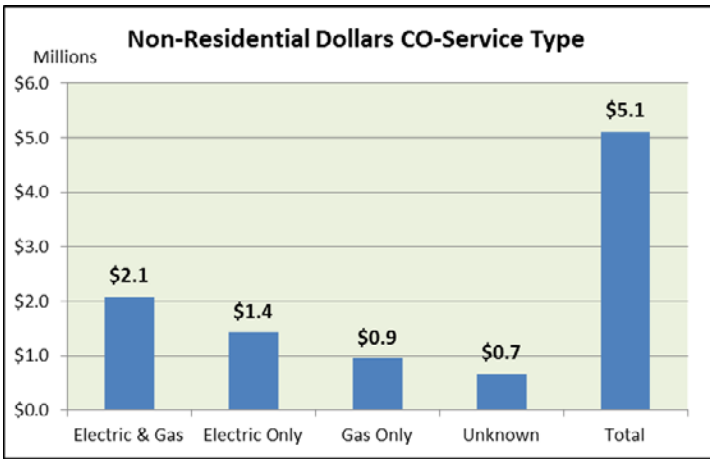


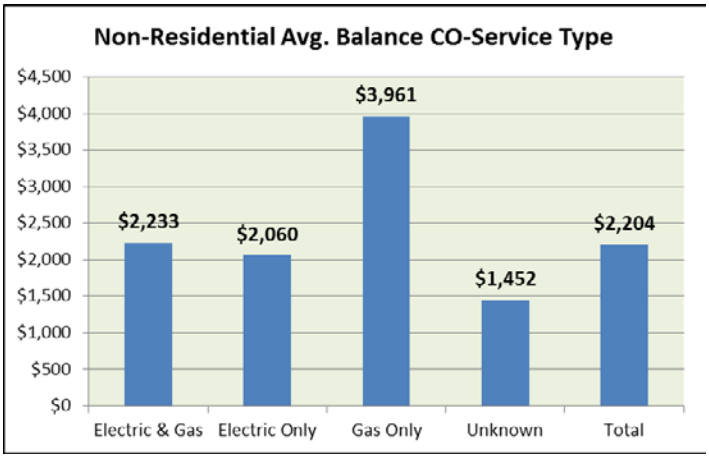


Attachment 7

Non-Residential Charge-Offs by Service Type, 2008-2013

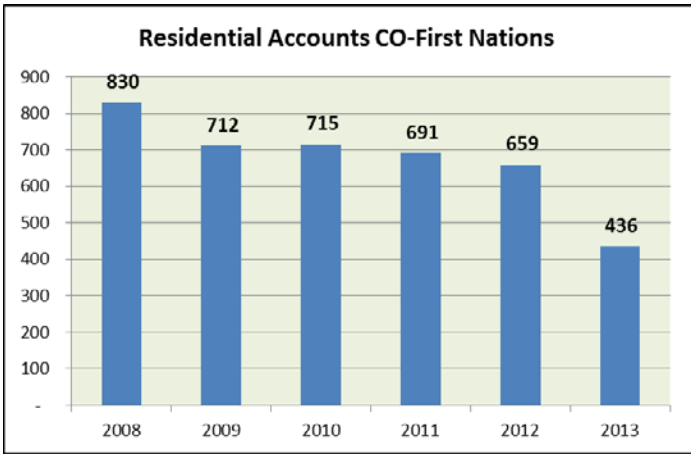


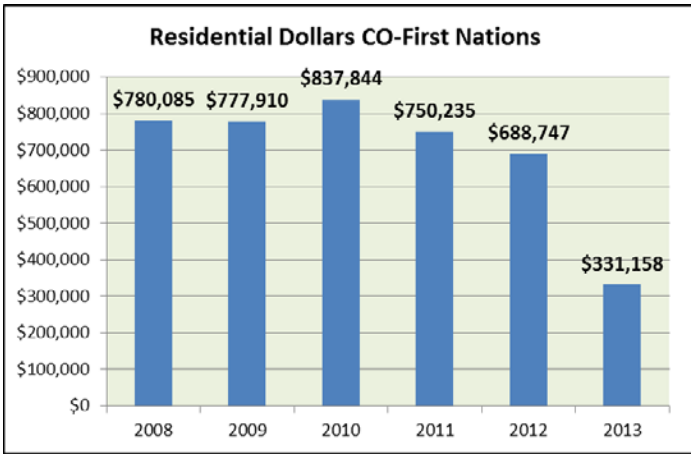


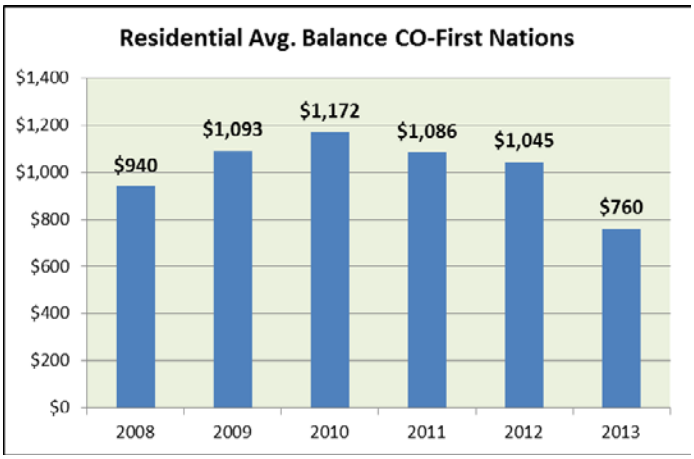


Attachment 8

Residential First Nations Accounts Charged-Off, 2008-2013

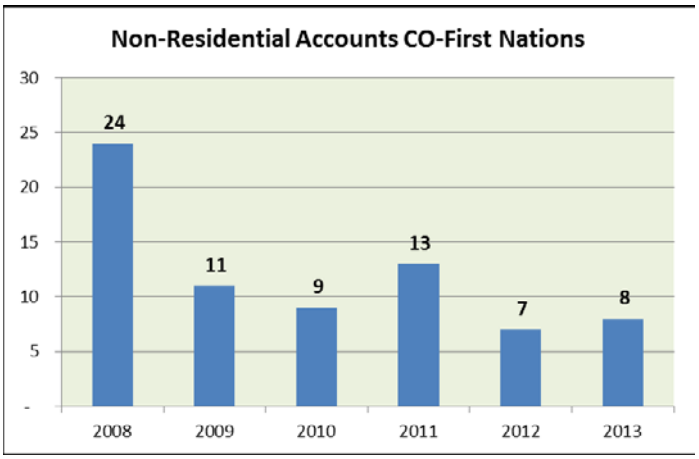


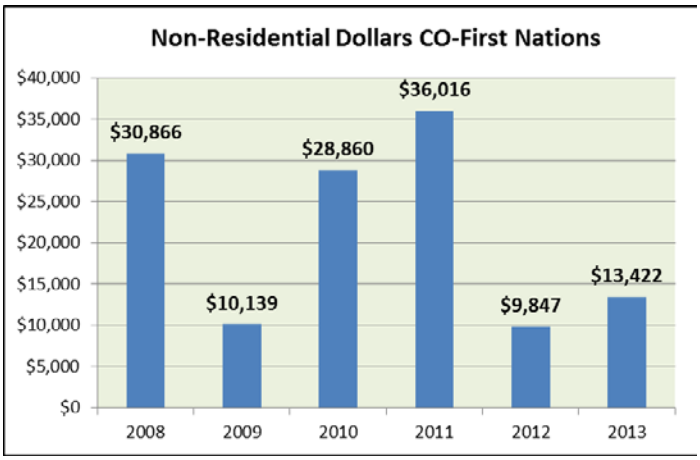


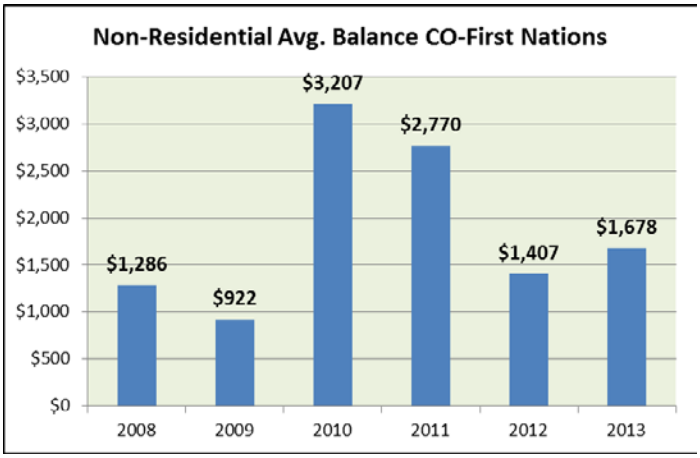


Attachment 9

Non-Residential First Nations Accounts Charged-Off, 2008-2013

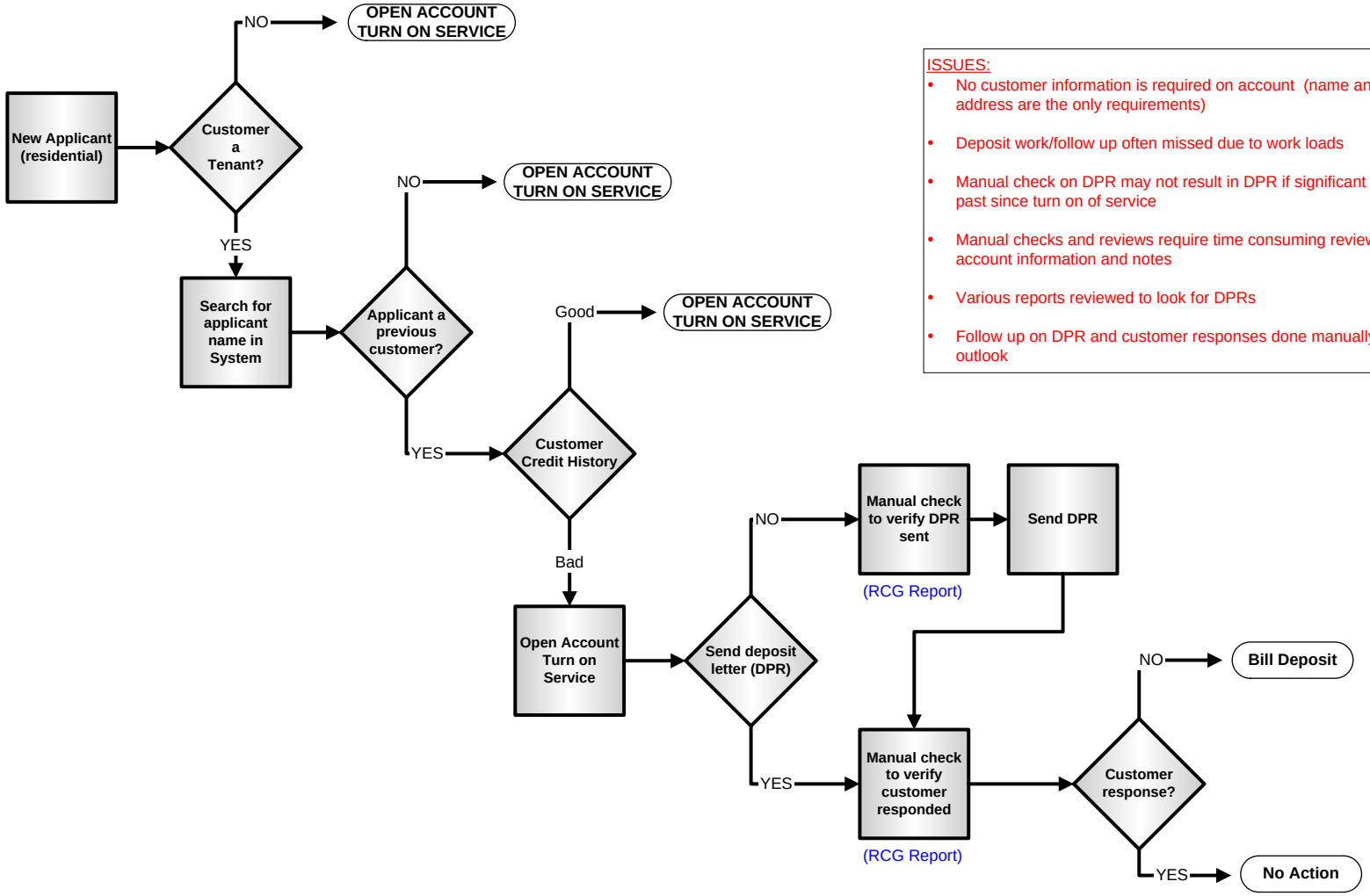






Attachment 10

Manitoba Hydro: New Residential Service Process Work Flow (Current)

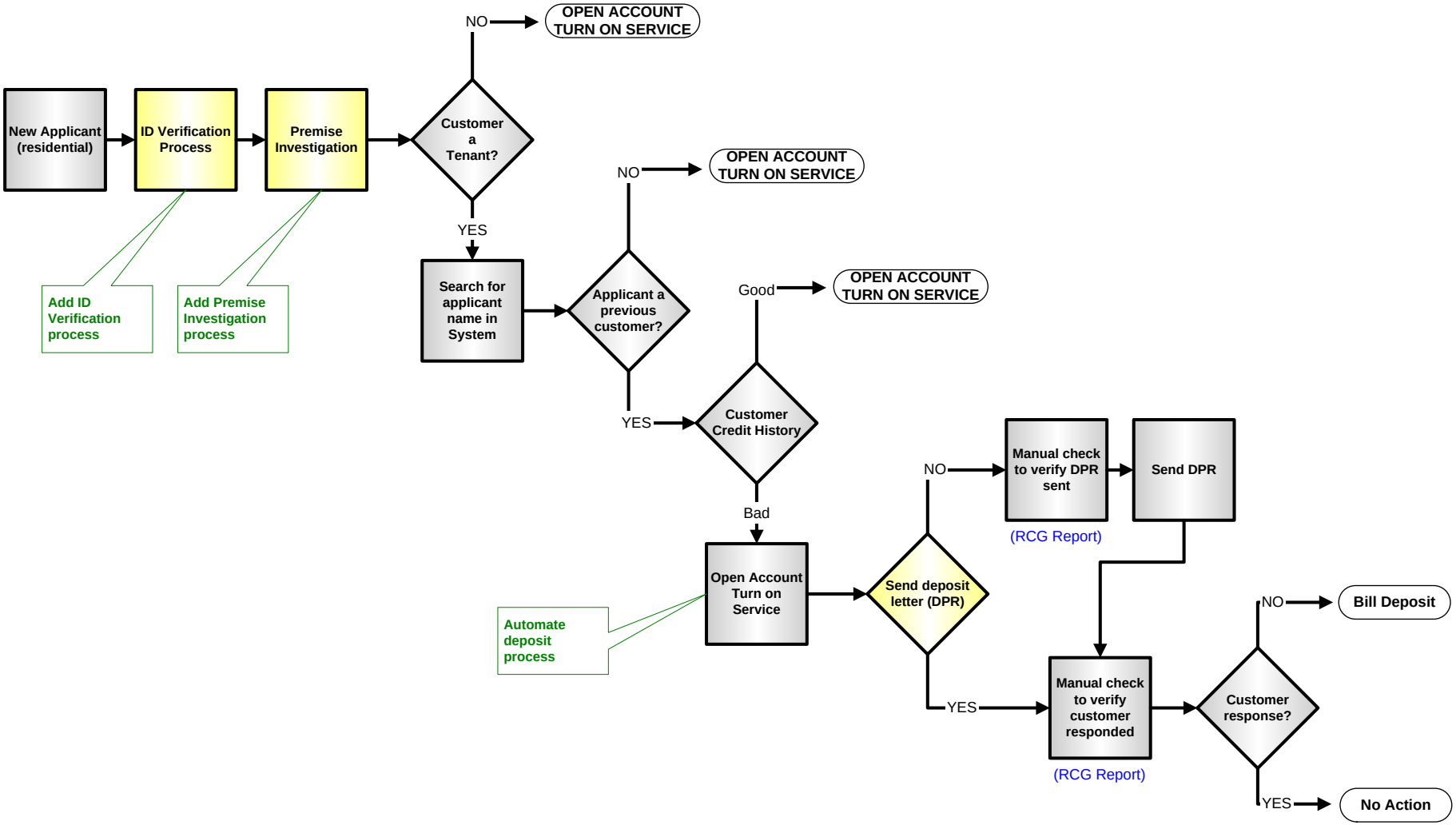


ISSUES:

- No customer information is required on account (name and billing address are the only requirements)
- Deposit work/follow up often missed due to work loads
- Manual check on DPR may not result in DPR if significant time has past since turn on of service
- Manual checks and reviews require time consuming review of account information and notes
- Various reports reviewed to look for DPRs
- Follow up on DPR and customer responses done manually via outlook

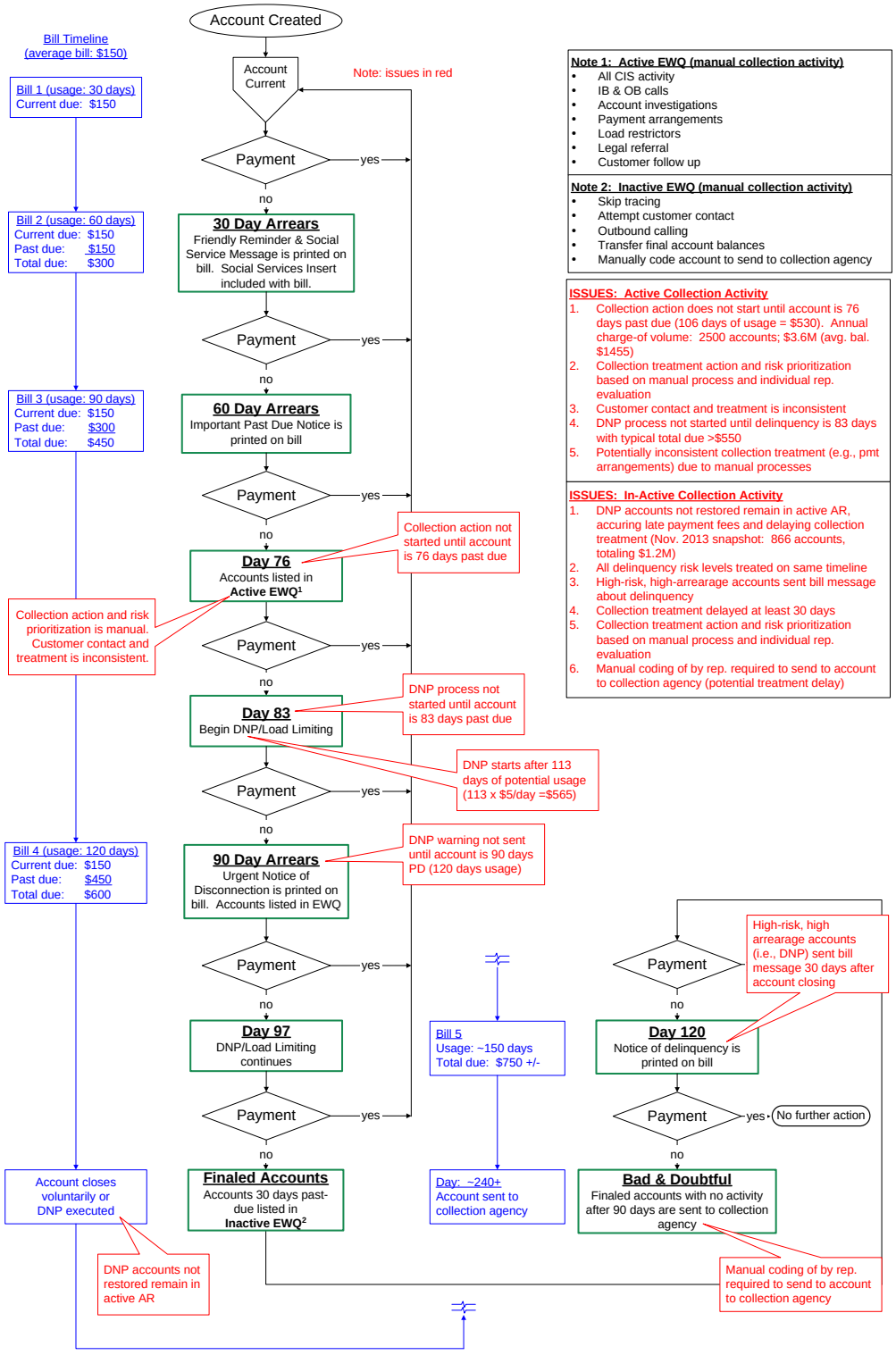
Attachment 11

Manitoba Hydro: New Residential Service Process Work Flow (Proposed)



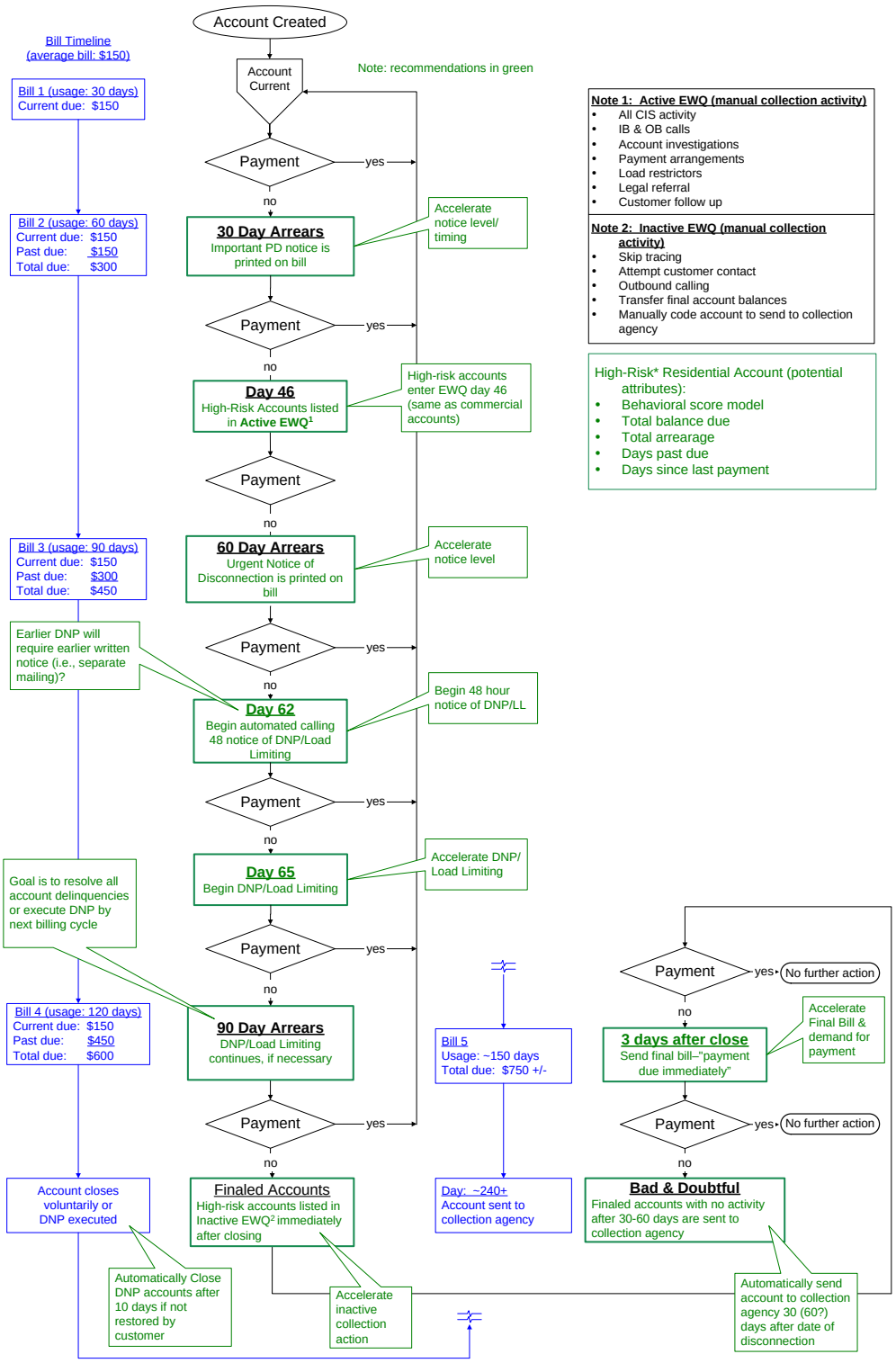
Attachment 12

Manitoba Hydro: Residential Collection Timeline (current process & issues)



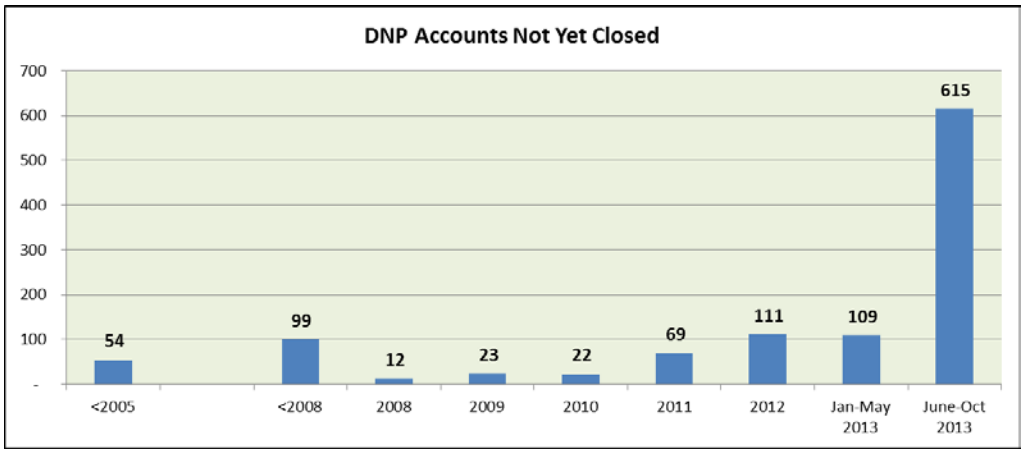
Attachment 13

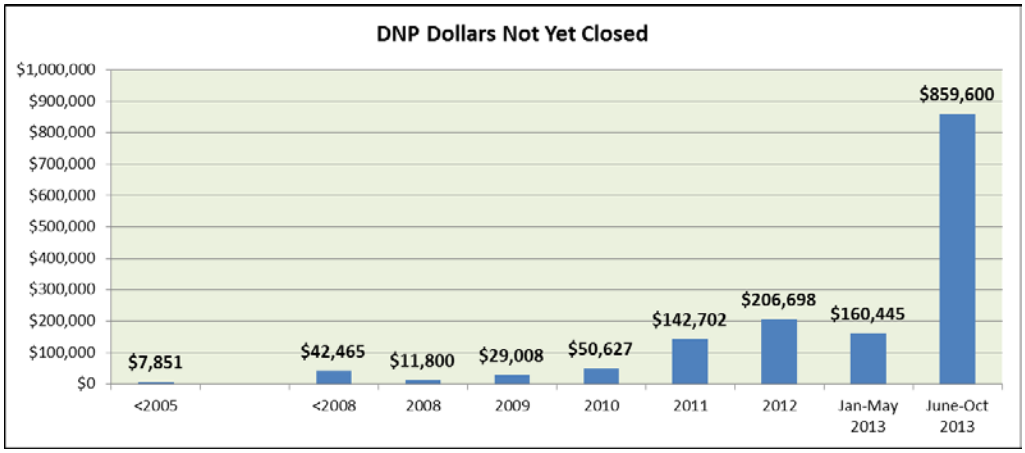
Manitoba Hydro: Residential Collection Timeline (recommendations for high-risk accounts)



Attachment 14

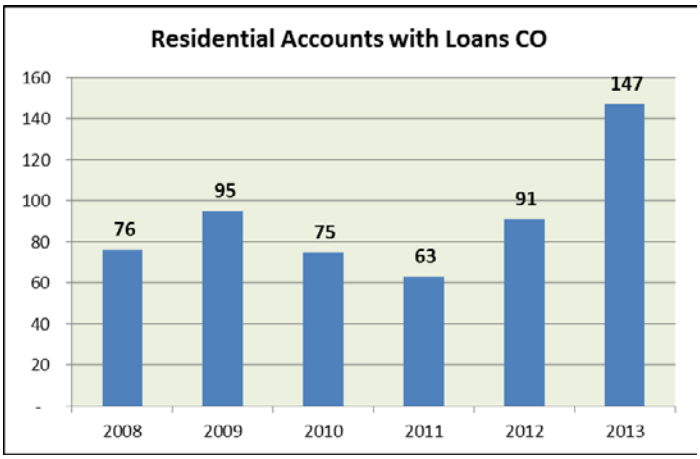
Disconnected Accounts Not Yet Closed, (CIS system snapshot, November 2013)

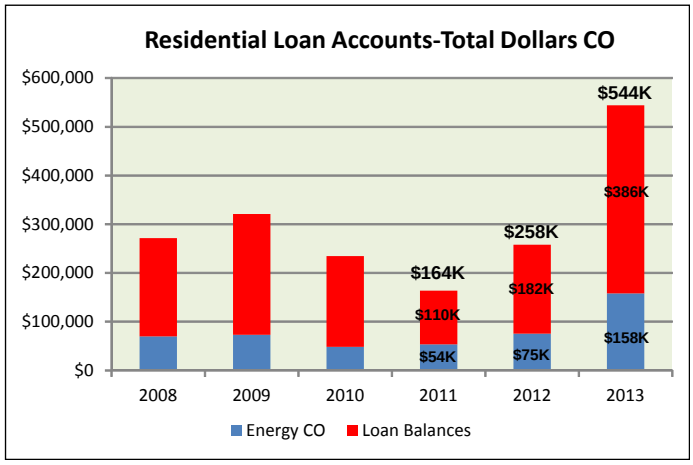


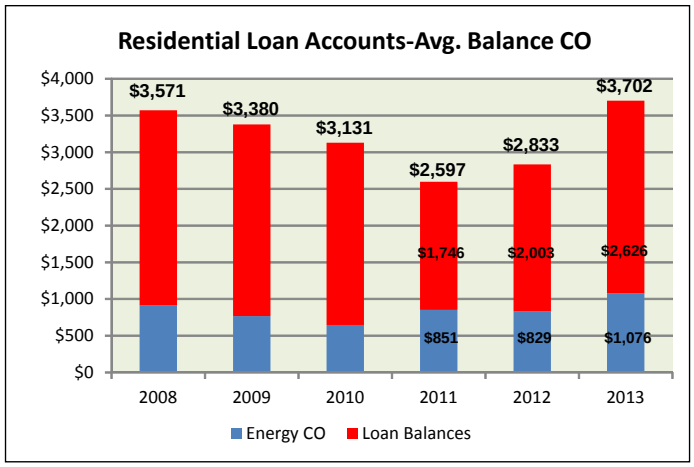


Attachment 15

Residential Loan Accounts Charge-Off, 2008-2013







Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide all written studies currently within the custody or control of Manitoba Hydro, whether or not prepared by or for Manitoba Hydro, that explicitly assess the extent to which the following activities reduce residential bad debt:

a) Cash security deposits;
b) Deferred payment agreements;
c) Disconnections for nonpayment;
d) Field collections;
e) Call center collection calls;
f) Budget billing plans;
g) Late payment charges.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Manitoba Hydro does not have documents explicitly assessing the extent to which the above mentioned activities reduce residential bad debt. Manitoba Hydro follows generally accepted industry practices for managing arrears and bad debt. These measures are regularly confirmed through discussions with other utilities, organizations such as the Canadian

Electrical Association (CEA), etc., to compare practices to ensure account management methods continue to be relevant.

Monticello consulting conducted a general review and analysis of Manitoba Hydro's current credit and collection practices to show where account management, and collection treatment could improve performance, including reducing arrearage and future bad debt. Please see Manitoba Hydro's response to GAC/MH-I-17b.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide all written studies currently within the custody or control of Manitoba Hydro, whether or not prepared by or for Manitoba Hydro, that explicitly assess the extent to which the following activities reduce residential arrears:

a) Cash security deposits;
b) Deferred payment agreements;
c) Disconnections for nonpayment;
d) Field collections;
e) Call center collection calls;
f) Budget billing plans;
g) Late payment charges.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Please see Manitoba Hydro's response to GAC/MH-I-18a-g.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide the following information: By month since October 2013, a single copy of all reports, compilations, memos or other written documents of any nature, including any electronic compilation not committed to paper, routinely (e.g., monthly, quarterly, annually) generated and filed with the Manitoba Public Utilities Board regarding residential (any report more frequent than monthly need not be provided):

a) Customers or dollars in arrears;
b) Billings;
c) Disconnections for nonpayment;
d) Receipts;
e) Reconnections;
f) Deposits held;
g) Deferred payment arrangements;
h) Deposits applied against accounts;
i) Collection activities;
j) Final bills;
k) Call center activity;
l) Levelized budget billing.
m) Uncollectibles;

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Please see the attachment for the requested reports.

Manitoba Hydro

360 Portage Ave • Winnipeg Manitoba Canada • R3C 2P4
Telephone / Nº de téléphone : (204) 360-5090 • Fax / Nº de télécopieur : (204) 360-6156
clreed@hydro.mb.ca

October 1, 2013

Mr. K Simonsen
The Public Utilities Board
400 – 330 Portage Avenue
Winnipeg, MB R3C 0C4

Dear Kurt:

Re: S1 Report Summary

Enclosed is a copy of the latest S1 Report dated October 1, 2013.

In summary, the report indicates the following:

	Winnipeg	Rural
Currently Disconnected:	57	13
Pending Reconnection:	18	2
Confirmed Vacant Properties:	26	8
Confirmed Vacant Properties after Sept 30:	0	0
Disconnected for Safety Concerns:	1	1
Disconnected for Technical Concerns:	0	0
Customer Request - Service to Remain Off:	0	0
Disconnected for RTB Failure:	0	0
All Electric Services:	0	0
Pending Meter Remove	0	0
Requested PUB Approval to Remain Off	0	0
PUB Approved to Remain Off	10	2

**1 Winnipeg GAS account is showing as disconnected due to system error - no gas service at property; 1 Winnipeg GAS account is waiting for the customer to call to make an appointment for reconnect.

Since May 15/13 we disconnected a total of 7 Gas services and 2 124 Electric services in Winnipeg, and 0 Gas services and 480 Electric Services in the Rural areas which fall under the PUB Board Order 14/08.

Explanations of the accounts are provided on the report for the categories listed in the Summary lists.

If you have any questions, please don't hesitate to contact me.

Sincerely,

Cheryl Reed
Business Analyst
360-5090

c: Patti Ramage Rosanne Sutton Zena Kavanagh

Manitoba Hydro

360 Portage Ave • Winnipeg Manitoba Canada • R3C 2P4
Telephone / N° de téléphone : (204) 360-5090 • Fax / N° de télécopieur : (204) 360-6156
clreed@hydro.mb.ca

October 31, 2013

Mr. K Simonsen
The Public Utilities Board
400 – 330 Portage Avenue
Winnipeg, MB R3C 0C4

Dear Kurt:

Re: S1 Report Summary

Enclosed is a copy of the latest S1 Report dated October 31, 2013.

In summary, the report indicates the following:

	Winnipeg	Rural
Currently Disconnected:	33	9
Pending Reconnection:	0	0
Confirmed Vacant Properties:	22	6
Confirmed Vacant Properties after Sept 30:	0	0
Disconnected for Safety Concerns:	1	1
Disconnected for Technical Concerns:	0	0
Customer Request - Service to Remain Off:	0	0
Disconnected for RTB Failure:	0	0
All Electric Services:	0	0
Pending Meter Remove	0	0
Requested PUB Approval to Remain Off	0	0
PUB Approved to Remain Off	9	2

**1 Winnipeg GAS account is showing as disconnected due to system error - no gas service at property.

Since May 15/13 we disconnected a total of 8 Gas services and 2 131 Electric services in Winnipeg, and 0 Gas services and 480 Electric Services in the Rural areas which fall under the PUB Board Order 14/08.

Explanations of the accounts are provided on the report for the categories listed in the Summary lists.

If you have any questions, please don't hesitate to contact me.

Sincerely,

Cheryl Reed
Business Analyst
360-5090

c: Patti Ramage Rosanne Sutton Zena Kavanagh

Manitoba Hydro

360 Portage Ave • Winnipeg Manitoba Canada • R3C 2P4
Telephone / N° de téléphone : (204) 360-5090 • Fax / N° de télécopieur : (204) 360-6156
clreed@hydro.mb.ca

December 2, 2013

Mr. K Simonsen
The Public Utilities Board
400 – 330 Portage Avenue
Winnipeg, MB R3C 0C4

Dear Kurt:

Re: S1 Report Summary

Enclosed is a copy of the latest S1 Report dated November 30, 2013.

In summary, the report indicates the following:

	Winnipeg	Rural
Currently Disconnected:	24	8
Pending Reconnection:	0	0
Confirmed Vacant Properties:	16	5
Confirmed Vacant Properties after Sept 30:	0	0
Disconnected for Safety Concerns:	1	1
Disconnected for Technical Concerns:	0	0
Customer Request - Service to Remain Off:	0	0
Disconnected for RTB Failure:	0	0
All Electric Services:	0	0
Pending Meter Remove	0	0
Requested PUB Approval to Remain Off	0	0
PUB Approved to Remain Off	6	2

**1 Winnipeg GAS account is showing as disconnected due to system error - no gas service at property.

Since May 15/13 we disconnected a total of 8 Gas services and 2 130 Electric services in Winnipeg, and 0 Gas services and 489 Electric Services in the Rural areas which fall under the PUB Board Order 14/08.

Explanations of the accounts are provided on the report for the categories listed in the Summary lists.

If you have any questions, please don't hesitate to contact me.

Sincerely,

Cheryl Reed
Business Analyst
360-5090

c: Patti Ramage Rosanne Sutton Zena Kavanagh

Manitoba Hydro

360 Portage Ave • Winnipeg Manitoba Canada • R3C 2P4
Telephone / N° de téléphone : (204) 360-5090 • Fax / N° de télécopieur : (204) 360-6156
clreed@hydro.mb.ca

December 31, 2013

Mr. K Simonsen
The Public Utilities Board
400 – 330 Portage Avenue
Winnipeg, MB R3C 0C4

Dear Kurt:

Re: S1 Report Summary

Enclosed is a copy of the latest S1 Report dated December 31, 2013.

In summary, the report indicates the following:

	Winnipeg	Rural
Currently Disconnected:	21	6
Pending Reconnection:	0	0
Confirmed Vacant Properties:	15	3
Confirmed Vacant Properties after Sept 30:	0	0
Disconnected for Safety Concerns:	0	1
Disconnected for Technical Concerns:	0	0
Customer Request - Service to Remain Off:	0	0
Disconnected for RTB Failure:	0	0
All Electric Services:	0	0
Pending Meter Remove	0	0
Requested PUB Approval to Remain Off	0	0
PUB Approved to Remain Off	5	2

**1 Winnipeg GAS account is showing as disconnected due to system error - no gas service at property.

Since May 15/13 we disconnected a total of 8 Gas services and 2 130 Electric services in Winnipeg, and 0 Gas services and 490 Electric Services in the Rural areas which fall under the PUB Board Order 14/08.

Explanations of the accounts are provided on the report for the categories listed in the Summary lists.

If you have any questions, please don't hesitate to contact me.

Sincerely,

Cheryl Reed
Business Analyst
360-5090

c: Patti Ramage Rosanne Sutton Zena Kavanagh

Manitoba Hydro

360 Portage Ave • Winnipeg Manitoba Canada • R3C 2P4
Telephone / N° de téléphone : (204) 360-5809 • Fax / N° de télécopieur : (204) 360-6156
swilson@hydro.mb.ca

October 1, 2014

Mr. K Simonsen
The Public Utilities Board
400 – 330 Portage Avenue
Winnipeg, MB R3C 0C4

Dear Kurt:

Re: S1 Report Summary

Enclosed is a copy of the latest S1 Report dated October 1, 2014.

In summary, the report indicates the following:

	Winnipeg	Rural
Currently Disconnected:	153	33
Pending Reconnection:	68	10
Confirmed Vacant Properties:	57	16
Potential Vacant/Pending Bailiff Visit:	1	0
Confirmed Vacant Properties after Sept 30:	0	0
Disconnected for Safety Concerns:	4	1
Disconnected for Technical Concerns:	6	2
Customer Request - Service to Remain Off:	0	0
Disconnected for RTB Failure:	0	0
All Electric Services:	1	2
Pending Further Review:	3	0
Requested PUB Approval to Remain Off	13	2
PUB Approved to Remain Off	0	0

Since May 15/14 we disconnected a total of 56 Gas services and 2 711 Electric services in Winnipeg, and 10 Gas services and 748 Electric Services in the Rural areas which fall under the PUB Board Order 14/08.

Explanations of the accounts are provided on the report for the categories listed in the Summary lists.

If you have any questions, please don't hesitate to contact me.

Sincerely,

Samantha Wilson
Business Analyst
360-5809

c: Patti Ramage Rosanne Sutton Zena Kavanagh

Manitoba Hydro

360 Portage Ave • Winnipeg Manitoba Canada • R3C 2P4
Telephone / N° de téléphone : (204) 360-5809 • Fax / N° de télécopieur : (204) 360-6156
swilson@hydro.mb.ca

November 4, 2014

Mr. K Simonsen
The Public Utilities Board
400 – 330 Portage Avenue
Winnipeg, MB R3C 0C4

Dear Kurt:

Re: S1 Report Summary

Enclosed is a copy of the latest S1 Report dated October 31, 2014.

In summary, the report indicates the following:

	Winnipeg	Rural
Currently Disconnected:	60	11
Pending Reconnection:	0	0
Confirmed Vacant Properties:	37	7
Potential Vacant/Pending Bailiff Visit:	0	0
Confirmed Vacant Properties after Sept 30:	0	0
Disconnected for Safety Concerns:	2	0
Disconnected for Technical Concerns:	8	2
Customer Request - Service to Remain Off:	0	0
Disconnected for RTB Failure:	0	0
All Electric Services:	1	1
Pending Further Review:	0	0
Requested PUB Approval to Remain Off	0	0
PUB Approved to Remain Off	1	12

Since May 15/14 we disconnected a total of 55 Gas services and 2 712 Electric services in Winnipeg, and 10 Gas services and 749 Electric Services in the Rural areas which fall under the PUB Board Order 14/08.

Explanations of the accounts are provided on the report for the categories listed in the Summary lists.

If you have any questions, please don't hesitate to contact me.

Sincerely,

Samantha Wilson
Business Analyst
360-5809

c: Patti Ramage Rosanne Sutton Zena Kavanagh

Manitoba Hydro

360 Portage Ave • Winnipeg Manitoba Canada • R3C 2P4
Telephone / N° de téléphone : (204) 360-5809 • Fax / N° de télécopieur : (204) 360-6156
swilson@hydro.mb.ca

December 2, 2014

Mr. K Simonsen
The Public Utilities Board
400 – 330 Portage Avenue
Winnipeg, MB R3C 0C4

Dear Kurt:

Re: S1 Report Summary

Enclosed is a copy of the latest S1 Report dated November 30, 2014.

In summary, the report indicates the following:

	Winnipeg	Rural
Currently Disconnected:	37	8
Pending Reconnection:	0	0
Confirmed Vacant Properties:	26	5
Potential Vacant/Pending Bailiff Visit:	0	0
Confirmed Vacant Properties after Sept 30:	0	0
Disconnected for Safety Concerns:	1	0
Disconnected for Technical Concerns:	5	1
Customer Request - Service to Remain Off:	0	0
Disconnected for RTB Failure:	0	0
All Electric Services:	1	1
Pending Further Review:	0	0
Requested PUB Approval to Remain Off	0	0
PUB Approved to Remain Off	4	1

Since May 15/14 we disconnected a total of 55 Gas services and 2 713 Electric services in Winnipeg, and 10 Gas services and 749 Electric Services in the Rural areas which fall under the PUB Board Order 14/08.

Explanations of the accounts are provided on the report for the categories listed in the Summary lists.

If you have any questions, please don't hesitate to contact me.

Sincerely,

Samantha Wilson
Business Analyst
204-360-5809

c: Patti Ramage Rosanne Sutton Zena Kavanagh

Manitoba Hydro

360 Portage Ave • Winnipeg Manitoba Canada • R3C 2P4
Telephone / N° de téléphone : (204) 360-5201 • Fax / N° de télécopieur : (204) 360-6156
ebernstein@hydro.mb.ca

January 2, 2014

Mr. K Simonsen
The Public Utilities Board
400 – 330 Portage Avenue
Winnipeg, MB R3C 0C4

Dear Kurt:

Re: S1 Report Summary

Enclosed is a copy of the latest S1 Report dated December 31, 2014.

In summary, the report indicates the following:

	Winnipeg	Rural
Currently Disconnected:	35	8
Pending Reconnection:	0	0
Confirmed Vacant Properties:	25	5
Potential Vacant/Pending Bailiff Visit:	0	0
Confirmed Vacant Properties after Sept 30:	0	0
Disconnected for Safety Concerns:	2	0
Disconnected for Technical Concerns:	5	1
Customer Request - Service to Remain Off:	0	0
Disconnected for RTB Failure:	0	0
All Electric Services:	1	1
Pending Further Review:	0	0
Requested PUB Approval to Remain Off	0	0
PUB Approved to Remain Off	2	1

Since May 15/14 we disconnected a total of 55 Gas services and 2 716 Electric services in Winnipeg, and 10 Gas services and 748 Electric Services in the Rural areas which fall under the PUB Board Order 14/08.

Explanations of the accounts are provided on the report for the categories listed in the Summary lists.

If you have any questions, please don't hesitate to contact me.

Sincerely,

Katia Bernstein
Business Analyst
204-360-5201

c: Patti Ramage Rosanne Sutton Zena Kavanagh

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide the following information: By month since October 2013, a single copy of all reports, compilations, memos or other written document of any nature, including any electronic compilation not committed to paper, routinely (e.g., monthly, quarterly, annually) generated internally but *not* filed with the Manitoba Public Utilities Board regarding (reports generated more frequently than monthly need not be provided):

a) Customers or dollars in arrears;
b) Billings;
c) Disconnections for nonpayment;
d) Receipts;
e) Reconnections;
f) Deposits held;
g) Deferred payment arrangements;
h) Deposits applied against accounts;
i) Collection activities;
j) Final bills;
k) Call center activity;
l) Levelized budget billing.
m) Uncollectibles;

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Manitoba Hydro regularly compiles data for the purposes of monitoring operations and activity for the items requested. These compilations vary in format from very detailed, customer specific reporting to broader summaries of activities. Many of these outputs are presented without context and without explanation, and therefore, would not be meaningful outside of the direct operational areas. Further, to attempt to broadly compile all of these documents would require more time than is available in the current process and be costly, and is unlikely to provide the reader with meaningful information relevant to their specific interest.

In an attempt to provide insight into the requested information, the following data is provided:

	(a) Dollars in Arrears (1000s)	(i) Outbound Calls	(i) Inbound Calls	(g) Payment Arrangements	(i) Collection Notices Mailed & Delivered	(c) Disconnections for Non-payment	(e) Re-connections
Oct-13	22,055	14,436	17,459	10,843	2,524	1,157	1,079
Nov-13	22,970	13,827	13,861	9,269	1,531	388	404
Dec-13	26,513	11,127	11,232	7,670	615	273	211
Jan-14	28,887	13,467	15,827	10,157	1,280	252	147
Feb-14	35,386	11,405	14,699	9,383	1,278	381	216
Mar-14	38,049	10,549	19,435	12,748	1,959	442	217
Apr-14	36,993	10,546	23,967	15,191	2,892	671	329
May-14	34,971	17,932	27,344	16,046	3,040	2,665	1,539
Jun-14	32,769	15,726	26,838	14,546	2,304	3,572	2,428
Jul-14	29,025	18,624	25,836	14,377	1,957	3,556	2,474
Aug-14	27,628	15,173	21,731	11,105	1,723	2,709	2,062
Sep-14	25,978	10,863	19,180	9,662	1,472	2,040	1,754
Oct-14	22,733	17,727	18,206	10,322	1,564	1,119	1,098
Nov-14	23,893	18,210	14,009	8,584	1,003	301	373
Dec-14	26,033	17,735	12,373	7,449	539	254	227

	(b) Billings ($1000s) (Residential and General Service)	(d) Receipts ($1000s) (Payments Applied to Electric Energy, Taxes and Other Related Charges)	(f) Deposits Held ($)	(j) Final Bills	(l) Equal Payment Plan Customers (Residential and General Service)
Oct-13	$95,894	$120,641	$171,756	10,713	122,927
Nov-13	$113,411	$114,112	$165,307	9,838	123,222
Dec-13	$133,374	$132,676	$160,032	7,441	123,229
Jan-14	$158,768	$159,446	$156,857	6,321	123,713
Feb-14	$148,950	$146,832	$152,307	5,814	123,706
Mar-14	$141,468	$156,954	$152,782	6,210	123,385
Apr-14	$131,080	$148,622	$162,207	6,821	122,562
May-14	$110,327	$138,314	$175,182	8,406	121,524
Jun-14	$97,764	$132,160	$185,857	8,997	120,455
Jul-14	$97,015	$123,068	$213,307	8,416	119,192
Aug-14	$101,043	$114,705	$223,207	8,788	124,406
Sep-14	$93,090	$122,323	$238,882	11,392	126,580
Oct-14	$103,016	$123,591	$317,382	12,658	127,278
Nov-14	$117,373	$116,718	$366,704	9,180	127,148
Dec-14	$139,275	$146,721	$419,254	7,774	126,812

	(k) Customer Contact Centre - Incoming Calls				(k) CCC - Emails Received
	Billing	**Service**	**Power Smart**	**Total**	
Oct-13	34,225	24,217	3,771	62,213	6,940
Nov-13	28,335	16,181	2,766	47,282	5,668
Dec-13	24,431	18,166	2,025	44,622	5,306
Jan-14	30,929	21,586	2,428	54,943	6,521
Feb-14	26,350	14,430	2,105	42,885	6,354
Mar-14	28,557	16,091	2,312	46,960	6,766
Apr-14	30,649	16,878	2,455	49,982	7,189
May-14	32,000	20,910	2,564	55,474	7,205
Jun-14	32,941	32,327	2,654	67,922	7,422
Jul-14	36,511	29,561	3,365	69,437	8,288
Aug-14	39,264	22,849	2,976	65,089	8,373
Sep-14	44,850	23,132	3,855	71,837	10,070
Oct-14	35,338	20,851	3,628	59,817	9,007
Nov-14	28,335	20,010	3,061	51,406	7,492
Dec-14	27,079	18,020	2,194	47,293	5,896
Total	**479,794**	**315,209**	**42,159**	**837,162**	**108,497**

	(m) Uncollectibles ($1000s)			(m) % Write-Off compared to Previous Year Revenue
Year	**Gross Write-Off, net of taxes**	**Recovery of Prev. Yrs' Write-Off**	**Net Write-Off**	
2009/10	$3,412	$448	$2,964	0.263
2010/11	$3,003	$459	$2,544	0.222
2011/12	$3,054	$372	$2,682	0.223
2012/13	$2,579	$349	$2,230	0.187
2013/14	$2,609	$535	$2,074	0.155

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide any documents, analyses or reports in the custody or control of Manitoba Hydro, whether or not prepared by or for Manitoba Hydro, that indicates, evaluates or otherwise discusses the amount which residential arrears must reach in order for Manitoba Hydro to cost-effectively disconnect service due to the arrearage.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Manitoba Hydro is unaware of any documents, analyses or reports to determine the amount residential arrears must reach in order to cost-effectively disconnect service. Under Manitoba Hydro's current policy, a residential bill must be past the due date of the 60 day bill and greater than $100 prior to disconnection of service.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide complete residential tariff sheets, if any, for each and every one of the following:

a) Late fees;
b) Deposits;
c) Bad check fees;
d) Disconnect/reconnect fees (for nonpayment);
e) New service connection fees;
f) Field collection fees;
g) Any and all other charges for residential customers.

RATIONALE FOR QUESTION:

The relationship between costs and fees is to be considered.

RESPONSE:

There are no tariff sheets for residential fees other than energy rates.

Current fees/charges are:

Late Fees	1.25% monthly on balance outstanding
Deposits (where credit worthiness has not been established)	House $300 Apartment (tenant pays heat) $100 Apartment (landlord pays heat) $50
Returned Cheque Fees	$20 per item
Reconnect Fees	During working hours $50 After hours $65
New Service Connection Fees	None
Field Collection Fees	None
Special Read Fees	$50 per reading
Federal Meter Dispute Fees	$35

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:			
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

For each fee for which a tariff page was provided, please provide:

a) The most recent cost-justification for that fee;

RATIONALE FOR QUESTION:

The relationship between costs and fees is to be considered.

RESPONSE:

Please see the following for information on the establishment of miscellaneous service fees and charges. Manitoba Hydro has plans in place to undertake a review of the appropriateness of these existing fees and charges during the 2015-16 fiscal year.

Late Payment Charges - Under Order 135/02, the PUB approved aligning Centra's late payment fee for natural gas services with Manitoba Hydro's current practises. Late Payment Charges are reviewed on an ongoing basis by monitoring acceptable industry practices and considering other factors such as Manitoba Hydro's short-term cost of funds, interest rate risk, credit risk, and administration costs.

Manitoba Hydro undertook a comprehensive review of industry late payment charge in October 2013 which included a comparison to both national and local markets. The current charge of 1.25% per month was found to be appropriate. The review included a survey of

19 Canadian utilities having late payment charges ranging from a low of .67% per month for two Newfoundland electric utilities to 2.5% per month for EPCOR and MTS. The most common charge found was 1.5% which was the rate charged by 13 of the 19 utilities surveyed. Only three utilities had a rate that was lower than Manitoba Hydro's. In Manitoba, rates being charged are 1.5% at City of Winnipeg (water), 2% at Shaw and 2.5% at MTS. A review of the local comparators undertaken in March 2015 confirmed these rates are still in place.

Guarantee Deposits - The Guarantee Deposit is either refunded, with interest, to the customer, or applied against amounts outstanding at the time of the final bill. Guarantee Deposits are assessed where credit worthiness has not been established.

The deposit amounts were established in 2004 after a review of the various guarantee deposit criteria. The rental house heating amount of $200 was established in view of the direction received from the PUB that set the natural gas deposit maximum at $225.

Returned Cheque Charge - The Returned Cheque charge was last adjusted in March 2000 to be consistent with the equivalent fee charged by Centra. The Returned Cheque charge of $20 is lower than local industry charges when considering comparative charges with Shaw Cable being $25, Winnipeg Water and Waste and MTS $30, and Assiniboine Credit Union $40.

Reconnect Fees - The Reconnect Fee was last adjusted in March 2000 to be consistent with the equivalent fee charged by Centra Gas. The most recent analysis supporting this fee was provided to the Manitoba PUB in the Centra Gas Manitoba Inc. 2003/04 GRA.

Special Read Fees - The Special Read Fee was reviewed in 2004 and was subsequently incrementally increased by $5 per year for each of the years 2005, 2006, 2007, 2008 and 2009. The current fee of $50 was developed based upon the cost of providing special meter read services and was intended to recover part, but not all, of the expense associated with this activity. The cost per reading based upon the 2004 study was estimated to be $90.

Federal Meter Dispute Fees - The Federal Meter Dispute Fee was last adjusted in March 2000 to be consistent with the equivalent fee charged by Centra.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:			
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

For each fee for which a tariff page was provided, please provide:

b) The total residential revenue by year for 2012 to present generated by that fee;

RATIONALE FOR QUESTION:

The relationship between costs and fees is to be considered.

RESPONSE:

There are no tariff sheets for residential fees other than energy rates.

Total residential revenue billed (on a calendar year basis):

	2014	***2013***	***2012***
Residential Late Payment Charges	$3,125,932	$3,061,073	$2,607,689
Residential Reconnect Charges	613,480	497,945	316,593
Residential Special Reading Fees	979,150	1,118,050	915,850
Residential Federal Meter Dispute Charges	1,225	595	595
Residential Returned Cheque Charges	48,735	48,460	47,380

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:			
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

For each fee for which a tariff page was provided, please provide:

c) The ratemaking treatment of that revenue; and

RATIONALE FOR QUESTION:

The relationship between costs and fees is to be considered.

RESPONSE:

Manitoba Hydro takes the revenues forecast from these miscellaneous fees into consideration when making a determination of the necessity for and magnitude of rate increases. Please see Manitoba Hydro's response to GAC/MH I-1d.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:			
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

For each fee for which a tariff page was provided, please provide:

d) The proposed ratemaking treatment of that revenue in this proceeding.

RATIONALE FOR QUESTION:

The relationship between costs and fees is to be considered.

RESPONSE:

Please see Manitoba Hydro's responses to GAC/MH-I-1d and GAC/MH-I-24c.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a detailed explanation of the order in which customer payments are applied against various components of an account balance. Indicate, for example, whether late payment charges are paid before usage charges; whether unpaid balances are paid in the order in which they were incurred; etc.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

The response to this information request assumes the following:

- a customer pays less than the full balance due on an account which is comprised of charges for the supply of natural gas and electricity including related late payment charges, and/or
- a customer pays an amount for items other than gas or electricity services and related late payment charges (the "other indebtedness"), or
- a customer receives a credit on the account

In all instances, a customer can provide Manitoba Hydro with specific direction regarding application of a payment or credit.

Where there is no specific direction provided the payment/credit shall be applied in the following order:

i. First to the oldest arrears. Where arrears are of equal vintage, payments shall be applied pro rata to electricity charges, including related late payment charges, natural gas charges, including related late payment charges and to the other indebtedness, including related late payment charges;

ii. Where there are payments/credits in excess of the amount required to pay the oldest arrears, payments/credits shall be next applied to the next oldest arrears (pro rata in accordance with subparagraph (i) if there is more than one service with arrears of equal vintage), and so on until arrears are paid;

iii. If there are no other arrears, to current charges, pro rata.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a list of each:

a) Community served by Manitoba Hydro, along with the number of residential customers served in that community.
b) Postal code served by Manitoba Hydro, along with the number of residential customers served in that postal code.

RATIONALE FOR QUESTION:

The impacts of rates on bills and revenues is to be considered.

RESPONSE:

(a)

Residential - Number of Customers	
Community	**Customers**
AGHAMING	6
ALBERT BEACH	331
ALEXANDER	150
ALLEGRA	25
ALONSA	162
ALTAMONT	76
ALTONA	1,909
AMARANTH	177
ANGUSVILLE	206
ANOLA	533

Residential - Number of Customers	
Community	**Customers**
ARBAKKA	31
ARBORG	1,132
ARDEN	134
ARGYLE	229
ARNAUD	46
ARNES	1,118
ARROW RIVER	28
ASHERN	669
ASHVILLE	79
AUBIGNY	70
AUSTIN	349
BACON RIDGE	60
BADGER	41
BAGOT	106
BAKERS NARROWS	471
BALDUR	267
BALMORAL	353
BARREN LAKE	26
BARRIER BAY	53
BARROWS	56
BASSWOOD	87
BEACONIA	311
BEAUSEJOUR	3,113
BEAVER	19
BEAVER CREEK	59
BELAIR	967
BELLEVIEW	22
BELLSITE	20
BELMONT	182
BENITO	389
BENYKS POINT	14
BERENS RIVER	312
BERESFORD	28
BERESFORD LAKE	53
BETHANY	48
BETULA LAKE	173
BEULAH	200
BIELD	4
BIG WHITESHELL	181
BIG WOODY	30

Residential - Number of Customers	
Community	**Customers**
BINSCARTH	333
BIRCH RIVER	264
BIRD	52
BIRD LAKE	121
BIRNIE	93
BIRTLE	427
BISSETT	128
BLACK RIVER	197
BLOODVEIN	180
BLUE LAKE	6
BLUMENFELD	59
BLUMENORT	717
BLUMENORT SOUTH	26
BOGGY CREEK	116
BOISSEVAIN	1,039
BOOSTER LAKE	69
BOWSMAN	336
BRACKEN DAM	32
BRADWARDINE	7
BRANDON	21,188
BRERETON LAKE	352
BROAD VALLEY	81
BROCHET	136
BROKENHEAD	77
BROOKDALE	38
BRUNKILD	109
BRUXELLES	35
BUFFALO POINT	312
BUTLER	9
CADDY LAKE	167
CALIENTO	48
CAMP MORTON	276
CAMPER	33
CAMPERVILLE	417
CARBERRY	1,255
CARDALE	12
CARDINAL	17
CAREY	3
CARLOWRIE	29
CARMAN	1,666

Residential - Number of Customers	
Community	**Customers**
CARRICK	20
CARROLL	89
CARTIER	206
CARTWRIGHT	286
CAYER	29
CFB SOUTHPORT	60
CHATER	48
CHATFIELD	59
CHIMO RESORT	67
CHORTITZ	89
CHURCHILL	559
CLANDEBOYE	113
CLANWILLIAM	77
CLEAR LAKE	844
CLEARWATER	102
CLEARWATER LAKE	372
CLOVERLEAF	200
COOKS CREEK	499
CORMORANT	132
COULTER	47
COWAN	75
CRANBERRY PORTAGE	383
CRANDALL	32
CRANE RIVER	187
CRESCENT COVE	35
CROMER	78
CROSS LAKE	1,040
CROSSING BAY	19
CRYSTAL CITY	296
CULROSS	31
CYPRESS RIVER	210
DACOTAH	12
DAKOTA TIPI	41
DALLAS	25
DARLINGFORD	273
DAUPHIN	4,486
DAUPHIN BEACH	123
DAUPHIN RIVER	52
DAVIDSON LAKE	48
DAWSON BAY	21

Residential - Number of Customers	
Community	**Customers**
DECKER	28
DEEPDALE	15
DELEAU	58
DELETE	1
DELORAINE	694
DELTA	165
DITCH LAKE	59
DOMAIN	63
DOMINION CITY	215
DOROTHY LAKE	79
DOUGLAS	81
DROPMORE	110
DUCK BAY	129
DUFRESNE	180
DUFROST	33
DUGALD	534
DUNREA	84
DURBAN	122
EAST BRAINTREE	77
EAST SELKIRK	729
EAST ST PAUL	3,288
EASTERVILLE	350
EBB AND FLOW	419
EBOR	19
EDDYSTONE	131
EDEN	130
EDRANS	58
EDWIN	1
ELEANOR LAKE	53
ELGIN	100
ELIE	361
ELKHORN	384
ELM CREEK	357
ELMA	214
ELPHINSTONE	243
ELVA	33
EMERSON	345
ENDCLIFFE	13
ERICKSON	925
ERIKSDALE	482

Residential - Number of Customers	
Community	**Customers**
ETHELBERT	312
EWART	18
FAIRFAX	41
FAIRFORD	348
FALCON LAKE	899
FANNYSTELLE	78
FAULKNER	44
FINNS	53
FIRDALE	33
FISHER BAY	13
FISHER BRANCH	563
FISHER RIVER	465
FLANDERS LAKE	45
FLIN FLON	2,581
FORK RIVER	123
FORREST	33
FORREST STATION	32
FORT ALEXANDER	664
FOXWARREN	204
FRANKLIN	42
FRASERWOOD	208
FRIEDENSFELD	15
FRIEDENSRUH	30
GARDEN HILL	497
GARDENTON	123
GARLAND	69
GARSON	500
GILBERT PLAINS	629
GILLAM	532
GIMLI	2,455
GIROUX	341
GLADSTONE	685
GLENBORO	541
GLENELLA	171
GLENLEA	68
GLENMOOR	22
GLENORA	68
GNADENFELD	33
GNADENTHAL	53
GODS LAKE NARROWS	332

Residential - Number of Customers	
Community	**Customers**
GODS RIVER	120
GOODLANDS	78
GRAHAMDALE	40
GRAND BEACH	532
GRAND CLAIRIERE	3
GRAND MARAIS	1,232
GRAND RAPIDS	377
GRANDE POINTE	218
GRANDVIEW	786
GRANVILLE LAKE	12
GRAYSVILLE	75
GREAT FALLS	322
GREEN LAKE	3
GREEN OAK	19
GREEN RIDGE	33
GRETNA	284
GRINDSTONE	397
GRISWOLD	395
GROSSE ISLE	172
GRUNTHAL	987
GULL LAKE	346
GUNTON	217
GYPSUMVILLE	80
HADASHVILLE	155
HALBSTADT	57
HALLBORO	3
HAMIOTA	573
HARDING	30
HARGRAVE	37
HARROWBY	8
HARTNEY	346
HASKETT	39
HAYWOOD	137
HAZELRIDGE	293
HEADINGLEY	1,108
HECLA ISLAND	144
HERB LAKE LANDING	15
HIGH BLUFF	56
HIGHLAND GLEN	96
HILBRE	74

Residential - Number of Customers	
Community	**Customers**
HILLSIDE BEACH	670
HILTON	20
HNAUSA	177
HOCHFELD	133
HODGSON	86
HOLE RIVER	195
HOLLAND	326
HOLMFIELD	47
HOMEWOOD	84
HORNDEAN	68
HOROD	5
HORTON	1
HOWDEN	112
HUSAVIK	54
ILE DES CHENES	1,068
ILFORD	37
INGLIS	431
INWOOD	273
ISABELLA	22
JACKHEAD	83
JESSICA LAKE	103
JUSTICE	13
KALEIDA	5
KANE	27
KATRIME	11
KELWOOD	130
KEMNAY	51
KENTON	178
KENVILLE	160
KILLARNEY	1,391
KINOSOTA	59
KIRKELLA	19
KIRKNESS	59
KLEEFELD	584
KOLA	69
KOMARNO	252
KOOSTATAK	6
LA BARRIERE	17
LA BROQUERIE	1,430
LA BROQUERIE WEST	1

Residential - Number of Customers	
Community	**Customers**
LA RIVIERE	141
LA SALLE	901
LAC BROCHET	150
LAC DU BONNET	4,073
LADYWOOD	92
LAGUNA BEACH	17
LAKE FRANCIS	94
LAKE ST MARTIN	26
LAKELAND	22
LANDMARK	829
LANGRUTH	154
LAUDER	33
LAURIER	147
LAVENHAM	74
LEAF RAPIDS	237
LEDWYN	27
LENA	32
LENORE	46
LENSWOOD	33
LETELLIER	145
LIBAU	303
LINDEN	159
LITTLE GRAND RAPIDS	249
LITTLE SASKATCHEWAN	86
LIZ LAKE	91
LK-MB-FIRST-NATION	238
LOCKPORT	579
LONG LAKE	27
LONG PLAIN FN	349
LOON STRAITS	25
LORETTE	1,757
LOWE FARM	210
LOWLAND	17
LUNDAR	701
LYLETON	75
LYNN LAKE	298
MACDONALD	33
MACGREGOR	633
MAFEKING	132
MAKAROFF	5

Residential - Number of Customers	
Community	**Customers**
MAKINAK	51
MALLARD	42
MALONTON	43
MANHATTAN BEACH	8
MANIGOTAGAN	237
MANITOU	565
MANSON	26
MARCHAND	327
MARGARET	53
MARIAPOLIS	62
MARQUETTE	117
MATHER	93
MATHESON ISLAND	78
MATLOCK	695
MCAULEY	161
MCCONNELL	10
MCCREARY	487
MCMUNN	22
MCTAVISH	23
MEADOW PORTAGE	247
MEADOWS	54
MEDIKA	48
MEDORA	64
MELEB	108
MELITA	666
MELROSE	192
MENISINO	34
MENZIE	4
METIGOSHE LAKE	251
MIAMI	322
MIDDLEBRO	66
MILLWOOD	13
MINIOTA	198
MINITONAS	456
MINK CREEK	34
MINNEDOSA	1,647
MINTO	122
MITCHELL	1,011
MOLSON	32
MOORE PARK	9

Residential - Number of Customers	
Community	**Customers**
MOOSE LAKE	245
MOOSE LAKE S	89
MOOSEHORN	234
MORDEN	3,957
MORRIS	908
MORWEENA	3
MOUNTAIN ROAD	29
MULVIHILL	23
MYRTLE	44
NAPINKA	85
NARCISSE	34
NAROL	1
NEELIN	40
NEEPAWA	2,055
NEGGINAN	1
NELSON HOUSE	522
NESBITT	147
NEUBERGTHAL	33
NEUENBERG	36
NEUHORST	15
NEW BOTHWELL	319
NEWDALE	150
NEWTON	28
NINETTE	312
NINGA	48
NIVERVILLE	1,858
NORWAY HOUSE	1,366
NOTRE-DAME-LOURDES	357
NUTIMIK LAKE	244
OAK BLUFF	467
OAK BRAE	8
OAK LAKE	708
OAK POINT	77
OAK RIVER	105
OAKBANK	1,657
OAKBURN	429
OAKNER	24
OAKO BEACH	25
OAKVIEW	165
OAKVILLE	274

Residential - Number of Customers	
Community	**Customers**
OBERON	2
OCHRE BEACH	79
OCHRE RIVER	225
ONANOLE	1,148
OPASKWAYAK	574
OSBORNE	18
OSTENFELD	6
OSTERWICK	46
OTTER FALLS	86
OTTERBURNE	199
OVERSTONEVILLE	11
OXFORD HOUSE	424
PAINT LAKE	133
PANSY	75
PATRICIA BEACH	74
PAUINGASSI	119
PEGUIS	801
PELICAN LAKE	414
PELICAN RAPIDS	30
PETERSFIELD	556
PIERSON	202
PIKWITONEI	42
PILOT MOUND	518
PINAWA	661
PINE CREEK	31
PINE DOCK	176
PINE FALLS	244
PINE RIVER	291
PINEY	122
PIPESTONE	270
PLEASANT VALLEY	100
PLUM COULEE	413
PLUMAS	255
POINTE DU BOIS	126
POLONIA	20
PONEMAH	291
POPE	11
POPLAR POINT	78
POPLAR RIVER	223
POPLARFIELD	127

Residential - Number of Customers	
Community	**Customers**
PORTAGE LA PRAIRIE	7,004
POWERVIEW	486
PRATT	32
PRAWDA	93
PRINCESS HARBOUR	6
PUKATAWAGAN	398
PURVES	12
RANDOLPH	60
RAPID CITY	388
RATHWELL	156
RED DEER LAKE	9
RED ROCK LAKE	122
RED SUCKER LAKE	210
REINFELD	414
REINLAND	83
RENNIE	64
RENWER	34
RESTON	372
RICHER	539
RIDGEVILLE	85
RIDING MOUNTAIN	153
RIVER HILLS	74
RIVERS	763
RIVERTON	599
ROBLIN	1,544
ROCK LAKE	34
ROCK LAKE NORTH	60
ROCK LAKE SOUTH	61
ROCK RIDGE	26
ROLAND	291
RORKETON	342
ROSA	91
ROSEAU RIVER	155
ROSEAU RIVER IR	172
ROSEBANK	73
ROSEISLE	139
ROSENFELD	112
ROSENGART	25
ROSENORT	392
ROSETOWN	48

Residential - Number of Customers	
Community	**Customers**
ROSS	156
ROSSBURN	434
ROSSENDALE	82
ROSSER	263
ROSSMAN LAKE	78
ROUNTHWAITE	4
RUSSELL	957
SAN CLARA	93
SANDILANDS	84
SANDRIDGE	14
SANDY BAY	546
SANDY HOOK	790
SANDY LAKE	632
SANFORD	490
SAPOTAWEYAK	250
SARTO	136
SCANTERBURY	175
SCARTH	17
SCHANZENFELD	266
SCHOENWIESE	29
SCLATER	25
SEDDONS CORNER	77
SELKIRK	3,704
SETTING LAKE	169
SEVEN SISTERS FALLS	305
SEWELL	9
SEYMOURVILLE	36
SHAMATTAWA	179
SHELL VALLEY	20
SHELLMOUTH	51
SHERRIDON	45
SHEVLIN	23
SHILO	649
SHOAL LAKE	603
SHOAL RIVER	1
SHORTDALE	66
SIDNEY	141
SIFTON	208
SILVER	67
SILVER RIDGE	66

Residential - Number of Customers	
Community	**Customers**
SILVERTON	39
SINCLAIR	64
SINGUSH LAKE	42
SKOWNAN	127
SMITH HILL	11
SNOW LAKE	565
SNOWFLAKE	48
SOLSGIRTH	42
SOMERSET	279
SOMMERFELD	23
SOURIS	1,063
SOUTH INDIAN LAKE	212
SOUTH JUNCTION	77
SOUTHPORT	132
SPENCE LAKE	4
SPERLING	122
SPLIT LAKE	385
SPRAGUE	191
SPRINGFIELD	777
SPRINGSTEIN	54
SPRUCE SIDING	11
SPRUCEWOODS	186
ST ADOLPHE	697
ST ALPHONSE	18
ST AMBROISE	87
ST ANDREWS	3,260
ST CLAUDE	488
ST CLEMENTS	2,302
ST EUSTACHE	178
ST FRANCOIS XAVIER	442
ST GEORGES	202
ST GERMAIN SOUTH	4
ST JEAN BAPTISTE	251
ST JOSEPH	53
ST LABRE	59
ST LAURENT	1,268
ST LAZARE	199
ST LEON	64
ST MALO	908
ST MARTIN	175

Residential - Number of Customers	
Community	**Customers**
ST NORBERT	30
ST PIERRE JOLYS	605
ST THERESA POINT	573
STAR LAKE	126
STARBUCK	317
STE AGATHE	350
STE ANNE	1,650
STE ELIZABETH	27
STE GENEVIEVE	426
STE RITA	79
STE ROSE DU LAC	749
STEAD	83
STEEP ROCK	240
STEINBACH	6,650
STEPHENFIELD	88
STEVENSON ISLAND	53
STOCKTON	41
STONEWALL	2,454
STONY MOUNTAIN	879
STRATHCLAIR	319
STRATHCONA PARK	60
STUARTBURN	82
SUNDOWN	164
SWAN LAKE	384
SWAN RIVER	2,261
TADOULE LAKE	117
TEULON	932
THALBERG	56
THE PAS	2,558
THICKET PORTAGE	48
THOMPSON	4,355
THORNHILL	27
TILSTON	98
TOLSTOI	117
TOUROND	30
TOUTES AIDES	28
TRADERS LAKE	49
TRAVERSE BAY	484
TREESBANK	10
TREHERNE	431

Residential - Number of Customers	
Community	**Customers**
TUOKKO N	37
TUOKKO S	22
TYNDALL	583
UKRAINA	15
UMPHERVILLE	42
VALLEY RIVER	55
VALLEY RIVER RESERVE	93
VASSAR	105
VENLAW	16
VICTORIA BEACH	1,431
VILLAGE OF DUNNOTAR	74
VIRDEN	1,945
VISTA	14
VITA	298
VIVIAN	431
VOGAR	56
VOLGA	15
WABOWDEN	188
WALDERSEE	43
WAMPUM	14
WANLESS	196
WARREN	531
WASAGAMACK	268
WASKADA	188
WATERHEN	50
WAWANESA	313
WAYWAYSEECAPPO	428
WELLWOOD	29
WEST HAWK LAKE	553
WEST PINE RIDGE	1
WEST ST PAUL	1,754
WESTBOURNE	101
WESTGATE	6
WHEATLAND	21
WHITE LAKE	82
WHITEFISH LAKE	26
WHITEMOUTH	294
WHITESHELL	27
WHYTEWOLD	256
WINKLER	4,607

Residential - Number of Customers	
Community	**Customers**
WINNIPEG	252,801
WINNIPEG BEACH	1,853
WINNIPEGOSIS	483
WOODLANDS	428
WOODMORE	54
WOODNORTH	33
WOODRIDGE	261
WOODSIDE	18
WORBY	38
WUSKWI SIPIHK	35
YORK LANDING	129
YOUNGS POINT	37
ZHODA	144
TOTAL	491,196

(b)

Residential - Number of Customers	
Postal Code	**Customers**
R0A	16,458
R0B	12,929
R0C	28,094
R0E	31,446
R0G	16,451
R0H	4,868
R0J	15,215
R0K	12,021
R0L	13,573
R0M	9,524
R1A	6,931
R1B	10
R1C	51
R1N	7,335
R2C	12,640
R2E	3,289
R2G	11,063
R2H	6,230
R2J	10,394
R2K	12,012

Residential - Number of Customers	
Postal Code	**Customers**
R2L	5,869
R2M	13,497
R2N	10,611
R2P	8,735
R2R	6,193
R2V	12,440
R2W	11,138
R2X	6,425
R2Y	7,347
R3A	1,386
R3B	4,096
R3C	6,860
R3E	7,094
R3G	10,382
R3H	40
R3J	11,095
R3K	4,747
R3L	8,490
R3M	9,596
R3N	6,932
R3P	6,812
R3R	9,089
R3S	191
R3T	15,667
R3V	2,292
R3W	2,931
R3X	5,820
R3Y	6,448
R4A	1,324
R4G	246
R4H	744
R4J	335
R4K	218
R4L	425
R5A	1,063
R5G	7,642
R5H	2,136
R6M	3,430
R6S	1
R6W	5,542

Residential - Number of Customers	
Postal Code	**Customers**
R7A	11,344
R7B	8,191
R7C	1,291
R7N	4,356
R7R	1
R8A	2,537
R8N	4,579
R9A	3,034
TOTAL	491,196

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Cost characteristics		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide the most recent study showing the month-by-month load curve:

a) For residential customers as a whole for a complete 12-month period;
b) For each residential tariff class for a complete 12-month period;
c) For low-income residential recipients for a complete 12-month period;
d) For low-use residential customers, who are also low-income; and
e) For low-use residential customers, whether or not such customers are low-income; using whatever definition of "low-use" has been utilized by Manitoba Hydro.

RATIONALE FOR QUESTION:

The reasonableness of Company's proposed rates, as differentially affecting different customers, is to be considered.

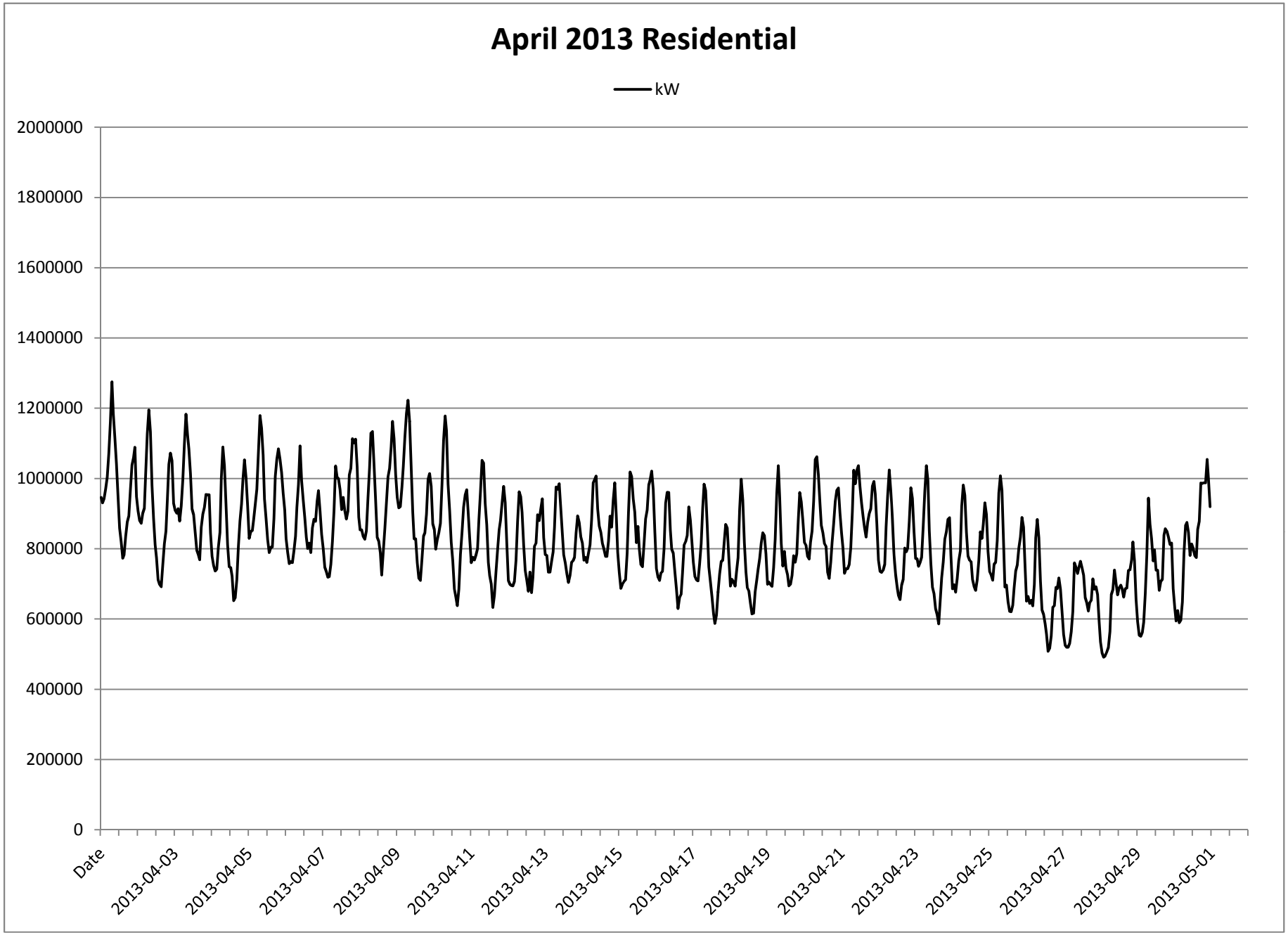
RESPONSE:

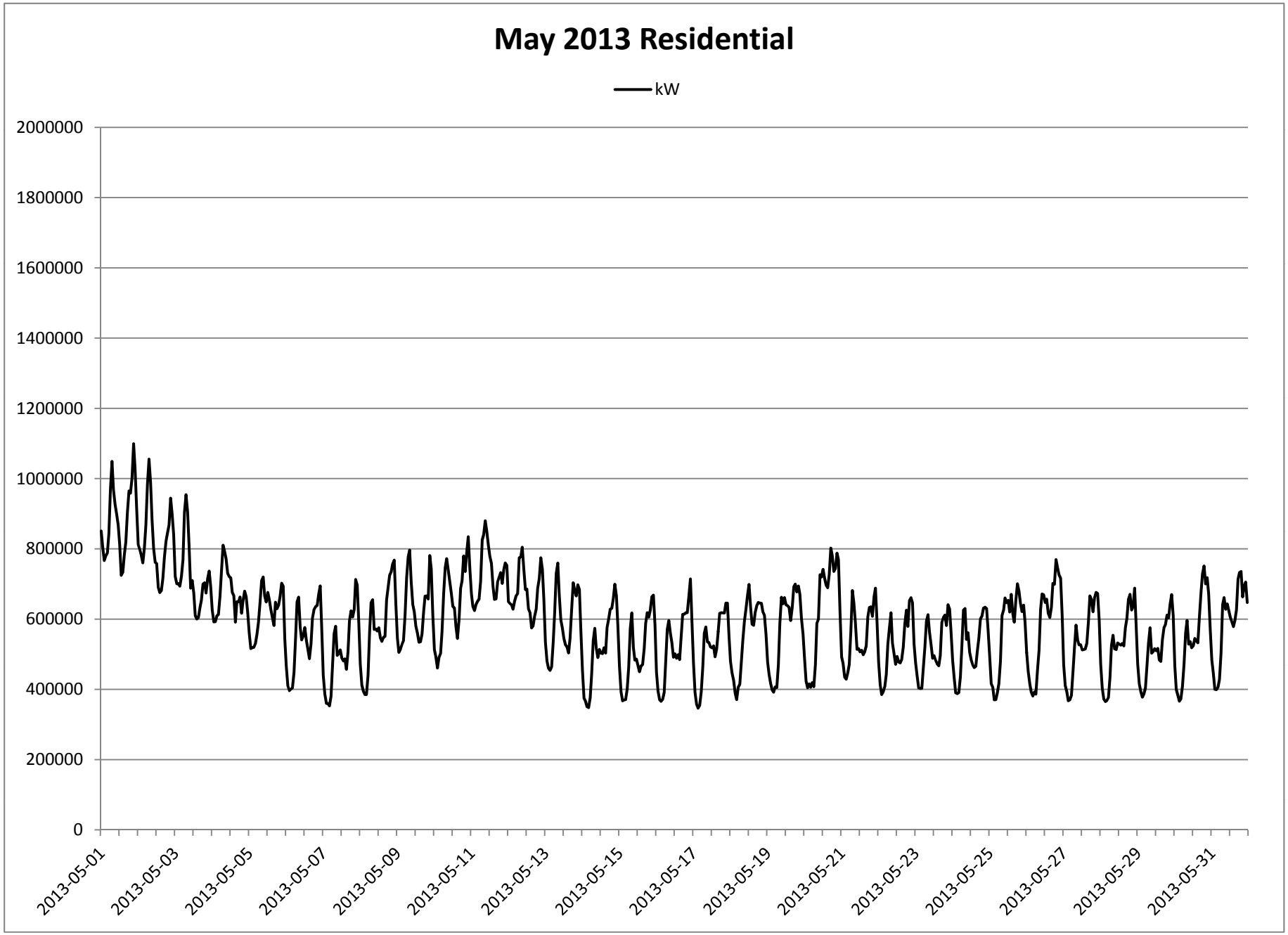
(a) and (b) The monthly 2013/14 load curves for basic residential customers are provided as Attachment 1 to this response. There is no other separate Load Research data for Seasonal or Diesel residential tariff classes.

c) Manitoba Hydro has no separate Load Research data for low-income residential customers.

d) Manitoba Hydro has no separate Load Research data for low-income residential customers.

e) The monthly 2013/14 load curves for < 8,000 kWh/yr basic residential customers are provided as Attachment 2 to this response. 8,000 kWh/yr is the lowest use stratified sample from which the class can be accurately estimated.


April 2013 Residential
kW
2000000
1800000
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
Date
2013-04-03
2013-04-05
2013-04-07
2013-04-09
2013-04-11
2013-04-13
2013-04-15
2013-04-17
2013-04-19
2013-04-21
2013-04-23
2013-04-25
2013-04-27
2013-04-29
2013-05-01


May 2013 Residential
kW
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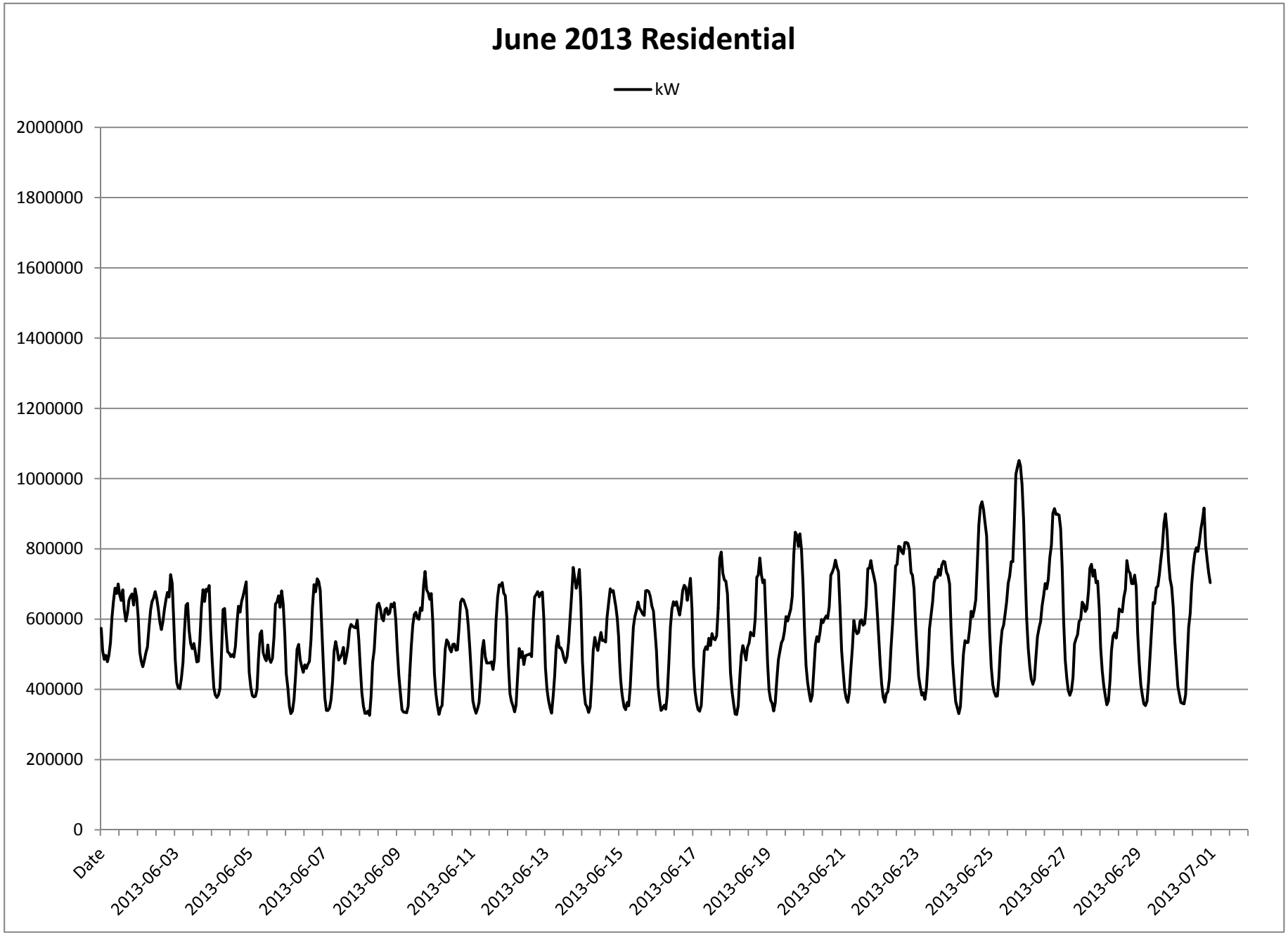
1800000
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
2013-05-01
2013-05-03
2013-05-05
2013-05-07
2013-05-09
2013-05-11
2013-05-13
2013-05-15
2013-05-17
2013-05-19
2013-05-21
2013-05-23
2013-05-25
2013-05-27
2013-05-29
2013-05-31


June 2013 Residential
kW
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1800000
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
Date
2013-06-03
2013-06-05
2013-06-07
2013-06-09
2013-06-11
2013-06-13
2013-06-15
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2013-06-21
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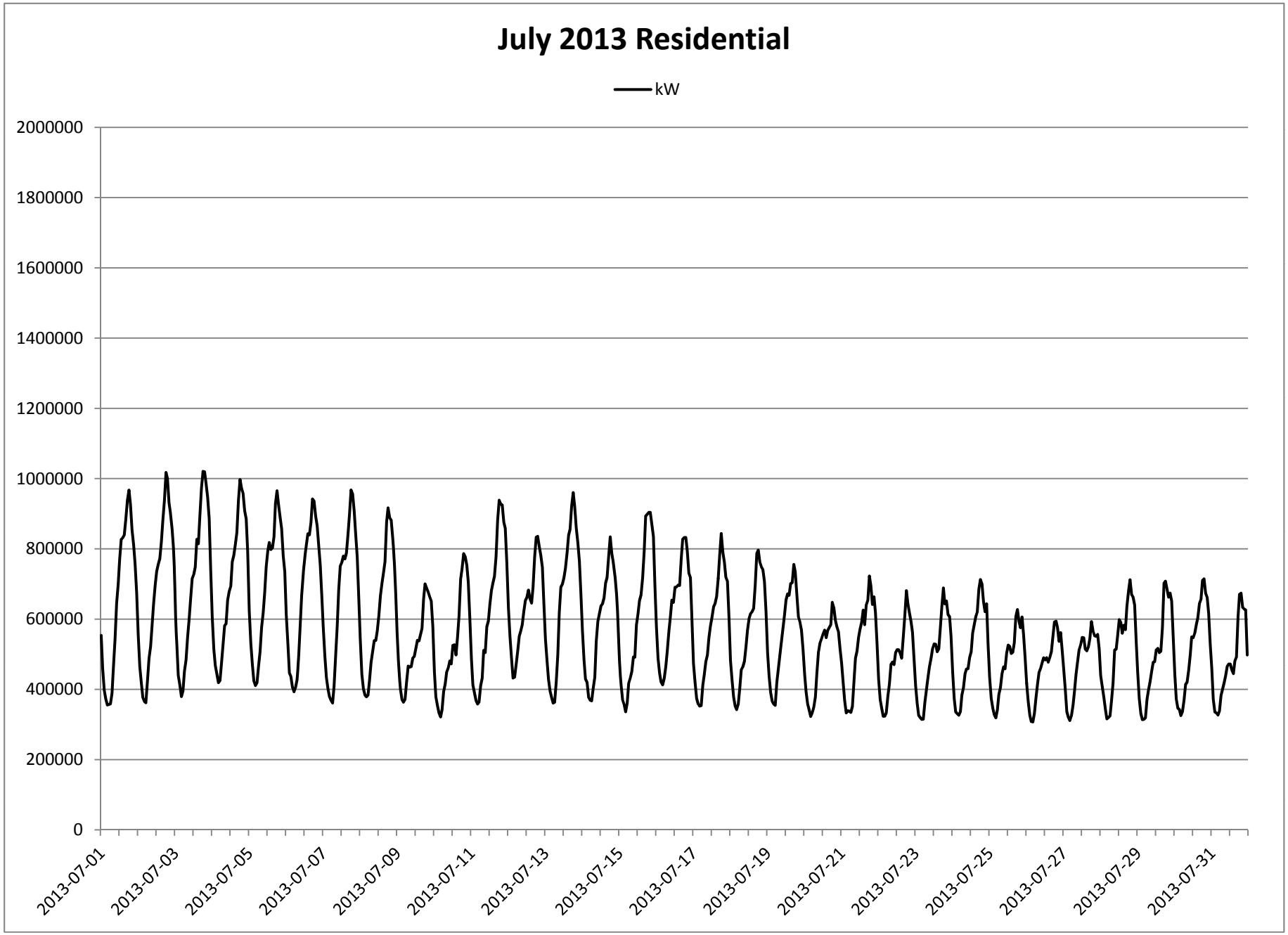
2013-06-27
2013-06-29
2013-07-01


July 2013 Residential
kW
2000000
1800000
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
2013-07-01
2013-07-03
2013-07-05
2013-07-07
2013-07-09
2013-07-11
2013-07-13
2013-07-15
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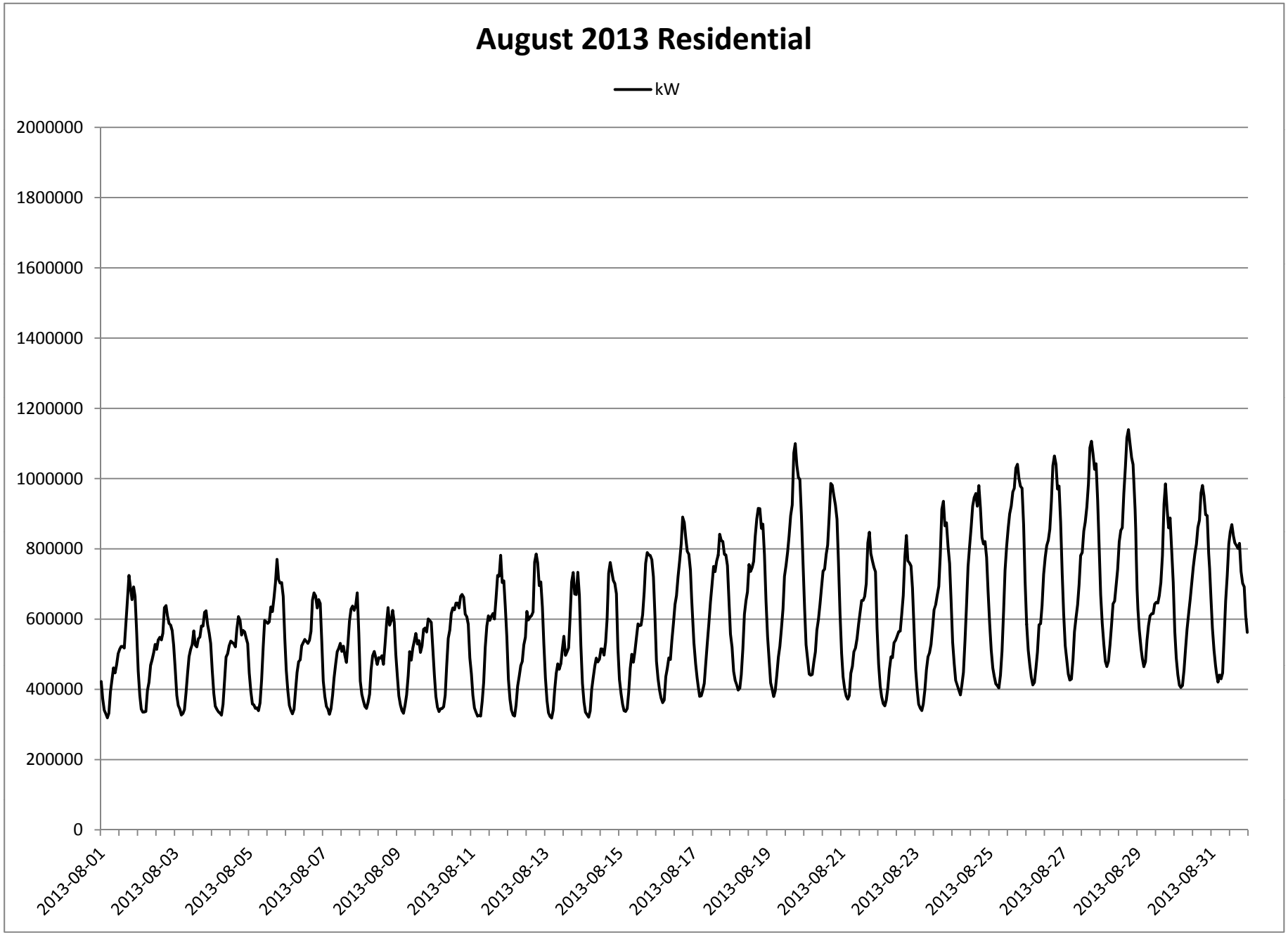
2013-07-29
2013-07-31


August 2013 Residential
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1400000
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1000000
800000
600000
400000
200000
0
2013-08-01
2013-08-03
2013-08-05
2013-08-07
2013-08-09
2013-08-11
2013-08-13
2013-08-15
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2013-08-19
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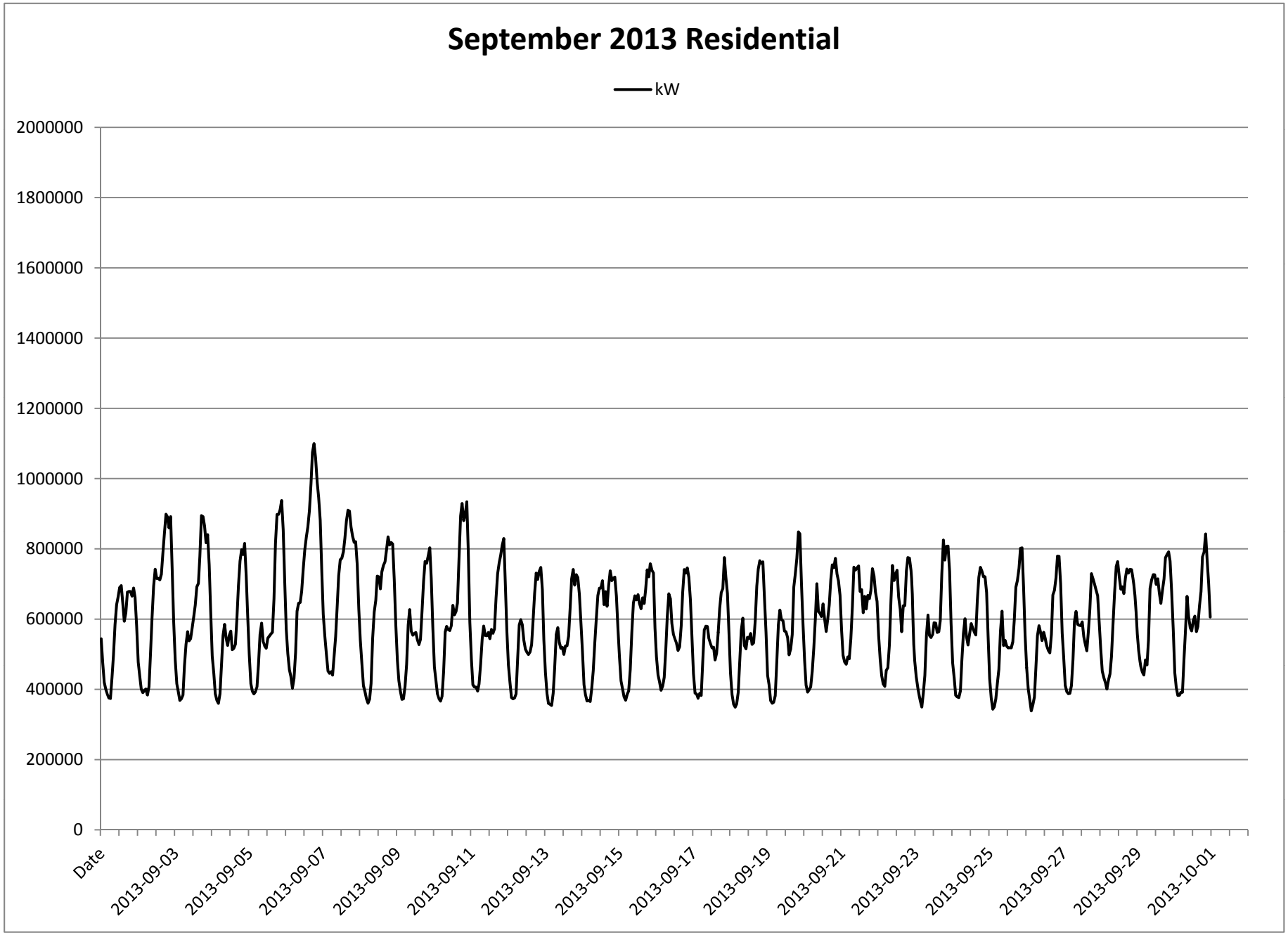
2013-08-31


September 2013 Residential
kW
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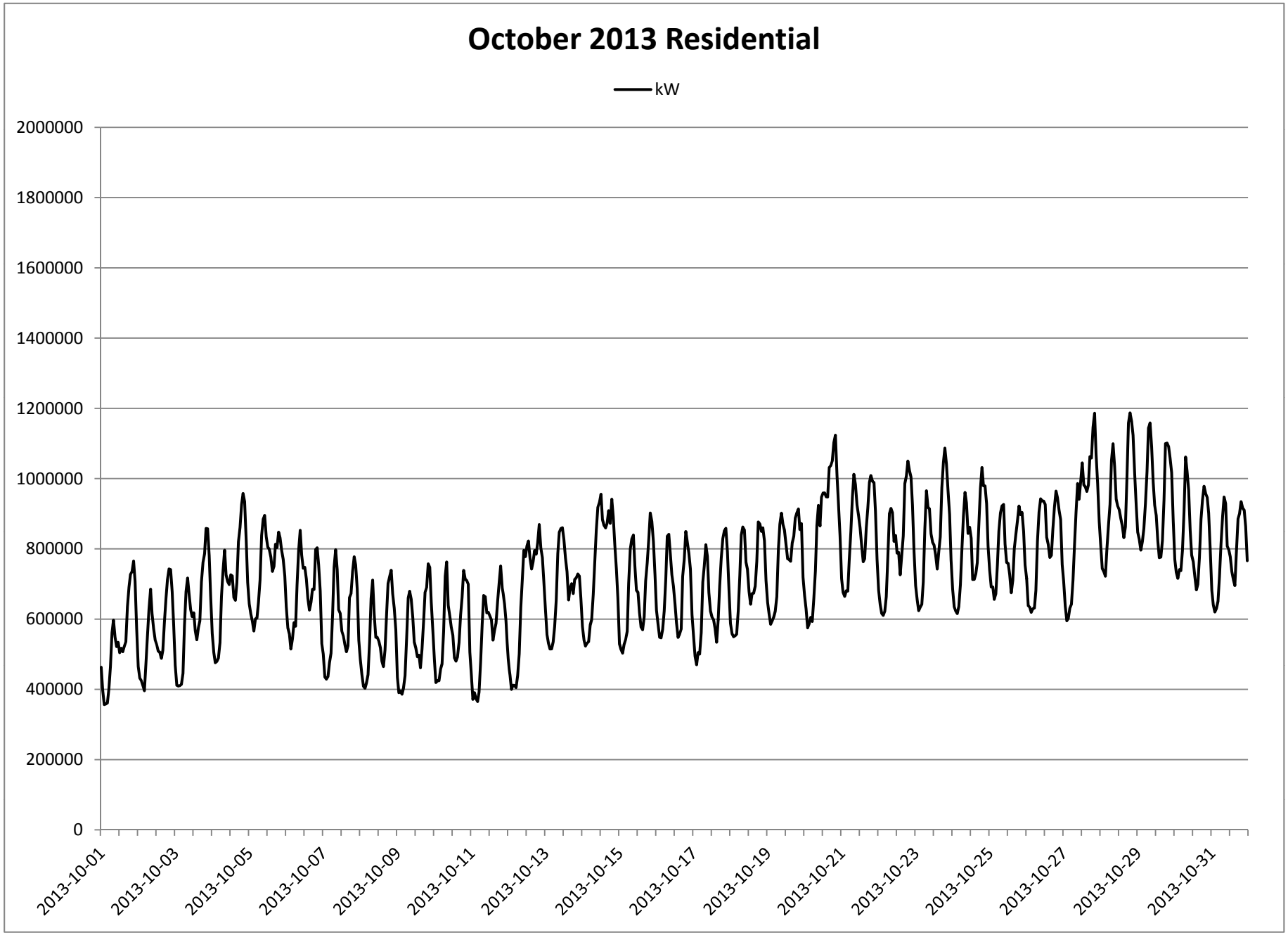
1800000
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
Date
2013-09-03
2013-09-05
2013-09-07
2013-09-09
2013-09-11
2013-09-13
2013-09-15
2013-09-17
2013-09-19
2013-09-21
2013-09-23
2013-09-25
2013-09-27
2013-09-29
2013-10-01


October 2013 Residential
kW
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1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
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2013-10-03
2013-10-05
2013-10-07
2013-10-09
2013-10-11
2013-10-13
2013-10-15
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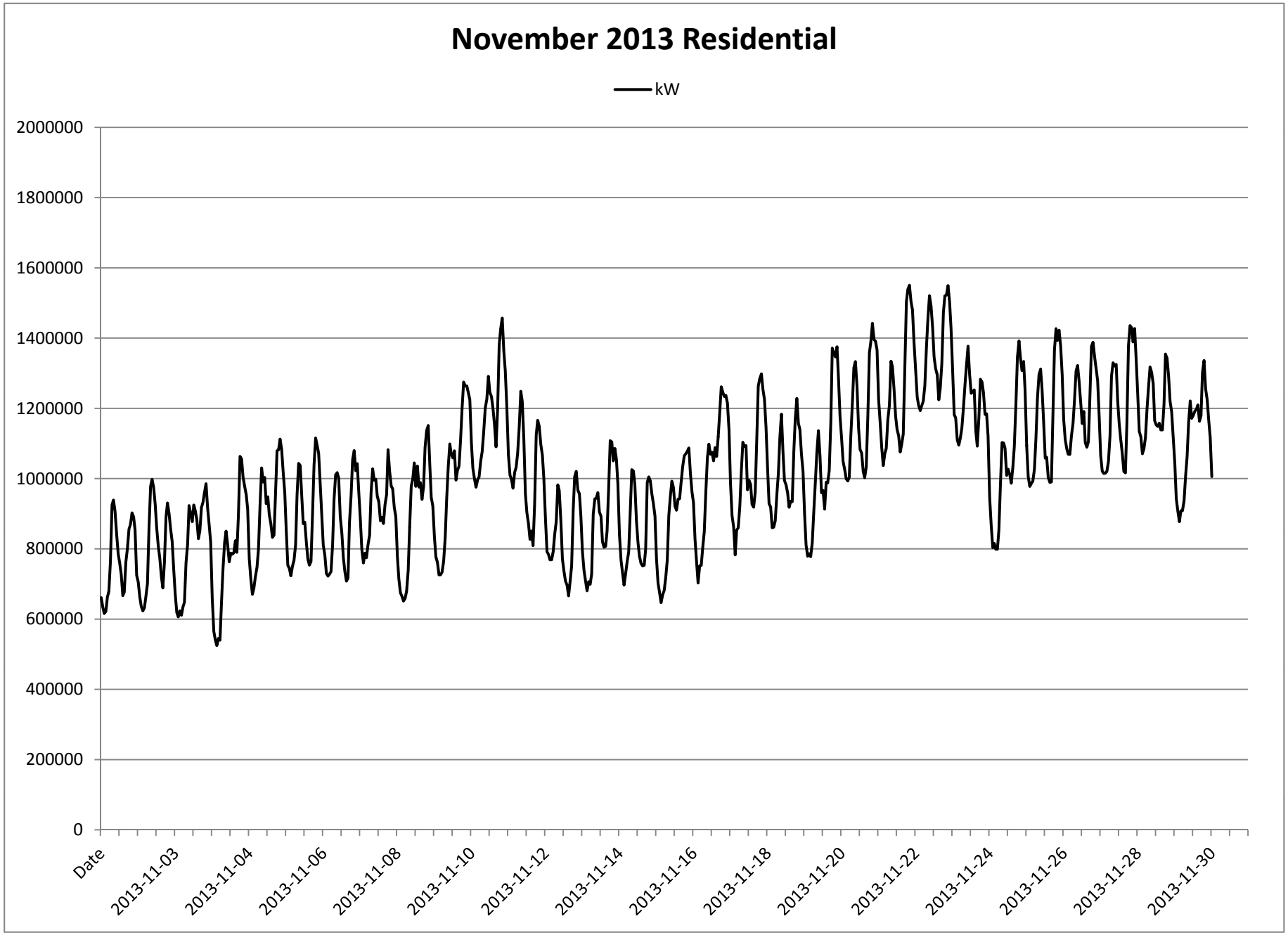
2013-10-29
2013-10-31


November 2013 Residential
kW
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1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
Date
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2013-11-04
2013-11-06
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2013-11-12
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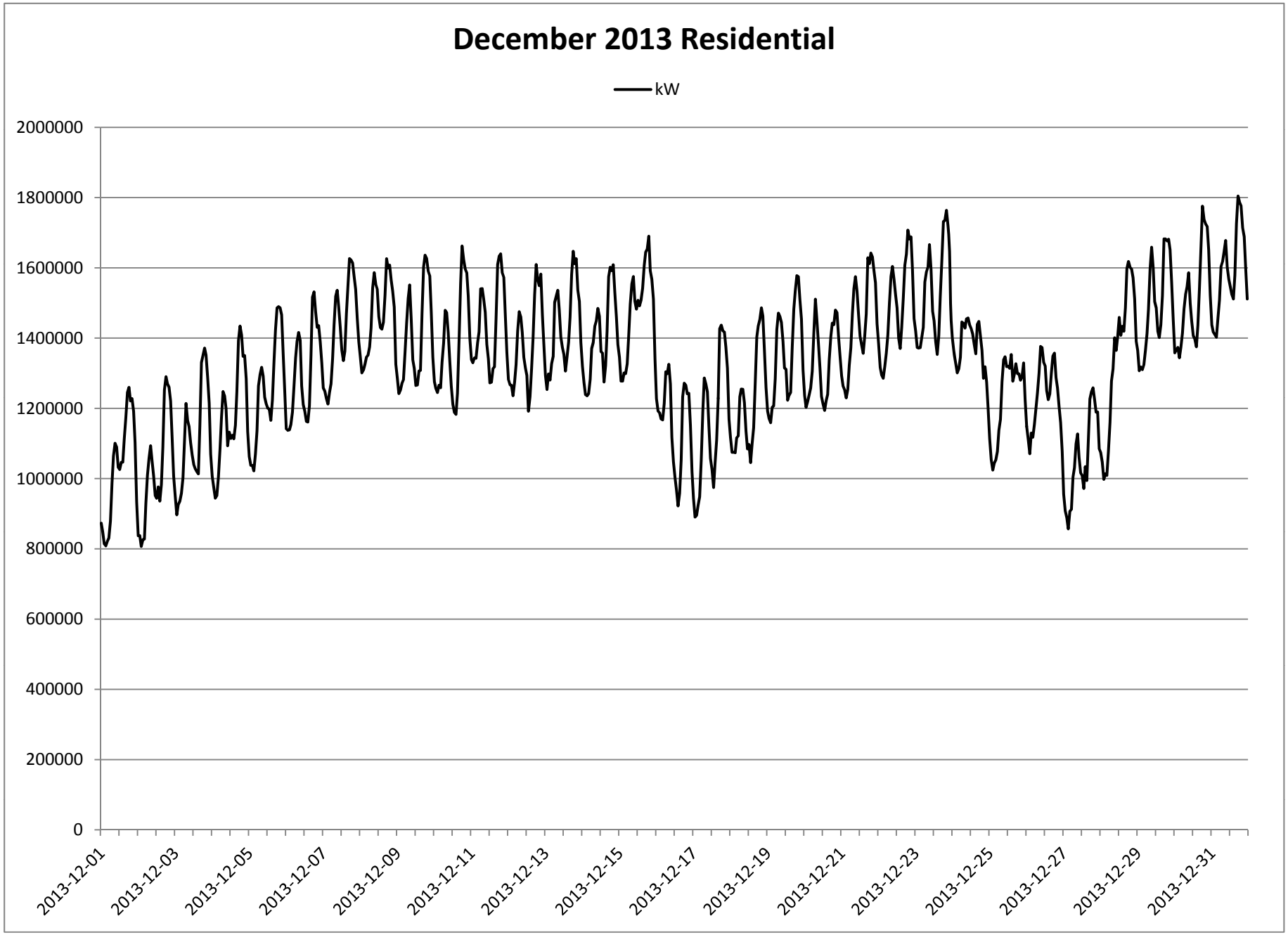
2013-11-30


December 2013 Residential
kW
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1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
2013-12-01
2013-12-03
2013-12-05
2013-12-07
2013-12-09
2013-12-11
2013-12-13
2013-12-15
2013-12-17
2013-12-19
2013-12-21
2013-12-23
2013-12-25
2013-12-27
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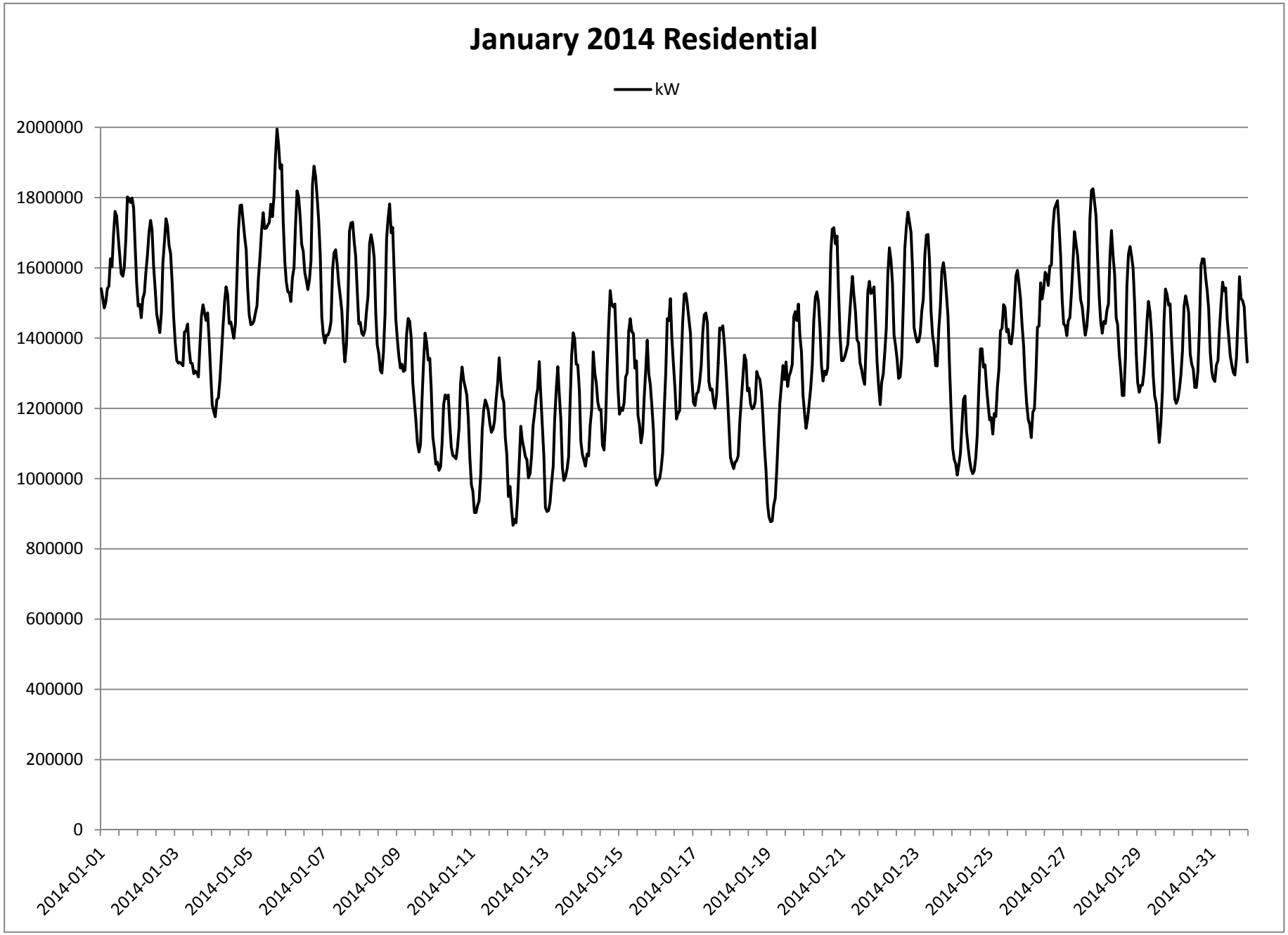
2013-12-31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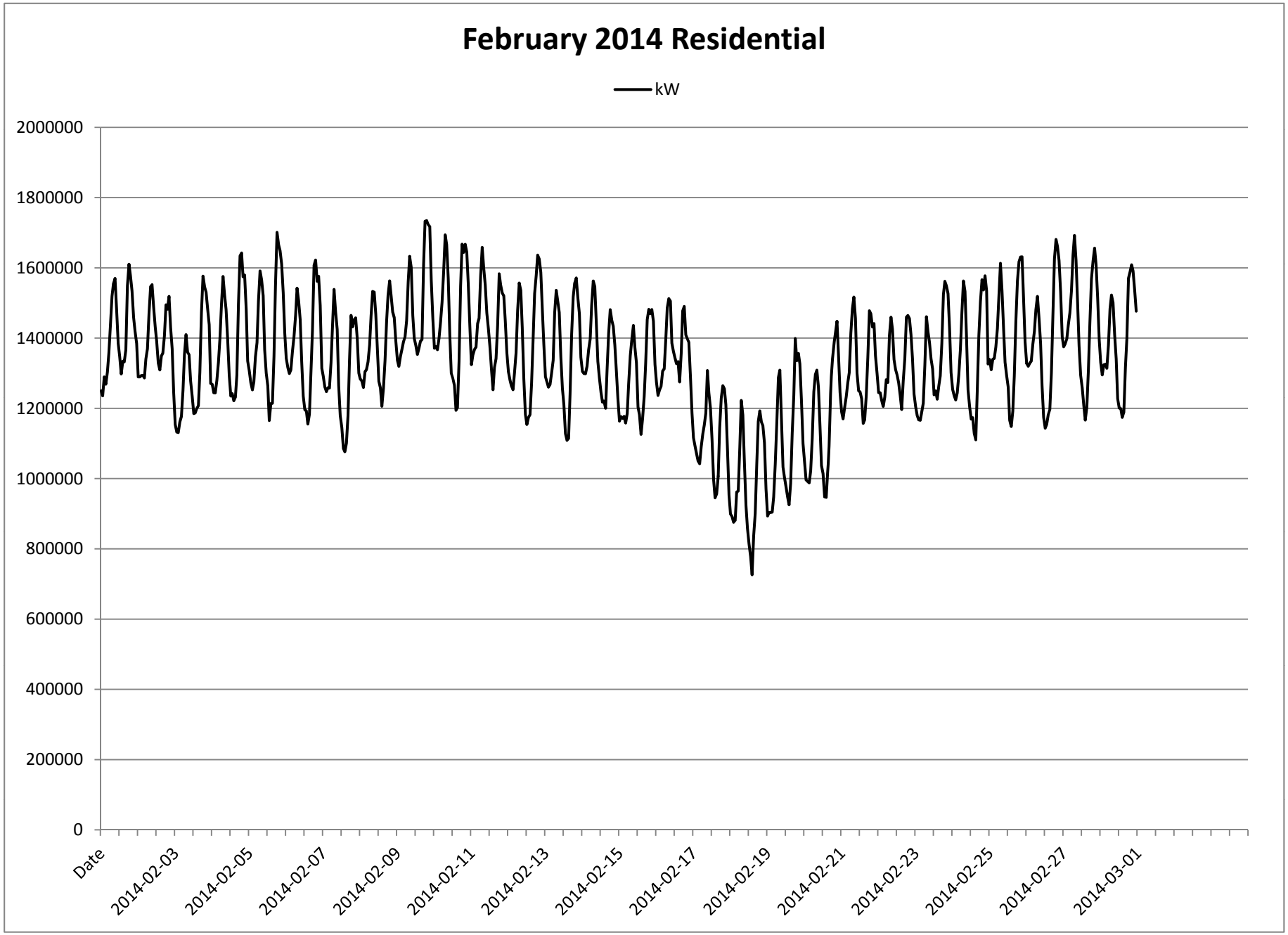
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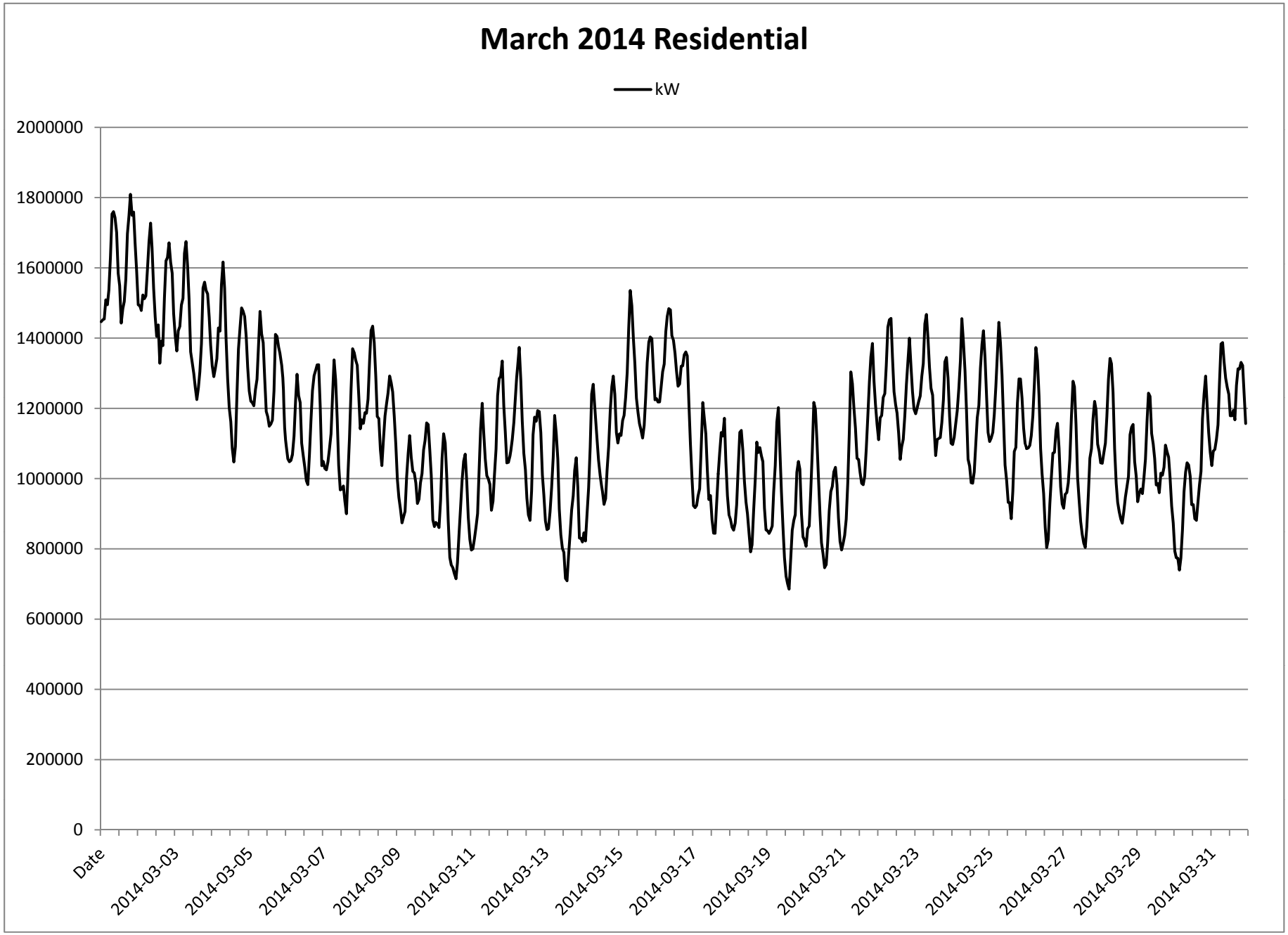
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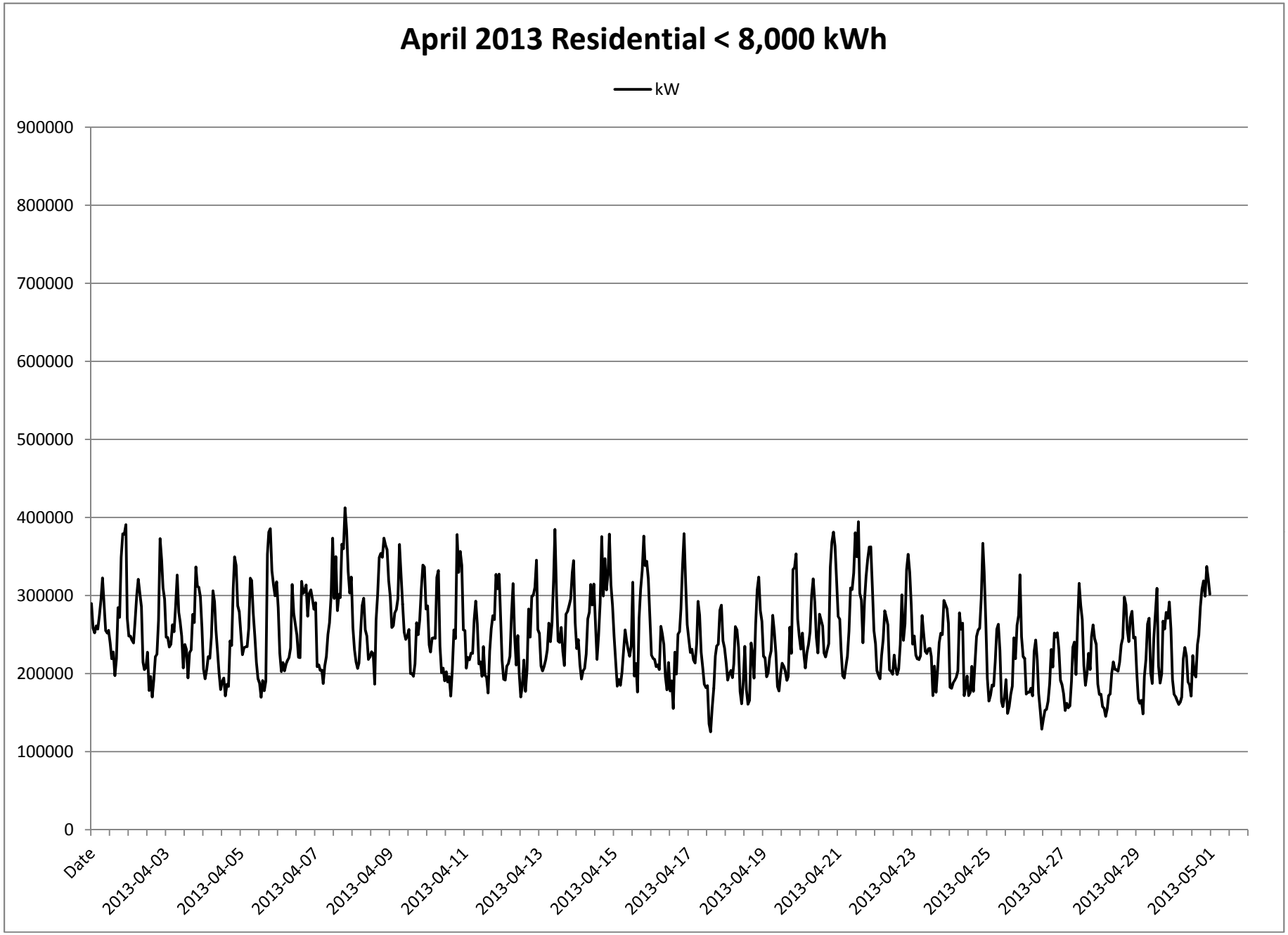
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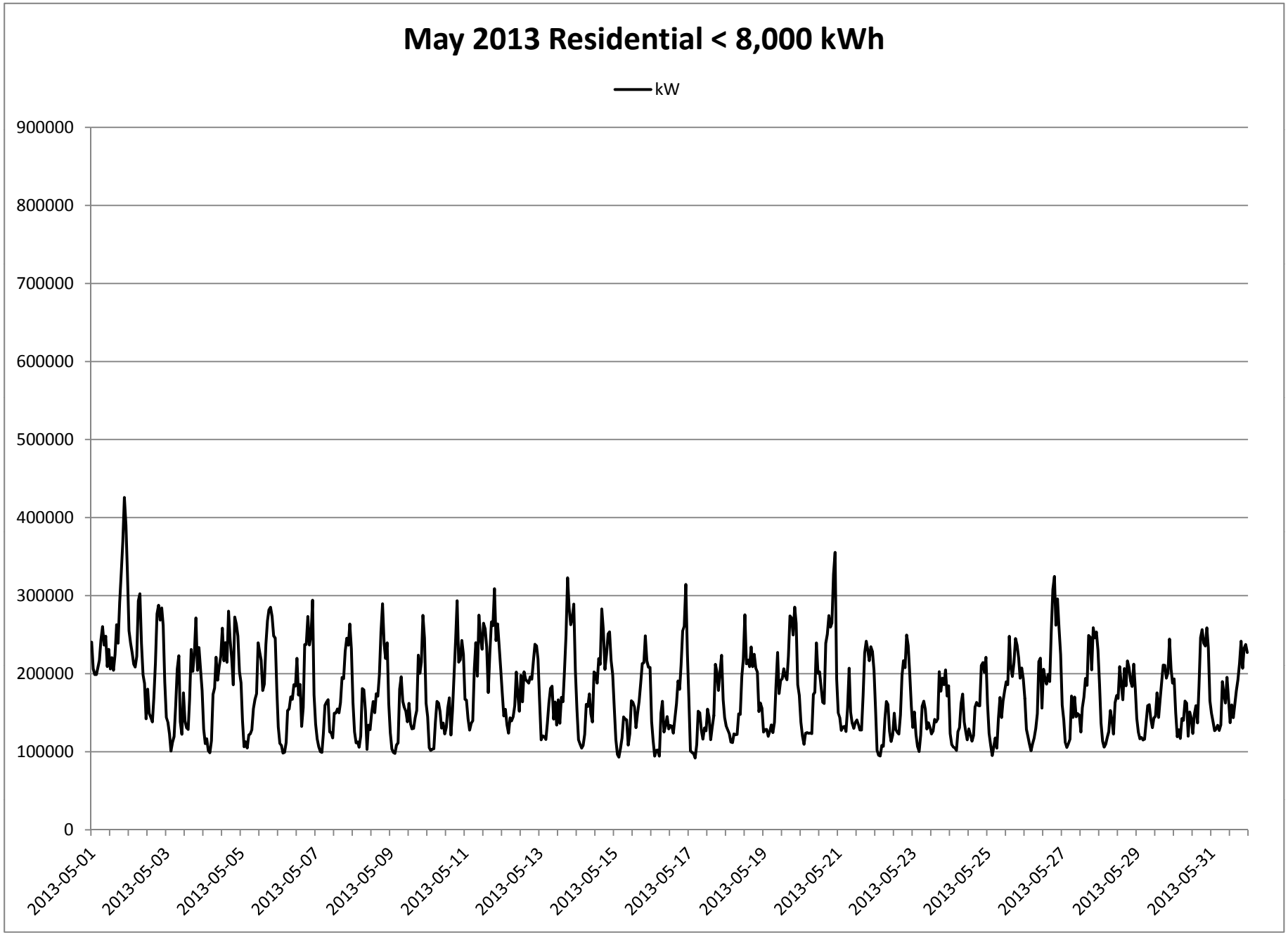
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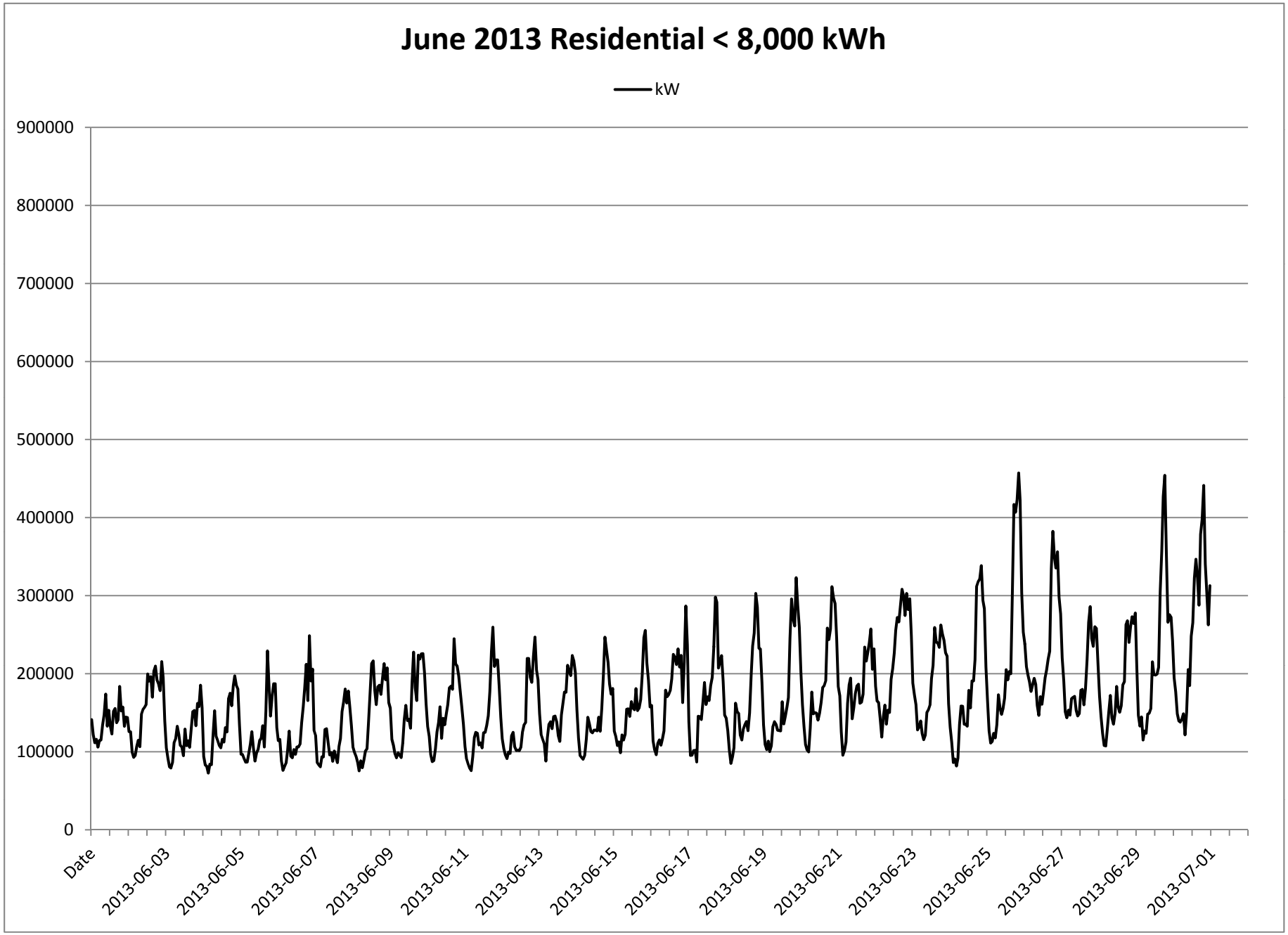
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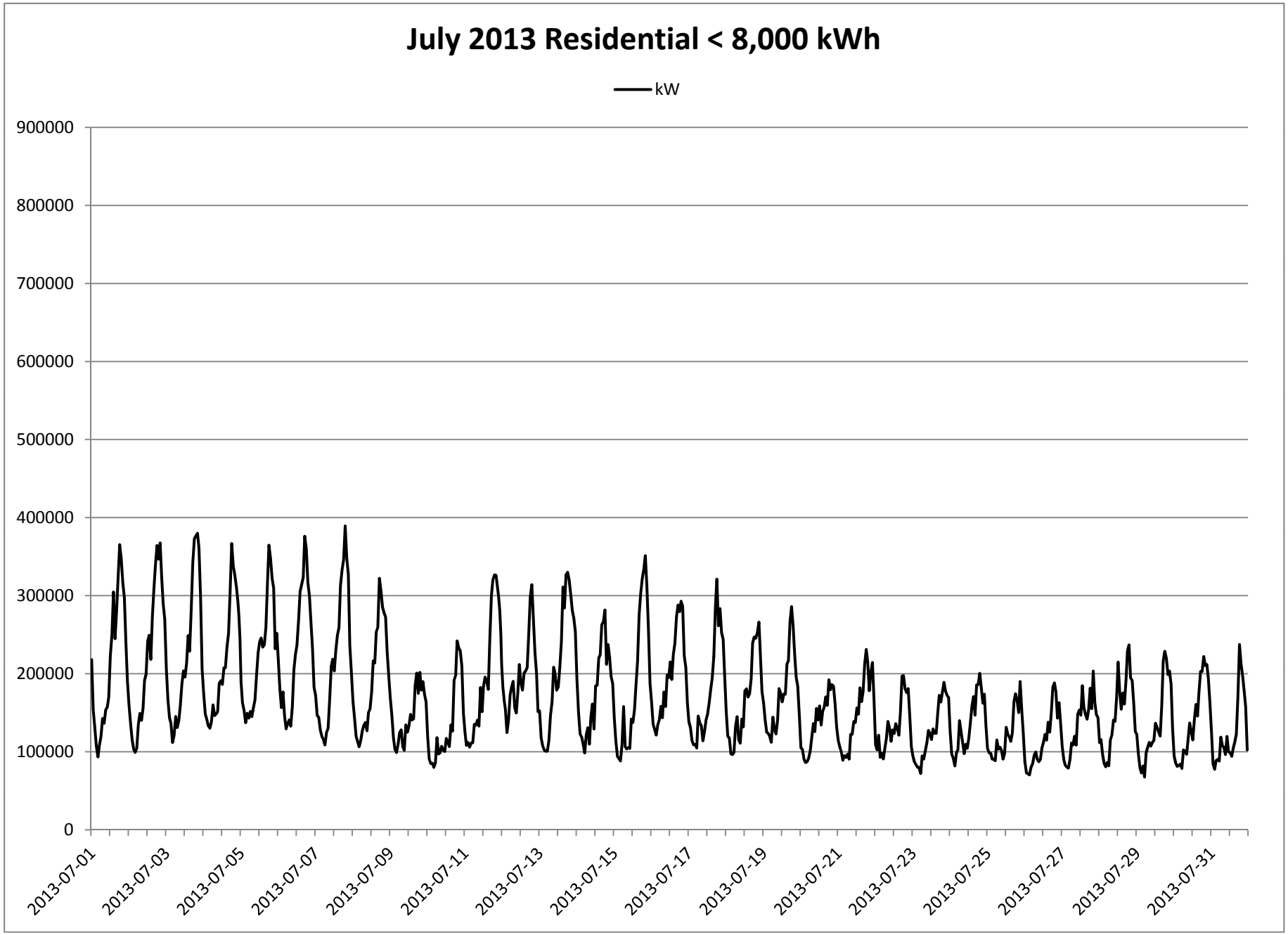
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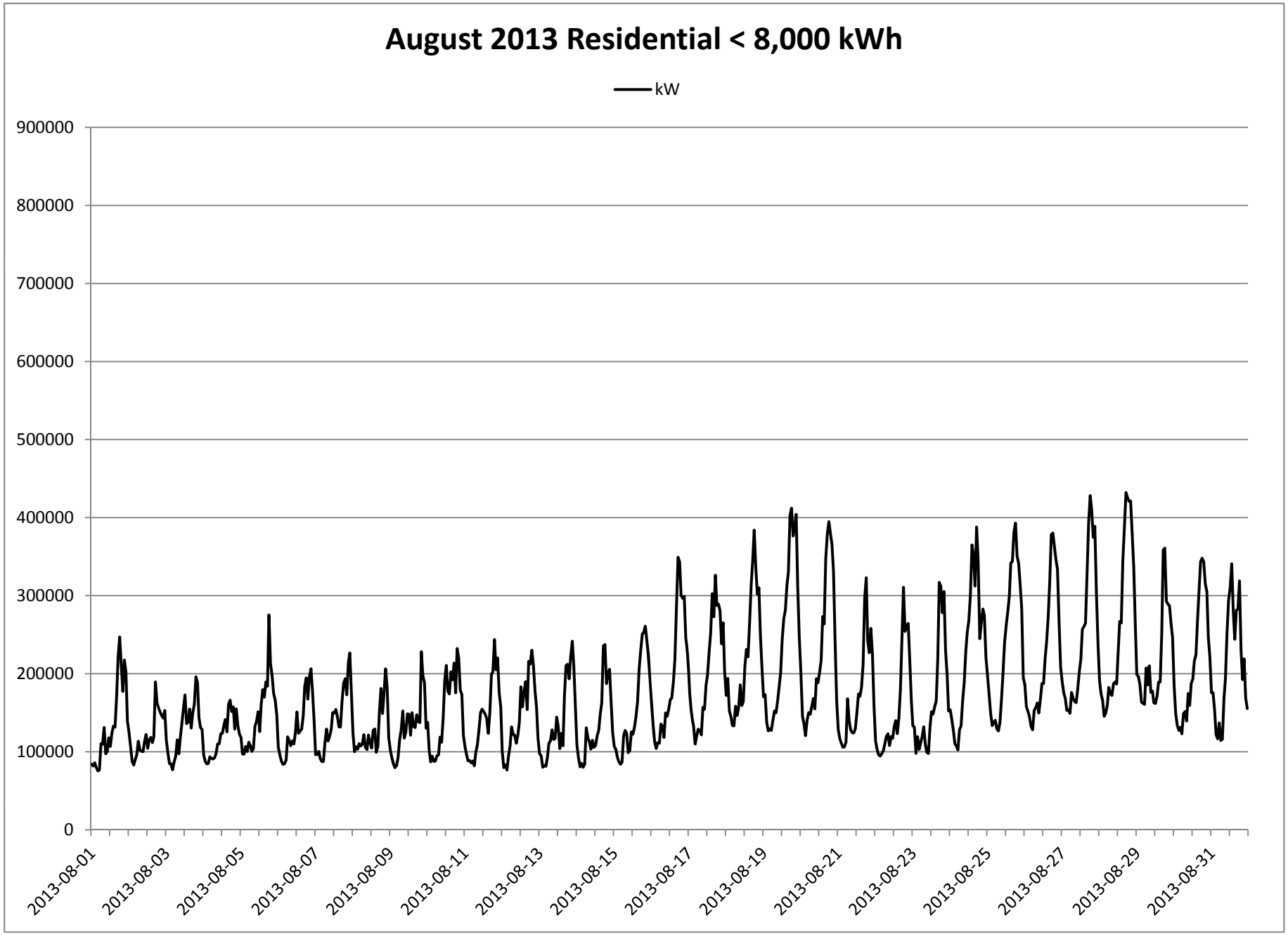
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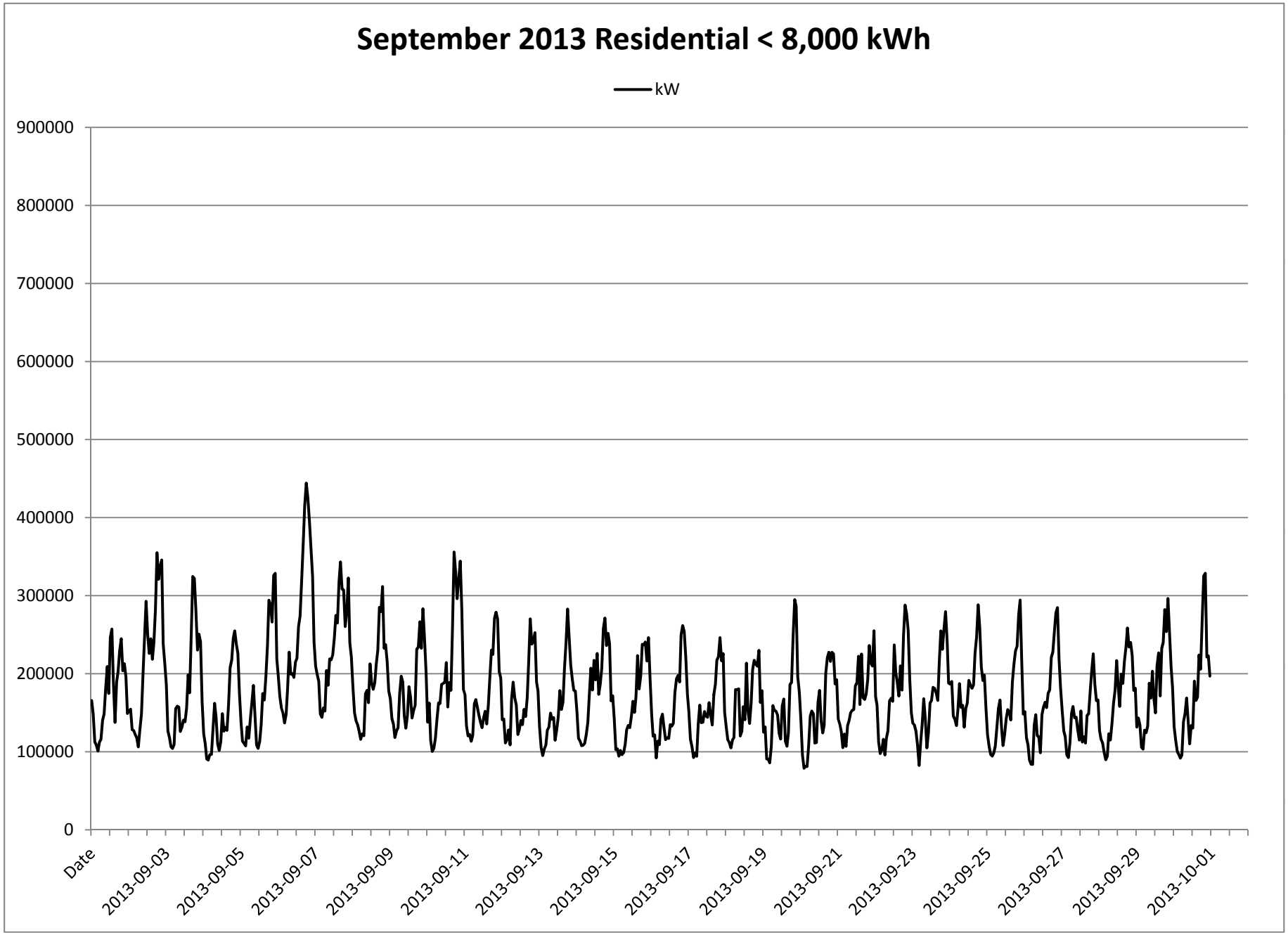
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Date
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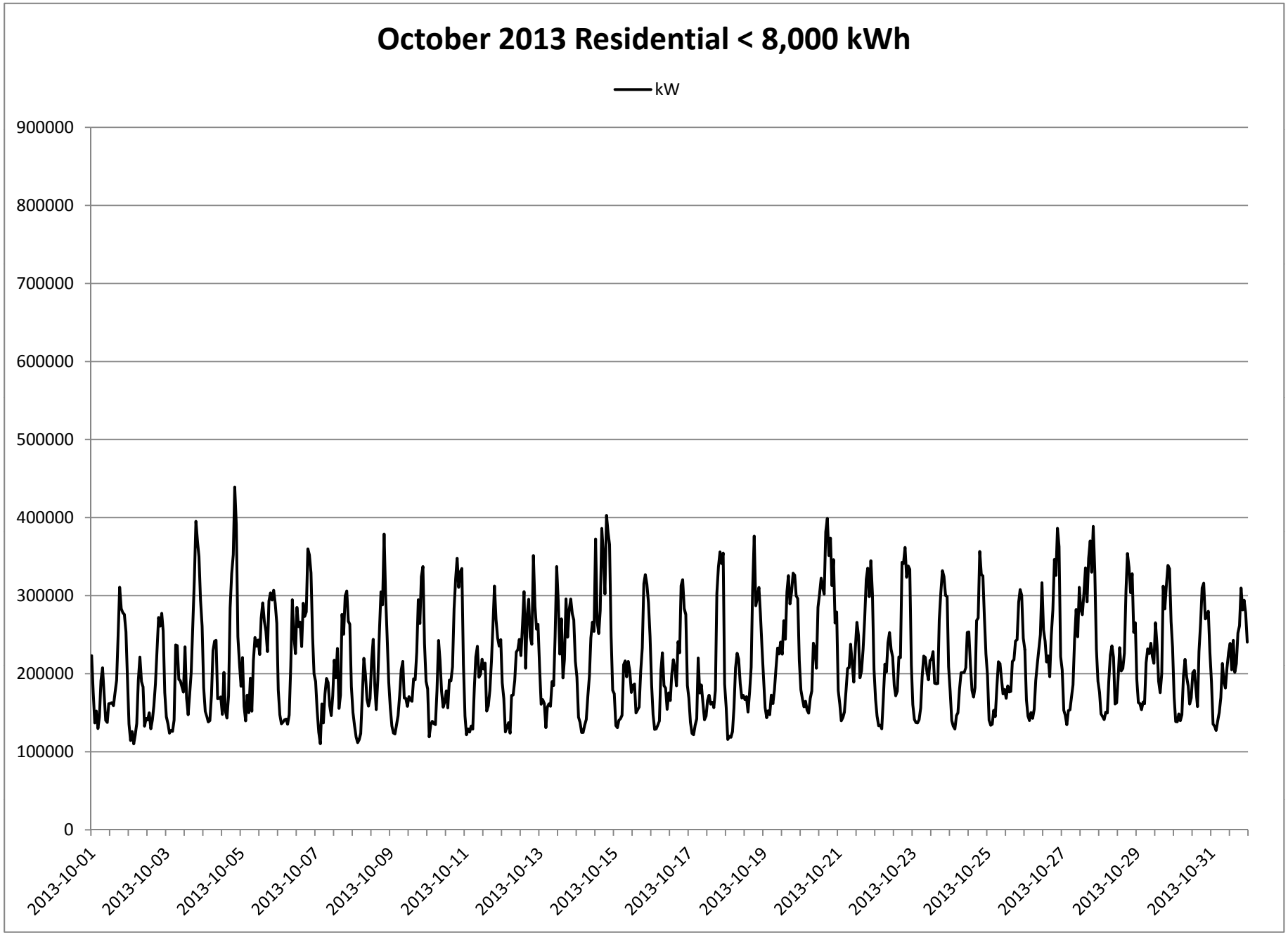
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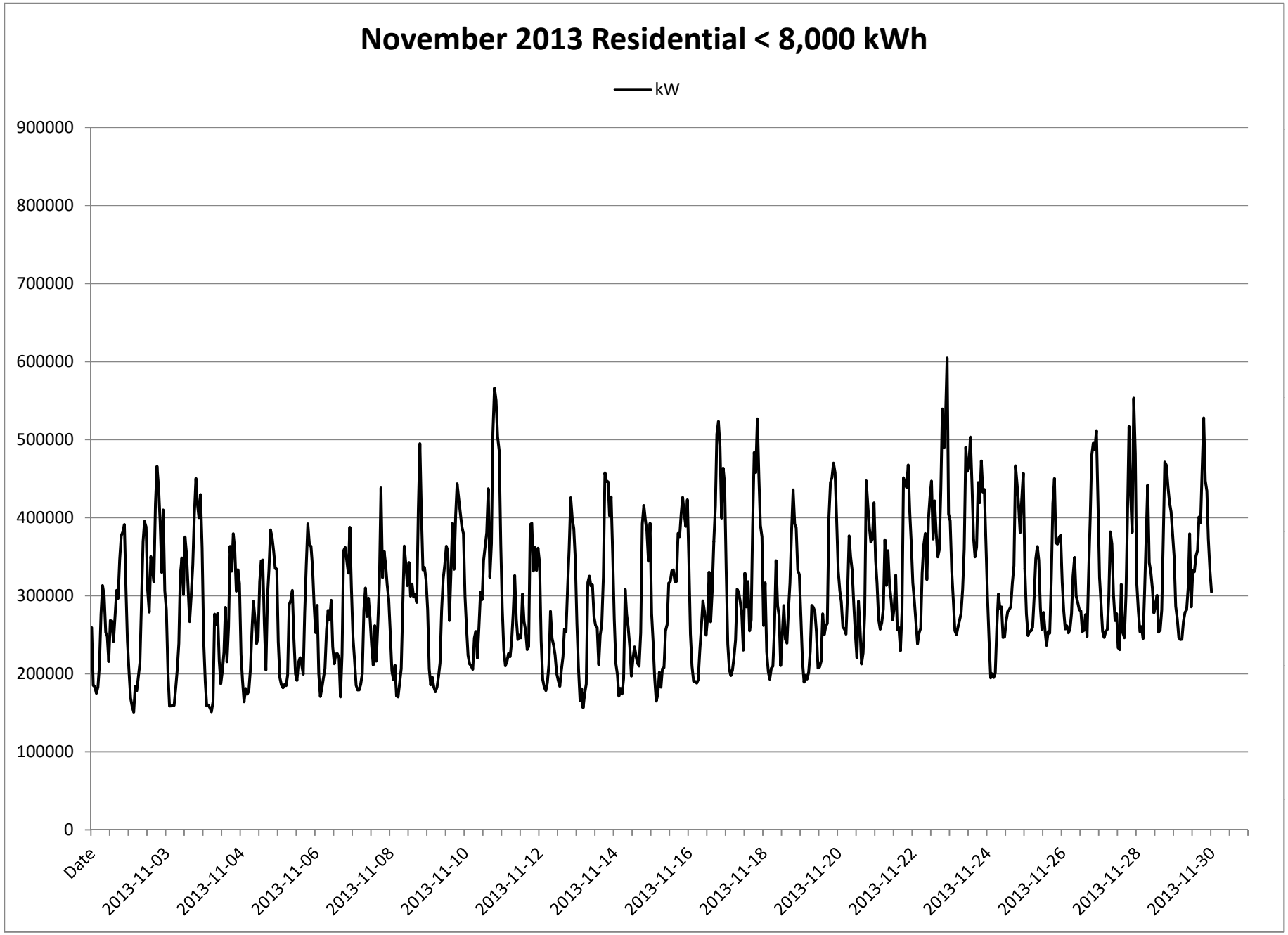
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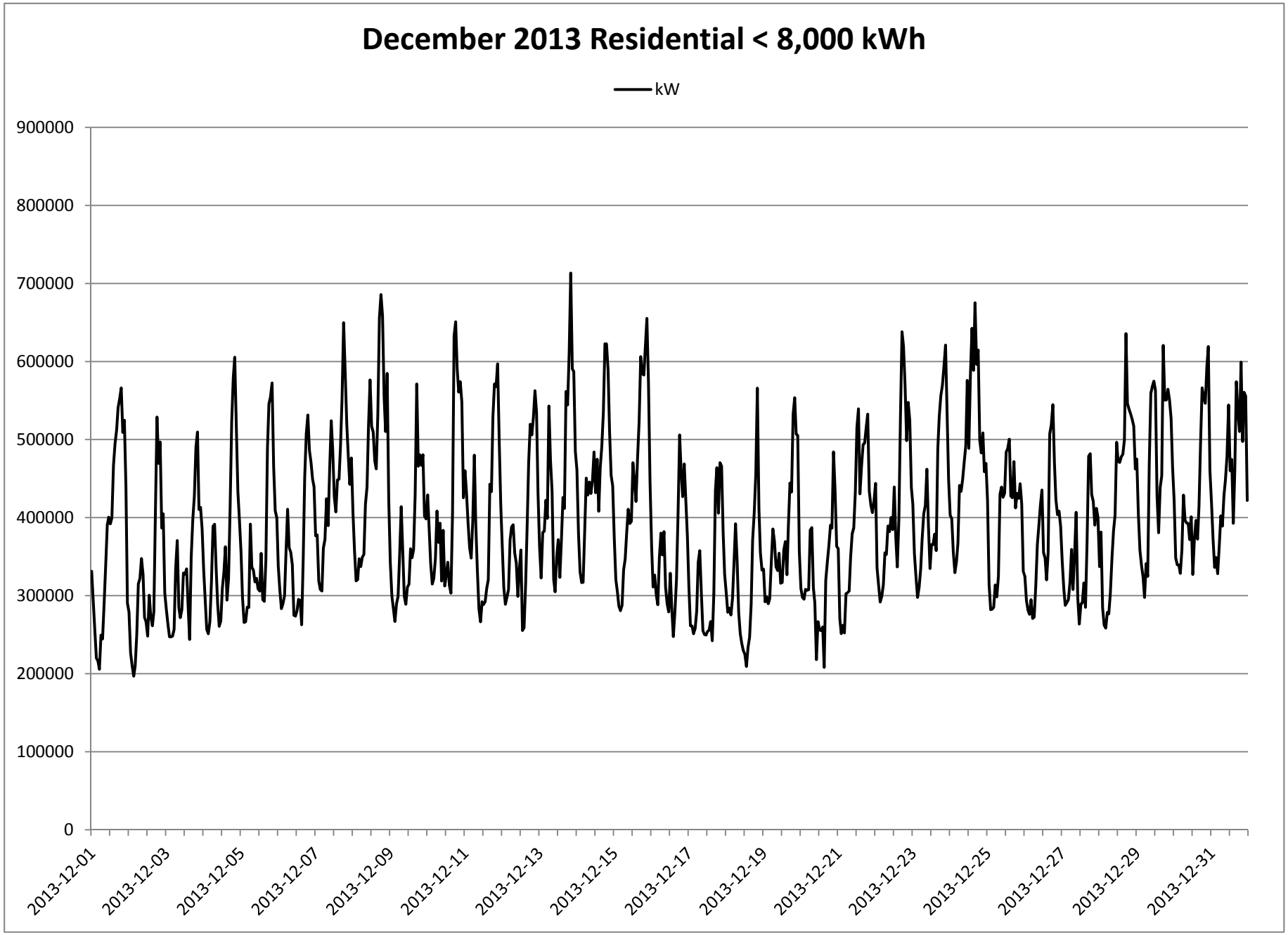
December 2013 Residential < 8,000 kWh
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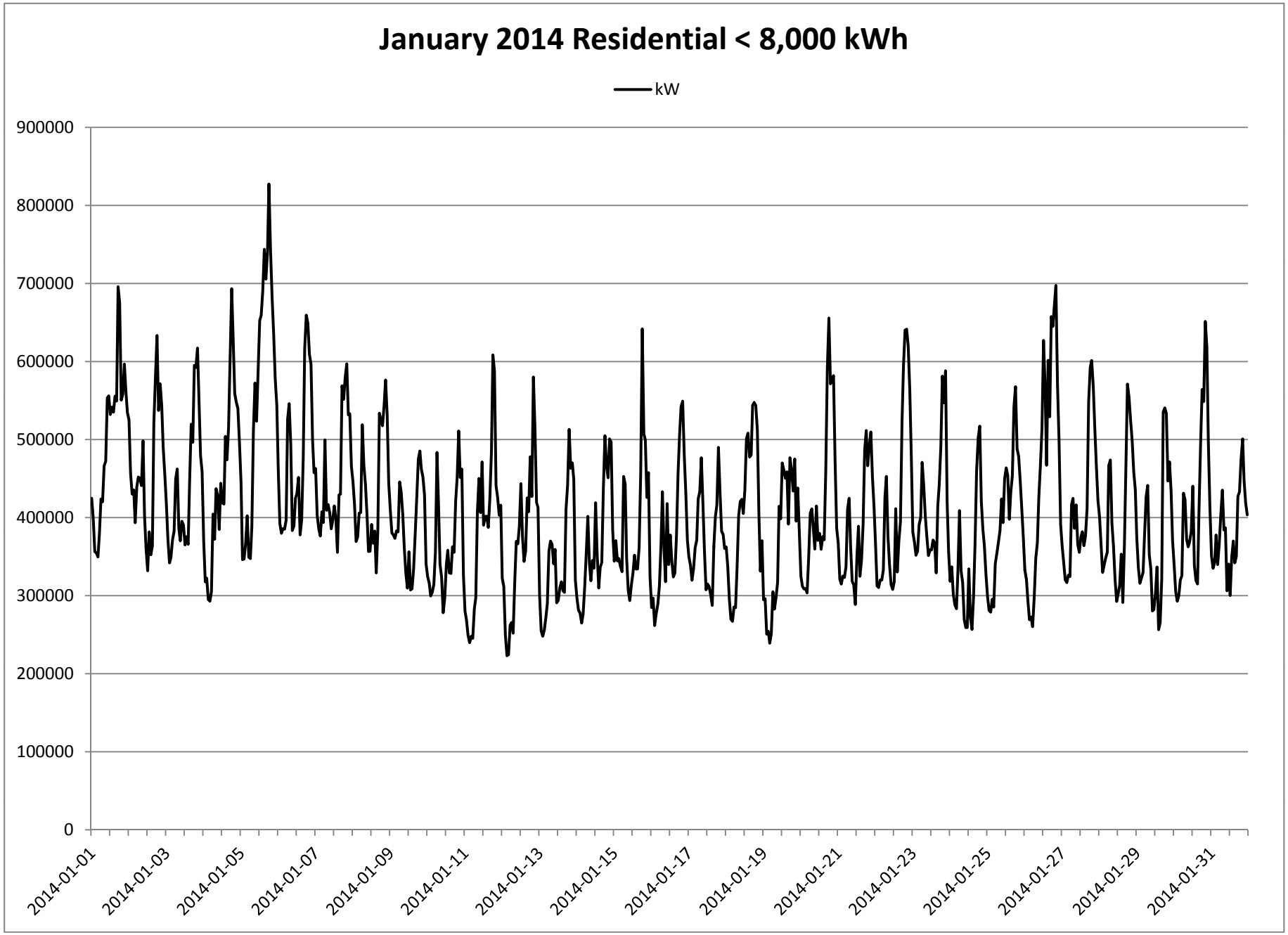
January 2014 Residential < 8,000 kWh
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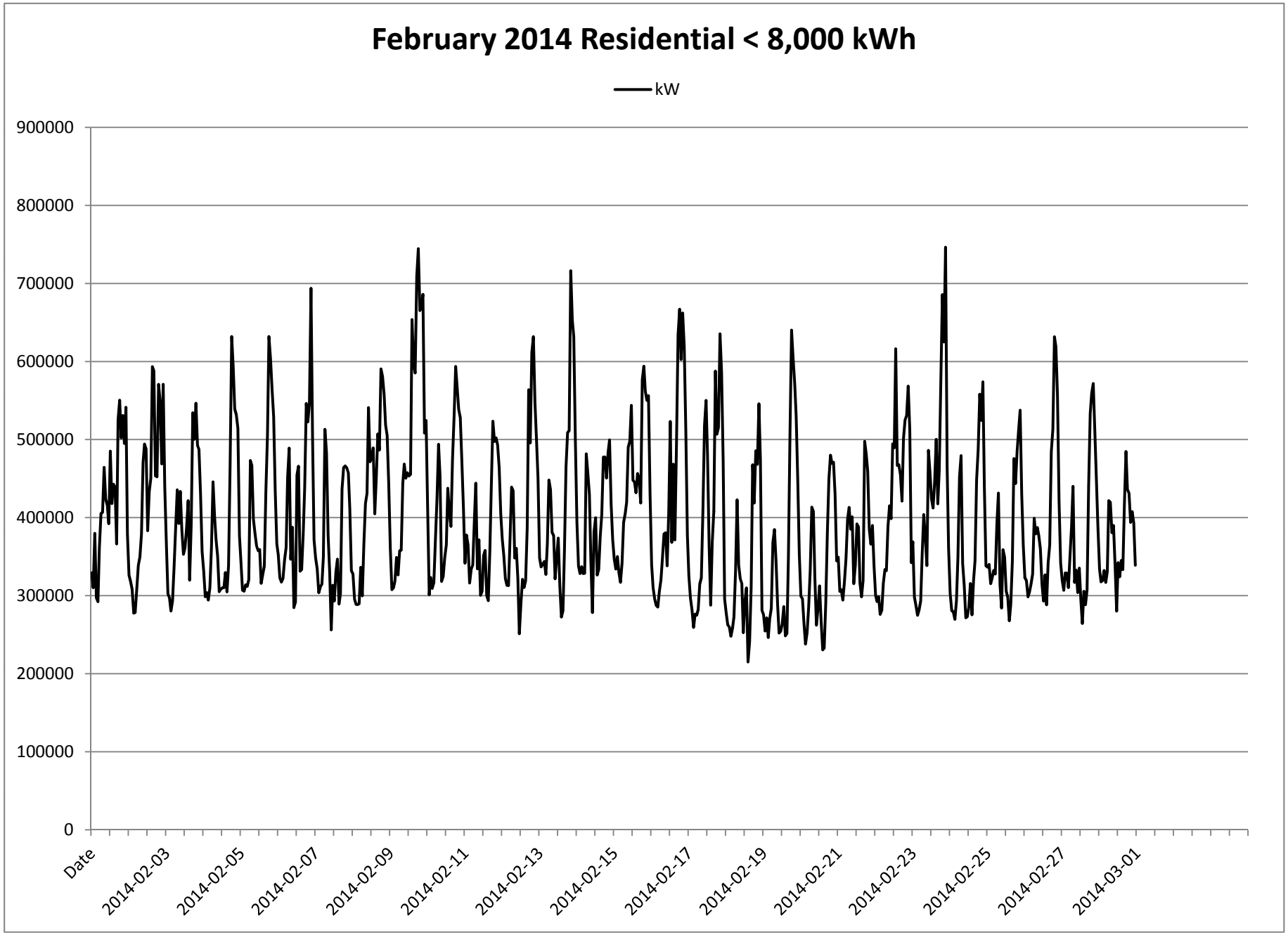
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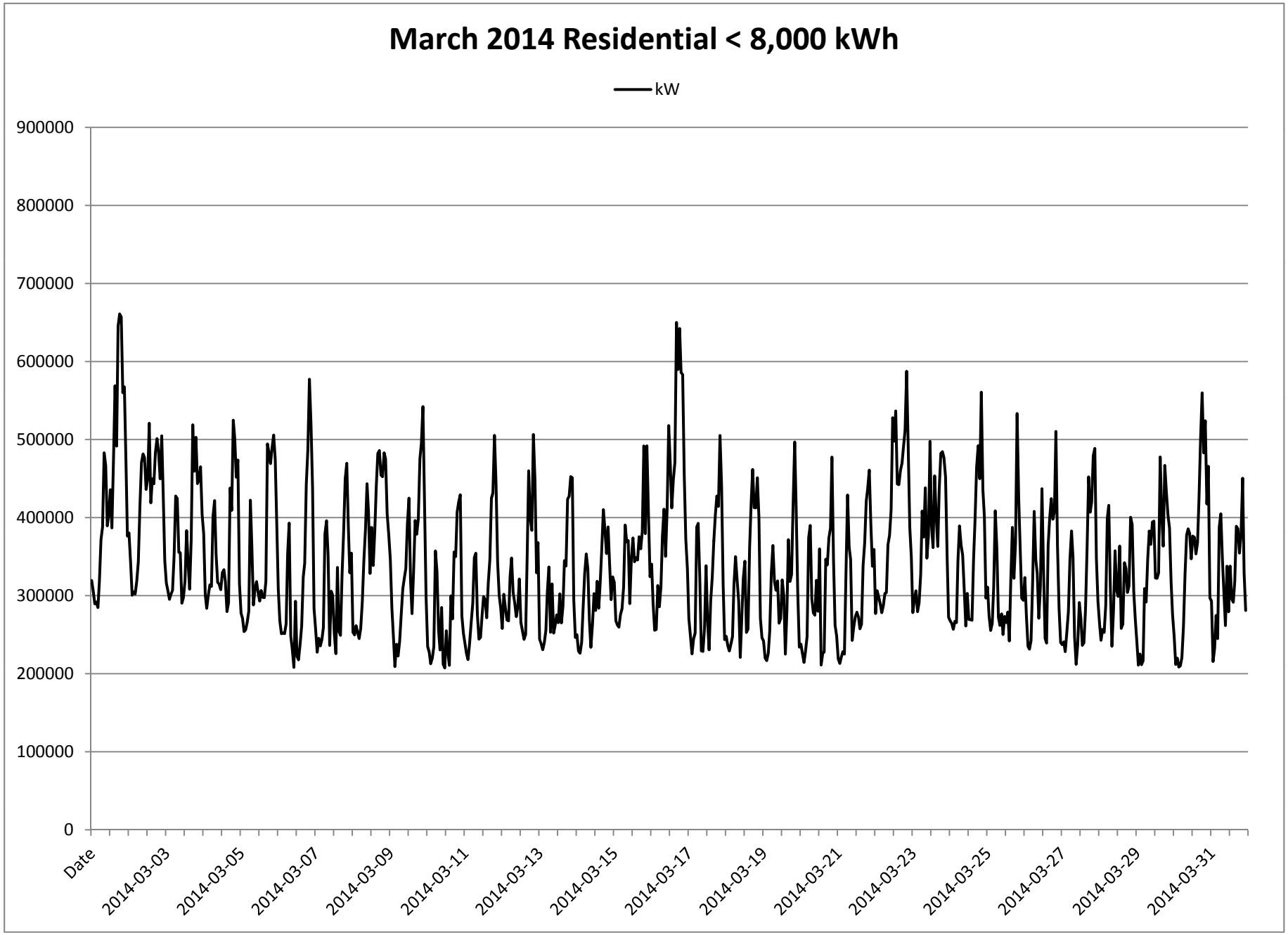
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2014-03-27
2014-03-29
2014-03-31

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Cost characteristics		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a copy of any study, memo, evaluation or analysis of any nature that discusses, assesses or otherwise considers the differences in the load curve for residential customers depending on the:

a) The monthly kWh consumption of the customer;
b) The annual kWh consumption of the customer;
c) The income of the customer.

RATIONALE FOR QUESTION:

The reasonableness of Company's proposed rates, as differentially affecting different customers, is to be considered.

RESPONSE:

Please see Manitoba Hydro's response to GAC/MH-I-27a-e for the most recent study showing the load curve for the residential customers as a whole and low-use residential customers for a complete 12-month period. Manitoba Hydro has not assessed differences in load curves for residential customers based on income.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Cost characteristics		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide the most recent residential appliance survey (or residential usage survey) prepared by and/or for Manitoba Hydro.

RATIONALE FOR QUESTION:

The reasonableness of Company's proposed rates, as differentially affecting different customers, is to be considered.

RESPONSE:

A copy of Manitoba Hydro’s 2014 Residential Energy Use Survey is attached to this response.

2014 **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.

Please answer the survey for the address shown BELOW. Return the completed questionnaire in the postage paid envelope provided.

Manitoba Hydro
POWER SMART

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

Your responses will only be used by Manitoba Hydro for its business purposes, such as the planning, development, implementation, administration, marketing, tracking, evaluation, and reporting, of its operations and programs. For inquiries concerning the collection of personal information contained in this form or if you have any questions concerning this survey please contact:

204.360.4629
(Weekdays 8:00 a.m. to 3:00 p.m.)

Outside Winnipeg, call collect.

Please return the completed questionnaire in the postage paid envelope provided, or mail to:

RESIDENTIAL ENERGY USE SURVEY
MARKET FORECAST DEPARTMENT
Manitoba Hydro
7th Floor 360 Portage Avenue
Winnipeg, MB R3C 0G8

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)
2 ☐ Side by Side (Two Attached Units)
3 ☐ Duplex (Upper Unit)
4 ☐ Duplex (Lower Unit)
5 ☐ Triplex/Fourplex
6 ☐ Mobile Home/Trailer
7 ☐ Rowhouse/Townhouse (Exterior Entrance)
8 ☐ Apartment Suite or Condominium unit
9 ☐ Cottage or Seasonal Residence
10 ☐ Other: _____

2 Do you OWN or RENT this residence?

1 ☐ Own/Buying
2 ☐ Rent/Lease
3 ☐ Other

3 How many STORIES is your residence (excluding basement area)?

1 ☐ 1 storey
2 ☐ 1 1/2 storey
3 ☐ 2 storey
4 ☐ 2 1/2 storey
5 ☐ Bi-level
6 ☐ Split level
7 ☐ Cab–Over
8 ☐ Suite, Corner
9 ☐ Suite, Interior
10 ☐ Suite, Basement
11 ☐ Other: _____

4 When was your residence originally BUILT?

1 ☐ 2010–present
2 ☐ 2000–2009
3 ☐ 1990–1999
4 ☐ 1980–1989
5 ☐ 1970–1979
6 ☐ 1960–1969
7 ☐ 1950–1959
8 ☐ 1940–1949
9 ☐ 1930–1939
10 ☐ 1920–1929
11 ☐ 1910–1919
12 ☐ 1909 or before

5 What is the SIZE of your residence in square feet?
(EXCLUDE BASEMENT AND GARAGE AREAS. ANSWER "5a", IF POSSIBLE.)

a) Specify size if KNOWN: _____ square feet.
b) If UNKNOWN, choose the approximate size range in square feet.

1 ☐ Under 500 sq ft
2 ☐ 501–700 sq ft
3 ☐ 701–900 sq ft
4 ☐ 901–1,100 sq ft
5 ☐ 1,101–1,300 sq ft
6 ☐ 1,301–1,500 sq ft
7 ☐ 1,501–1,700 sq ft
8 ☐ 1,701–1,900 sq ft
9 ☐ 1,901–2,100 sq ft
10 ☐ 2,101–2,300 sq ft
11 ☐ 2,301–2,500 sq ft
12 ☐ 2,501–2,700 sq ft
13 ☐ 2,701–2,900 sq ft
14 ☐ 2,901–3,100 sq ft
15 ☐ over 3,100 sq ft

6 **How many walls in your residence are ATTACHED to other residences or heated structures?**

1 ☐ None 2 ☐ One 3 ☐ Two 4 ☐ Three

7 **Are any ADDITIONAL BUILDINGS using ELECTRICITY at this location?**
(CHECK ALL THAT APPLY.)

1 ☐ None 1 ☐ Storage Shed 1 ☐ Grain Dryer
1 ☐ Workshop 1 ☐ Barn 1 ☐ Grain Bin(s)
1 ☐ Detached Garage 1 ☐ Pumphouse 1 ☐ Greenhouse
1 ☐ Other: _____

8 **What type of WINDOWS are in your residence?** (CHECK ONE FOR EACH WINDOW TYPE.)

	None	Some	All
Single Pane	1 ☐	2 ☐	3 ☐
Dual Pane	1 ☐	2 ☐	3 ☐
Triple Pane	1 ☐	2 ☐	3 ☐
Storm Pane	1 ☐	2 ☐	3 ☐

9 **Are any of your WINDOWS Low-E or Argon Gas?**

1 ☐ None 2 ☐ Some 3 ☐ All 4 ☐ Do not know

10 **What type and number of EXTERIOR DOORS are in your residence?**
(CHECK ONE FOR EACH DOOR TYPE.)

	None	One	Two	Three	Four	Five
Storm	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐
Patio Slider	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐
Wood	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐
PVC	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐
Steel Insulated	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐
Fiberglass	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐

11 **What best describes the overall level of INSULATION in your residence?**
(EXCLUDE BASEMENT AREA)

1 ☐ Excellent 3 ☐ Average 5 ☐ Poor
2 ☐ Very Good 4 ☐ Fair

12 **Please indicate which of the following best describes the BASEMENT (foundation) of your residence:**

1 ☐ No Basement – Go to Question 13 5 ☐ Crawl Space
2 ☐ Slab on Grade 6 ☐ Partial and Crawlspace
3 ☐ Full Basement 7 ☐ Other: _____
4 ☐ Partial Basement 8 ☐ Do not know

a) What amount of your residence's basement foundation walls are insulated?

1 ☐ No Insulation
2 ☐ Partially Insulated (up to 49%)
3 ☐ Mostly Insulated (50% to 89%)
4 ☐ Fully Insulated (90% or more)
5 ☐ Do not know

b) What type is the basement wall insulation?

1 ☐ No Insulation
2 ☐ Fiberglass Batting
3 ☐ Rigid Foam Board
4 ☐ Spray Foam
5 ☐ Insulate Concrete Forms (ICF)
6 ☐ Other: _____
7 ☐ Do not know

c) What amount of your residence's basement area is finished?

1 ☐ Totally Unfinished (0%)
2 ☐ Partially Finished (up to 49%)
3 ☐ Mostly Finished (50% to 89%)
4 ☐ Fully Finished (90% or more)
5 ☐ Do not know

13 Does this residence have any of the following PROBLEMS?
(CHECK ALL THAT APPLY.)

1 ☐ Lingering odours, cooking smells, stale air
1 ☐ High humidity in winter
1 ☐ Low humidity in winter
1 ☐ Window condensation
1 ☐ Condensation in attic
1 ☐ Mold and mildew
1 ☐ Ice dams on roof
1 ☐ Water leakage in basement
1 ☐ Other: _____

14 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 ☐ Insulated the exterior walls
1 ☐ Insulated the attic or ceiling
1 ☐ Caulked to reduce air leakage
1 ☐ Replaced some or all of the windows

Section 2 *Heating System*

1 How do you pay for your SPACE HEATING costs?

1 ☐ Payment is made directly to Manitoba Hydro (part of my utility bill)
2 ☐ Cost is included in rent or common service fees
3 ☐ Other: _____
4 ☐ Do not know

2 What is the MAIN HEATING SYSTEM used to heat your residence?

(CHECK ONLY ONE.)

1 ☐ Hi-efficiency Natural Gas (+ 90%) Central Forced Air Furnace
(Available from 1984 – present)

2 ☐ Mid-efficiency Natural Gas (80–85%) Central Forced Air Furnace
(Available from 1984 – 2009)

3 ☐ Standard-efficiency Natural Gas (65%) Central Forced Air Furnace
(Last installed in 1992)

4 ☐ Natural Gas Boiler
5 ☐ Electric Baseboards
6 ☐ Electric Forced Air Furnace
7 ☐ Electric Boiler
8 ☐ Heat Pump - Geothermal
9 ☐ Heat Pump - Air Source
10 ☐ Wood Stove/Furnace
11 ☐ Propane Furnace
12 ☐ Oil Furnace
13 ☐ Other: _____
14 ☐ Do not know

3 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

4 Have you always heated with the same space heating fuel at this residence?

1 ☐ Yes, always
2 ☐ No, previously heated with NATURAL GAS and now heating with ELECTRICITY
3 ☐ No, previously heated with ELECTRICITY and now heating with NATURAL GAS
4 ☐ No, previously heated with PROPANE or WOOD or COAL or OIL and now heating with ELECTRICITY
5 ☐ Other: _____
6 ☐ Do not know

5 What other HEATING SYSTEMS are used to heat your residence?

(CHECK ALL THAT APPLY.)

1 ☐ Electric Baseboards
1 ☐ Electric Portable Heater
1 ☐ Electric Fireplace
1 ☐ Natural Gas Fireplace
1 ☐ Wood Stove
1 ☐ Wood Fireplace
1 ☐ Other: _____
1 ☐ Do not know

6 How is the CENTRAL FORCED AIR FURNACE fan motor normally operated?

1 ☐ No Central Forced Air Furnace
2 ☐ Comes on only when furnace is running
3 ☐ Two speed (high, low) - continuous
4 ☐ Continuous - one speed on
5 ☐ Continuous Variable Direct Current Motor
(on select hi-efficiency furnaces)
6 ☐ Do not know

7 **Do you have a central zoned heating system installed?**

1 ☐ No
2 ☐ Yes, with multiple furnaces
3 ☐ Yes, with automatic dampers
4 ☐ Do not know

8 **Do you perform maintenance checks on your heating system?**

1 ☐ Not applicable
2 ☐ No, never
3 ☐ At least once a year
4 ☐ Every 2 to 3 years
5 ☐ Every 4 or more years

9 **Do you regularly change or clean your furnace filter?**

1 ☐ Not applicable
2 ☐ No, never
3 ☐ Yes, every 3 to 4 months
4 ☐ Yes, once a year
5 ☐ Every other year

10 **If you use WOOD to provide heat for your residence, 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.)

1 ☐ No wood used
2 ☐ Under 1
3 ☐ 1–2
4 ☐ 3–4
5 ☐ 5–6
6 ☐ 7–8
7 ☐ 9+
8 ☐ Do not know

11 **What type of THERMOSTAT controls the main heating system?**

1 ☐ No Thermostat
2 ☐ Individual Unit or Room Control
3 ☐ Manual Central Control
4 ☐ Programmable Thermostat
5 ☐ Smart Programmable (e.g. NEST INSTEON)
6 ☐ Other: _____
7 ☐ Do not know

12 **If you have a programmable or Smart Thermostat, do you use the features?**

1 ☐ Do not have a programmable thermostat or Smart Thermostat Go to Question 14
2 ☐ Yes, use the features
3 ☐ No, do not use the features

13 **Why do you program your Thermostat?**

1 ☐ Optimization of energy use
2 ☐ Comfort
3 ☐ Both optimization and comfort
4 ☐ Other: _____
5 ☐ Do not program the Thermostat

14 **How often do you TURN DOWN the temperature at night during the heating season?**

1 ☐ Every Night
2 ☐ Most Nights
3 ☐ Occasionally
4 ☐ Never
5 ☐ No Thermostat

15 **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 ☐	1 ☐	1 ☐
18°–19°	65°–67°	2 ☐	2 ☐	2 ☐
20°–21°	68°–70°	3 ☐	3 ☐	3 ☐
22°–23°	71°–73°	4 ☐	4 ☐	4 ☐
24°–25°	74°–77°	5 ☐	5 ☐	5 ☐
26° plus	78° plus	6 ☐	6 ☐	6 ☐
Do not know		7 ☐	7 ☐	7 ☐

16 **Do you use a dehumidifier?**

1 ☐ Yes 2 ☐ No 3 ☐ Do not know

17 **Do you use a humidifier?**

1 ☐ Yes 2 ☐ No 3 ☐ Do not know

18 **What type of VENTILATION SYSTEM(s) is/are used to control the air quality in your residence?** (CHECK ALL THAT APPLY.)

1 ☐ Central Exhaust System
1 ☐ Heat Recovery Ventilator
1 ☐ Kitchen/Bathroom Fans (Not Central Exhaust)
1 ☐ Furnace Fan
1 ☐ Other: _____
1 ☐ Do not know

Section 3 *Air Conditioning*

1 **What type of AIR CONDITIONER is used to COOL your residence?**

1 ☐ No Air Conditioner – Go to SECTION 4
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 my 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 **Is this the original air conditioning system installed at your residence or has it been replaced?**

1 ☐ Yes, it is the original system
2 ☐ No, it has been replaced
3 ☐ Do not know

5 **How often do you adjust the temperature at night during the cooling season?**

1 ☐ Every night	3 ☐ Occasionally	5 ☐ Do not know
2 ☐ Most nights	4 ☐ Never	

6 **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 ☐	1 ☐	1 ☐
18°–19°	65°–67°	2 ☐	2 ☐	2 ☐
20°–21°	68°–70°	3 ☐	3 ☐	3 ☐
22°–23°	71°–73°	4 ☐	4 ☐	4 ☐
24°–25°	74°–77°	5 ☐	5 ☐	5 ☐
26° plus	78° plus	6 ☐	6 ☐	6 ☐
Do not know		7 ☐	7 ☐	7 ☐

Section 4 *Hot Water*

1 **Is there a HOT WATER TANK used at your residence?**

1 ☐ No Hot Water Tank – Go to SECTION 5
2 ☐ Shared Central Supply (Serving two or more residences) – Go to SECTION 5
3 ☐ Private Individual Hot Water Tank (Used solely by your household.)
4 ☐ Tankless Water Heater

2 **How do you pay for your water heating costs?**

1 ☐ Payment is made directly to Manitoba Hydro (part of my utility bill)
2 ☐ Cost is included in rent or common service fee
3 ☐ Other: _____
4 ☐ Do not know

3 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

4 What is the AGE of your hot water heater?

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 is the temperature setting of your hot water heater?

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

6 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

7 Have you always heated the water with the fuel indicated in Question 3?

1 ☐ Yes, always
2 ☐ No, previously heated with NATURAL GAS and now heating with ELECTRICITY
3 ☐ No, previously heated with ELECTRICITY and now heating with NATURAL GAS
4 ☐ No, other: _____

8 How many SHOWERHEADS are installed in your residence?

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
2 ☐ Rarely shower
3 ☐ One
4 ☐ Two
5 ☐ Three
6 ☐ Four
7 ☐ Five
8 ☐ Six or more

10 Have you done any of the following to CONSERVE water?
(CHECK ALL THAT APPLY.)

1 ☐ Installed Energy Efficient Showerhead(s) (up to 6 gal/min)
1 ☐ Installed Energy Efficient Faucet Aerator(s)
1 ☐ Installed Water Heater Blanket/Insulation
1 ☐ Installed Energy Efficient Toilets (1.6 or less gal/flush)
1 ☐ Lowered Water Heater Temperature
1 ☐ Installed Pipe Wrap

11 **Do you have an ELECTRIC WATER PUMP installed on your water system?**
(CHECK ALL THAT APPLY.)

- 1 ☐ No Pump
- 1 ☐ Well Pump
- 1 ☐ Circulation Pump
- 1 ☐ Pressure Pump
- 1 ☐ Sump Pump
- 1 ☐ Sewage Pump
- 1 ☐ Do not know

Section 5 *Major Appliances*

1 **Please indicate the COOKING APPLIANCE(S) used in your residence.**
(CHECK ALL THAT APPLY.)

- 1 ☐ None
- 1 ☐ Electric Range with Standard Oven
- 1 ☐ Electric Range with Self-Cleaning Oven
- 1 ☐ Electric Range with Convection Oven
- 1 ☐ Electric Counter Cooktop
- 1 ☐ Electric Wall Oven
- 1 ☐ Gas Cooktop
- 1 ☐ Gas Range
- 1 ☐ Gas Wall Oven
- 1 ☐ Gas/Electric Range
- 1 ☐ Wood Stove/Oven
- 1 ☐ Other: _____

• ***AVERAGE COOKED MEALS PER WEEK:***

- 1 ☐ 1–7 meals
- 2 ☐ 8–14 meals
- 3 ☐ 15–21 meals
- 4 ☐ Over 21 meals
- 5 ☐ Other:_____

2 **What is the AGE of your main cooking appliance?**

- 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

3 **Is a MICROWAVE OVEN used in your residence?**

- 1 ☐ No
- 2 ☐ Yes

• ***AVERAGE MINUTES PER DAY:***

- 1 ☐ Under 5 minutes
- 2 ☐ 5–20 minutes
- 3 ☐ Over 20 minutes
- 4 ☐ Other:_____

4 **How many REFRIGERATORS are used in your residence?**

- 1 ☐ None – Go to Question 5
- 2 ☐ One
- 3 ☐ Two
- 4 ☐ Three or More

a) Please indicate the MAIN REFRIGERATOR that is used in your residence.

• TYPE:
- 1 ☐ Frost-Free
- 2 ☐ Manual Defrost

• DOORS:
- 1 ☐ Single Door
- 2 ☐ Two Door, Top Freezer
- 3 ☐ Two Door, Bottom Freezer
- 4 ☐ French Door, Bottom Freezer
- 5 ☐ Side-By-Side

- 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 indicate the SECOND REFRIGERATOR that is used in your residence.

1 ☐ None – Go to Question 5

- 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

5 How many stand-alone FREEZERS are used in your residence?
(DO NOT INCLUDE FREEZER COMPARTMENT OF YOUR REFRIGERATOR)

1 ☐ None – Go to Question 6 2 ☐ One 3 ☐ Two 4 ☐ Three or More

a) Please indicate the MAIN stand-alone FREEZER that is used in your residence.

- TYPE: 1 ☐ Frost-Free 2 ☐ Manual Defrost
- STYLE: 1 ☐ Upright 2 ☐ Chest
- 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

b) Please indicate the SECOND stand-alone FREEZER that is used in your residence.

1 ☐ None – Go to Question 6

- TYPE: 1 ☐ Frost-Free 2 ☐ Manual Defrost

- STYLE: 1 ☐ Upright 2 ☐ Chest
- 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

6 Is there an automatic DISHWASHER used in your residence?

1 ☐ No Automatic Dishwasher – Go to Question 7 2 ☐ Yes

- ***AVERAGE LOADS PER WEEK:***
  1 ☐ 1–7 loads 3 ☐ 15–21 loads 5 ☐ Other:_____
  2 ☐ 8–14 loads 4 ☐ Over 21 loads

- 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 WASHER used in your residence?

1 ☐ Do not have a Clothes Washer – Go to Question 8
2 ☐ Use laundry facility outside the residence
(e.g., apartment block laundry room or laundromat) – Go to Question 8
3 ☐ Top Load Automatic Clothes Washer with agitator
4 ☐ Front Load or Top Load Automatic Clothes Washer without agitator
5 ☐ Compact/Spinner Washer
6 ☐ Wringer Washer

- ***WATER TEMPERATURE for the WASH/RINSE CYCLE:***
  (Setting used most often, choose only one.)
  1 ☐ Hot/Hot 3 ☐ Hot/Cold 5 ☐ Warm/Cold
  2 ☐ Hot/Warm 4 ☐ Warm/Warm 6 ☐ Cold/Cold

- ***AVERAGE LOADS PER WEEK:***
  1 ☐ 1–7 loads 3 ☐ 15–21 loads 5 ☐ Other:_____
  2 ☐ 8–14 loads 4 ☐ Over 21 loads

- 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

8 **Is there a CLOTHES DRYER used in your residence?**

1 ☐ No Clothes Dryer – Go to Section 6
2 ☐ Use laundry facility outside the residence
(e.g., apartment block laundry room or laundromat) – Go to Section 6
3 ☐ **AUTOMATIC CLOTHES DRYER**

- DRYER FUEL: 1 ☐ Electricity 3 ☐ Propane 2 ☐ Natural Gas 4 ☐ Other: _____
- DRYER TEMP: (Used most often.) 1 ☐ Cold (Low) 3 ☐ Warm (Medium) 5 ☐ Hot (High) 2 ☐ Delicate 4 ☐ Permanent Press 6 ☐ Automatic
- ***AVERAGE LOADS PER WEEK:***
  1 ☐ 1–7 loads 3 ☐ 15–21 loads 5 ☐ Other:_____
  2 ☐ 8–14 loads 4 ☐ Over 21 loads
- ***AVERAGE MINUTES PER LOAD:***
  1 ☐ Under 30 minutes 3 ☐ Over 60 minutes
  2 ☐ 30–60 minutes 4 ☐ Other:_____
- 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 6 *Electronics & Lighting*

1 **What type and number of Electronics are in USE at your residence?**
(CHECK ONE FOR EACH ELECTRONIC TYPE)

	None	One	Two	Three	Four	Five+
Television	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐
Set Top Box	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐
DVD/Blu-ray	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐
Gaming Console	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐
Desktop Computer	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐
Laptop Computer	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐
Tablet	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐
Cell Phone Charger	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐

2 **For the top 3 most frequently used television sets in your residence, please check the most appropriate boxes below:**

a) Please indicate the MAIN TELEVISION that is used in your residence.

1 ☐ Do not have a television set – Go to Question 3

- TYPE: 1 ☐ Tube (CRT) 2 ☐ Plasma 3 ☐ LCD 4 ☐ LED 5 ☐ Projection 6 ☐ Do not know
- USAGE: (per day) 1 ☐ 0 hours 2 ☐ 1–3 hours 3 ☐ 4–6 hours 4 ☐ 7–9 hours 5 ☐ Over 9 hours

b) Please indicate the SECOND TELEVISION that is used in your residence.

1 ☐ Do not have a second television set – Go to Question 3

- TYPE: 1 ☐ Tube (CRT) 2 ☐ Plasma 3 ☐ LCD 4 ☐ LED 5 ☐ Projection 6 ☐ Do not know
- USAGE: (per day) 1 ☐ 0 hours 2 ☐ 1–3 hours 3 ☐ 4–6 hours 4 ☐ 7–9 hours 5 ☐ Over 9 hours

c) Please indicate the THIRD TELEVISION that is used in your residence.

1 ☐ Do not have a third television set – Go to Question 3

- TYPE: 1 ☐ Tube (CRT) 2 ☐ Plasma 3 ☐ LCD 4 ☐ LED 5 ☐ Projection 6 ☐ Do not know
- USAGE: (per day) 1 ☐ 0 hours 2 ☐ 1–3 hours 3 ☐ 4–6 hours 4 ☐ 7–9 hours 5 ☐ Over 9 hours

3 **For the top 3 most frequently used computers in your residence, please check the most appropriate boxes.**

a) Please describe the MAIN COMPUTER that is used in your residence.

1 ☐ Do not have a computer – Go to Question 4

- TYPE: 1 ☐ Desktop 2 ☐ Laptop 3 ☐ Tablet
- USAGE: (per day) 1 ☐ Under 1 hour 2 ☐ 1–3 hours 3 ☐ 4–6 hours 4 ☐ 7–9 hours 5 ☐ Over 9 hours
- POWER ON: 1 ☐ On 24 hours 2 ☐ On when necessary

b) Please describe the SECOND COMPUTER that is used in your residence.

1 ☐ Do not have a second computer – Go to Question 4

- TYPE: 1 ☐ Desktop 2 ☐ Laptop 3 ☐ Tablet
- USAGE: (per day) 1 ☐ Under 1 hour 2 ☐ 1–3 hours 3 ☐ 4–6 hours 4 ☐ 7–9 hours 5 ☐ Over 9 hours
- POWER ON: 1 ☐ On 24 hours 2 ☐ On when necessary

c) Please describe the THIRD COMPUTER that is used in your residence.

1 ☐ Do not have a third computer – Go to Question 4

- TYPE: 1 ☐ Desktop 2 ☐ Laptop 3 ☐ Tablet
- USAGE: (per day) 1 ☐ Under 1 hour 2 ☐ 1–3 hours 3 ☐ 4–6 hours 4 ☐ 7–9 hours 5 ☐ Over 9 hours
- POWER ON: 1 ☐ On 24 hours 2 ☐ On when necessary

4 Do you have INTERNET ACCESS at your residence?

1 ☐ No
2 ☐ Yes, through home internet only
3 ☐ Yes, through mobile device only
4 ☐ Yes, through both home internet and mobile device

5 What type and approximate percent of the following INTERIOR LIGHT FIXTURES are in your residence? (CHECK ONE FOR EACH LIGHTING TYPE)

	None	20%	40%	60%	80%	100%
Compact Fluorescent	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐
Halogen	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐
Incandescent	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐
LED	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐
Tube Fluorescent	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐

6 Are there any strings of OUTDOOR SEASONAL LIGHTS hung at your residence?

1 ☐ No
2 ☐ Yes, LED lights
3 ☐ Yes, Incandescent lights
4 ☐ Yes, both LED and Incandescent lights

Section 7 *Hot Tub, Pool & Sauna*

EXCLUDING HOT TUBS, POOLS AND SAUNAS IN APARTMENT/TOWNHOUSE COMPLEXES

1 Is there a HOT TUB installed in your residence?

1 ☐ No 2 ☐ Yes, indoor 3 ☐ Yes, outdoor

2 Is there a SAUNA installed in your residence?

1 ☐ No 2 ☐ Yes

3 **Does your residence have a SWIMMING POOL?**

1 ☐ No – Go to SECTION 8 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 SYSTEM:

1 ☐ Not Heated 4 ☐ Ground Source Heat Pump 6 ☐ Propane Heater
2 ☐ Electric Heater 7 ☐ Solar Blanket
3 ☐ Air Source Heat Pump 5 ☐ Natural Gas Heater 8 ☐ Do not know

Section 8 *Vehicles*

1 **How many VEHICLES are usually plugged in by your household during the winter months?** (NOVEMBER – MARCH)

1 ☐ None – Go to SECTION 9 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 ☐ 7–8 hours
2 ☐ 1–2 hours 4 ☐ 5–6 hours 6 ☐ Over 8 hours

Section 9 *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
2 ☐ In-Person - at a designated agency
3 ☐ By Mail
4 ☐ On-Line
5 ☐ Pre-Authorized Payment Plan
6 ☐ Other:_____
7 ☐ Do not know

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 **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 **What is the best way for you to receive Manitoba Hydro corporate information (e.g. Energy Rates)?** (CHOOSE ONLY ONE)

1 ☐ By mail
2 ☐ Social media
3 ☐ Newspaper
4 ☐ Radio
5 ☐ Television
6 ☐ e-mail
7 ☐ Manitoba Hydro Website

9 **What is the best way for you to receive Power Smart general information and Power Smart programs information?** (CHOOSE ONLY ONE)

1 ☐ By mail
2 ☐ Social media
3 ☐ Newspaper
4 ☐ Radio
5 ☐ Television
6 ☐ e-mail
7 ☐ Manitoba Hydro Website

10 **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/Boiler Replacement Program
- 1 ☐ Power Smart New Home Program
- 1 ☐ Power Smart Residential Loan
- 1 ☐ Earth Power (Geothermal) Loan
- 1 ☐ Power Smart Home Insulation Program
- 1 ☐ Power Smart Energy Efficient Appliance Program
- 1 ☐ Power Smart Compact Fluorescent Lighting Promotions
- 1 ☐ Affordable Energy Program
- 1 ☐ Power Smart PAY AS YOU SAVE (PAYS) financing
- 1 ☐ Water and Energy Saver Program (Free kit provided)
- 1 ☐ Refrigerator Retirement Program
- 1 ☐ Power Smart In-Home Eco-Energy Evaluation Program

Section 10 *Household Demographics*

The following questions 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.

1 **Including yourself, how many persons usually live in your residence?**

1 ☐ One (myself)	3 ☐ Three	5 ☐ Five	7 ☐ Seven or more
2 ☐ Two	4 ☐ Four	6 ☐ Six	8 ☐ Choose not to answer

2 **Please indicate the number of people usually living in your residence, 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 **Would you describe yourself as an Aboriginal person, that is to say a person of First Nations, Metis or Inuit ancestry?**

1 ☐ Yes	3 ☐ Do not know
2 ☐ No	4 ☐ Choose not to answer

4 What is the PRIMARY language spoken in your household?

1 ☐ English
2 ☐ French
3 ☐ German
4 ☐ Tagalog
5 ☐ Cree
6 ☐ Ukrainian
7 ☐ Punjabi
8 ☐ Chinese
9 ☐ Ojibway
10 ☐ Other: _____
11 ☐ Choose not to answer

5 What is your approximate total annual household INCOME? (ALL SOURCES BEFORE TAXES)

1 ☐ Under $20,000
2 ☐ $20,000-$24,999
3 ☐ $25,000-$29,999
4 ☐ $30,000-$34,999
5 ☐ $35,000-$39,999
6 ☐ $40,000-$49,999
7 ☐ $50,000-$54,999
8 ☐ $55,000-$59,999
9 ☐ $60,000-$64,999
10 ☐ $65,000-$69,999
11 ☐ $70,000-$74,999
12 ☐ $75,000-$79,999
13 ☐ $80,000-$89,999
14 ☐ $90,000-$99,999
15 ☐ $100,000-$124,999
16 ☐ $125,000-$149,999
17 ☐ $150,000 or over
18 ☐ Choose not to answer

6 Please indicate the highest EDUCATION LEVEL attained by each head of household?

	Person 1	Person 2
High School (or less)	1 ☐	1 ☐
Trade School	2 ☐	2 ☐
Community College	3 ☐	3 ☐
University (Bachelor)	4 ☐	4 ☐
Graduate (Master's or PhD)	5 ☐	5 ☐
Other _____	6 ☐	6 ☐
Choose not to answer	7 ☐	7 ☐

We welcome any comments you may wish to make. Please record your comments in the space below and/or on the next page.

THANK YOU
FOR YOUR TIME AND COOPERATION

Please mail this completed form in the postage paid self-addressed envelope provided or to:

RESIDENTIAL ENERGY USE SURVEY
MARKET FORECAST DEPARTMENT
Manitoba Hydro
7th Floor 360 Portage Avenue
Winnipeg, MB R3C 0G8

THANK YOU
FOR YOUR TIME AND COOPERATION

Please answer the survey for the address shown on the FRONT COVER.
Return the completed questionnaire in the postage paid envelope provided.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Cost characteristics		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

For each of the most recent 12 months available, please separately provide the numbers of *low-income* residential customers with monthly usage levels as follows:

i. At or below 200 kWh,
ii. Between 200 and 250 kWh;
iii. Between 250 and 300 kWh;
iv. Between 300 and 350 kWh;
v. Between 350 and 400 kWh;
vi. Between 400 and 450 kWh;
vii. Between 450 and 500 kWh;
viii. Between 500 and 550 kWh;
ix. Between 500 and 600 kWh;
x. Between 600 and 650 kWh;
xi. Between 650 and 700 kWh;
xii. Between 700 and 750 kWh;
xiii. Between 750 and 800 kWh;
xiv. Between 800 and 850 kWh;
xv. Between 850 and 900 kWh;
xvi. Between 900 and 950 kWh;
xvii. Between 950 and 1000 kWh;
xviii. Between 1000 and 1100 kWh;
xix. Between 1100 and 1200 kWh;
xx. Between 1200 and 1400 kWh;

xxi. Between 1400 and 1600 kWh;
xxii. Between 1600 and 1800 kWh;
xxiii. Between 1800 and 2000 kWh;
xxiv. 2000 – 2200 kWh;
xxv. Above 2200 kWh.

RATIONALE FOR QUESTION:

The reasonableness of Company's proposed rates, as differentially affecting different customers, is to be considered.

RESPONSE:

Manitoba Hydro does not track income information for customer accounts. The most recent information provided in Manitoba Hydro's application regarding energy use and income is based upon the 2009 Residential Energy Use Survey which is attached to Manitoba Hydro's response to GAC/MH-I-46.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Cost characteristics		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Provide the same data as requested immediately above, except for residential customers as a whole.

RATIONALE FOR QUESTION:

The reasonableness of Company's proposed rates, as differentially affecting different customers, is to be considered.

RESPONSE:

The following chart provides the numbers of total residential basic customers within the requested monthly usage levels.

Number of Total Residential Basic Customers Across Month For 2014

Monthly kW.h Ranges	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0-200	39,875	68,625	51,410	58,130	62,877	68,490	68,708	70,411	69,360	52,747	68,890	86,479
201-250	5,367	5,716	7,121	8,717	10,922	13,196	11,736	9,881	13,690	11,288	8,632	7,027
251-300	5,797	6,158	8,022	9,838	12,020	14,321	13,005	10,583	15,206	12,973	9,415	7,562
301-350	6,518	7,061	8,696	10,958	13,272	15,335	14,375	11,440	16,045	14,304	10,919	8,511
351-400	7,030	7,988	9,816	12,044	13,929	16,074	14,878	12,219	17,064	15,101	12,015	9,329
401-450	7,992	8,925	11,563	13,017	14,828	16,524	15,916	12,926	17,721	15,925	13,036	10,143
451-500	9,041	9,364	11,453	13,396	14,982	17,070	16,417	13,532	18,078	16,662	13,965	10,960
501-550	9,305	9,830	11,858	13,334	14,529	17,054	16,288	13,797	17,600	16,276	13,480	11,386
551-600	9,526	10,291	12,296	13,395	14,230	16,887	16,275	14,060	17,360	15,795	13,902	11,622
601-650	9,992	10,684	12,238	13,285	13,897	16,677	16,109	14,209	17,105	15,950	14,227	11,830
651-700	10,020	10,779	12,234	12,631	13,266	16,376	15,806	14,198	16,842	14,953	13,198	11,419
701-750	10,050	10,501	11,750	11,978	12,705	15,585	15,446	14,128	15,980	14,458	12,710	11,008
751-800	10,050	10,316	11,203	11,164	12,083	15,040	14,965	13,827	15,205	13,906	11,870	10,735
801-850	9,849	9,859	10,756	10,571	11,504	14,289	14,579	13,735	14,714	13,140	11,347	10,266
851-900	9,763	9,610	10,253	10,137	10,907	13,598	14,095	13,220	13,566	12,511	10,942	9,400
901-950	9,498	9,076	9,413	9,539	10,444	12,891	13,220	12,994	12,840	12,020	10,042	8,996
951-1,000	8,968	8,613	8,991	8,802	9,923	12,125	12,682	12,510	12,320	11,554	9,659	8,448
1,001-1100	16,755	15,953	15,988	15,982	17,816	22,027	23,138	23,944	22,089	21,008	17,148	15,320
1,101-1,200	15,031	13,654	13,936	13,890	16,257	18,916	20,102	21,408	18,961	19,067	15,035	13,523
1,201-1,400	25,686	22,868	23,329	22,968	27,915	30,827	32,156	35,778	30,152	32,776	24,886	22,192
1,401-1,600	20,620	17,845	17,739	18,105	23,012	21,810	23,152	27,553	21,151	26,340	19,932	17,089
1,601-1,800	16,480	14,149	14,195	15,375	19,611	15,516	16,637	20,385	14,886	20,729	16,879	13,490
1,801-2,000	13,821	11,622	11,986	13,641	16,587	11,050	11,924	15,375	10,529	16,010	14,795	11,346
2,001-2,200	11,665	9,718	10,429	12,688	13,880	8,021	8,550	10,921	7,239	11,831	13,237	9,847
Above 2,200	165,854	145,679	138,634	112,239	64,773	26,792	26,626	34,276	22,322	41,483	89,197	122,114
Total	464,553	464,884	465,309	465,824	466,169	466,491	466,785	467,310	468,025	468,807	469,358	470,042

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Cost characteristics		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

For each range stated above, provide the total kWh of usage in that range.

RATIONALE FOR QUESTION:

The reasonableness of Company's proposed rates, as differentially affecting different customers, is to be considered.

RESPONSE:

The following chart provides the total kWh usage within the requested monthly usage levels for all residential customers. Manitoba Hydro does not track income information for customer accounts; please refer to Manitoba Hydro's response to GAC/MH-I-30ai-xxv.

kWh Usage of Total Residential Basic Customers Across Month For 2014

Monthly kW.h Ranges	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0-200	1,879,233	2,020,862	2,336,272	2,717,177	3,264,536	4,036,857	3,591,197	3,091,396	4,258,004	3,349,420	2,639,567	2,340,992
201-250	1,233,995	1,307,264	1,615,580	1,970,695	2,460,339	2,968,367	2,645,258	2,228,397	3,082,849	2,549,944	1,952,712	1,593,601
251-300	1,617,830	1,708,078	2,213,949	2,710,565	3,301,117	3,928,732	3,570,242	2,913,900	4,163,751	3,562,893	2,595,561	2,089,680
301-350	2,130,596	2,294,836	2,825,793	3,554,175	4,305,516	4,960,353	4,654,270	3,714,023	5,192,475	4,646,639	3,546,702	2,762,294
351-400	2,657,735	2,999,983	3,671,266	4,503,066	5,201,735	5,998,738	5,560,237	4,576,539	6,372,391	5,649,197	4,509,057	3,494,131
401-450	3,404,441	3,786,770	4,914,315	5,517,198	6,275,132	6,988,039	6,740,187	5,478,407	7,492,360	6,738,285	5,528,868	4,308,291
451-500	4,316,788	4,438,755	5,421,489	6,336,954	7,080,801	8,067,852	7,764,647	6,417,169	8,545,740	7,883,219	6,599,207	5,191,423
501-550	4,898,175	5,153,274	6,206,448	6,973,041	7,594,173	8,916,531	8,513,473	7,218,711	9,202,390	8,511,284	7,051,363	5,956,419
551-600	5,477,094	5,903,202	7,047,768	7,671,703	8,146,107	9,666,806	9,330,693	8,056,945	9,944,350	9,057,756	7,972,422	6,660,421
601-650	6,250,412	6,660,605	7,626,054	8,272,018	8,653,346	10,384,458	10,033,327	8,855,378	10,644,962	9,932,972	8,864,310	7,380,006
651-700	6,763,560	7,248,859	8,228,869	8,493,326	8,918,325	11,014,077	10,634,208	9,554,087	11,321,773	10,064,073	8,880,862	7,687,607
701-750	7,282,027	7,591,703	8,493,150	8,649,803	9,175,488	11,254,525	11,161,941	10,215,121	11,548,111	10,444,882	9,181,934	7,957,362
751-800	7,783,014	7,968,519	8,660,057	8,626,824	9,331,441	11,607,589	11,559,529	10,682,245	11,737,607	10,750,050	9,172,116	8,296,457
801-850	8,106,633	8,113,148	8,841,697	8,695,784	9,460,873	11,746,332	11,988,735	11,297,005	12,097,716	10,806,316	9,345,920	8,440,753
851-900	8,530,246	8,385,991	8,940,575	8,844,736	9,516,557	11,862,183	12,291,724	11,537,139	11,836,273	10,929,071	9,551,750	8,205,125
901-950	8,777,303	8,371,321	8,683,461	8,803,307	9,632,331	11,886,910	12,188,864	11,993,325	11,841,476	11,094,452	9,271,379	8,302,468
951-1,000	8,730,268	8,378,008	8,743,981	8,552,622	9,650,048	11,782,968	12,335,871	12,161,752	11,974,247	11,245,763	9,408,647	8,228,722
1,001-1100	17,559,631	16,705,797	16,732,988	16,735,564	18,646,798	23,049,545	24,207,483	25,055,561	23,113,393	22,004,392	17,990,069	16,039,477
1,101-1,200	17,257,108	15,657,382	15,973,101	15,923,702	18,640,532	21,672,534	23,050,705	24,551,021	21,732,402	21,867,687	17,274,503	15,517,636
1,201-1,400	33,255,793	29,588,701	30,182,427	29,721,670	36,152,901	39,839,980	41,534,739	46,307,152	38,945,031	42,453,590	32,246,902	28,709,580
1,401-1,600	30,819,565	26,645,210	26,505,041	27,061,512	34,396,094	32,546,221	34,541,796	41,143,597	31,562,778	39,371,418	29,841,074	25,556,852
1,601-1,800	27,940,778	23,965,290	24,050,679	26,055,951	33,213,692	26,254,164	28,158,751	34,509,128	25,173,469	35,095,952	28,636,229	22,872,151
1,801-2,000	26,203,612	22,022,659	22,734,240	25,878,729	31,406,844	20,900,152	22,568,966	29,098,804	19,915,066	30,299,344	28,061,282	21,515,113
2,001-2,200	24,438,770	20,369,878	21,859,403	26,602,142	29,038,673	16,780,784	17,893,441	22,842,113	15,139,307	24,755,232	27,737,148	20,636,347
Above 2,200	838,934,098	687,028,853	607,204,421	441,147,129	239,660,400	99,528,571	93,578,917	115,667,382	78,562,962	145,444,370	321,136,448	506,457,014
Total	1,106,248,705	934,314,948	869,713,024	720,019,393	563,123,799	427,643,268	430,099,201	469,166,297	405,400,883	498,508,201	618,996,032	756,199,922

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Rate impact		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

For each usage band identified in the immediately preceding data request, provide a sample monthly billing calculation:

a) At existing standard residential rates; and
b) At the standard residential rates as proposed by Manitoba Hydro in this proceeding.

RATIONALE FOR QUESTION:

The reasonableness of Company's proposed rates, as differentially affecting different customers, is to be considered.

RESPONSE:

In order to be responsive, the following table provides sample bill calculations, at current and proposed rates, for the various levels of consumption specified in GAC/MH-I-30.

	Interim 2014 Rates	Prop. 2015 Rates	Prop. 2016 Rates
Basic Charge	$7.28	$7.57	$7.87
Energy Charge	$0.07381	$0.07672	$0.07975
kWh	**$/Month**	**$/Month**	**$/Month**
0	$7.28	$7.57	$7.87
200	$22.04	$22.91	$23.82
250	$25.73	$26.75	$27.81
300	$29.42	$30.59	$31.80
350	$33.11	$34.42	$35.78
400	$36.80	$38.26	$39.77
450	$40.49	$42.09	$43.76
500	$44.19	$45.93	$47.75
550	$47.88	$49.77	$51.73
600	$51.57	$53.60	$55.72
650	$55.26	$57.44	$59.71
700	$58.95	$61.27	$63.70
750	$62.64	$65.11	$67.68
800	$66.33	$68.95	$71.67
850	$70.02	$72.78	$75.66
900	$73.71	$76.62	$79.65
950	$77.40	$80.45	$83.63
1000	$81.09	$84.29	$87.62
1100	$88.47	$91.96	$95.60
1200	$95.85	$99.63	$103.57
1400	$110.61	$114.98	$119.52
1600	$125.38	$130.32	$135.47
1800	$140.14	$145.67	$151.42
2000	$154.90	$161.01	$167.37

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a complete bibliography of all consultation documents, reports, evaluations, memos, written presentations, conference agendas or other written documents of any nature within the custody or control of Manitoba Hydro that discuss the structure and operation of bill assistance programs for low-income customers. For each document in the bibliography, indicate whether Manitoba Hydro has a copy of that "bill assistance report" or "consultation paper" in its custody or control as of the date of this proceeding.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Manitoba Hydro views the request for all consultation documents, reports, evaluations, memos, written presentations, conference agendas or other written documents of any nature within the custody or control of Manitoba Hydro that discuss the structure and operation of bill assistance programs for low-income customers as unreasonable given the time, effort and expense involved in the preparation and filing of such responses.

In order to be responsive to the request, see Manitoba Hydro's response to MKO–COALITION/MH-I-9 for a copy of an independent review of the Affordable Energy Program (2015).

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide the number of households in the target market for the Company's LIEEP;

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

The number of households in the target market for Affordable Energy Program (previously called the Lower Income Energy Efficiency Program (LIEEP)) is:

Target Market	
Homeowners	105 415
Renters	9 712
Total	115 127

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

For each year Fiscal Year 2012 to present, provide the number of applicants for Company's LIEEP.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

For each Fiscal Year 2012 to present the number of applicants for the Affordable Energy Program (AEP) is:

2011/12	1854
2012/13	1569
2013/14	2187
2014/15 (up to December 31)	1964

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

For each year Fiscal Year 2012 to present, provide the number of participants in Company's LIEEP.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

For each Fiscal Year 2012 to present, the number of participants in the Affordable Energy Program is:

2011/12	1909
2012/13	1653
2013/14	1786
2014/15 (up to December 31)	1566

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

For each Fiscal Year 2012 to present, provide the number of LIEEP participants who also received assistance in the same year from the Neighbors Helping Neighbors.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

The number of Affordable Energy Program participants who also received assistance from Neighbours Helping Neighbours is:

2011/12	4
2012/13	7
2013/14	5
2014/15 (up to December 31)	2

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

The unduplicated total number of lower-income customers receiving NHN and LIEEP assistance;

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

The unduplicated total number of lower-income customers receiving NHN and the Affordable Energy Program is reported in the table below:

AEP	9750
NHN	6106

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

The number of lower-income customers receiving NHN assistance who had previously received LIEEP assistance.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

The number of lower-income customers receiving NHN assistance who had previously received assistance under the Affordable Energy Program is 62.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide the number of households in the target market for the Company's Neighbors Helping Neighbors ("NHN") program;

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Manitoba Hydro does not have an estimate for the number of households which may be in the target market for the NHN program.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

For each Fiscal Year 2012 to present, provide the number of applicants for Company's NHN.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

The number of applications for each fiscal year 2012 to the present of the Neighbours Helping Neighbours Program are:

2011/12	963
2012/13	825
2013/14	1171
2014/15 (up to December 31)	564

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

For each Fiscal Year 2012 to present, provide the number of participants in Company's NHN.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

The number of participants for each fiscal year 2012 to the present of the Neighbours Helping Neighbours Program are:

2011/12	946
2012/13	823
2013/14	1164
2014/15 (up to December 31)	548

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

For each Fiscal Year 2012 to present, provide the average grant for Company's NHN.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

The average grant provided by the Neighbours Helping Neighbours Program for each fiscal year 2012 to the present are:

2011/12	$422
2012/13	$425
2013/14	$409
2014/15 (up to December 31)	$286

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

For each Fiscal Year 2012 to present, provide the average arrearage for participant's in Company's NHN.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

The average arrearage for participants in the Neighbours Helping Neighbours Program for each fiscal year 2012 to the present are:

2011/12	$608
2012/13	$572
2013/14	$620
2014/15 (up to December 31)	$626

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

For each Fiscal Year 2012 to present, provide the annual report (or other written evaluation) of and for the Company's NHN.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

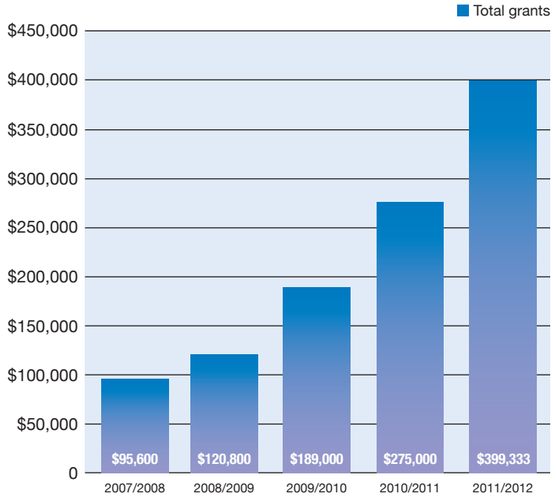
Please see attached annual reports for the Neighbours Helping Neighbours Program for each fiscal year 2012 to present.

Statement of activities

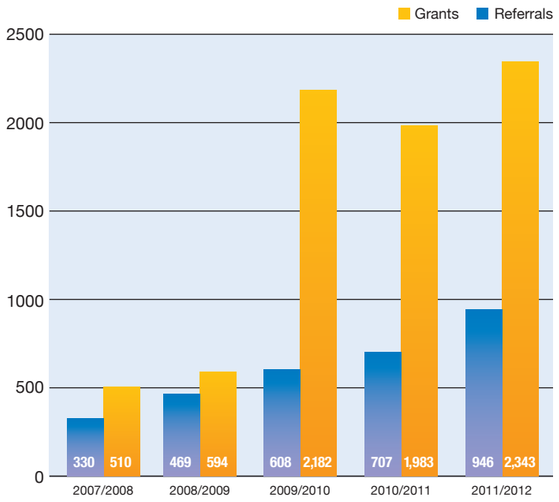
Year ended March 31, 2012

Income	
Prior Year Surplus (deficit) brought forward (restated)	$ (0)
Customer and Manitoba Hydro donations	$ 411,895
Administration Grants	$ 81,656
Other	
Total Income	$ 493,551
Expenses	
Support services	$ 64,977
General operations	$ 11,895
Headquarters supervision	$ 14,286
Equipment, furniture, and property	$ 5,339
Assistance grants	$ 397,054
Total Expenses	$ 493,551
Surplus (deficit) to be carried forward	Ø

Total assistance grants

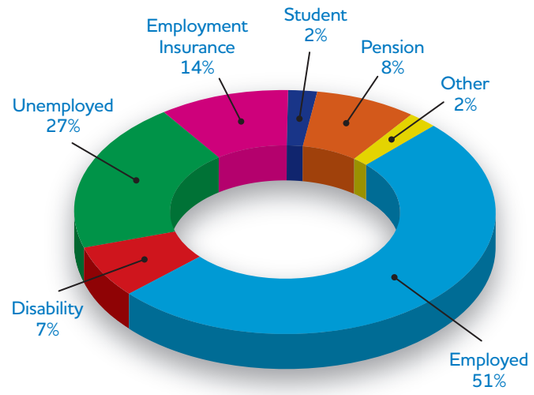


Grants and referrals provided



Employment status of individuals assisted

2011-2012 Winnipeg program only



You can make a difference.

Neighbours Helping Neighbours
c/o The Salvation Army
Winnipeg, Manitoba
(204) 949-2106

neighbourshelpingneighbours.com

Annual Report 2011-2012

neighbourshelpingneighbours.com

You can make a difference.

With your support, Neighbours Helping Neighbours:

- **assists individuals, families, and seniors in crisis;**
- **strengthens families and our community; and**
- **helps people to learn new life skills to make positive changes.**

The Board and staff of Neighbours Helping Neighbours look forward to their continued role helping people manage emergency situations. Without your generous donations, this program would not be possible. On behalf of all the people you helped regain their self reliance last year, **thank you**.

Wayne Bungay
Major
Divisional Commander
The Salvation Army
- Prairie Division

The "Neighbours Helping Neighbours" program represents an eight year partnership between Manitoba Hydro and The Salvation Army. This initiative was launched in order to provide one time emergency funding that would assist families and individuals living at or near the poverty level, including the working poor. It is simply compassionate people helping other people in need!

Poverty affects so many individuals throughout our society. No one chooses to be poor, but it is usually the result of employment loss, the death of a loved one, unforeseen illness; all which lead to financial strain on the entire family. The "Neighbours Helping Neighbours" enterprise provides referrals to community resources that support the development of personal budgeting skills, enhancement of job search abilities, emergency food assistance, and the Manitoba Hydro LIEEP program.

The expansion of the program in 2011 into all areas of the province of Manitoba, not only demonstrates the need, but also the willingness of Manitobans to care for their own and to do so with the deepest possible level of dignity and respect; values which are fundamental to both The Salvation Army and Manitoba Hydro. Thanks to this relationship, Manitoba Hydro and The Salvation Army are ensuring that communities become stronger through selfdirected empowerment of its citizens.

Your support of "Neighbours Helping Neighbours" is making a significant difference in the lives of men, women, and children who call Manitoba home. On their behalf, I say ***Thank You*** for your personal contribution!

Giving Hope Today

Scott Thomson
President and CEO
Manitoba Hydro

Manitoba Hydro is proud to be working with The Salvation Army to assist our most vulnerable customers. As part of Manitoba Hydro's continued commitment to the community, we are pleased to have completed our eighth year of offering this energy assistance program to help low-income families, seniors, and other individuals.

Our partnership with The Salvation Army has enabled the program applicants' access to a number of agencies where they can receive support to help them overcome a variety of hurdles and move towards a brighter future.

I would like to take this opportunity to thank The Salvation Army for their efforts and look forward to continued success in the years ahead.

To all our contributors, I also extend our thanks for your generous donations. Your support truly does make a difference to those in need.

Manitoba Hydro

Vision

Strengthening our communities by empowering and guiding individuals towards independence.

Who Neighbours helps

"Being the soul provider for my family, losing my job has been extremely difficult. With so many bills pilling up and EI processing, not knowing where your next dollar will come from is terrifying. My family has always counted on me to provide for them but now I'm unable to. With 2 small kids at home and my wife being a stay at home mom, it is a huge weight on my shoulders. It is so nice to know that there are people in this world that genuinely want to help and listen to what's going on. My struggle continues but I am so grateful to Neighbours Helping Neighbours, not just for the grant but for the resources they provided to help me get through the next few months."

"The loss of a child takes everything out of you emotionally, spiritually and physically. People say time will heal but it has been 4 years since I lost my son and I still struggle everyday to bring myself to get out of bed. When I got my disconnection notice complete panic hit. I had no clue how I was going to come up with the money to pay this. When I called Hydro, they refferred me to Neighbours Helping Neighbours. It took me a while to actually call - it seemed unbelievable that there are programs like this. When I finally called and made the appointment I ended up spending 2 hrs talking with the lady at Neighbours Helping Neighbours and couldn't believe how comfortable she made me feel and all the things I let out in my meeting. I am forever grateful to Neighbours Helping Neighbours. They will never know the way they have impacted and forever changed me. Thank you for all that you did for me and all that you do for others!"

In every community, there are individuals, families, and seniors trying to make ends meet who experience problems beyond their control. When personal hardship happens, it can cause a financial emergency. Neighbours Helping Neighbours assists people who need support.

Individuals with lower incomes typically spend a higher proportion of their income on their natural gas and electricity bills. These families also often rent homes that have little insulation, older appliances, and inefficient heating systems – factors that can cause a greater impact on their energy bills.

Through Neighbours Helping Neighbours, these families are provided with referrals to help them manage through a crisis. One-time emergency funding to assist with energy bills may be provided.

Program management

The Salvation Army manages the program and meets with individuals and families who are seeking assistance and is responsible for determining the level of assistance to be granted.

Community council

Neighbours Helping Neighbours was developed by a community council that oversees the program. The group is made up of individuals representing a number of community-minded organizations.

- **Sharon Allard**, Central Neighbourhood Development Corporation
- **Jason Graneer**, United Way
- **Stephanie Sawchuk**, Community Ministries Worker, Neighbours Helping Neighbours Program
- **Nic Mundey**, Scotia Bank
- **Quinn Menec**, Division Manager, Business Support Services, Manitoba Hydro
- **Cindy Roy**, Customer Care Manager, Business Support Services, Manitoba Hydro
- **Catherine Mcfarlane**, Winnipeg Regional Health Authority
- **Major Wayne Bungay**, Divisional Commander, Salvation Army, DHQ
- **Mark Young**, Community Ministries Coordinator, Salvation Army, Weetamah

Highlights

To date, more than 3,700 families have been helped by the program. Most referrals come from Manitoba Hydro staff assisting customers with bill payment concerns.

In 2011/2012, more than 2,300 referrals were provided to additional community programs. Through Neighbours Helping Neighbours, the Salvation Army can access a significant number of community members that they may not normally reach. Connecting these individuals to community support services helps address underlying factors that affect their household.

Access to community and government programs

Programs:

- Community financial counseling services
- Community resources (rent assistance, housing renovations, clothing, and furniture)
- Disability issues
- Employment programs
- Food banks
- Health care facilities
- Individual counseling (addictions, abuse, grief, support groups)
- Manitoba Child Benefit
- Manitoba Shelter Benefit for Renters
- Manitoba Hydro Power Smart* Lower Income Energy Efficiency Program
- Residential Rehabilitation Assistance Program for Homeowners (RRAP)
- Repair conversions
- Social assistance
- STAT 55 Plus (school tax assistance for tenants 55 years and over)
- 55 Plus (income supplement for Manitobans)
- Various job sites, websites, etc.

Referral agencies:

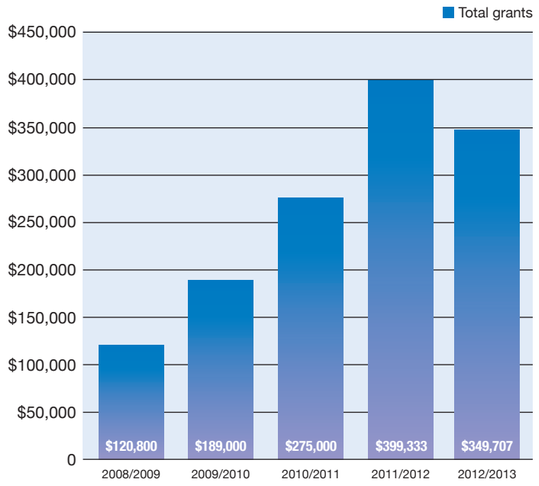
- Age & Opportunity
- Canada Pension Plan Disability
- Child Related Income Support Program
- Community Financial Counseling Services
- Dental assistance
- Employment and Income Assistance
- Fort Garry Women's Resource Centre
- Hands of Hope
- Klinic
- North End Women's Counseling Services
- Pharmacy and prescription drugs
- Salvation Army Weetamah Community Services
- SEED Winnipeg Inc.
- The Salvation Army Work Readiness Program
- Vision care
- Winnipeg Harvest
- Housing referrals
- Opportunities for employment

Statement of activities

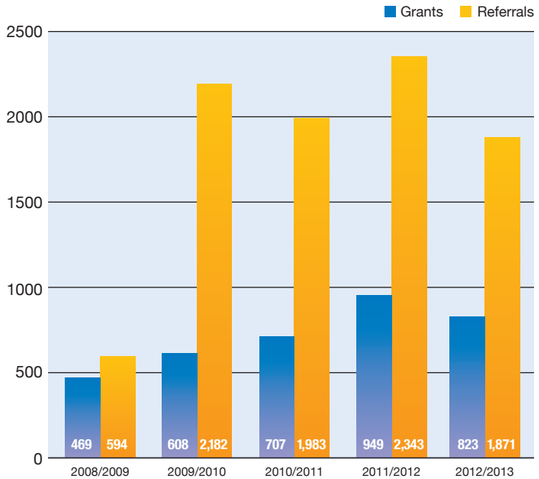
Year ended March 31, 2013

Income	
Prior Year Surplus (deficit) brought forward (restated)	$ (0)
Customer and Manitoba Hydro donations	$ 483,016
Administration Grants	$ 92,125
Other	
Total Income	$ 575,141
Expenses	
Support services	$ 79,807
General operations	$ 16,059
Headquarters supervision	$ 26,894
Equipment, furniture, and property	$ 5,644
Assistance grants	$ 349,274
Total Expenses	$ 477,678
Surplus (deficit) to be carried forward	97,463

Total assistance grants

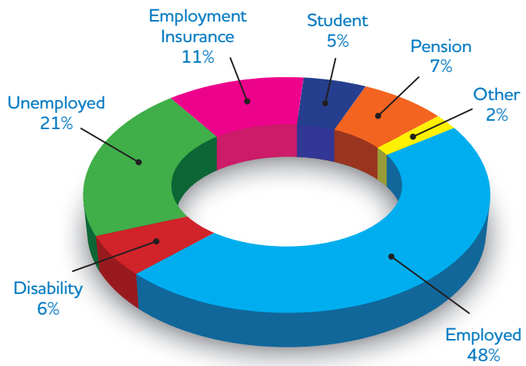


Grants and referrals provided



Employment status of individuals assisted

2012-2013 Winnipeg program only



Annual Report 2012-2013

neighbourshelpingneighbours.com

The Neighbours Helping Neighbours program represents a longstanding relationship between Manitoba Hydro and the Salvation Army. This initiative, which was launched to help provide one time emergency funding to assist families and individuals living at or near the poverty line, is a true demonstration of human compassion!

While no one chooses poverty as a way of life, it continues to affect many vulnerable individuals within our society, and is usually the result of employment loss, the death of a loved one, unforeseen illness, leading to severe financial strain on the entire family. The Neighbours Helping Neighbours enterprise facilitates referral opportunities that support the development of personal budgeting skills, enhancement of job search abilities, emergency food assistance, and to the Manitoba Hydro Lower Income Energy Efficiency (LIEEP) Program.

Neighbours Helping Neighbours has expanded throughout the province in order to meet the needs of Manitobans in their local setting with the deepest level of dignity and respect; values which are fundamental to both the Salvation Army and Manitoba Hydro, and which help to ensure that communities become stronger through self-directed empowerment of its citizens.

Your support of Neighbours Helping Neighbours is making a significant difference in the lives of men, women and children who call Manitoba home. On their behalf, I say thank you for your personal contribution.

Sincerely,

Wayne Bungay
Major
Divisional Commander

Giving Hope Today

I am very pleased to report the Neighbours Helping Neighbours program has been truly successful in helping those people in our community who need it most. This program is designed to assist individuals who have been impacted by personal hardship and are struggling to meet their financial commitments.

It's no secret that partnerships, such as the one we enjoy with the Salvation Army, can be powerful instruments of change. Manitoba Hydro is honoured to be working with such a well-respected organization. We commend the Salvation Army's commitment to our community and look forward to building on our partnership and to the continued success of the program.

I also would like to offer our thanks to all contributors for their donations. Your support does truly make a difference to those in need.

Scott Thomson
President and CEO
Manitoba Hydro

Manitoba Hydro

You can make a difference.

With your support, Neighbours Helping Neighbours:

- **assists individuals, families, and seniors in crisis;**
- **strengthens families and our community; and**
- **helps people to learn new life skills to make positive changes.**

The Board and staff of Neighbours Helping Neighbours look forward to their continued role helping people manage emergency situations. Without your generous donations, this program would not be possible. On behalf of all the people you helped regain their self reliance last year, **thank you**.

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(204) 949-2106

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Vision

Strengthening our communities by empowering and guiding individuals towards independence.

Who Neighbours helps

"The last year and a half has been the hardest in my life. My husband has been battling cancer and has been in and out of hospitals. A year ago, he was given six months to live. When I came to the Salvation Army a little over a year ago, I felt lost. I was unsure of so much in my life and had no one to talk to. I came in expecting to just receive a grant to help with my hydro bill and then ended up spending two hours talking about everything going on. It was the first time I was able to let go of my emotions and just be, and it was OK. I didn't have to be strong for anyone. A year later, I came back for a second grant with my husband by my side, and he was healthy. I am so thankful for the resources available through Neighbours Helping Neighbours. Not only for all of the financial support but also the emotional support offered through the program. It was nice to walk in and be truly cared about." ~ Rachel

"I have worked for 40 years. Since I was 16 I have always had a job. In the last year I have lost two jobs and become very ill. It has been such a struggle to try and just survive the day-to-day stress without the added stress of finances. I am more thankful than Neighbours Helping Neighbours will ever know for all the support and resources they made available for me. For the first time in a long time I feel like I can breathe. Thank you for your caring hearts and your openness." ~ Shawn

In every community, there are individuals, families, and seniors trying to make ends meet who experience problems beyond their control. When personal hardship happens, it can cause a financial emergency. Neighbours Helping Neighbours assists people who need support.

Individuals with lower incomes typically spend a higher proportion of their income on their natural gas and electricity bills. These families also often rent homes that have little insulation, older appliances, and inefficient heating systems – factors that can cause a greater impact on their energy bills.

Through Neighbours Helping Neighbours, these families are provided with referrals to help them manage through a crisis. One-time emergency funding to assist with energy bills may be provided.

Program management

The Salvation Army manages the program and meets with individuals and families who are seeking assistance and is responsible for determining the level of assistance to be granted.

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- **Catherine Mcfarlane**, Winnipeg Regional Health Authority
- **Major Wayne Bungay**, Divisional Commander, Salvation Army, DHQ
- **Mark Young**, Community Ministries Coordinator, Salvation Army, Weetamah

Highlights

To date, more than 4,600 families have been helped by the program. Most referrals come from Manitoba Hydro staff assisting customers with bill payment concerns.

In 2012/2013, more than 1,800 referrals were provided to additional community programs. Through Neighbours Helping Neighbours, the Salvation Army can access a significant number of community members that they may not normally reach. Connecting these individuals to community support services helps address underlying factors that affect their household.

Access to community and government programs

Programs:

- Community financial counseling services
- Community resources (rent assistance, housing renovations, clothing, and furniture)
- Disability issues
- Employment programs
- Food banks
- Health care facilities
- Individual counseling (addictions, abuse, grief, support groups)
- Manitoba Child Benefit
- Manitoba Shelter Benefit for Renters
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- Social assistance
- STAT 55 Plus (school tax assistance for tenants 55 years and over)
- 55 Plus (income supplement for Manitobans)
- Various job sites, websites, etc.

Referral agencies:

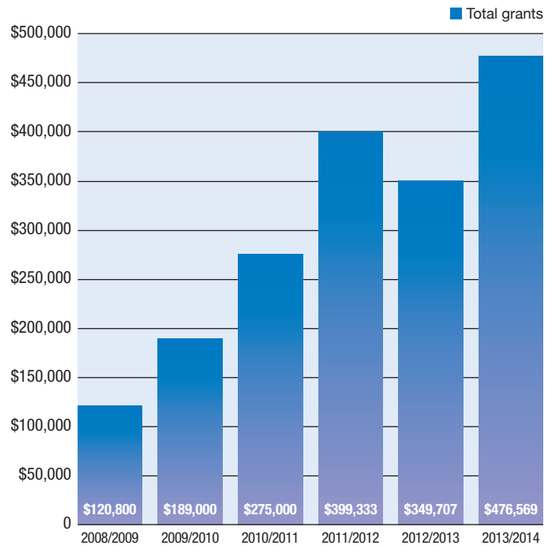
- Age & Opportunity
- Canada Pension Plan Disability
- Child Related Income Support Program
- Community Financial Counseling Services
- Dental assistance
- Employment and Income Assistance
- Fort Garry Women's Resource Centre
- Hands of Hope
- Klinic
- North End Women's Counseling Services
- Pharmacy and prescription drugs
- Salvation Army Weetamah Community Services
- SEED Winnipeg Inc.
- The Salvation Army Work Readiness Program
- Vision care
- Winnipeg Harvest
- Housing referrals
- Opportunities for employment

Statement of activities

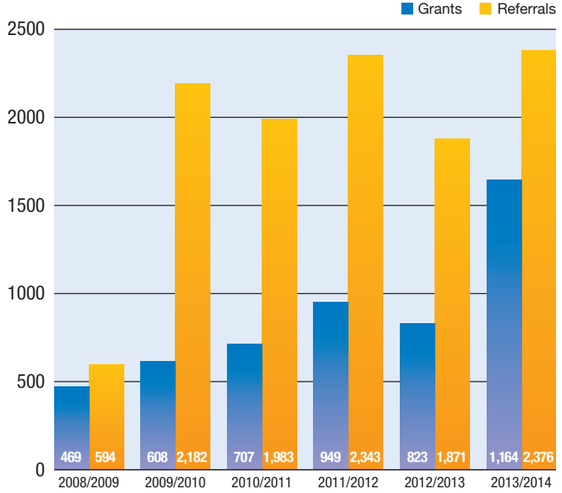
Year ended March 31, 2014

Income	
Prior Year Surplus (deficit) brought forward (restated)	$ (0)
Customer and Manitoba Hydro donations	$ 464,403
Administration Grants	$ 99,296
Other	
Total Income	$ 563,699
Expenses	
Support services	$ 68,923
General operations	$ 21,118
Headquarters supervision	$ 27,886
Equipment, furniture, and property	$ 5,706
Assistance grants	$ 471,143
Total Expenses	$ 594,776
Surplus (deficit) to be carried forward	(31,077)

Total assistance grants

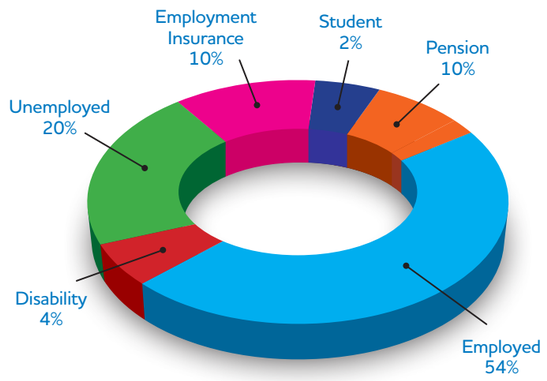


Grants and referrals provided



Employment status of individuals assisted

2013-2014 Winnipeg program only



You can make a difference.

Neighbours Helping Neighbours
c/o The Salvation Army
Winnipeg, Manitoba
(204) 949-2106

hydro.mb.ca/neighbours

Neighbours HELPING Neighbours

Annual Report 2013-2014

hydro.mb.ca/neighbours

Over the past four years, I have had the privilege of observing the interaction between Manitoba Hydro and The Salvation Army in responding to the needs of many vulnerable individuals in our communities across the Province of Manitoba.

The Neighbours Helping Neighbours program represents a venerable relationship designed to provide one-time emergency funding to assist families and individuals living at or near the poverty level with the goal of providing a comfortable home environment. This is a true demonstration of dignity and hope for those who are experiencing temporary financial hardship.

The death of a loved one, an unforeseen illness, or the loss of a job, are all situations which can can lead to severe financial strain on the entire family. The Neighbours Helping Neighbours enterprise facilitates referral opportunities that support the development of personal budgeting skills, enhancement of job search abilities, emergency food assistance, and to the Manitoba Hydro Affordable Energy Program.

Neighbours Helping Neighbours has expanded throughout the province in order to meet the needs of any Manitoban in his or her local setting with the deepest possible level of dignity and respect; values which are fundamental to both The Salvation Army and Manitoba Hydro. These values help to ensure communities become stronger through self-directed empowerment of its citizens.

Your support of Neighbours Helping Neighbours is making a significant difference in the lives of men, women and children who call Manitoba home. On their behalf, I say 'Thank You' for your personal contribution!

Sincerely,

Wayne Bungay
Major
Divisional Commander

THE SALVATION ARMY
Giving Hope Today

I am very pleased with the continued success of the Neighbours Helping Neighbours program and proud to be working with The Salvation Army to help those in need. The assistance provided under this program benefits individuals facing financial hardship and offers community resources to help get them back on their feet.

Partnering with the Salvation Army provides great opportunities to create change in the lives of those who access the program and obtain assistance. Working together, we are making a positive impact for Manitobans struggling with financial difficulties. I am very thankful to the Salvation Army for their efforts and look forward to continued success in the years ahead.

I would like to also extend our thanks to all our contributors for their generous donations. Your support truly does make a difference to those in need.

Scott Thomson
President and CEO
Manitoba Hydro

Manitoba Hydro

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With your support, Neighbours Helping Neighbours:

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Vision

Strengthening our communities by empowering and guiding individuals towards independence.

Who Neighbours helps

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~ Shawn

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- **Jason Graneer**, United Way
- **Stephanie Sawchuk**, Community Ministries Worker, Neighbours Helping Neighbours Program
- **Nic Mundey**, Scotia Bank
- **Lloyd Kuczek**, Vice-President, Customer Care & Energy Conservation, Manitoba Hydro
- **Colleen Galbraith**, Supervisor, Affordable Energy, Manitoba Hydro
- **Catherine Mcfarlane**, Winnipeg Regional Health Authority
- **Major Wayne Bungay**, Divisional Commander, Salvation Army, DHQ
- **Mark Young**, Community Ministries Coordinator, Salvation Army, Weetamah

Highlights

To date, more than 5,700 families have been helped by the program. Most referrals come from Manitoba Hydro staff assisting customers with bill payment concerns.

In 2013-2014, more than 2,300 referrals were provided to additional community programs. Through Neighbours Helping Neighbours, the Salvation Army can access a significant number of community members that they may not normally reach. Connecting these individuals to community support services helps address underlying factors that affect their household.

Access to community and government programs

Programs:

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- 55 Plus (income supplement for Manitobans)
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Referral agencies:

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- SEED Winnipeg Inc.
- The Salvation Army Work Readiness Program
- Vision care
- Winnipeg Harvest
- Housing referrals
- Opportunities for employment

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a single copy of all program evaluations prepared by or for the Company since January 1, 2008 for:

a) The Company's low-income energy efficiency program;
b) Any Company low-income energy assistance program;
c) Any Company customer service initiative directed primarily at low-income customers.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Please see the responses to MKO/COALITION-I-9 and GAC/MH-I-55d which provides copies of program evaluations.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a single copy of all program planning documents prepared by or for the Company since January 1, 2011 for:

a) The Company's low-income energy efficiency program;
b) Any Company low-income energy assistance program;
c) Any Company customer service initiative directed primarily at low-income customers.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Please see Manitoba Hydro's 2014 – 2017 Power Smart Plan – 15 Year Supplemental Report (included as Appendix 8.1 of this Application).

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a copy of a typical residential notice of disconnection for nonpayment printed in each of the following months:

a) November 2014
b) January 2015
c) April 2014
d) August 2014

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

a) November 2014 bill message for: Residential Gas & Combined Gas/Electric

IMPORTANT PAST DUE NOTICE
Your **account** is past due. If suitable payment arrangements or full payment of the arrears are not made on or before Nov 26, 2014 your account will be subject to collection action which may include limited electric service or full disconnection of service(s). Please call the phone number on the front of your billing statement or pay in person at a Manitoba Hydro Office. If payment of the arrears has already been

made, please notify Manitoba Hydro immediately. If payment arrangements have already been made kindly disregard this notice.

If your energy service(s) are limited or disconnected, full payment of the arrears balance plus a reconnect fee for each service may be required before service(s) are fully restored. A security deposit may also be required.

Customers may appeal the Company's action by contacting the Public Utilities Board. Manitoba Hydro is not responsible for any damages or losses that may occur as a result of energy services which are limited or disconnected for nonpayment. Please ensure you protect people, animals and property that may be impacted.

Reconnection Fees will range from $50 to $65 plus GST.

a) November 2014 bill message for: Residential Electric Heat (Houses / Townhouses) (Referred to as "Legal Notice")

Your account remains outstanding despite previous requests for payment. Failure to pay the outstanding account balance can jeopardize your credit rating and subject your account to legal action. Please call the phone number on the front of your billing statement or pay in person at a Manitoba Hydro Office. If payment of the arrears has already been made, please notify Manitoba Hydro immediately. If payment arrangements have already been made kindly disregard this notice.

a) November 2014 bill message for: Apartments

IMPORTANT PAST DUE NOTICE
Your **account** is past due. If suitable payment arrangements or full payment of the arrears are not made on or before Nov 26, 2014 your account will be subject to collection action which may include full disconnection of service(s). Please call the phone number on the front of your billing statement or pay in person at a Manitoba Hydro Office. If payment of the arrears has already been made, please notify Manitoba Hydro immediately. If payment arrangements have already been made kindly disregard this notice.

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Reconnection Fees will range from $50 to $65 plus GST.

b) January 2015 bill message for: Residential Gas & Combined Gas/Electric

IMPORTANT PAST DUE NOTICE
Your **account** is past due. If suitable payment arrangements or full payment of the arrears are not made on or before Jan 26, 2015 your account will be subject to collection action which may include limited electric service or full disconnection of service(s). Please call the phone number on the front of your billing statement or pay in person at a Manitoba Hydro Office. If payment of the arrears has already been made, please notify Manitoba Hydro immediately. If payment arrangements have already been made kindly disregard this notice.

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b) January 2015 bill message for: Residential Electric Heat (Houses / Townhouses)

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b) January 2015 bill message for: Apartments

IMPORTANT PAST DUE NOTICE
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c) April 2014 bill message for: Residential Gas & Combined Gas/Electric

IMPORTANT PAST DUE NOTICE

Your **account** is past due. If suitable payment arrangements or full payment of the arrears are not made on or before Apr 26, 2014 your account will be subject to collection action which may include limited electric service or full disconnection of service(s). Please call the phone number on the front of your billing statement or pay in person at a Manitoba Hydro Office. If payment of the arrears has already been made, please notify Manitoba Hydro immediately. If payment arrangements have already been made kindly disregard this notice.

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c) April 2014 bill message for: Residential Electric Heat (Houses / Townhouses)

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c) April 2014 bill message for: Apartments

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d) August 2014 bill message for: Residential Gas & Combined Gas/Electric

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d) August 2014 bill message for: Residential Electric Heat (Houses / Townhouses)

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Reconnection Fees will range from $50 to $65 plus GST.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

By month for each month January 2012 to present inclusive, please provide:

a) The number of new deferred payment arrangements entered into;
b) The average downpayment (in dollars) of deferred payment arrangements entered into;
c) The average term (in months) of deferred payment arrangements entered into;
d) The average dollar amount of arrears made subject to the deferred payment arrangement;
e) The average monthly installment of deferred payment arrangements;
f) The distribution of new deferred payment arrangements by their term (in months);
g) The number of defaulted deferred payment arrangements;
h) The number of defaulted deferred payment arrangements disaggregated by their term (in months) of the payment arrangement agreement;
i) The number of completed (or "successful") deferred payment arrangements.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Please see Attachment 1 for a response to parts a) to e), g) and i)
Please see Attachment 2 for a response to part f.
Please see Attachment 3 for a response to part i.

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DATE	a) # of payment arrangements	b) average downpayment of payment arrangements ($)	c) average term (in months) of payment arrangements	d) average arrears subject to payment arrangement ($)	e) average monthly installment of payment arrangement ($)	g) # of defaulted payment arrangements	i) # of completed (or successful) payment arrangements
JAN-2012	11,036	264.91	1.02	662	308	5,691	5,339
FEB-2012	11,029	274.55	0.93	697	336	5,670	5,352
MAR-2012	14,617	282.45	1.03	757	354	7,571	7,043
APR-2012	15,354	282.12	1.08	757	344	8,002	7,347
MAY-2012	15,963	275.32	1.43	774	319	8,549	7,405
JUN-2012	13,810	280.19	1.31	679	307	7,033	6,768
JUL-2012	12,444	254.59	1.20	671	339	6,201	6,241
AUG-2012	11,809	245.91	1.09	549	253	5,917	5,882
SEP-2012	8,502	239.88	1.30	563	250	4,269	4,223
OCT-2012	10,290	303.79	1.08	609	302	4,898	5,381
NOV-2012	8,783	259.75	0.91	489	259	4,244	4,528
DEC-2012	6,486	272.58	0.80	492	271	3,195	3,281
JAN-2013	10,787	306.79	0.89	647	308	5,506	5,273
FEB-2013	9,863	356.64	0.94	748	360	4,977	4,875
MAR-2013	13,132	364.22	1.11	878	387	6,612	6,511
APR-2013	16,356	379.98	1.15	893	391	8,198	8,146
MAY-2013	16,537	341.39	1.38	878	356	8,813	7,717
JUN-2013	14,992	316.84	1.27	791	330	7,750	7,229
JUL-2013	15,740	301.78	1.13	689	315	7,354	8,374
AUG-2013	12,669	281.17	1.23	652	285	6,063	6,587
SEP-2013	10,799	286.73	1.30	679	290	5,222	5,566
OCT-2013	11,776	282.46	0.95	565	283	5,499	6,262
NOV-2013	9,994	290.24	0.87	530	283	4,677	5,301
DEC-2013	8,304	322.92	0.97	607	310	4,258	4,041
JAN-2014	11,210	327.06	1.02	718	326	5,748	5,441
FEB-2014	10,190	364.56	1.06	831	367	5,224	4,950
MAR-2014	13,823	381.35	1.18	942	394	7,092	6,707
APR-2014	16,212	380.53	1.39	999	385	8,743	7,432
MAY-2014	17,295	356.15	1.50	967	371	9,246	7,995
JUN-2014	15,457	344.68	1.30	844	354	8,037	7,360
JUL-2014	15,207	327.33	1.03	719	339	7,354	7,795
AUG-2014	11,978	296.17	1.05	669	305	5,821	6,112
SEP-2014	10,501	293.60	1.11	680	305	5,037	5,398
OCT-2014	11,117	292.71	0.89	587	300	5,175	5,827
NOV-2014	9,157	277.35	0.85	547	279	4,313	4,754
DEC-2014	8,142	315.12	0.99	632	311	3,980	3,951

GAC-MH-I- 38 f) distribution of new payment arrangements by their term (in months)																						
Month	**<1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19-24**	**25-60**	**60+**
JAN-2012	7,101	2,720	691	201	89	58	44	29	15	15	2	16	14	3	4	3	3	4	1	8	11	4
FEB-2012	6,477	3,361	705	213	79	60	39	24	12	12	8	9	5	3	7	1	2	2	2	2	6	0
MAR-2012	8,732	3,932	1,132	393	158	105	38	23	21	13	11	8	5	4	2	3	5	3	2	8	15	3
APR-2012	9,022	4,258	1,174	394	194	108	46	40	27	10	7	4	10	9	4	7	3	7	1	10	14	5
MAY-2012	9,581	4,134	1,059	407	219	135	56	48	29	32	27	22	18	8	10	13	12	6	7	41	79	20
JUN-2012	8,730	3,350	803	309	161	105	48	43	29	30	22	19	20	10	10	13	7	6	6	28	41	18
JUL-2012	8,366	2,759	601	237	119	97	49	27	28	20	16	13	5	4	6	7	4	5	3	15	45	18
AUG-2012	8,243	2,505	459	180	112	81	33	28	22	27	11	3	8	10	4	5	5	12	4	18	24	15
SEP-2012	5,957	1,680	321	150	87	61	39	25	27	23	17	11	18	9	4	5	2	4	2	16	31	13
OCT-2012	7,478	2,041	286	132	77	57	37	29	20	22	13	8	10	4	5	4	6	0	7	7	31	16
NOV-2012	6,379	1,800	288	92	48	44	21	12	20	10	9	8	10	5	2	2	2	2	1	9	13	6
DEC-2012	4,608	1,455	242	72	35	21	8	5	5	6	5	5	7	3	1	2	0	0	0	1	3	2
JAN-2013	6,992	2,779	648	182	62	28	27	12	8	14	4	7	3	2	2	0	1	1	1	5	6	3
FEB-2013	5,730	3,004	684	225	72	44	29	10	13	7	9	5	3	1	2	5	2	1	2	4	9	1
MAR-2013	7,628	3,525	1,136	417	159	109	47	17	15	25	5	7	2	10	2	2	2	1	0	7	8	8
APR-2013	9,033	4,652	1,542	570	234	121	50	29	28	10	14	12	4	5	5	2	3	3	3	10	19	6
MAY-2013	9,286	4,495	1,394	579	246	149	85	56	35	24	21	17	22	8	7	13	2	4	2	24	50	18
JUN-2013	8,842	4,037	1,096	392	185	110	77	36	37	22	18	11	13	6	7	5	6	3	5	22	46	16
JUL-2013	10,188	3,792	853	312	158	104	63	44	36	19	20	19	15	10	12	8	6	4	2	24	42	9
AUG-2013	8,343	2,810	636	265	167	125	55	46	37	22	25	24	10	6	5	10	4	6	5	22	32	14
SEP-2013	7,153	2,381	532	213	136	74	72	30	26	17	18	12	12	7	10	7	7	11	5	20	39	16
OCT-2013	8,200	2,525	480	196	87	76	51	32	29	9	15	14	6	5	5	5	3	5	2	10	21	0
NOV-2013	7,127	2,058	410	131	77	46	40	20	14	11	11	9	10	5	0	3	2	4	3	5	6	2
DEC-2013	5,527	2,052	412	114	55	38	22	15	6	6	7	8	14	3	3	3	2	2	2	3	7	3
JAN-2014	7,001	2,925	740	229	95	59	41	25	12	10	13	11	9	3	3	3	1	2	1	7	19	0
FEB-2014	5,610	3,324	779	210	89	53	25	17	16	11	6	2	4	4	6	4	4	4	1	8	9	4
MAR-2014	7,599	3,934	1,395	474	145	93	36	27	18	13	11	11	12	7	6	2	3	3	0	10	17	7
APR-2014	8,093	4,904	1,766	687	286	148	80	37	21	29	21	22	17	13	10	4	7	9	2	18	26	12
MAY-2014	9,229	4,855	1,693	634	254	182	95	65	43	25	32	15	24	20	4	8	4	9	7	22	51	22
JUN-2014	8,657	4,331	1,347	469	190	118	72	52	30	25	19	16	8	8	13	7	11	3	8	17	49	7
JUL-2014	9,570	3,875	977	307	152	110	45	32	14	23	19	8	11	9	5	5	3	3	3	12	21	3
AUG-2014	7,889	2,810	660	233	122	77	43	26	15	17	10	8	11	8	3	5	2	3	2	7	22	5
SEP-2014	6,869	2,498	539	228	100	63	30	31	19	17	12	11	8	4	5	3	2	5	2	14	32	8
OCT-2014	7,814	2,325	497	186	87	59	43	26	16	7	5	10	9	3	6	2	1	2	0	7	8	4
NOV-2014	6,520	1,861	416	133	68	37	43	13	8	9	9	7	4	2	2	2	1	1	3	7	11	0
DEC-2014	5,328	2,039	430	118	63	38	23	20	8	5	7	13	10	12	4	4	2	3	0	4	8	3

GAC-MH-I-38 h) # of defaulted payment arrangements disaggregated by their term (in months) of the payment arrangement																						
Month	**<1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19-24**	**25-60**	**60+**
JAN-2012	2,941	1,846	507	148	64	38	38	21	12	13	2	12	12	2	4	3	3	3	1	7	10	4
FEB-2012	2,617	2,194	479	166	58	45	32	21	8	10	7	7	4	3	4	1	2	2	2	2	6	0
MAR-2012	3,504	2,616	800	300	129	81	29	20	19	12	10	6	5	3	1	2	5	3	1	7	15	3
APR-2012	3,639	2,809	854	290	159	87	34	31	23	9	6	2	7	7	4	6	2	7	1	8	12	5
MAY-2012	3,958	2,790	807	323	180	116	45	39	25	27	23	21	17	8	9	13	11	5	6	36	74	16
JUN-2012	3,477	2,184	593	251	135	84	41	35	26	28	15	19	18	10	9	11	6	5	5	25	40	14
JUL-2012	3,287	1,871	443	191	91	84	45	24	23	18	15	11	3	3	5	5	4	4	3	13	41	17
AUG-2012	3,383	1,700	313	149	98	64	30	27	21	25	10	3	8	7	4	5	4	12	2	15	22	15
SEP-2012	2,435	1,120	240	123	77	53	34	19	26	21	14	10	16	8	3	5	2	4	2	16	29	12
OCT-2012	2,919	1,346	212	108	67	47	34	27	18	19	13	6	8	4	5	4	6	0	6	5	30	14
NOV-2012	2,530	1,229	221	73	38	37	18	10	16	10	9	8	9	4	1	2	2	2	1	7	12	5
DEC-2012	1,890	998	173	49	30	15	6	4	3	5	5	3	2	3	1	2	0	0	0	1	3	2
JAN-2013	2,890	1,867	469	130	45	24	21	8	7	12	4	7	3	2	1	0	1	1	1	5	5	3
FEB-2013	2,229	1,938	476	162	59	31	22	7	11	7	8	5	2	0	1	5	2	1	2	2	6	1
MAR-2013	2,916	2,291	766	310	123	81	32	13	14	19	4	6	1	10	2	2	2	1	0	5	7	7
APR-2013	3,310	2,968	1,052	419	187	93	39	24	22	10	12	11	4	4	4	2	3	3	3	7	16	5
MAY-2013	3,686	2,988	1,017	470	196	113	71	53	29	19	16	16	20	6	6	10	2	3	2	24	49	17
JUN-2013	3,441	2,669	813	289	157	95	62	31	31	17	16	10	11	5	7	5	6	3	4	21	42	15
JUL-2013	3,536	2,428	640	246	121	87	52	38	30	18	17	17	15	8	11	8	5	4	2	23	40	8
AUG-2013	3,117	1,781	453	196	130	107	49	39	32	15	18	20	9	6	5	7	4	5	5	22	29	14
SEP-2013	2,768	1,499	373	146	109	59	64	23	21	15	14	12	11	6	8	7	6	10	2	19	35	15
OCT-2013	3,042	1,613	362	154	70	60	46	30	28	8	14	13	4	5	5	5	3	4	2	10	21	0
NOV-2013	2,694	1,376	292	105	53	40	30	16	11	7	10	8	8	5	1	2	4	3	2	4	6	2
DEC-2013	2,301	1,402	301	92	42	31	18	13	5	5	7	7	11	1	2	3	2	2	2	3	5	3
JAN-2014	2,846	1,925	538	178	80	45	36	21	9	10	11	9	9	3	2	1	1	1	1	5	17	0
FEB-2014	2,158	2,146	548	159	69	43	19	10	15	9	4	2	3	3	5	3	3	3	1	8	9	4
MAR-2014	2,844	2,572	987	346	116	78	28	21	16	9	9	11	10	4	6	2	3	2	0	8	14	6
APR-2014	3,183	3,193	1,266	498	214	115	62	31	19	27	15	19	14	9	10	4	6	9	2	13	23	11
MAY-2014	3,641	3,171	1,235	475	194	159	83	54	33	22	28	14	20	12	3	6	4	7	4	17	48	16
JUN-2014	3,361	2,801	972	380	146	97	60	40	23	21	16	13	6	7	12	5	7	3	4	16	42	5
JUL-2014	3,548	2,488	701	236	123	89	28	28	12	21	15	5	7	7	4	4	2	3	2	12	16	3
AUG-2014	3,063	1,804	478	164	98	62	37	19	14	14	8	8	10	4	0	4	2	3	2	7	15	3
SEP-2014	2,663	1,557	372	164	78	43	24	23	14	14	10	7	5	3	4	3	2	5	2	10	27	7
OCT-2014	2,971	1,486	368	138	62	39	30	17	11	6	4	7	7	3	6	2	1	1	0	6	6	4
NOV-2014	2,497	1,252	304	95	48	28	37	9	5	5	6	4	3	2	0	2	1	1	2	3	9	0
DEC-2014	2,090	1,381	297	81	32	22	15	11	4	2	5	10	5	5	1	4	2	0	0	4	6	3

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide for each year 2011 through present inclusive, a copy of:

a) Each presentation to the Company Board of Directors regarding low-income issues;
b) Each Company Board of Directors meeting agenda identifying low-income issues as a separately stated agenda item;
c) Each set of written materials distributed as part of the agenda item

RATIONALE FOR QUESTION:

The reasonableness of Company's proposed rates, as differentially affecting different customers, is to be considered.

RESPONSE:

In Order 33/15, the PUB accepted Manitoba Hydro's submission, in response to other Intervenor requests for similar presentations, that internal presentations to the Manitoba Hydro-Electric Board are not required in this proceeding.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide for each year 2011 through present inclusive, a copy of:

a) Each presentation to the Company Board of Directors regarding customer service and/or credit and collection issues;
b) Each Company Board agenda identifying customer service and/or credit and collection issues as a separately stated agenda item;
c) Each set of written materials distributed as part of the agenda item.

RATIONALE FOR QUESTION:

The reasonableness of Company's proposed rates, as differentially affecting different customers, is to be considered.

RESPONSE:

In Order 33/15, the PUB accepted Manitoba Hydro's submission, in response to its objection to other Intervenor requests, that internal presentations to the Manitoba Hydro-Electric Board were not required in this proceeding.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a copy of all reports, evaluations, memos, analyses or other written documents of any nature containing any the Company methodology, procedure or process designed to systematically review, study or assess the Company residential billing and/or payment records in an effort to:

a) Characterize patterns of nonpayment;
b) Identify the characteristics of nonpayers;
c) Identify predictors of nonpayment;
d) Identify strategies to reduce nonpayment;
e) Identify early indicators of nonpayment.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Please see Manitoba Hydro's response to GAC/MH-I-17b.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please list all the programs and initiatives the Company has undertaken since January 2011 to reduce the number of residential disconnections for nonpayment and, if available, the measures the Company uses to determine if these programs are successful, and the results.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Front line staff work with customers in arrears in establishing flexible payment arrangements. When a customer is facing disconnection, front line staff promote the Neighbours Helping Neighbours Program, administered through the Salvation Army, which provides emergency assistance through program referrals and financial assistance for customers in need.

DSM is an integral component of Manitoba Hydro's overall strategy to assist customers with managing their bills, minimizing arrears, and reducing the number of disconnections, all of Manitoba Hydro's portfolio of residential DSM programs offer customers the ability to reduce their energy bill through energy efficiency upgrades, regardless of whether these programs were launched since January 2011 or prior to this time. The Affordable Energy Program (AEP), targeted to lower income customers, is one program in particular which

directly markets to residential customers in arrears through an autodialer call campaign to promote program participation. In addition, staff working on credit and collection activities also refer customers to this program.

Manitoba Hydro does not measure the number of avoided disconnections for non-payment as part of program measurement for the above listed programs.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please list all the programs and initiatives the Company has undertaken since January 2011 to reduce the number of delinquent residential customer accounts and, if available, the measures the Company uses to determine if these programs are successful, and the results.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Please see Manitoba Hydro's response to GAC/MH-I-42.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Of the residential accounts receiving a notice of an impending disconnection for nonpayment, for each month January 2012 to present inclusive, please provide:

a) the total number of accounts that did not have their service disconnected by the date specified in the disconnect notice.
b) the total number of accounts that did not have their service disconnected prior to the next bill received after receiving the notice of disconnection;
c) the total number of accounts that did not have their service disconnected for nonpayment after receiving a disconnect notice for nonpayment that voluntarily terminated their accounts;
d) the total number of accounts that did not have their service disconnected because the customer paid their bills in full prior to their scheduled disconnection;
e) the total number of accounts that did not have their service disconnected because the customer paid their bills less than in full but sufficient to avoid their scheduled disconnection;
f) the total number of accounts that did not have their service disconnected even though they retained an arrears that was sufficient large (or sufficiently old) to trigger a disconnection); and
g) the total number of accounts on which account no payments were made prior to the issuance of the next bill after issuance of the disconnect notice.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

a) No services would be disconnected for nonpayment prior to the date on the disconnect notice. Services become subject to further collection action, which may include disconnection if payment or payment arrangements are not made by this date.

b) to g) The requested data is only available starting from March 2013.

Month	b & f	C	d	E	g
JAN-2013	n/a	n/a	n/a	n/a	n/a
FEB-2013	n/a	n/a	n/a	n/a	n/a
MAR-2013	10,157	236	3,773	3,369	2,206
APR-2013	13,981	572	5,479	4,272	3,147
MAY-2013	11,173	436	5,764	3,026	2,153
JUN-2013	11,205	296	7,321	2,882	2,120
JUL-2013	8,768	284	6,797	1,828	1,465
AUG-2013	6,232	270	4,842	1,241	1,499
SEP-2013	6,465	303	5,139	1,198	1,393
OCT-2013	5,915	265	4,717	1,311	770
NOV-2013	4,228	142	3,510	929	876
DEC-2013	5,641	165	4,411	1,264	1,439
JAN-2014	6,913	186	4,722	1,568	1,591
FEB-2014	6,831	171	3,686	2,240	1,750
MAR-2014	11,615	342	5,684	4,352	2,896
APR-2014	14,214	475	7,302	5,427	2,871
MAY-2014	10,614	310	7,045	3,788	2,594
JUN-2014	11,346	299	9,004	3,635	2,219
JUL-2014	9,444	345	8,450	2,718	2,161
AUG-2014	6,410	343	6,327	1,719	2,152
SEP-2014	6,698	329	6,436	1,699	1,628
OCT-2014	6,152	311	6,228	1,800	1,137
NOV-2014	4,304	175	4,068	1,249	1,272
DEC-2014	5,015	203	4,559	1,353	1,456

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Cost characteristics		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide all empirical studies within the custody or control of the Company showing the relationship between income and electricity consumption.

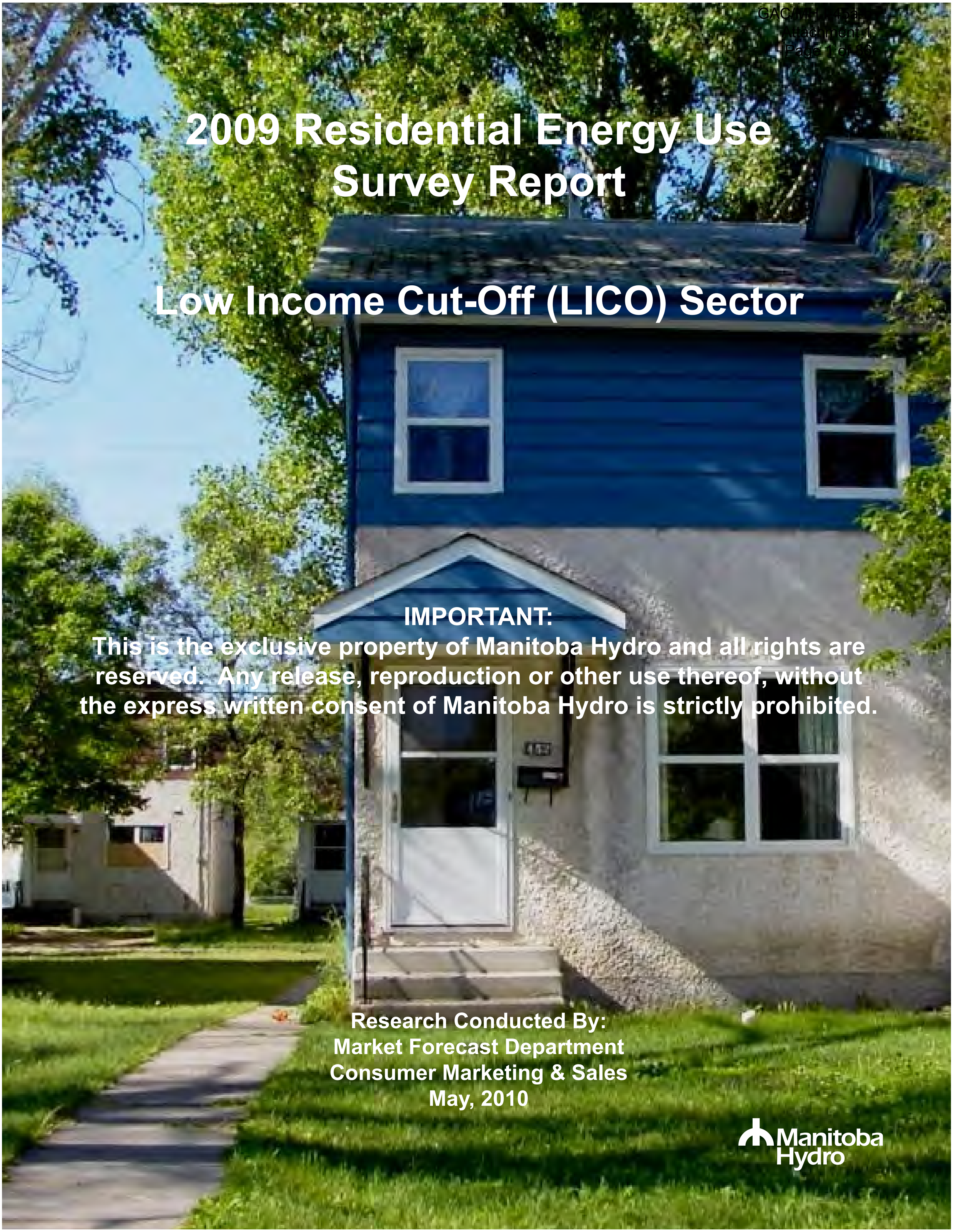
a) Using data from the Company's customers; and
b) Using data from an electric utility whether or not in Manitoba.

RATIONALE FOR QUESTION:

The impacts of rates on bills and revenues is to be considered.

RESPONSE:

The most recent study undertaken by Manitoba Hydro examining the relationship between income and electricity consumption was presented in the 2009 Residential Energy Use Survey Report – Low Income Cut-Off (LICO) Sector previously filed with the PUB as part of the 2010/11 & 2011/12 Electric GRA. A copy is included as an attachment to this response.



2009 Residential Energy Use Survey Report

Low Income Cut-Off (LICO) Sector

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Research Conducted By:
Market Forecast Department
Consumer Marketing & Sales
May, 2010

Manitoba Hydro

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**			
Number of Persons per Household	**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 household tend to be less educated. 55.2% of LICO-100 households heads have attained high school or less compared to 27.3% of the NON-LICO-100 heads. 53.3% of LICO-125 households 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.

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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**			
Number of Persons per Household	**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	**Community Population**			
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

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 Wieghted % 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

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

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

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

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

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

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	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	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	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	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	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 kW.h 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 kW.h 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 kW.h 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)
Overall Average kW.h						
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
Average Annual kW.h Non-Electric Heat*						
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
Average Annual kW.h Electric Heat						
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
Average Annual Cubic Meters Natural Gas						
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)
Average Annual kW.h Total Overall						
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
Average Annual kW.h Non-Electric Heat*						
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
Average Annual kW.h Electric Heat						
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
Average Annual Cubic Meters Natural Gas						
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.

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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)
Space Heating System*												
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
% Older Than 25 Years	27.1%	118,968	39.9%	29,911	24.5%	89,057	38.2%	40,458	23.6%	78,510	34.2%	10,547
Heating System Avg. Age												
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)
Space Heating System*												
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
% Older Than 25 Years	17.6%	42,455	28.0%	10,332	15.7%	32,123	26.3%	14,003	15.2%	28,452	22.4%	3,671
Heating System Avg. Age												
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

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

NON LICO-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

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

NON LICO-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

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

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	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

NON LICO-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	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

NON LICO-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	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.

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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)
Home Internet Access	73.0%	320,343	46.7%	34,985	78.4%	285,358	50.4%	53,278	80.1%	232,080	59.3%	18,293
Bill Payment Method												
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
MYBILL Awareness	62.6%	274,944	55.1%	41,269	64.2%	233,675	55.8%	59,033	64.8%	215,911	57.6%	17,764
MYBILL Interest	7.8%	34,175	2.7%	2,012	8.8%	32,163	3.6%	3,803	9.1%	30,372	5.8%	1,791
2009 MH Website Visitors	23.1%	101,562	12.1%	9,073	25.4%	92,489	12.5%	13,189	26.5%	88,373	13.3%	4,116
Energy Matters Readership												
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
Power Smart Insert Readership												
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
Power Smart Insert Participation	19.5%	85,717	15.2%	11,358	20.4%	74,359	14.6%	15,408	21.1%	70,309	13.1%	4,050
Residential Program Participation												
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
Lower Income Energy Program	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)
Home Internet Access	79.9%	192,637	53.8%	19,867	84.6%	172,770	57.6%	30,689	86.2%	161,948	66.0%	10,822
Bill Payment Method												
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
MYBILL Awareness	65.2%	157,246	57.0%	21,027	66.7%	136,219	57.7%	30,741	67.4%	126,505	59.3%	9,714
MYBILL Interest	8.0%	19,215	2.8%	1,034	8.9%	18,181	4.2%	2,221	9.0%	16,994	7.2%	1,187
2009 MH Website Visitors	27.6%	66,638	13.4%	4,944	30.2%	61,694	14.4%	7,696	31.4%	58,942	16.8%	2,752
Energy Matters Readership												
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
Power Smart Insert Readership												
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
Power Smart Insert Participation	23.6%	56,915	21.1%	7,774	24.1%	49,141	20.4%	10,867	24.5%	46,048	18.9%	3,093
Residential Program Participation												
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
Lower Income Energy Program	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
POWER SMART

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RESIDENTIAL ENERGY USE SURVEY
MARKET FORECAST DEPARTMENT
Manitoba Hydro
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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)
2 ☐ Side by Side (Two Attached Units)
3 ☐ Duplex (Upper Unit)
4 ☐ Duplex (Lower Unit)
5 ☐ Triplex/Fourplex
6 ☐ Mobile Home/Trailer
7 ☐ Rowhouse/Townhouse (Exterior Entrance)
8 ☐ Apartment Suite or Condominium unit
9 ☐ Cottage or Seasonal Home
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
2 ☐ 1 1/2 storey
3 ☐ 1 3/4 storey
4 ☐ 2 storey
5 ☐ 2 1/2 storey
6 ☐ 3 storey
7 ☐ Bi-level
8 ☐ 2 level split
9 ☐ 4 level split
10 ☐ Cab - Over
11 ☐ Suite
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
2 ☐ 1990 - 1999
3 ☐ 1980 - 1989
4 ☐ 1970 - 1979
5 ☐ 1960 - 1969
6 ☐ 1950 - 1959
7 ☐ 1940 - 1949
8 ☐ 1930 - 1939
9 ☐ 1920 - 1929
10 ☐ 1910 - 1919
11 ☐ 1900 - 1909
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.

1 ☐ Under 500 sq ft	7 ☐ 1,501-1,700 sq ft	13 ☐ 2,701-2,900 sq ft
2 ☐ 501-700 sq ft	8 ☐ 1,701-1,900 sq ft	14 ☐ 2,901-3,100 sq ft
3 ☐ 701-900 sq ft	9 ☐ 1,901-2,100 sq ft	15 ☐ 3,101-3,300 sq ft
4 ☐ 901-1,100 sq ft	10 ☐ 2,101-2,300 sq ft	16 ☐ 3,301-3,500 sq ft
5 ☐ 1,101-1,300 sq ft	11 ☐ 2,301-2,500 sq ft	17 ☐ over 3,500 sq ft
6 ☐ 1,301-1,500 sq ft	12 ☐ 2,501-2,700 sq ft	

8 **What is the ELECTRIC PANEL size servicing your residence?**

1 ☐ 60 amp	3 ☐ 150 amp	5 ☐ 400 amp	7 ☐ Do not know
2 ☐ 100 amp	4 ☐ 200 amp	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?

1 ☐ Excellent	3 ☐ Average	5 ☐ Poor
2 ☐ Very Good	4 ☐ Fair	

c) What best describes the quality of EXTERIOR DOORS in your residence?

1 ☐ Excellent	3 ☐ Average	5 ☐ Poor
2 ☐ Very Good	4 ☐ Fair	

10 **What best describes the overall level of INSULATION in your residence?**
(EXCLUDE BASEMENT)

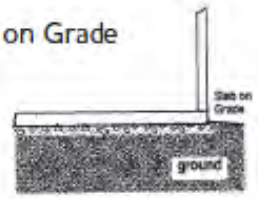
1 ☐ Excellent	3 ☐ Average	5 ☐ Poor
2 ☐ Very Good	4 ☐ Fair	

11 **Please indicate which of the following best describes the BASEMENT (foundation) of your residence:**

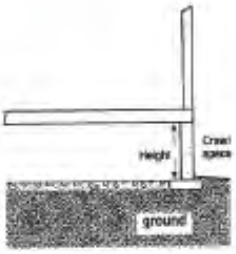
a)

1 ☐ No Basement (foundation) – Go to Question 12

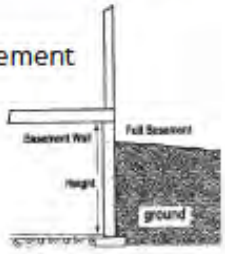
2 ☐ Slab on Grade



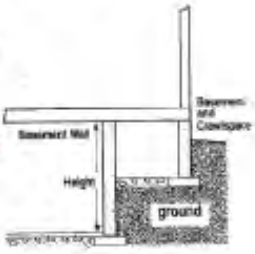
6 ☐ Crawl Space
(including cottages and mobile homes)



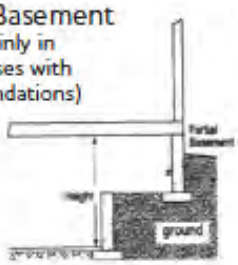
3 ☐ Full Basement



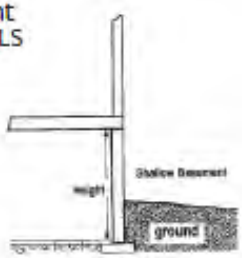
7 ☐ Partial Basement and Crawl Space
(includes houses with ground level additions)



4 ☐ Partial Basement
(found mainly in older houses with stone foundations)



8 ☐ Shallow Basement
(includes SPLIT LEVELS and BI-LEVELS)



5 ☐ Other: _____ 9 ☐ Do Not Know

b) What percentage of your home's BASEMENT (foundation) walls are insulated?

1 ☐ No Insulation – Go to Question 12
2 ☐ 10% Insulated
3 ☐ 20% Insulated
4 ☐ 30% Insulated
5 ☐ 40% Insulated
6 ☐ 50% Insulated
7 ☐ 60% Insulated
8 ☐ 70% Insulated
9 ☐ 80% Insulated
10 ☐ 90% Insulated
11 ☐ 100% Insulated
12 ☐ 2 ft Below Grade Only
13 ☐ Other: _____
14 ☐ Do not know

c) Main type of INSULATION

1 ☐ Fibreglass Batting
2 ☐ Rigid
3 ☐ Spray Foam
4 ☐ Other: _____
5 ☐ Do not know

d) What % of your basement is finished?

1 ☐ No Basement
2 ☐ 0%
3 ☐ 1 - 20%
4 ☐ 21 - 40%
5 ☐ 41 - 60%
6 ☐ 61 - 80%
7 ☐ 81 - 100%
8 ☐ Do not know

12 **Does this residence have any of the following PROBLEMS?**
(CHECK ALL THAT APPLY.)

- 1 ☐ Odours, cooking smells, stale air
- 1 ☐ High humidity in winter
- 1 ☐ Low humidity in winter
- 1 ☐ Window condensation
- 1 ☐ Condensation in attic
- 1 ☐ Mold and mildew
- 1 ☐ Ice dams on roof
- 1 ☐ Water leakage in basement
- 1 ☐ Cold floor on slab on grade foundation
- 1 ☐ Difficult to heat rooms
- 1 ☐ Inadequate supply of hot water
- 1 ☐ Short life of hot water tank (less than five years)
- 1 ☐ No problems

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.)

- 1 ☐ None
- 1 ☐ Workshop
- 1 ☐ Garage
- 1 ☐ Storage Shed
- 1 ☐ Barn
- 1 ☐ Pumphouse
- 1 ☐ Grain Dryer
- 1 ☐ Grain Bin(s)
- 1 ☐ Greenhouse
- 1 ☐ Other: _____

16 **Are any ADDITIONAL BUILDINGS using NATURAL GAS at this location?**
(CHECK ALL THAT APPLY.)

- 1 ☐ None
- 1 ☐ Workshop
- 1 ☐ Garage
- 1 ☐ Storage Shed
- 1 ☐ Barn
- 1 ☐ Pumphouse
- 1 ☐ Grain Dryer
- 1 ☐ Grain Bin(s)
- 1 ☐ Greenhouse
- 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.)

- 1 ☐ None
- 1 ☐ Forced Air Furnace
- 1 ☐ Electric Baseboards
- 1 ☐ Electric Portable Heater
- 1 ☐ Stove/Spaceheater
- 1 ☐ Gas Fireplace (not decorative)
- 1 ☐ Wood Stove
- 1 ☐ Wood Fireplace (with glass doors)
- 1 ☐ Wood Fireplace (no glass doors)
- 1 ☐ Outside Wood Boiler
- 1 ☐ Pellet Stove
- 1 ☐ Heat Pump
- 1 ☐ Other: _____
- 1 ☐ Do not know

7 **How is the central forced air furnace fan motor normally operated?**

- 1 ☐ No Central Forced Air Furnace
- 2 ☐ Comes on only when furnace is running
- 3 ☐ Two speed (high, low) - continuous
- 4 ☐ Continuous - one speed on
- 5 ☐ Continuous Variable Direct Current Motor (on select hi-efficiency furnaces)
- 6 ☐ Do not know

8 **Do you perform annual maintenance checks on your heating system?**

- 1 ☐ Not applicable
- 2 ☐ No, never
- 3 ☐ Once a year
- 4 ☐ Every 2 to 3 years
- 5 ☐ Every 4 or more years
- 6 ☐ Do not know

9 **Do you regularly change or clean your furnace filter?**

- 1 ☐ Not applicable
- 2 ☐ No, never
- 3 ☐ Yes, every 3 to 4 months
- 4 ☐ Yes, every year or more
- 5 ☐ Do not know

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.)

- 1 ☐ No wood used
- 2 ☐ Under 1
- 3 ☐ 1 - 2
- 4 ☐ 3 - 4
- 5 ☐ 5 - 6
- 6 ☐ 7 - 8
- 7 ☐ 9+
- 8 ☐ Do not know

11 **What type of THERMOSTAT controls the main heating system?**

- 1 ☐ No Thermostat
- 2 ☐ Individual Unit or Room Control
- 3 ☐ Manual Central Control
- 4 ☐ Programmable Thermostat
- 5 ☐ Flue Gauge (located on a wood stove chimney)
- 6 ☐ Other: _____
- 7 ☐ Do not know

12 **How often do you TURN DOWN the temperature at night during the heating season?**

- 1 ☐ Every Night
- 2 ☐ Most Nights
- 3 ☐ Occasionally
- 4 ☐ Never
- 5 ☐ No Thermostat
- 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 ☐	2 ☐	3 ☐
18°-19°	65°-67°	1 ☐	2 ☐	3 ☐
20°-21°	68°-70°	1 ☐	2 ☐	3 ☐
22°-23°	71°-73°	1 ☐	2 ☐	3 ☐
24°-25°	74°-77°	1 ☐	2 ☐	3 ☐
26° plus	78° plus	1 ☐	2 ☐	3 ☐
Do not know		1 ☐	2 ☐	3 ☐

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 ☐ Central Exhaust System
1 ☐ Heat Recovery Ventilator
1 ☐ Furnace Fan
1 ☐ Kitchen/Bathroom Fans
1 ☐ Ceiling Fans
1 ☐ Portable Fans
1 ☐ Roof Turbine Vent
1 ☐ Windows/Doors
1 ☐ Other: _____
1 ☐ No Ventilation System
1 ☐ Do not know

2 What type of AIR FILTRATION system is used?

1 ☐ None
2 ☐ Standard Furnace Air Filter
3 ☐ Room Air Filter(s)
4 ☐ Electrostatic (Electronic) Air Filter/Cleaner
5 ☐ Other: _____
6 ☐ Do not know

3 Is there a FRESH AIR INTAKE to your central forced air furnace?

1 ☐ Yes
2 ☐ No
3 ☐ No Central Forced Air Furnace
4 ☐ Do not know

4 What best describes the air quality in your home during the winter months?

1 ☐ Too Dry 2 ☐ Too Humid 3 ☐ 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
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

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 ☐	2 ☐	3 ☐
18°-19°	65°-67°	1 ☐	2 ☐	3 ☐
20°-21°	68°-70°	1 ☐	2 ☐	3 ☐
22°-23°	71°-73°	1 ☐	2 ☐	3 ☐
24°-25°	74°-77°	1 ☐	2 ☐	3 ☐
26° plus	78° plus	1 ☐	2 ☐	3 ☐
Do not know		1 ☐	2 ☐	3 ☐

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 With:_____ Year Converted: _____ (e.g., 1992)
3 ☐ Do not know

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: _____
8 ☐ Do not know

8 How many SHOWERHEADS are installed in your home?

- ☐ None
- ☐ One
- ☐ Two
- ☐ Three or more

9 On average, how many total showers are taken by your household per day?

- ☐ None
- ☐ Rarely shower
- ☐ One
- ☐ Two
- ☐ Three
- ☐ Four
- ☐ Five
- ☐ Six or more

10 On average, how many tub baths are taken by your household per day?

- ☐ None
- ☐ Rarely take tub baths
- ☐ One
- ☐ Two
- ☐ Three
- ☐ Four
- ☐ Five
- ☐ Six or more

11 Have you done any of the following been done to CONSERVE water?
(CHECK ALL THAT APPLY.)

- ☐ Installed Energy Efficient Showerhead(s) (6 gal/min)
- ☐ Installed Energy Efficient Faucet Aerator(s)
- ☐ Installed Water Heater Blanket/Insulation
- ☐ Installed Energy Efficient Toilets (1.6 or less gal/flush)
- ☐ Lowered Water Heater Temperature
- ☐ Installed Pipe Wrap
- ☐ None
- ☐ Do not know

12 Do you have an ELECTRIC WATER PUMP installed on your water system?
(CHECK ALL THAT APPLY.)

- ☐ No Pump
- ☐ Well Pump
- ☐ Pressure Pump
- ☐ Sump Pump
- ☐ Sewage Pump
- ☐ Do not know

Section 6 Major Appliances

1 Please indicate the COOKING APPLIANCE(S) used in your home.
(CHECK ALL THAT APPLY.)

- ☐ None
- ☐ Electric Range with Standard Oven
- ☐ Electric Range with Self-Cleaning Oven
- ☐ Electric Range with Convection Oven
- ☐ Electric Counter Cooktop
- ☐ Electric Wall Oven
- ☐ Gas Cooktop
- ☐ Gas Range
- ☐ Gas Wall Oven
- ☐ Wood Stove/Oven
- ☐ Other: _____

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)

1 ☐ None – Go to Question 5 2 ☐ One 3 ☐ Two 4 ☐ Three or More

*a) Please describe the **MAIN** stand-alone FREEZER that is used.*

- TYPE: 1 ☐ Frost-Free 2 ☐ Manual Defrost
- STYLE: 1 ☐ Upright 2 ☐ Chest
- 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

b) Location of main freezer?

1 ☐ Garage 3 ☐ Porch 5 ☐ Other: _____
2 ☐ Basement 4 ☐ Main floor or above

*c) Please describe the **SECOND** stand-alone FREEZER that is used.*

1 ☐ None – Go to Question 5

- TYPE: 1 ☐ Frost-Free 2 ☐ Manual Defrost
- STYLE: 1 ☐ Upright 2 ☐ Chest
- 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

d) Is the second freezer operating all year?

1 ☐ Yes, all year 2 ☐ No, only part of the year.

e) Location of second freezer?

1 ☐ Garage 3 ☐ Porch 5 ☐ Other: _____
2 ☐ Basement 4 ☐ Main floor or above

5 **Is there an automatic DISHWASHER used in your home?**

1 ☐ No Dishwasher – Go to Question 6 2 ☐ Yes

- LOADS PER WEEK: ____ (loads/week)
  (Average number of times the dishwasher 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

a) What type of DRYING CYCLE do you use most often:

1 ☐ Heat Dry (Sanitizing Cycle) 2 ☐ Air Dry (Econo) 3 ☐ Do not know

b) Do you use the Water Heat Temperature Boost option?

1 ☐ Not available
2 ☐ Available, and used always
3 ☐ Available, but choose not to use it
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
2 ☐ Hot/Warm
3 ☐ Hot/Cold
4 ☐ Warm/Warm
5 ☐ Warm/Cold
6 ☐ Cold/Cold
7 ☐ Do not know

- LOADS PER WEEK: ____ (loads/week)
(Average number of times the clothes washer is operating each week.)

- AGE: (years)
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 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
2 ☐ Natural Gas
3 ☐ Propane
4 ☐ Other: _____

- DRYER TEMP: (Used most often.)
1 ☐ Cold (Low)
2 ☐ Delicate
3 ☐ Warm (Medium)
4 ☐ Permanent Press
5 ☐ Hot (High)
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
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

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.*

1 ☐ 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.*

1 ☐ 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.*

1 ☐ 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.*

1 ☐ Do not have a set-top or cable converter box – Go to Question 3

- SERVICE PROVIDER: 1 ☐ Cable company 2 ☐ Telephone company 3 ☐ Satellite 4 ☐ Do not know
- FEATURES: 1 ☐ Digital 2 ☐ Digital PVR 3 ☐ HD 4 ☐ HD PVR 5 ☐ Do not know
- AGE: (years) 1 ☐ 0 - 3 years 2 ☐ 4 - 6 years 3 ☐ 7 - 9 years 4 ☐ 10 - 12 years 5 ☐ Over 12 years 6 ☐ Do not know

*b) Please describe the **SECOND MAIN SET-TOP OR CABLE CONVERTER BOX** that is used in your home.*

1 ☐ Do not have a second set-top or cable converter box – Go to Question 3

- SERVICE PROVIDER: 1 ☐ Cable company 2 ☐ Telephone company 3 ☐ Satellite 4 ☐ Do not know
- FEATURES: 1 ☐ Digital 2 ☐ Digital PVR 3 ☐ HD 4 ☐ HD PVR 5 ☐ Do not know
- AGE: (years) 1 ☐ 0 - 3 years 2 ☐ 4 - 6 years 3 ☐ 7 - 9 years 4 ☐ 10 - 12 years 5 ☐ Over 12 years 6 ☐ Do not know

*c) Please describe the **THIRD MAIN SET-TOP OR CABLE CONVERTER BOX** that is used in your home.*

1 ☐ Do not have a third set-top or cable converter box – Go to Question 3

- SERVICE PROVIDER: 1 ☐ Cable company 2 ☐ Telephone company 3 ☐ Satellite 4 ☐ Do not know
- FEATURES: 1 ☐ Digital 2 ☐ Digital PVR 3 ☐ HD 4 ☐ HD PVR 5 ☐ Do not know
- AGE: (years) 1 ☐ 0 - 3 years 2 ☐ 4 - 6 years 3 ☐ 7 - 9 years 4 ☐ 10 - 12 years 5 ☐ Over 12 years 6 ☐ 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.*

1 ☐ Do not have a computer – Go to Question 5

- TYPE: 1 ☐ Desktop 2 ☐ Laptop 3 ☐ Do not know
- SCREEN: 1 ☐ Tube (CRT) 2 ☐ LCD
- AGE: (years) 1 ☐ 0 - 3 years 2 ☐ 4 - 6 years 3 ☐ 7 - 9 years 4 ☐ 10 - 12 years 5 ☐ Over 12 years 6 ☐ Do not know
- USAGE: 1 ☐ On 24 hours 2 ☐ On when necessary 3 ☐ 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
3 ☐ 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
- 2 ☐ In-Person - at a designated agency
- 3 ☐ By Mail
- 4 ☐ On-Line
- 5 ☐ Pre-Authorized Payment Plan
- 6 ☐ Other: _____
- 7 ☐ Do not know

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 Flourescent 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 11 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?

1 ☐ One (myself) 3 ☐ Three 5 ☐ Five 7 ☐ Seven or more
2 ☐ Two 4 ☐ Four 6 ☐ Six 8 ☐ 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)

1 ☐ Under $20,000 7 ☐ $50,000-$54,999 13 ☐ $80,000-$89,999
2 ☐ $20,000-$24,999 8 ☐ $55,000-$59,999 14 ☐ $90,000-$99,999
3 ☐ $25,000-$29,999 9 ☐ $60,000-$64,999 15 ☐ $100,000-$124,999
4 ☐ $30,000-$34,999 10 ☐ $65,000-$69,999 16 ☐ $125,000-$149,999
5 ☐ $35,000-$39,999 11 ☐ $70,000-$74,999 17 ☐ $150,000 or over
6 ☐ $40,000-$49,999 12 ☐ $75,000-$79,999 18 ☐ Choose not to answer

5 Please indicate the highest EDUCATION LEVEL attained by each head of household?

	Person 1	Person 2
No Formal Education	1 ☐	1 ☐
Elementary (Grades 1-6)	2 ☐	2 ☐
Junior High (Grades 7-9)	3 ☐	3 ☐
Senior High (Grades 10-12)	4 ☐	4 ☐
Trade School	5 ☐	5 ☐
Community College	6 ☐	6 ☐
University (Bachelor)	7 ☐	7 ☐
Graduate (Master's or PHD)	8 ☐	8 ☐
Other _____	9 ☐	9 ☐
Choose not to answer	10 ☐	10 ☐

We welcome any comments you may wish to make. Please record your comments in the space below.

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.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:			
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide each customer segmentation study that has been prepared for the Company of its residential customers since January 2011. If no study has been prepared since January 2011, please provide the most recent study.

RATIONALE FOR QUESTION:

The reasonableness of Company's proposed rates, as differentially affecting different customers, is to be considered.

RESPONSE:

Please see the attachment to this response for a copy of the 2009 Residential Energy Use Survey Report.

2009 RESIDENTIAL ENERGY USE SURVEY REPORT

Manitoba Hydro

MARKET FORECAST

DECEMBER 2012

IMPORTANT:

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EXECUTIVE SUMMARY

Purpose

The objective of this summary is to present an overview the dwelling, space heating and cooling, water heat, end uses, and demographic characteristics of Manitoba Hydro residential customers. Detailed knowledge of the characteristics of this market sector will assist Manitoba Hydro in preparing the annual Load Forecast as well as 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 24.8% was realized. The primary purpose of the survey was to gather current information on residential dwelling, space heating and cooling, water heating, appliance and energy usage characteristics. This information is utilized to create a residential sector database and formal written report, which are subsequently used to assist in developing Manitoba Hydro's Load Forecast and Power Smart programs. This report provides details of the survey variables as they relate to natural gas availability, dwelling type, dwelling vintage, space heating fuel, and annual household income.

Key Findings

Dwelling Characteristics

Out of the 439,096 residential customers, 53.8% reside in Winnipeg City where natural gas is available, 28.0% outside Winnipeg in natural gas available areas, and 18.3% in no natural gas available areas.

83.2% of the 55,873 total apartment suite customers reside in Winnipeg City.

More new residential construction has occurred outside Winnipeg. Of the 40,581 dwellings built in the 2000s, 40.3% were constructed inside Winnipeg City and 59.7% were constructed outside the capital city.

Three quarters of 234,536 customers, who heat their dwellings with natural gas and receive a bill for that consumption directly from Manitoba Hydro (natural gas heat billed), reside in Winnipeg City.

Out of the 439,096 residential customers, 79.7% reside in single detached dwellings.

23.3% of the 71,163 lowest household income customers (under $25,000) reside in apartment suites compared to 92.5% of the 72,150 highest household income customers ($100,000 and over) who reside in single detached dwellings.

86.6% of residential customers own their dwelling and 13.4% rent.

52.8% of customers reside in dwellings that are single storey bungalow types.

The average single detached dwelling was built in 1966 and is 1,321 square feet. The average apartment suite was built in 1968 and is 870 square feet. Dwellings of all types, built in the 2000's, are an average of 1,508 square feet. Average square footage has increased with each decade of construction.

37.5% of residential customers describe the overall insulation levels of the dwelling as either excellent or very good and 19.9% describe their overall insulation as fair or poor.

Window condensation is the most common dwelling problem as indicated by 30.6% of customers while 36.0% indicated no dwelling issues at all.

The three most common dwelling projects undertaken in the last three years are compact fluorescent (CFL) bulb installs (34.2%), window replacements (27.2%), and hot water tank replacements (23.5%). 34.5% have not undertaken any dwelling projects in the last three years.

Space Heating Characteristics

Out of the 439,096 customers, 35.3% are electric heat billed; 53.4% are natural gas heat billed; 7.2% heat by natural gas but consumption is not on utility bill; 1.3% heat by electricity but consumption is not on utility bill; and 2.8% heat by other fuels such as propane, coal, wood, or oil.

49.6% of the 55,873 apartment suite customers, heat by natural gas but the consumption is not on their utility bill. Natural gas use comes from a common service and the bill is paid by the owner or landlord of the apartment complex. The natural gas costs are passed down into rent or monthly common service fees. 35.6% of apartment suites are electric heat billed customers where the use is recorded on the utility bill and the customer pays Manitoba Hydro directly for any space heating consumption.

52.8% of dwellings built in the 2000s are electric heat billed compared to 24.7% of dwellings built prior to 1950. There has been a trend in the last decade for new dwelling construction to install electric heat. From the 1970's to the 1990's, approximately 42% of new construction installed electric heat. Prior to 1970, electric heat was installed in about 25% of new housing starts.

The average single detached electric heat billed customer consumes 28,574 kilowatt hours (kW.h) annually compared to the average single detached natural gas heat billed customer consuming 11,290 kW.h annually. The average apartment suite electric heat billed customer

consumes 8,969 kW.h annually compared to the average natural gas heat billed apartment suite customer consuming 5,618 kW.h annually.

Overall, the lowest household income customers consume 12,328 kW.h annually compared to 18,493 kW.h consumed annually by the highest household income customers.

The average single detached natural gas heat billed customer consumes 2,587 cubic meters annually.

The lowest income group consumes 2,362 cubic meters compared to 2,816 cubic meters consumed by the highest income group.

36.6% of natural gas heat billed customers use high efficiency natural gas furnaces (85,793 units); 33.7% of natural gas heat billed customers use mid efficiency natural gas furnaces (78,958 units); and 25.7% of natural gas heat billed customers use standard efficiency natural gas furnaces (60,329 units); and 4.0% of natural gas heat billed customers use boilers for their space heating systems,

17.4% of the 105,086 LICO-125 customers use standard efficiency furnaces (18,285 units).

The average age of a heating system in a single detached dwelling is 14.9 years.

Ventilation and Air Quality Characteristics

76.7% of all residential customers rely on the furnace fan for their ventilation. 10.5% have central exhaust and 6.9% have a heat recovery system.

30.0% of dwellings built in the 2000s have a heat recovery system and 37.1% of new home customers have a central exhaust system.

68.4% of residential customers describe the air quality in their home as comfortable during the winter months.

Space Cooling Characteristics

22.1% of the 349,899 single detached residential customers have no air conditioning system and 63.6% have a central air conditioner .

54.1% of apartment suites have window air conditioners.

The average age of a central air conditioner in a single detached dwelling is 12.5 years.

Hot Water Tanks

45.7% of all residential customers use electric hot water tanks (201,250 units) and 41.3% use natural gas hot water tanks (181,553 units).

Electric hot water tanks are in 75.5% of dwellings constructed during the 2000s compared to in 43.6% of dwellings constructed during the 1990s.

21.8% of natural gas heat billed customers have an electric hot water tank.

Of the natural gas heat billed customers with a high efficiency furnace, 43.2% have an electric hot water tank.

The three most common water conservation measures undertaken are lower flow shower head installs (36.3%), low flush toilet installs (24.8%), and pipe wrap installs (16.1%). 41.4% have not undertaken any water conservation measures.

Major Appliances

The most common electric cooking appliance is the standard non-self-cleaning range (46.1%) followed by the self-cleaning range (37.2%).

95.6% of residential customers use microwave ovens.

Almost all customers (99.7%) have a refrigerator. The average age of a primary use refrigerator is 9.8 years. There are an estimated 83,428 residential customers (19.0%) with primary use refrigerators that are over 15 years old.

42.6% of residential customers have a second refrigerator. The average age of a secondary use refrigerator is 16.4 years. There are an estimated 90,454 residential customers (20.6%) with secondary use refrigerators that are over 15 years old.

78.6% of residential customers have a freezer. The average age of a primary use freezer is 15.4 years. There are an estimated 150,171 residential customers (34.2%) with primary use freezers that are over 15 years old.

16.6% of residential customers have a second freezer. The average age of a secondary use freezer is 16.7 years. There are an estimated 36,884 residential customers (8.4%) with secondary use freezers that are over 15 years old.

66.2% of residential customers have an automatic dishwasher. The average age of an automatic dishwasher is 8.0 years. There are an estimated 36,640 residential customers (8.8%) with automatic dishwashers that are over 15 years old.

64.0% of residential customers have a top load clothes washer and 23.1% have a front load washer. The average age of clothes washer is 9.3 years. There are an estimated 71,573 residential customers (16.3%) with clothes washers that are over 15 years old.

83.3% of residential customers have an electric clothes dryer and 3.8% have a natural gas clothes dryer. The average age of clothes dryer is 10.0 years. There are an estimated 80,355 residential customers (18.3%) with clothes washers that are over 15 years old.

Electronics and Lighting

97.8% of residential customers have a television. The most popular type of television is the cathode ray tube (CRT) (50.2%) followed by the liquid crystal display (LCD) (28.5%) type. The average screen size of a primary use television is 34 inches and the average age is 6.1 years. The average daily hours of viewing is 5.7 hours.

68.5% of residential customers have a second television. The most popular type of secondary television is the CRT (48.1%) followed by the LCD (14.0%) type. The average screen size of a secondary use television is 26 inches and the average age is 7.8 years. The average daily hours of viewing is 3.2 hours.

20.7% of residential customers have no cable or satellite service; 38.2% have cable TV; 25.3% have satellite service; and 15.7% have telephone company service.

20.9% of residential customers have no computer. 30.9% of customers have more than one computer.

72.4% of residential customers have home internet service. In no natural gas available areas, 63.1% have home internet while in Winnipeg City that percent climbs to 77.1%.

Only 38.9% of the under $25,000 household income group has home internet compared to 91.9% of the $100,000 plus household income group.

66.9% of residential customers use CFL bulbs in their homes; 81.3% use incandescent bulbs; 10.4% use LED lights; 27.7% use halogen bulbs; and 61.6% use tube fluorescent bulbs.

52.2% of all residential customers hang outdoor seasonal lights. 28.5% hang LED lights; 13.9% hang incandescent lights; and 9.8% hang both LED and incandescent seasonal lights.

Hot Tubs, Saunas, and Swimming Pools

10.3% of all customers have their own hot tubs, 2.9% have their own outdoor swimming pool; and 1.7% have their own saunas.

Block Heaters, Timers, and Interior Car Warmers

71.7% of all residential customers plug in at least one block heater during the winter months. When the temperature warrants it, 46.7% plug in, compared to 11.8% who plug in on a daily basis.

24.0% use block heater timers and only 6.7% use interior car warmers.

Services and Program Participation

The most popular bill payment method is by online banking (32.5%) followed by pre-authorized payment (29.4%). There are 85,185 (19.4%) residential customers who prefer to pay in-person either at a payment agency or at a Manitoba Hydro District office. Of the lowest income group, 34.1% or 24,267 customers prefer in-person payments.

Only 6.2% of customers are aware of MYBILL. 8.4% or 36,884 customers indicated an interest of potentially signing up for the service. This is in addition to the 22,394 customers that were already signed up at the time of the survey.

23.2% or 101,870 residential customers indicated visiting the Manitoba Hydro corporate website at least once during the last twelve months.

98,797 (22.5%) customers always read the monthly Energy Matters bill insert; 255,114 (58.1%) customers sometimes read the monthly Energy Matters bill insert; and 85,185 (19.4%) customers never read the monthly Energy Matters bill insert.

19.9% or 87,380 customers indicated participating in a Power Smart program as a result of reading a special Power Smart bill, flyer, or newspaper insert.

64.7% or 284,095 residential customers have never participated in any residential program offered by Manitoba Hydro. The three most popular residential programs are the CFL program (12.8%), LED seasonal lights program (8.2%), and the natural gas high efficiency furnace rebate program (7.7%).

19.5% or 85,624 customers have participated in only one residential program, 9.4% or 41,275 participated in two programs, and 6.4% or 28,102 have participated in three or more programs.

Residential Demographic Characteristics

There is an average of 2.4 people per household in residential dwellings. 23.1% are one person households and 46.2% are two person households.

52.7% of apartment suites customers are one person households.

As household income increases, people per household increases. For the lowest income group of under $25,000, there are 1.6 people per household where 58.8% are one person households.

For the highest income group of $100,000 plus, there are 3.1 people per household where only 3.4% are one person households. 40.2% of the highest income group have four or more people per household compared to 18.5% of customers overall.

The average age of a residential customer is 49.7 years.

As household income increases, average age decreases. For the lowest income group of under $25,000 the average age is 61.7 years where 55.2% are 65 years and older. For the highest income group of $100,000 plus, the average age is 40.9 years where only 4.5% of the people in that group are 65 years and older.

The average annual household income of residential customers is $67,063.

Winnipeg City household income is $72,170.

Apartment suite customer household income is $45,652.

As dwelling age increases so does the annual household income. Customers in dwellings built in the 2000s have an average household income of $85,992. Customers in dwellings built prior to 1950 have an average household income of $56,990.

Natural gas heat billed customers have an average annual household income of $76,739 compared to electric heat billed customers with an average household income of $58,138.

University education is related to household income. 55.9% of customers representing $100,000 plus household have a university education compared to 10.6% of the under $25,000 group.

The average annual residential Manitoba Hydro bill, including all service charges and taxes, is $1,882.

The average annual utility bill for apartment suite customers is $521 compared to $2,137 for a single detached customer.

The average annual bill for natural gas heat billed customers is $2,185 compared to $1,825 for electric heat billed customers. The electric heat bill average is lower due to a higher proportion of apartment suites in the electric heat billed group.

As household income increases, the average annual bill increases. For the lowest income group of under $25,000 the average annual bill is $1,434. For the highest income group of $100,000 plus, the average bill is $2,386.

The average energy burden is 4.1% for all residential customers.

Energy burden is higher outside Winnipeg. Winnipeg City customers experience an energy burden of 3.5% compared to about 4.7% outside the capital city.

Apartment suite customers have the lowest energy burden of 1.6%.

The highest average energy burden of 8.2% is experienced by the under $25,000 households. As expected, energy burden decreases as household income increases. For households earning $100,000 plus, the energy burden is 1.7%.

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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's residential customers. In November 2009, the 2009 Residential Energy Use Survey was mailed to 19,422 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 certain pieces of demographic information as they relate 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. The survey results are also used to meet the information needs of other areas throughout the corporation regarding the residential 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.

2.01 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.

2.02 Sample Selection

As of September 23, 2009, there were a total of 439,096 premises under the residential basic rate class that excludes seasonal and diesel customers. 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.

The 439,096 dwellings in November, 2009 correspond to 442,459 total Residential Basic billing customers that existed during that month. The difference of 3,363 is from 2,309 dwellings with two or more Residential Basic services and from 1,054 newly constructed and unoccupied dwellings that were added to the billing system between the time the survey was sampled and the time the survey was answered.

2.03 Survey Returns

In total 19,246 residential customers were reached and 4,780 surveys were completed and returned. There were 176 surveys returned unopened to Manitoba Hydro from customers who either had just moved or has just passed away. A survey response rate of 24.8% was achieved. The overall survey results are accurate within 1.5%, 19 times out of 20.

2.04 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 electric population base of 439,096 and the natural gas population base of 239,455, as recorded in Banner, Manitoba Hydro's billing system. Weighting criteria used was as follows.

Billing Class:
1. All-Electric with no natural gas service
2. All-Electric with natural gas service
3. Standard with natural gas service
4. Standard with no natural gas service

Dwelling Type:
1. Single Detached
2. Individual Multi Attached
3. Shared Services Multi-Attached
4. Town/Rowhouse)
5. Mobile home
6. Apartment Suite

Area:
1. Winnipeg City (Natural Gas Available)
2. Manitoba Hydro Natural Gas Available (excluding Winnipeg City)
3. Manitoba Hydro No Natural Gas Available (Northern Area included)

2.05 Survey Results

The survey results provide up-to-date profiles of Manitoba Hydro's residential customers. The discussion of survey results follows the order of the sections in the questionnaire booklet (Appendix). All results in this report are summarized in table form and are cross-tabulated by five major groupings. These groups are:

1. **Area** - There are three service areas especially defined for the analysis of results. The areas are Winnipeg City, Manitoba Hydro Natural Gas Available, and Manitoba Hydro No Gas Available (Northern Manitoba and Saskatchewan served areas included).

2. **Dwelling Type -** These are the three key residential dwelling types used for load forecasting and marketing purposes: single detached dwellings, multi-family attached (duplexes, town and rowhouses); and individually metered apartment suites. Banner billing data was used to fill in any missing responses pertaining to dwelling type.

3. **Vintage** - This refers to the decade when the dwelling was built. Available tax assessment data was used to verify responses and to fill in any missing responses pertaining to year built.

4. **Heating Fuel** - The heating fuel categories are Electric Heat Billed, Natural Gas Heat Billed and Other. "Other" includes fuels such as propane, oil, coal and wood, as well as customers that do not pay directly for any heating fuel consumption.

The Banner billing system classifies residential customers as All-Electric and Standard based on the application of the Provincial Reduced Revenue Tax Code. To be classified as All-Electric, the customer must reside in a dwelling unit where the permanently installed electric heating system is capable of heating 80% or more of the dwelling space. All other customers are classified as Standard.

The Heating Fuel category in the report is based on customer response. A detailed analysis, using usage per degree day heating was performed to verify the answers for those respondents where there was a discrepancy between reported heating fuel and Banner billing classification. This information will be used to assist in the maintenance of the Banner billing classification. The chart below summarizes the weighted responses of survey respondent heating fuel versus the billing system classification.

Heating Class Comparison (Heating Fuel vs Billing Classification)

	Banner Billing Classification				
Heating Fuel	**All-Electric No Gas Service**	**All-Electric With Gas Service**	**Standard With Gas Service**	**Standard No Gas Service**	**Total**
Electric Heat Billed	**132,625**	**4,193**	**726**	**17,399**	**154,943**
Gas Heat Billed	**-**	**2,514**	**232,022**	**-**	**234,536**
Other - Gas Heat No Bill				**31,864**	**31,864**
Other - Electric Heat No Bill				**5,808**	**5,808**
Other -Propane, Oil, Coal, Wood	**-**	**-**	**-**	**11,945**	**11,945**
Total	**132,625**	**6,707**	**232,748**	**67,016**	**439,096**

When the survey sample was drawn, the Banner Billing System identified 139,332 All-Electric customers (132,625 with no natural gas service plus 6,707 with a natural gas service). In addition, Banner identified 239,455 customers with a natural gas service (232,748 Standard customers plus 6,707 All-Electric customers). There are 154,943 customers estimated to heat with electricity and are billed directly for that use on their Manitoba Hydro bill (Electric Heat Billed). According to the survey, 18,125 electric heat customers are classed as Standard on the Banner Billing system. There are an estimated 2,514 natural gas heat customers that are classed as All-Electric. There are 234,536 customers that heat with natural gas and are billed directly for that heat on their Manitoba Hydro bill (Natural Gas Heat Billed).

There are 49,617 customers that are grouped under Other heating fuel. Of those, 31,864 are customers that heat with natural gas, but their consumption is not recorded on their utility bill.

These customers reside primarily in apartment suites where the heating source is derived from a common service. It is the landlord or owner of the apartment building that pays Manitoba Hydro for that consumption. That consumption is not billed as Residential but rather is billed as General Service. Similarly for the same reasons, there are 5,808 that heat with electricity, but their consumption is not recorded on their utility bill. The remaining 11,945 customers heat with sources such as propane, oil, coal and wood. The electric consumption recorded on these 49,617 customers' utility bills is for miscellaneous electric use for appliances, lights and electronics. These customers are classed as Standard under the Banner billing system.

5. **Annual Household Income** - Based on how respondents answered the household income question, their answers were grouped into five categories of either under $25,000, $25-49,999, $50-74,999, $75-99,999 or $100,000 plus.

Customers were also classified using Statistics Canada's Low Income Cut-Off (LICO) definitions. The chart below was used to classify customers into the Low Income Cut-Off Plus 25% (LICO-125) and Non-LICO-125 groups.

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	**$29,178**	**$33,216**	**$36,300**	**$42,415**
4 Persons	**$35,451**	**$40,330**	**$44,075**	**$51,496**
5 Persons	**$40,206**	**$45,742**	**$49,989**	**$58,407**
6 Persons	**$45,348**	**$51,588**	**$56,380**	**$65,872**
7 or more Persons	**$50,487**	**$57,437**	**$62,771**	**$73,340**

Low Income Cut-Off (LICO) Sector Report

In May 2010, a 76 page Low Income Cut-Off (LICO) Sector report was produced based on preliminary results of the 2009 Residential Energy use Survey. Select variables were analyzed to provide an initial overview of the LICO customer base. Results of the preliminary report are still statistically valid, although the results of the LICO report differ slightly to the results presented in this final report. The differences are due to additional late survey returns that were incorporated into the final report analysis after May 2010. Weightings were modified to include matches to natural gas customers. Also, thorough verification of dwelling type, year of construction, and heating type resulted in the small changes in this report compared to the Low Income Cut-Off (LICO) Sector report.

3.0 RESIDENTIAL DWELLINGS

3.01 Residential Area Customers

Table # 3.01 shows the distribution of residential customers within the Manitoba Hydro provincial service territory. Overall, 53.8% of Manitoba Hydro's residential customers are located within the perimeter of the City of Winnipeg. Manitoba Hydro Natural Gas available areas account for 28.0% of residential customers while Manitoba Hydro No Natural Gas Available areas account for 18.3% of the residential customer base.

The vast majority of multi-family dwellings are located within the City of Winnipeg. Over 83% of individually metered apartment suites are located in Winnipeg City and 79.8% of all multi-attached dwellings, such as duplexes and town/rowhouses, are also in the capital city.

In recent decades, new residential dwelling construction has occurred more in Gas Available areas than in the City of Winnipeg. The Gas Available areas include bedroom communities outside the City of Winnipeg perimeter such as Bird's Hill, East St Paul, West St Paul, LaSalle, St Norbert, Headingley and Dugald as well as major centers such Steinbach, Winkler and Brandon. Of all the residential dwellings built either in the 2000s or 1990s, over 42% are located in Gas Available areas. At the other end of the residential vintage scale, approximately 64% of the dwellings built prior to 1960 are located in Winnipeg.

Three quarters of natural gas heat billed customers reside in the City of Winnipeg compared to 83.1% of electric heat billed customers which reside in outside Winnipeg in either Gas Available (37.1%) or No Gas Available (46.0%) areas. Many other heating fuel customers (69.3%) reside in Winnipeg. This reason for this high number is that the other heating fuel category is mainly composed of apartment suite customers that do not pay directly for their space heat. Heat is either included in rent or a common service fee. Their energy bill consists of miscellaneous electric uses such as lighting, appliances, and electronics. As mentioned, apartment suite customers are mainly located in Winnipeg.

Low-income Cut-Off 125% (LICO-125) households tend to reside in Winnipeg City. Almost 60% of LICO-125 customers are found in Winnipeg. However, only 46.8% of customers earning under $25,000 per year reside in Winnipeg. The discrepancy between LICO-125 and the under $25,000 group is that some single-person household customers in the under $25,000 group do not qualify as LICO-125. High-income households also tend to be located in the Winnipeg. Over 62% of households earning $100,000 plus per year take up residence in Winnipeg.

Table # 3.01
Residential Area Customers
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Area Customers		
		Winnipeg City	MH Gas	MH No Gas
OVERALL:	439,096	53.8%	28.0%	18.3%
AREA:				
Winnipeg City	236,093	100.0%	0.0%	0.0%
Manitoba Hydro Gas	122,844	0.0%	100.0%	0.0%
Manitoba Hydro No Gas	80,159	0.0%	0.0%	100.0%
DWELLING TYPE:				
Single Detached	349,899	46.6%	31.5%	21.9%
Multi Attached	33,324	79.8%	14.8%	5.5%
Apartment Suite	55,873	83.2%	13.7%	3.1%
VINTAGE:				
2000-2009	40,581	40.3%	42.2%	17.5%
1990-1999	37,153	34.4%	43.8%	21.8%
1980-1989	67,289	55.0%	26.5%	18.5%
1970-1979	83,775	51.6%	29.9%	18.4%
1960-1969	65,866	51.8%	27.2%	21.0%
1950-1959	56,453	64.8%	21.1%	14.2%
Pre 1950	87,980	63.7%	19.0%	17.3%
HEATING FUEL:				
Electric Heat Billed	154,943	16.9%	37.1%	46.0%
Gas Heat Billed	234,536	74.9%	25.1%	0.0%
Other	49,617	69.3%	13.0%	17.8%
ANNUAL HOUSEHOLD INCOME:				
LICO 125	105,086	59.5%	24.6%	15.9%
NON-LICO 125	334,010	52.0%	29.0%	19.0%
Under $25,000	71,163	46.8%	30.9%	22.3%
$25-$49,999	128,882	49.1%	31.3%	19.6%
$50-$74,999	102,841	56.1%	26.6%	17.3%
$75-$99,999	64,060	57.7%	26.4%	15.9%
$100,000 and Over	72,150	62.2%	22.5%	15.3%

3.02 Residential Dwelling Types

Table # 3.02 shows the distribution of residential dwelling types within the Manitoba Hydro provincial service territory. The majority of Manitoba Hydro residential customers reside in single detached dwellings (79.7%) followed by apartment suites (12.7%).

Almost 20% of residential customers in Winnipeg City live in apartment suites. Single detached homes make up the vast majority of dwellings in No Gas Available (95.6%) and Gas Available (89.8%) areas.

By examining dwelling types by vintage, it is observed that during the 1980s, 19.2% of dwellings constructed during that decade were apartment suites, compared to 12.7% overall. Most recently, apartment suite construction has increased making up 15.5% of dwellings constructed during the 2000s. During the 1970s, multi-attached dwellings, consisting of duplexes and town-/rowhouses, accounted for 15.9% of construction during that decade. Multi-attached dwellings make up 7.6% of residential dwellings overall.

Over 90% of natural gas heat billed customers reside in single detached dwellings compared to 12.9% of electric heat billed customers who reside in apartment suites. Other heating fuel customers (67.5%) reside in apartment suites. The other heating fuel category is mainly composed of apartment suite customers that do not pay directly for their space heat. Heat is either included in rent or a common service fee. Their energy bill consists of miscellaneous electric uses such as lighting, appliances, and electronics. Other heating fuel customers also include those heating with propane, wood or coal. Their energy bills, as the case in other heating fuel apartment suites, consist of miscellaneous electric uses such as lighting, appliances, and electronics.

Low-income households are more likely to reside in apartment suites. Almost 22% of LICO-125 customers live in apartment suites compared to 83.3% of NON-LICO-125 customers who reside in single detached dwellings. Similarly, 23.3% of households earning under $25,000 live in apartment suites compared to 92.5% of households earning $100,000 or more live in single detached units.

Table # 3.02
Residential Dwelling Types
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	% Weighted Frequency of Dwelling Types			
	# of Customers	Single Detached	Multi Attached	Apartment Suite
OVERALL:	439,096	79.7%	7.6%	12.7%
AREA:				
Winnipeg City	236,093	69.1%	11.3%	19.7%
Manitoba Hydro Gas	122,844	89.8%	4.0%	6.2%
Manitoba Hydro No Gas	80,159	95.6%	2.3%	2.2%
DWELLING TYPE:				
Single Detached	349,899	100.0%	0.0%	0.0%
Multi Attached	33,324	0.0%	100.0%	0.0%
Apartment Suite	55,873	0.0%	0.0%	100.0%
VINTAGE:				
2000-2009	40,581	77.4%	7.1%	15.5%
1990-1999	37,153	82.9%	6.5%	10.7%
1980-1989	67,289	75.5%	5.3%	19.2%
1970-1979	83,775	75.3%	15.9%	8.8%
1960-1969	65,866	80.9%	5.5%	13.6%
1950-1959	56,453	84.0%	4.2%	11.9%
Pre 1950	87,980	83.1%	5.8%	11.1%
HEATING FUEL:				
Electric Heat Billed	154,943	81.7%	5.5%	12.9%
Gas Heat Billed	234,536	90.5%	8.5%	1.1%
Other	49,617	22.5%	10.0%	67.5%
ANNUAL HOUSEHOLD INCOME:				
LICO 125	105,086	68.2%	9.9%	21.9%
NON-LICO 125	334,010	83.3%	6.9%	9.9%
Under $25,000	71,163	68.2%	8.5%	23.3%
$25-$49,999	128,882	75.8%	7.9%	16.3%
$50-$74,999	102,841	79.6%	9.3%	11.1%
$75-$99,999	64,060	86.0%	6.6%	7.4%
$100,000 and Over	72,150	92.5%	4.6%	3.0%

3.03 Residential Dwelling Ownership

Table # 3.03 shows the distribution of residential dwelling ownership within the Manitoba Hydro provincial service territory. Overall, the vast majority (86.6%) of Manitoba Hydro residential customers own their own home while 13.4% indicated they rent.

When comparing specific areas, residential customers in Winnipeg City are more likely to rent their dwellings (17.9%). This coincides with the finding in Table # 3.02 where 19.7% residential customers in Winnipeg live in apartment suites and apartment suites tend to be rental units.

Almost 70% of customers living in apartment suites rent their dwellings whereas single detached homes (96.9%) tend to be owned by their occupants. Multi-attached dwellings (27.1%) are also more likely to be rental properties.

Electric heat billed (14.1%) customers are more likely to be in a rental situation compared to natural gas heat billed customers (4.0%). Electric heat billed customers are more likely to be apartment suites (12.9%) compared to natural gas heat billed (1.1%) customers (Table # 3.02).

Low-income households are more likely to be in a rental situation. LICO-125 customers (24.6%) rent compared to 9.9% of NON-LICO-125 customers who rent their homes. Over 26% of households earning less than $25,000 per year rent compared to only 3.0% of households earning $100,000 or more who rent their home. This finding coincides with the dwelling type these income groups reside in. Over 23% of households earning less than $25,000 per year are in apartment suites compared to 92.5% of households earning $100,000 or more who live in single detached units (Table # 3.02).

Table # 3.03
Residential Dwelling Ownership
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Dwelling Ownership: Own	Rent
OVERALL:	439,096	86.6%	13.4%
AREA:			
Winnipeg City	236,093	82.1%	17.9%
Manitoba Hydro Gas	122,844	90.7%	9.3%
Manitoba Hydro No Gas	80,159	93.6%	6.5%
DWELLING TYPE:			
Single Detached	349,899	96.9%	3.1%
Multi Attached	33,324	72.9%	27.1%
Apartment Suite	55,873	30.3%	69.7%
VINTAGE:			
2000-2009	40,581	87.6%	12.4%
1990-1999	37,153	92.5%	7.5%
1980-1989	67,289	85.7%	14.3%
1970-1979	83,775	88.2%	11.8%
1960-1969	65,866	85.2%	14.8%
1950-1959	56,453	84.2%	15.8%
Pre 1950	87,980	85.2%	14.8%
HEATING FUEL:			
Electric Heat Billed	154,943	85.9%	14.1%
Gas Heat Billed	234,536	96.0%	4.0%
Other	49,617	44.3%	55.7%
ANNUAL HOUSEHOLD INCOME:			
LICO 125	105,086	75.4%	24.6%
NON-LICO 125	334,010	90.1%	9.9%
Under $25,000	71,163	73.8%	26.2%
$25-$49,999	128,882	82.3%	17.7%
$50-$74,999	102,841	89.4%	10.6%
$75-$99,999	64,060	93.0%	7.0%
$100,000 and Over	72,150	97.0%	3.0%

3.04 Residential Dwelling Occupancy

Table # 3.04 shows the distribution of residential dwelling occupancy within the Manitoba Hydro provincial service territory. Overall, the vast majority (96.8%) of Manitoba Hydro residential customers reside in their home on a year round basis.

Comparing specific areas and dwelling types, residential customers from No Gas Available areas (6.6%) and apartment suites (5.3%) indicate they are more likely to reside only part of the year.

Lower income households of under $25,000 (4.1%) are more likely to reside only part of the year compared to higher income households. Lower income households are more likely to be senior or retired households. Retired persons are more likely to travel for extended periods of time. Age and income are explored in greater detail in Section 13.0.

Table # 3.04
Residential Dwelling Occupancy
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Dwelling Occupancy: All Year	% Weighted Frequency of Dwelling Occupancy: Part of Year
OVERALL:	439,096	96.8%	3.2%
AREA:			
Winnipeg City	236,093	97.8%	2.2%
Manitoba Hydro Gas	122,844	97.2%	2.8%
Manitoba Hydro No Gas	80,159	93.4%	6.6%
DWELLING TYPE:			
Single Detached	349,899	97.2%	2.8%
Multi Attached	33,324	96.7%	3.3%
Apartment Suite	55,873	94.7%	5.3%
VINTAGE:			
2000-2009	40,581	94.2%	5.9%
1990-1999	37,153	96.4%	3.6%
1980-1989	67,289	96.2%	3.8%
1970-1979	83,775	97.3%	2.7%
1960-1969	65,866	97.5%	2.6%
1950-1959	56,453	98.3%	1.7%
Pre 1950	87,980	96.9%	3.1%
HEATING FUEL:			
Electric Heat Billed	154,943	95.0%	5.0%
Gas Heat Billed	234,536	98.3%	1.7%
Other	49,617	95.4%	4.6%
ANNUAL HOUSEHOLD INCOME:			
LICO 125	105,086	96.6%	3.4%
NON-LICO 125	334,010	96.9%	3.1%
Under $25,000	71,163	95.9%	4.1%
$25-$49,999	128,882	97.2%	2.8%
$50-$74,999	102,841	97.0%	3.0%
$75-$99,999	64,060	96.8%	3.2%
$100,000 and Over	72,150	96.8%	3.2%

3.05 Residential Dwelling Storey Types

Table # 3.05 shows the distribution of residential dwelling stories within the Manitoba Hydro provincial service territory. Overall, the majority (52.8%) of Manitoba Hydro residential customers reside in single story homes.

When comparing specific areas, two storey dwellings (19.3%) and suites (21.5%) are more common in Winnipeg City. Note Table # 3.02 shows 19.7% of residential customers in Winnipeg live in "apartment" suites while Table # 3.05 shows 21.5% residing in suite stories. The reason for this difference is that suites defined in this section include dwellings that were originally single detached and have been duplexed into upper or lower levels into suites. By dwelling type, 16.9% of multi-attached dwellings have individually metered suites.

By examining dwelling stories by vintage, it is observed that during the 1950s, 68.7% of dwellings constructed during that decade were single storey dwellings. Dwellings built prior to 1950 were most likely to be one and one half stories (28.5%), compared to 8.7% overall, or two stories (24.6%), compared to 15.7% overall.

The other heating fuel category is mainly composed of apartment suite customers (73.6%). As described in Table # 3.02, most customers in this category are apartment suites that do not pay directly for their space heat. Heat is either included in rent or a common service fee. Their energy bill consists of miscellaneous electric uses such as lighting, appliances, and electronics. Other heating fuel customers also include those heating with propane, wood or coal. Their energy bills, as the case in other heating fuel apartment suites, consist of miscellaneous electric uses such as lighting, appliances, and electronics.

One quarter of the lowest income customers reside in suites compared to only 3.8% of households earning $100,000 or more.

Table # 3.05
Residential Dwelling Storey Types
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Dwelling Storey Types

	# of Customers	1 Storey	1&1/2	2 Storey	Split	Suite
OVERALL:	439,096	52.8%	8.7%	15.7%	8.8%	14.0%
AREA:						
Winnipeg City	236,093	42.4%	7.8%	19.3%	9.1%	21.5%
Manitoba Hydro Gas	122,844	62.8%	8.8%	11.1%	10.4%	6.9%
Manitoba Hydro No Gas	80,159	68.1%	11.4%	12.0%	5.6%	2.9%
DWELLING TYPE:						
Single Detached	349,899	63.5%	10.7%	15.5%	10.3%	0.0%
Multi Attached	33,324	28.6%	3.1%	43.4%	8.1%	16.9%
Apartment Suite	55,873	0.0%	0.0%	0.0%	0.0%	100.0%
VINTAGE:						
2000-2009	40,581	53.0%	3.3%	16.1%	12.1%	15.6%
1990-1999	37,153	58.5%	5.4%	17.6%	7.4%	11.2%
1980-1989	67,289	42.6%	3.3%	19.0%	15.5%	19.7%
1970-1979	83,775	60.5%	1.9%	13.5%	14.4%	9.7%
1960-1969	65,866	64.3%	2.8%	8.8%	10.1%	14.0%
1950-1959	56,453	68.7%	7.7%	7.4%	3.1%	13.0%
Pre 1950	87,980	31.8%	28.5%	24.6%	0.2%	14.9%
HEATING FUEL:						
Electric Heat Billed	154,943	58.5%	8.7%	11.8%	7.3%	13.7%
Gas Heat Billed	234,536	57.2%	9.5%	20.2%	11.5%	1.6%
Other	49,617	13.8%	5.2%	6.5%	0.9%	73.6%
ANNUAL HOUSEHOLD INCOME:						
LICO 125	105,086	53.2%	7.8%	9.5%	5.6%	24.0%
NON-LICO 125	334,010	52.6%	9.1%	17.6%	9.8%	10.9%
Under $25,000	71,163	54.6%	8.3%	8.5%	3.4%	25.2%
$25-$49,999	128,882	55.8%	8.6%	11.2%	7.0%	17.4%
$50-$74,999	102,841	50.7%	9.5%	17.6%	9.6%	12.6%
$75-$99,999	64,060	53.2%	8.5%	18.6%	11.3%	8.4%
$100,000 and Over	72,150	48.1%	8.6%	25.4%	14.1%	3.8%

3.06 Number of Common Walls to Other Dwellings

Table # 3.06 shows the distribution of residential dwellings with attached walls to other dwellings structures within the Manitoba Hydro provincial service territory. Overall, the vast majority (82.1%) of Manitoba Hydro residential customers do not have attached walls to other dwellings.

When comparing specific areas, 27.6% of residential customers in Winnipeg indicate being attached by at least one or more common walls. This coincides with the finding that almost 20% of residential customers in Winnipeg live in apartment suites and apartment suites are attached by common walls.

As expected customers in multi-attached (80.1%) and apartments suites (92.6%) indicate their dwelling has at least one wall attached to another dwelling.

Since the other heating fuel category is mainly composed of apartment suite customers who do not pay directly for their space heat, 63.5% have common walls with other dwellings.

Almost 28% of low-income households live in dwellings with common walls, compared to only 5.6% of customers in the $100,000 plus income bracket.

Table # 3.06
Number of Common Walls to Other Dwellings
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Common Walls: None	One	Two	Three
OVERALL:	439,096	82.1%	7.3%	7.5%	3.1%
AREA:					
Winnipeg City	236,093	72.4%	11.3%	11.3%	5.0%
Manitoba Hydro Gas	122,844	91.2%	3.7%	4.0%	1.1%
Manitoba Hydro No Gas	80,159	97.1%	1.2%	1.3%	0.4%
DWELLING TYPE:					
Single Detached	349,899	100.0%	0.0%	0.0%	0.0%
Multi Attached	33,324	19.9%	54.8%	21.1%	4.2%
Apartment Suite	55,873	7.4%	24.9%	46.0%	21.6%
VINTAGE:					
2000-2009	40,581	78.7%	7.5%	9.3%	4.5%
1990-1999	37,153	84.0%	6.7%	5.7%	3.6%
1980-1989	67,289	76.3%	5.9%	12.3%	5.5%
1970-1979	83,775	76.2%	13.2%	7.7%	3.0%
1960-1969	65,866	83.2%	6.0%	7.8%	3.1%
1950-1959	56,453	86.8%	4.1%	7.8%	1.3%
Pre 1950	87,980	89.3%	6.1%	2.9%	1.6%
HEATING FUEL:					
Electric Heat Billed	154,943	82.7%	5.2%	7.6%	4.5%
Gas Heat Billed	234,536	91.4%	6.3%	2.1%	0.2%
Other	49,617	36.5%	18.7%	32.6%	12.3%
ANNUAL HOUSEHOLD INCOME:					
LICO 125	105,086	72.2%	11.0%	12.5%	4.4%
NON-LICO 125	334,010	85.3%	6.2%	5.9%	2.7%
Under $25,000	71,163	72.3%	9.6%	13.3%	4.9%
$25-$49,999	128,882	77.9%	8.7%	9.7%	3.8%
$50-$74,999	102,841	82.1%	8.7%	5.9%	3.3%
$75-$99,999	64,060	88.0%	5.4%	4.6%	2.0%
$100,000 and Over	72,150	94.4%	2.4%	2.5%	0.7%

3.07 Decade Residence Built

Table # 3.07 shows the distribution of the decades when residential dwellings were built within the Manitoba Hydro provincial service territory. Overall, the average residential dwelling was built in 1967. The most common decade for construction is the 1970s.

Winnipeg has the oldest dwellings with an average year built of 1963. New residential building construction has occurred mainly in Gas Available areas outside Winnipeg. Dwellings built in the 2000s make up 13.9% of the housing stock in Gas Available areas, compared to 9.2% overall. Gas available areas include the popular bedroom communities outside the City of Winnipeg perimeter such as Bird's Hill, East St Paul, West St Paul, LaSalle, St Norbert, Headingley and Dugald.

Apartment suites, on average, have the highest percent of units built in the 2000s at 11.2% compared to 9.2% overall. The most popular decade for apartment suite construction was the 1980s when 23.1% of all individually apartment suites were constructed. Over 40% of multi-attached dwellings were built in the 1970s.

On average, electric heat billed dwellings are eight years younger than natural gas heat billed dwellings. Almost 14% of electric heat billed dwellings were constructed in the 2000s.

Low-income households tend to reside in older structures compared to households in the upper income bracket. The average year built for a dwelling occupied by an under $25,000 household is 1960 compared to 1974 for a $100,000 plus household. As household income increases, dwelling age decreases. Of the $100,000 plus households, 16.2% reside in dwellings built in the 2000s compared to only 5.3% of households earning under $25,000. Almost 45% of households earning under $25,000 reside in dwellings built prior to 1960 compared to 33% of the residential population, overall.

Table # 3.07
Decade When Dwelling Was Built
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	Average Year	% Weighted Frequency of Decade When Dwelling Was Built: 2000's	1990's	1980's	1970's	1960's	1950's	Pre 1950
OVERALL:	439,096	1967	9.2%	8.5%	15.3%	19.1%	15.0%	12.9%	20.0%
AREA:									
Winnipeg City	236,093	1963	6.9%	5.4%	15.7%	18.3%	14.5%	15.5%	23.7%
Manitoba Hydro Gas	122,844	1973	13.9%	13.3%	14.5%	20.4%	14.6%	9.7%	13.6%
Manitoba Hydro No Gas	80,159	1968	8.9%	10.1%	15.5%	19.3%	17.3%	10.0%	19.0%
DWELLING TYPE:									
Single Detached	349,899	1966	9.0%	8.8%	14.5%	18.0%	15.2%	13.6%	20.9%
Multi Attached	33,324	1970	8.7%	7.2%	10.7%	40.1%	10.9%	7.1%	15.4%
Apartment Suite	55,873	1968	11.2%	7.1%	23.1%	13.2%	16.0%	12.0%	17.4%
VINTAGE:									
2000-2009	40,581	2005	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
1990-1999	37,153	1995	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
1980-1989	67,289	1985	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
1970-1979	83,775	1975	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
1960-1969	65,866	1964	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%
1950-1959	56,453	1955	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%
Pre 1950	87,980	1926	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
HEATING FUEL:									
Electric Heat Billed	154,943	1973	13.8%	9.7%	19.4%	22.6%	12.4%	8.0%	14.0%
Gas Heat Billed	234,536	1965	7.4%	8.8%	13.8%	18.6%	15.2%	15.0%	21.2%
Other	49,617	1954	3.5%	2.9%	9.6%	10.4%	22.2%	18.1%	33.4%
ANNUAL HOUSEHOLD INCOME:									
LICO 125	105,086	1961	5.5%	6.8%	10.1%	18.3%	16.3%	17.2%	25.8%
NON-LICO 125	334,010	1969	10.4%	9.0%	17.0%	19.3%	14.6%	11.5%	18.2%
Under $25,000	71,163	1960	5.3%	9.1%	8.9%	17.4%	14.7%	16.5%	28.1%
$25-$49,999	128,882	1965	7.1%	6.6%	13.9%	20.3%	15.8%	15.2%	21.0%
$50-$74,999	102,841	1967	8.4%	8.3%	16.4%	19.2%	15.6%	12.2%	20.1%
$75-$99,999	64,060	1970	11.4%	8.7%	19.1%	18.4%	15.2%	11.4%	15.8%
$100,000 and Over	72,150	1974	16.2%	11.1%	19.3%	19.1%	12.8%	7.3%	14.1%

3.08 Residential Dwelling Square Footage

Table # 3.08 shows the distribution of residential dwelling sizes within the Manitoba Hydro provincial service territory. Overall, the average residential dwelling is 1,254 square feet and 45.7% of dwellings are 1,100 square feet or less.

Winnipeg (18.1%) has the highest percent of dwellings that are 800 square feet or less. The reason for the higher percent of smaller dwellings in Winnipeg is due to the higher proportion of apartment suites that make up the dwelling mix in Winnipeg.

Apartment suites, on average, are the smallest residential dwellings. The average size of an apartment suite is 870 square feet. Of all the apartment suites in the province, 52.6% are 800 square feet or less. Single detached dwellings are the largest with an average size of 1,321 square feet.

Just over 53% of dwellings built in the 2000s are over 1,400 square feet compared to 26.9% of dwellings, overall. In the 2000s the average size is 1,508 square feet. Average square footage has been steadily increasing by each decade of construction.

Other heating fuel customers, mainly composed of apartment suite customers who do not pay directly for their space heat, reside in smaller dwellings with an average size of 982 square feet. Almost half of the other heating fuel customers reside in dwelling that are 800 square or less.

Low-income households tend to reside in smaller dwellings more so than do households in the upper income bracket. The average size of a dwelling occupied by an under $25,000 household is 1,024 square feet compared to 1,571 square feet for a $100,000 plus household. As household income increases, dwelling size increases. Almost 20% of $100,000 plus households reside in dwellings that over 2,000 square feet compared to only 2.1% of the under $25,000 group.

Table # 3.08
Residential Dwelling Square Footage
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	Average SqFt	% Weighted Frequency of Square Foot Ranges: 800 or less	801-1100	1101-1400	1401-1700	1701-2000	Over 2000
OVERALL:	439,096	1,254	15.4%	30.3%	27.4%	11.4%	7.7%	7.8%
AREA:								
Winnipeg City	236,093	1,199	18.1%	33.0%	24.8%	11.2%	6.1%	6.8%
Manitoba Hydro Gas	122,844	1,324	12.3%	27.4%	29.3%	11.8%	9.5%	9.7%
Manitoba Hydro No Gas	80,159	1,308	12.3%	26.8%	32.1%	11.4%	9.6%	7.9%
DWELLING TYPE:								
Single Detached	349,899	1,321	9.6%	29.8%	29.2%	13.1%	9.3%	9.0%
Multi Attached	33,324	1,188	14.2%	37.3%	30.7%	8.8%	2.9%	6.1%
Apartment Suite	55,873	870	52.6%	29.5%	14.0%	2.3%	0.4%	1.2%
VINTAGE:								
2000-2009	40,581	1,508	6.4%	15.6%	25.1%	22.4%	18.2%	12.5%
1990-1999	37,153	1,457	6.7%	15.7%	34.5%	16.2%	14.6%	12.4%
1980-1989	67,289	1,369	10.0%	24.9%	29.4%	15.2%	9.1%	11.4%
1970-1979	83,775	1,228	10.1%	37.0%	34.2%	7.6%	4.8%	6.4%
1960-1969	65,866	1,168	16.7%	36.1%	27.7%	10.2%	3.9%	5.5%
1950-1959	56,453	1,048	21.2%	45.9%	21.0%	6.9%	3.0%	2.0%
Pre 1950	87,980	1,183	27.8%	26.7%	21.4%	8.8%	7.6%	7.9%
HEATING FUEL:								
Electric Heat Billed	154,943	1,262	14.4%	28.6%	31.6%	10.7%	7.8%	7.0%
Gas Heat Billed	234,536	1,306	9.0%	32.4%	28.1%	13.0%	8.6%	9.1%
Other	49,617	982	48.8%	25.9%	11.0%	6.2%	3.6%	4.5%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	105,086	1,049	27.8%	36.3%	24.3%	5.9%	3.2%	2.6%
NON-LICO 125	334,010	1,318	11.5%	28.4%	28.3%	13.1%	9.1%	9.5%
Under $25,000	71,163	1,024	29.4%	36.8%	23.7%	5.5%	2.5%	2.1%
$25-$49,999	128,882	1,140	21.9%	34.6%	25.6%	8.9%	4.7%	4.5%
$50-$74,999	102,841	1,279	11.9%	29.9%	29.6%	13.2%	8.5%	7.1%
$75-$99,999	64,060	1,339	6.1%	30.0%	31.1%	13.8%	10.0%	9.0%
$100,000 and Over	72,150	1,571	3.3%	17.2%	27.9%	16.9%	15.2%	19.5%

3.09 Electric Panel Size

Table # 3.09 shows the distribution of residential panel sizes within the Manitoba Hydro provincial service territory. A significant percent of customers (39.3%) do not know the size of their electrical panel. If the 39.3% “don’t know” are removed from analysis, then 3.8% of dwellings have a 60 amp panel; 37.4% have a 100 amp panel; 52.7% have a 200 amp panel; 1.1% have a 400 amp panel; and 5.0% have other combination of panel sizes.

Many Winnipeg City customers (46.0%) do not know the size of their electrical panel. If the 46.0% “don’t know” are removed from analysis, then 5.9% of Winnipeg dwellings have a 60 amp panel; 52.4% have a 100 amp panel; 34.1% have a 200 amp panel; 0.7% have a 400 amp panel; and 5.0% have other combination of panel sizes.

If the 36.4% of electric heat billed customers who answered “don’t know” are removed from analysis, then 1.4% of electric heat billed dwellings have a 60 amp panel; 14.3% have a 100 amp panel; 79.7% have a 200 amp panel; 1.6% have a 400 amp panel; and 3.0% have other combination of panel sizes.

Table # 3.09
Electric Panel Sizes
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Electric Panel Sizes

	# of Customers	60 Amp	100 Amp	200 Amp	400 Amp	Other	Do Not Know
OVERALL:	439,096	2.3%	22.7%	32.0%	0.7%	3.0%	39.3%
AREA:							
Winnipeg City	236,093	3.2%	28.3%	18.4%	0.4%	3.6%	46.0%
Manitoba Hydro Gas	122,844	1.6%	18.5%	42.3%	1.0%	2.4%	34.4%
Manitoba Hydro No Gas	80,159	1.0%	12.9%	56.3%	0.9%	1.9%	27.1%
DWELLING TYPE:							
Single Detached	349,899	2.0%	24.9%	38.0%	0.8%	2.6%	31.8%
Multi Attached	33,324	2.6%	21.6%	15.4%	0.4%	3.2%	56.8%
Apartment Suite	55,873	4.7%	10.0%	4.2%	0.0%	5.1%	76.1%
VINTAGE:							
2000-2009	40,581	1.2%	15.3%	41.5%	1.6%	5.1%	35.4%
1990-1999	37,153	0.4%	16.6%	42.3%	0.6%	3.1%	37.0%
1980-1989	67,289	0.5%	17.8%	35.7%	0.5%	2.2%	43.4%
1970-1979	83,775	1.1%	19.2%	37.7%	1.4%	2.1%	38.5%
1960-1969	65,866	1.7%	28.5%	26.6%	0.3%	2.3%	40.6%
1950-1959	56,453	4.9%	31.2%	25.5%	0.1%	3.9%	34.4%
Pre 1950	87,980	5.2%	26.2%	23.1%	0.3%	3.2%	42.0%
HEATING FUEL:							
Electric Heat Billed	154,943	0.9%	9.1%	50.7%	1.0%	1.9%	36.4%
Gas Heat Billed	234,536	2.6%	33.0%	23.8%	0.5%	3.2%	36.9%
Other	49,617	5.9%	17.0%	12.2%	0.3%	5.2%	59.5%
ANNUAL HOUSEHOLD INCOME:							
LICO 125	105,086	4.3%	20.3%	18.8%	0.2%	3.5%	52.8%
NON-LICO 125	334,010	1.7%	23.5%	36.1%	0.8%	2.8%	35.1%
Under $25,000	71,163	4.1%	17.5%	19.8%	0.2%	3.3%	55.2%
$25-$49,999	128,882	3.6%	21.1%	29.7%	0.5%	3.2%	41.9%
$50-$74,999	102,841	1.5%	24.4%	34.3%	0.6%	3.2%	36.0%
$75-$99,999	64,060	0.9%	26.5%	36.0%	0.5%	2.5%	33.7%
$100,000 and Over	72,150	1.0%	25.2%	41.3%	1.6%	2.3%	28.7%

3.10 Residential Window Types

Table # 3.10 shows the distribution of residential window types within the Manitoba Hydro provincial service territory. Overall, the most popular window is the triple pane (32.9%) followed the dual pane (26.6%) and dual pane slider (26.3%). Note the percent values across each row exceed 100% since multiple responses were allowed for this question.

Apartment suites (40.4%) and multi-attached dwellings (33.4%) are most likely to have two pane sliders.

The more expensive gas-filled windows, dual low E and triple low E and triple argon are found in the newest homes. For dwellings built in the 2000s, 13.7% have dual low E, 15.1% have triple low E and 14.0% have triple argon windows. This compared to 9.1%, 11.0% and 9.0% respectively, overall. The least energy efficient windows, the single pane, are found mainly in the oldest homes. Single panes are in 30.5% of dwellings built prior to 1950 compared to 10.1% overall.

Low-income households are more likely to have single pane windows. Almost 17% of under $25,000 households have single pane windows compared to 6.3% of $100,000 plus households. As household income increases, so does the presence of the more expensive gas filled windows.

Table # 3.10
Residential Window Types
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Window Types

	# of Customers	Single Pane	Dual Slider	Dual Pane	Dual Low E	Dual Argon	Triple Pane	Triple Low E	Triple Argon
OVERALL:	439,096	10.1%	26.3%	26.6%	9.1%	7.2%	32.9%	11.0%	9.0%
AREA:									
Winnipeg City	236,093	11.5%	29.5%	26.5%	9.1%	6.8%	28.5%	10.9%	9.5%
Manitoba Hydro Gas	122,844	7.7%	22.1%	27.1%	9.7%	8.1%	38.0%	11.5%	8.2%
Manitoba Hydro No Ga	80,159	10.0%	23.4%	26.2%	8.5%	7.3%	37.8%	10.8%	8.7%
DWELLING TYPE:									
Single Detached	349,899	9.6%	23.4%	27.5%	9.8%	8.3%	37.3%	12.7%	10.6%
Multi Attached	33,324	9.0%	33.4%	26.2%	8.0%	6.5%	22.5%	8.4%	6.9%
Apartment Suite	55,873	14.2%	40.4%	21.5%	5.6%	0.9%	11.4%	2.0%	0.4%
VINTAGE:									
2000-2009	40,581	0.4%	10.8%	18.6%	13.7%	8.3%	27.4%	15.1%	14.0%
1990-1999	37,153	0.0%	7.9%	26.4%	7.7%	6.4%	44.3%	10.3%	8.8%
1980-1989	67,289	1.1%	19.3%	24.2%	6.0%	3.9%	43.7%	12.3%	9.3%
1970-1979	83,775	5.0%	34.1%	23.2%	8.2%	7.8%	32.3%	13.5%	8.7%
1960-1969	65,866	6.5%	26.9%	28.1%	10.9%	8.1%	32.4%	12.4%	11.7%
1950-1959	56,453	14.7%	34.0%	30.9%	6.8%	8.6%	32.7%	9.3%	7.2%
Pre 1950	87,980	30.5%	33.7%	31.6%	11.2%	7.6%	23.3%	6.3%	5.9%
HEATING FUEL:									
Electric Heat Billed	154,943	6.5%	25.6%	25.7%	8.4%	7.5%	34.6%	10.6%	8.2%
Gas Heat Billed	234,536	9.9%	23.9%	28.3%	10.0%	8.2%	35.8%	13.0%	10.7%
Other	49,617	22.5%	39.7%	21.6%	7.2%	1.6%	13.7%	3.1%	3.4%
ANNUAL HOUSEHOLD INCOME:									
LICO 125	105,086	15.2%	33.7%	25.7%	6.3%	5.9%	28.5%	4.6%	5.5%
NON-LICO 125	334,010	8.5%	23.9%	26.9%	34.2%	10.0%	13.1%	7.6%	10.1%
Under $25,000	71,163	16.8%	33.5%	24.1%	5.3%	4.2%	31.3%	2.3%	4.4%
$25-$49,999	128,882	10.1%	29.0%	27.9%	8.8%	7.3%	32.8%	8.8%	7.2%
$50-$74,999	102,841	9.8%	27.8%	27.8%	9.1%	8.3%	31.6%	11.5%	9.1%
$75-$99,999	64,060	7.7%	22.1%	25.1%	11.8%	6.5%	35.0%	16.4%	11.0%
$100,000 and Over	72,150	6.3%	15.8%	26.3%	11.2%	9.3%	34.3%	18.3%	14.9%

3.11 Overall Condition of Residential Windows

Table # 3.11 shows the distribution of overall condition of residential windows within the Manitoba Hydro provincial service territory. About one third rate their windows in "average" condition followed by 29.1% who rate the overall condition of their windows as "very good".

A large percent of apartment suite customers (21.5%) rate their windows as "poor" compared to 8.8% overall.

As expected, 72.7% of customers in newer homes built in the 2000s rate their windows as either "excellent" or "very good" compared to 47.0% overall. For dwellings built prior to 1950, 31.4% of those occupants rate their windows as either "fair" or "poor" compared to 19.4% overall.

Low-income households are more likely to rate their windows as "poor" compared to other income groups. About 12% of under $25,000 households rate their windows as "poor" compared to only 2.7% of $100,000 plus households. As household income increases, the condition ratings of windows improve. About 12% of under $25,000 households rate their windows as "excellent" compared to 24.8% of $100,000 plus households.

Table # 3.11
Overall Condition of Residential Windows
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Overall Window Conditions

	# of Customers	Excellent	Very Good	Average	Fair	Poor
OVERALL:	439,096	17.9%	29.1%	33.7%	10.6%	8.8%
AREA:						
Winnipeg City	236,093	18.5%	26.5%	33.8%	11.8%	9.3%
Manitoba Hydro Gas	122,844	17.7%	33.3%	33.6%	8.3%	7.1%
Manitoba Hydro No Gas	80,159	16.3%	30.4%	33.3%	10.4%	9.6%
DWELLING TYPE:						
Single Detached	349,899	19.2%	31.5%	33.6%	9.4%	6.3%
Multi Attached	33,324	15.9%	28.2%	29.5%	13.4%	13.0%
Apartment Suite	55,873	11.1%	14.9%	36.4%	16.0%	21.5%
VINTAGE:						
2000-2009	40,581	33.1%	39.6%	24.3%	1.9%	1.2%
1990-1999	37,153	17.9%	35.7%	37.7%	5.2%	3.5%
1980-1989	67,289	16.4%	31.2%	37.9%	7.6%	7.0%
1970-1979	83,775	18.3%	27.1%	31.7%	12.3%	10.5%
1960-1969	65,866	20.6%	31.5%	30.4%	10.7%	6.8%
1950-1959	56,453	15.1%	27.4%	35.7%	13.4%	8.5%
Pre 1950	87,980	11.4%	21.2%	36.1%	15.5%	15.9%
HEATING FUEL:						
Electric Heat Billed	154,943	16.7%	31.2%	33.1%	10.1%	8.9%
Gas Heat Billed	234,536	20.2%	31.1%	33.2%	9.8%	5.7%
Other	49,617	10.5%	13.4%	38.0%	15.5%	22.6%
ANNUAL HOUSEHOLD INCOME:						
LICO 125	105,086	12.5%	24.5%	36.1%	13.6%	13.3%
NON-LICO 125	334,010	19.6%	30.6%	32.9%	9.6%	7.3%
Under $25,000	71,163	12.3%	23.5%	37.5%	14.3%	12.4%
$25-$49,999	128,882	14.8%	28.3%	35.0%	10.6%	11.3%
$50-$74,999	102,841	19.3%	28.3%	33.0%	10.9%	8.6%
$75-$99,999	64,060	20.2%	31.4%	33.6%	8.1%	6.8%
$100,000 and Over	72,150	24.8%	35.5%	28.6%	8.5%	2.7%

3.12 Overall Condition of Residential Exterior Doors

Table # 3.12 shows the distribution of overall condition of residential exterior doors within the Manitoba Hydro provincial service territory. Almost 42% rate their exterior doors in “average” condition followed by 31.3% who rate the overall condition of their exterior doors as “very good”.

A large percent of apartment suite customers (28.3%) rate their exterior doors either “fair” or “poor” compared to 14.7% of respondents overall.

As expected, 66.1% of customers in newer homes built in the 2000s rate their exterior doors as either “excellent” or “very good” compared to 43.4% overall. For dwellings built prior to 1950, 24.5% of those occupants rate their exterior doors as either “fair” or “poor” compared to 14.7% overall.

Low-income households are more likely to rate their exterior doors as “fair” or “poor” compared to other income groups. About 22% of under $25,000 households rate their exterior doors as “fair” or “poor” compared to only 8.4% of $100,000 plus households. As household income increases, the condition ratings of exterior doors improve. About 8.0% of under $25,000 households rate their exterior doors as “excellent” compared to 18.1% of $100,000 plus households.

Table # 3.12
Overall Condition of Residential Exterior Doors
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Overall Door ExteriorConditions				
		Excellent	Very Good	Average	Fair	Poor
OVERALL:	439,096	12.1%	31.3%	41.9%	9.6%	5.1%
AREA:						
Winnipeg City	236,093	12.8%	29.5%	42.3%	10.1%	5.3%
Manitoba Hydro Gas	122,844	11.5%	34.8%	41.3%	8.1%	4.3%
Manitoba Hydro No Gas	80,159	11.2%	31.4%	41.7%	10.1%	5.7%
DWELLING TYPE:						
Single Detached	349,899	12.7%	33.9%	41.7%	8.0%	3.7%
Multi Attached	33,324	14.6%	25.0%	37.4%	11.9%	11.1%
Apartment Suite	55,873	7.4%	18.6%	45.8%	18.2%	10.1%
VINTAGE:						
2000-2009	40,581	23.9%	42.2%	31.0%	1.7%	1.2%
1990-1999	37,153	13.0%	42.1%	38.5%	5.2%	1.2%
1980-1989	67,289	9.7%	36.1%	43.9%	6.2%	4.2%
1970-1979	83,775	12.9%	30.0%	42.3%	9.7%	5.1%
1960-1969	65,866	12.4%	28.5%	43.2%	11.5%	4.4%
1950-1959	56,453	11.5%	30.4%	41.6%	11.0%	5.5%
Pre 1950	87,980	7.7%	22.1%	45.7%	15.0%	9.5%
HEATING FUEL:						
Electric Heat Billed	154,943	11.9%	33.0%	40.7%	8.8%	5.7%
Gas Heat Billed	234,536	13.5%	33.7%	41.1%	8.2%	3.5%
Other	49,617	6.5%	14.8%	49.4%	18.5%	10.7%
ANNUAL HOUSEHOLD INCOME:						
LICO 125	105,086	8.4%	26.8%	41.7%	14.5%	8.6%
NON-LICO 125	334,010	13.3%	32.7%	42.0%	8.0%	4.0%
Under $25,000	71,163	8.0%	26.9%	42.9%	14.7%	7.5%
$25-$49,999	128,882	10.8%	31.9%	41.3%	10.2%	5.8%
$50-$74,999	102,841	12.5%	29.9%	44.4%	7.8%	5.4%
$75-$99,999	64,060	12.2%	34.1%	40.8%	9.4%	3.4%
$100,000 and Over	72,150	18.1%	34.3%	39.3%	6.0%	2.4%

3.13 Overall Insulation Levels

Table # 3.13 shows the distribution of the ratings of overall insulation levels within the Manitoba Hydro provincial service territory. Most customers (42.6%) rated their overall insulation levels as “average”.

Apartment suite customers (16.4%) rate their insulation levels as “poor” compared to 7.7% overall.

New dwelling insulation is more likely to be rated as “excellent” whereas older home insulation is more likely to be rated as “poor”. For homes built in the 2000s, 33.1% rated overall insulation levels as “excellent”. As the age of the dwelling increases do does the likelihood of a “poor” rating. Over 18% of customers in dwellings built prior to 1950 gave a “poor” rating compared to 0.8% from the 2000s decade group. The likelihood of a “poor” rating sharply increases from occupants in dwellings built prior to 1950.

Low-income households are more likely to rate their overall insulation levels as “poor”. Almost 11% of under $25,000 households gave a “poor” rating compared to 4.1% of the $100,000 plus group. As household income increases, so does the rating that the insulations levels are “excellent”.

Table # 3.13
Overall Insulation Levels
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Overall Insulation Levels

	# of Customers	Excellent	Very Good	Average	Fair	Poor
OVERALL:	439,096	10.7%	26.8%	42.6%	12.2%	7.7%
AREA:						
Winnipeg City	236,093	8.3%	23.6%	46.1%	13.3%	8.8%
Manitoba Hydro Gas	122,844	14.9%	31.5%	38.1%	9.9%	5.7%
Manitoba Hydro No Gas	80,159	11.4%	29.4%	39.4%	12.6%	7.3%
DWELLING TYPE:						
Single Detached	349,899	11.6%	29.3%	42.0%	11.3%	5.9%
Multi Attached	33,324	7.9%	18.4%	46.9%	14.7%	12.0%
Apartment Suite	55,873	6.8%	16.5%	43.8%	16.5%	16.4%
VINTAGE:						
2000-2009	40,581	33.1%	44.5%	20.8%	0.8%	0.8%
1990-1999	37,153	19.6%	44.3%	32.0%	3.1%	0.9%
1980-1989	67,289	13.5%	37.0%	39.3%	6.8%	3.4%
1970-1979	83,775	6.7%	23.1%	51.6%	13.6%	5.0%
1960-1969	65,866	5.8%	25.1%	50.3%	12.1%	6.8%
1950-1959	56,453	5.8%	18.7%	47.0%	18.0%	10.5%
Pre 1950	87,980	5.2%	13.6%	42.4%	20.5%	18.4%
HEATING FUEL:						
Electric Heat Billed	154,943	12.2%	31.6%	39.4%	10.7%	6.1%
Gas Heat Billed	234,536	10.4%	27.0%	44.1%	12.4%	6.3%
Other	49,617	7.5%	11.6%	45.6%	16.2%	19.2%
ANNUAL HOUSEHOLD INCOME:						
LICO 125	105,086	6.9%	22.4%	44.3%	14.9%	11.6%
NON-LICO 125	334,010	11.9%	28.2%	42.1%	11.4%	6.4%
Under $25,000	71,163	7.8%	23.6%	41.9%	16.2%	10.5%
$25-$49,999	128,882	9.2%	25.3%	43.0%	13.2%	9.3%
$50-$74,999	102,841	10.7%	26.6%	42.7%	12.4%	7.5%
$75-$99,999	64,060	11.2%	27.5%	44.5%	11.6%	5.3%
$100,000 and Over	72,150	15.8%	32.6%	40.7%	6.8%	4.1%

3.14 Residential Basement Types

Table # 3.14 shows the distribution of residential basement types within the Manitoba Hydro provincial service territory. Almost 69% of customers have full basements in their dwellings, 6.6% have partial basements, 5.4% have crawl spaces and 19.3% have no basements.

Winnipeg (74.4%) dwellings are most likely to have full basements while dwellings in No Gas Available areas (56.0%) are the least likely to have full basements. No Gas Available area dwellings tend to have either partial basements (16.0%) or crawl spaces (13.7%).

Over 80% of single detached dwellings have full basements. All apartment suites, as expected, do not have their own separate basement although some units may be located in the building's basement.

Low-income households are more likely to live in dwellings with no basements compared to higher income households. Almost 34% of under $25,000 households have no basements compared to only 5.2% of $100,000 plus households with no basements. This observation is related to the dwelling types the various income groups occupy. Lower income groups tend to live in apartments while higher income groups are more likely to reside in single detached dwellings (Table # 3.02).

Table # 3.14
Residential Basement Types
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Basement Types

	# of Customers	No Basement	Full	Partial	Crawl Space
OVERALL:	439,096	19.3%	68.8%	6.6%	5.4%
AREA:					
Winnipeg City	236,093	23.3%	74.4%	1.2%	1.1%
Manitoba Hydro Gas	122,844	14.7%	66.3%	10.7%	8.3%
Manitoba Hydro No Gas	80,159	14.4%	56.0%	16.0%	13.7%
DWELLING TYPE:					
Single Detached	349,899	6.5%	80.1%	7.6%	5.8%
Multi Attached	33,324	17.5%	65.2%	6.4%	10.9%
Apartment Suite	55,873	100.0%	0.0%	0.0%	0.0%
VINTAGE:					
2000-2009	40,581	26.1%	61.4%	3.3%	9.3%
1990-1999	37,153	20.5%	63.2%	3.9%	12.5%
1980-1989	67,289	24.7%	65.9%	3.0%	6.4%
1970-1979	83,775	17.7%	73.2%	3.8%	5.4%
1960-1969	65,866	16.9%	73.2%	5.5%	4.4%
1950-1959	56,453	17.3%	71.8%	7.6%	3.2%
Pre 1950	87,980	16.1%	67.2%	14.6%	2.1%
HEATING FUEL:					
Electric Heat Billed	154,943	25.1%	51.4%	11.0%	12.5%
Gas Heat Billed	234,536	4.4%	90.2%	3.9%	1.6%
Other	49,617	71.7%	21.9%	4.9%	1.5%
ANNUAL HOUSEHOLD INCOME:					
LICO 125	105,086	30.7%	58.1%	6.3%	5.0%
NON-LICO 125	334,010	15.7%	72.1%	6.7%	5.6%
Under $25,000	71,163	33.7%	51.3%	8.4%	6.5%
$25-$49,999	128,882	24.4%	63.2%	6.5%	5.9%
$50-$74,999	102,841	16.2%	71.8%	6.4%	5.6%
$75-$99,999	64,060	13.6%	75.7%	6.4%	4.3%
$100,000 and Over	72,150	5.2%	85.5%	5.0%	4.3%

3.15 Percent of Basement Walls Insulated

Table # 3.15 shows the distribution of the degree basement walls are insulated within the Manitoba Hydro provincial service territory. Most customers (40.6%) indicate their basement walls are fully insulated. A sizeable percent of customers (12.0%) do not know the level of basement wall insulation. If the 12.0% “don’t know” and the 19.3% “no basement” responses are removed from analysis, then 12.7% of dwellings with basements have no wall insulation; 6.2% have “10%-49%” of basement walls insulated; 22.0% have “50%-89%” of basement walls insulated; and 59.1% have fully insulated basement walls.

Full basement insulation is most evident in newer dwellings. The likelihood of full basement insulation decreases as dwelling age increases. One-quarter of customers living in pre 1950s dwellings indicate there is zero percent insulation in their basement walls. If the 10.3% “don’t know” and the 16.1% “no basement” responses are removed from analysis, then 34.7% of pre 1950s dwellings with basements have no wall insulation; 10.3% have “10%-49%” of basement walls insulated; 22.6% have “50%-89%” of basement walls insulated; and 32.4% have fully insulated basement walls.

Low-income households, the under $25,000 per year, are more likely to live in dwellings with either no basements (33.7%) or dwellings with no insulation (14.3%) in the basement walls. If the 12.1% “don’t know” and the 33.7% “no basement” responses are removed from analysis, then 26.3% of under $25,000 households in dwellings with basements have no wall insulation; 8.2% have “10%-49%” of basement walls insulated; 25.5% have “50%-89%” of basement walls insulated; and 40.0% have fully insulated basement walls.

Table # 3.15
Percent of Basement Walls Insulated
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency Percent of Basement Walls Insulated

	# of Customers	No Insulation	10% - 49%	50% - 89%	90% - 100%	Don't Know	No Basement
OVERALL:	439,096	8.7%	4.3%	15.1%	40.6%	12.0%	19.3%
AREA:							
Winnipeg City	236,093	6.8%	4.2%	16.5%	41.0%	8.3%	23.3%
Manitoba Hydro Gas	122,844	8.5%	3.9%	14.1%	44.8%	14.1%	14.7%
Manitoba Hydro No Gas	80,159	14.6%	5.4%	12.8%	33.0%	19.9%	14.4%
DWELLING TYPE:							
Single Detached	349,899	9.4%	5.0%	17.6%	48.7%	12.8%	6.5%
Multi Attached	33,324	14.9%	4.4%	14.8%	23.9%	24.5%	17.5%
Apartment Suite	55,873	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
VINTAGE:							
2000-2009	40,581	0.9%	0.8%	2.6%	58.3%	11.4%	26.1%
1990-1999	37,153	2.2%	0.9%	4.4%	55.9%	16.2%	20.5%
1980-1989	67,289	2.0%	1.1%	9.1%	50.8%	12.4%	24.7%
1970-1979	83,775	3.7%	3.7%	18.4%	43.0%	13.6%	17.7%
1960-1969	65,866	6.0%	7.2%	21.3%	37.0%	11.7%	16.9%
1950-1959	56,453	10.5%	5.4%	24.2%	32.6%	10.1%	17.3%
Pre 1950	87,980	25.6%	7.6%	16.6%	23.8%	10.3%	16.1%
HEATING FUEL:							
Electric Heat Billed	154,943	8.4%	3.5%	11.1%	35.1%	17.0%	25.1%
Gas Heat Billed	234,536	7.8%	5.4%	20.1%	51.6%	10.7%	4.4%
Other	49,617	13.3%	1.8%	4.3%	5.8%	3.0%	71.7%
ANNUAL HOUSEHOLD INCOME:							
LICO 125	105,086	12.5%	4.3%	15.8%	25.5%	11.2%	30.7%
NON-LICO 125	334,010	7.4%	4.3%	14.9%	45.4%	12.3%	15.7%
Under $25,000	71,163	14.3%	4.4%	13.8%	21.7%	12.1%	33.7%
$25-$49,999	128,882	9.5%	4.7%	16.1%	32.5%	12.8%	24.4%
$50-$74,999	102,841	8.3%	4.3%	15.0%	44.0%	12.3%	16.2%
$75-$99,999	64,060	6.5%	4.2%	15.5%	48.8%	11.6%	13.6%
$100,000 and Over	72,150	4.0%	3.8%	14.6%	61.7%	10.7%	5.2%

3.16 Basement Insulation Types

Table # 3.16 shows the distribution of the type of basement wall insulation within the Manitoba Hydro provincial service territory. Most customers (53.7%) indicate their basement walls are insulated with fiberglass. A sizeable percent of customers (10.2%) do not know the type of basement wall insulation. If the 10.2% “don’t know” and the 19.3% “no basement” responses are removed from analysis, then 12.3% of dwellings with basements have no wall insulation; 76.1% have fiberglass insulation; 7.2% have rigid insulation; 1.3% have spray foam insulation; and 3.1% have other forms of insulation.

Table # 3.16
Basement Insulation Type
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Basement Insulation Type

	# of Customers	No Insulation	Fiberglass	Rigid	Spray Foam	Other	Don't Know	No Basement
OVERALL:	439,096	8.7%	53.7%	5.1%	0.9%	2.2%	10.2%	19.3%
AREA:								
Winnipeg City	236,093	6.8%	55.1%	2.4%	0.9%	1.2%	10.4%	23.3%
Manitoba Hydro Gas	122,844	8.5%	54.7%	7.6%	0.9%	3.3%	10.4%	14.7%
Manitoba Hydro No Gas	80,159	14.6%	48.2%	9.4%	0.6%	3.4%	9.5%	14.4%
DWELLING TYPE:								
Single Detached	349,899	9.4%	63.4%	6.2%	1.0%	2.7%	10.7%	6.5%
Multi Attached	33,324	14.9%	41.8%	2.0%	1.1%	0.4%	22.3%	17.5%
Apartment Suite	55,873	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
VINTAGE:								
2000-2009	40,581	0.9%	50.4%	7.6%	2.7%	5.4%	7.0%	26.1%
1990-1999	37,153	2.2%	60.2%	6.5%	0.5%	1.9%	8.3%	20.5%
1980-1989	67,289	2.0%	60.0%	4.1%	0.4%	1.0%	7.8%	24.7%
1970-1979	83,775	3.7%	60.5%	4.5%	0.6%	1.6%	11.6%	17.7%
1960-1969	65,866	6.0%	58.3%	5.4%	0.6%	2.0%	10.9%	16.9%
1950-1959	56,453	10.5%	52.3%	4.9%	0.5%	1.9%	12.6%	17.3%
Pre 1950	87,980	25.6%	38.7%	4.6%	1.2%	2.8%	11.0%	16.1%
HEATING FUEL:								
Electric Heat Billed	154,943	8.4%	44.9%	8.2%	0.8%	3.1%	9.5%	25.1%
Gas Heat Billed	234,536	7.8%	68.5%	4.0%	1.0%	1.9%	12.5%	4.4%
Other	49,617	13.3%	11.4%	0.7%	0.6%	0.9%	1.4%	71.7%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	105,086	12.5%	39.8%	3.4%	0.4%	1.7%	11.4%	30.7%
Under $25,000	71,163	14.3%	34.6%	4.5%	0.4%	1.7%	10.8%	33.7%
$25-$49,999	128,882	9.5%	47.4%	4.6%	0.6%	2.2%	11.3%	24.4%
$50-$74,999	102,841	8.3%	56.3%	5.7%	1.3%	2.5%	9.8%	16.2%
$75-$99,999	64,060	6.5%	62.4%	4.2%	1.2%	2.3%	9.9%	13.6%
$100,000 and Over	72,150	4.0%	72.6%	6.6%	0.9%	2.2%	8.6%	5.2%

3.17 Residential Basement Finish

Table # 3.17 shows the distribution of the type of basement finishes within the Manitoba Hydro provincial service territory. There is a fairly equal distribution of customers that indicate their basement is fully finished (30.3%) versus partially finished (27.0%) versus unfinished (23.4%). If the 19.3% “no basement” responses are removed from analysis, then 37.5% of dwellings with basements have fully finished basements; 33.4% have partially finished basements; and 29.1% have unfinished basements.

Fully finished basements are least in older dwellings. The likelihood of fully finished basements decreases as dwelling age increases. Of the customers living in pre 1950s dwellings, 41.0% indicate their basements are unfinished. If the 16.1% “no basement” responses are removed from analysis, then 48.9% of pre 1950s dwellings have unfinished basements; 31.9% have partially finished basements; and 19.2% have fully finished basements.

High-income households, the $100,000 and over per year, are most likely to live in dwellings with fully finished basements (43.1%). If 5.2% “no basement” responses are removed from analysis, then 18.9% of high income earners live in dwellings with unfinished basements; 35.6% have partially finished basements; and 45.5% have fully finished basements.

Table # 3.17
Residential Basement Finish
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Basement Finish: Unfinished	Partial	Full Finish	No Basement
OVERALL:	439,096	23.4%	27.0%	30.3%	19.3%
AREA:					
Winnipeg City	236,093	17.5%	27.8%	31.3%	23.3%
Manitoba Hydro Gas	122,844	25.1%	27.2%	33.1%	14.7%
Manitoba Hydro No Gas	80,159	38.3%	24.1%	23.2%	14.4%
DWELLING TYPE:					
Single Detached	349,899	25.8%	31.8%	35.9%	6.5%
Multi Attached	33,324	38.1%	21.3%	23.2%	17.5%
Apartment Suite	55,873	0.0%	0.0%	0.0%	100.0%
VINTAGE:					
2000-2009	40,581	29.9%	17.6%	26.4%	26.1%
1990-1999	37,153	28.4%	20.1%	31.1%	20.5%
1980-1989	67,289	14.9%	26.8%	33.6%	24.7%
1970-1979	83,775	14.7%	27.7%	40.0%	17.7%
1960-1969	65,866	15.4%	31.8%	36.0%	16.9%
1950-1959	56,453	20.8%	32.1%	29.8%	17.3%
Pre 1950	87,980	41.0%	26.7%	16.2%	16.1%
HEATING FUEL:					
Electric Heat Billed	154,943	29.1%	21.8%	24.1%	25.1%
Gas Heat Billed	234,536	21.0%	34.7%	39.9%	4.4%
Other	49,617	17.5%	6.5%	4.3%	71.7%
ANNUAL HOUSEHOLD INCOME:					
LICO 125	105,086	25.2%	21.7%	22.4%	30.7%
NON-LICO 125	334,010	22.9%	28.6%	32.8%	15.7%
Under $25,000	71,163	29.0%	19.2%	18.2%	33.7%
$25-$49,999	128,882	24.6%	25.0%	25.9%	24.4%
$50-$74,999	102,841	23.5%	27.2%	33.1%	16.2%
$75-$99,999	64,060	21.1%	31.6%	33.8%	13.6%
$100,000 and Over	72,150	17.9%	33.8%	43.1%	5.2%

3.18 Common Dwelling Problems

Table # 3.18 shows the distribution of common dwelling problems for residential customers within the Manitoba Hydro provincial service territory. Overall, 36.0% of Manitoba Hydro's residential customers indicate "no problems" with their dwellings. The number one dwelling problem is window condensation (30.6%) followed by low humidity (19.0%). Note the percent values across each row exceed 100% since multiple responses were allowed for this question.

Multi-attached dwellings have the most concern with poorly heated rooms (20.4%) compared to 12.8% overall. For customers in apartment suites, their main issue is stale cooking odors (31.2%) compared to 13.2% overall.

New residential construction is less likely to indicate problems. For dwellings built in the 2000s, 57.4% indicate "no problems". As dwelling age increases, the number of problems associated with the dwelling increases. For dwellings built prior to 1950, 26.0% of those customers report low humidity, compared to 19.0% overall; 18.5% report stale cooking odors, compared to 13.2% overall; 20.2% report difficult to heat rooms, compared to 12.8% overall; 27.6% report leaking basements, compared to 12.0% overall; 20.1% report ice dams on roof, compared to 8.8% overall; and 12.3% report mold and mildew, compared to 8.6% overall;

Table # 3.18
Common Dwelling Problems
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Common Dwelling Problems								
		No Problems	Window Cond	Low Humidity	Cooking Odours	Difficult Heat Rms	Bsmt Leakage	High Humidity	Ice Dams	Mold & Mildew
OVERALL:	439,096	36.0%	30.6%	19.0%	13.2%	12.8%	12.0%	10.2%	8.8%	8.6%
AREA:										
Winnipeg City	236,093	35.1%	30.0%	19.8%	14.5%	14.6%	12.5%	8.5%	10.2%	9.4%
Manitoba Hydro Gas	122,844	38.6%	30.8%	18.2%	11.2%	10.8%	10.6%	11.0%	6.2%	7.2%
Manitoba Hydro No Gas	80,159	34.6%	31.7%	18.1%	12.4%	10.8%	12.6%	13.7%	8.6%	8.5%
DWELLING TYPE:										
Single Detached	349,899	36.6%	30.4%	17.2%	10.1%	12.1%	13.1%	10.7%	9.9%	7.6%
Multi Attached	33,324	32.1%	32.4%	22.6%	15.9%	20.4%	13.5%	6.3%	9.2%	11.7%
Apartment Suite	55,873	34.4%	30.5%	28.3%	31.2%	12.8%	3.8%	9.3%	1.9%	13.3%
VINTAGE:										
2000-2009	40,581	57.4%	17.8%	12.1%	6.1%	7.3%	2.1%	6.0%	2.1%	2.6%
1990-1999	37,153	50.5%	22.1%	17.1%	6.9%	8.0%	3.1%	10.2%	2.8%	3.2%
1980-1989	67,289	42.1%	31.0%	14.8%	12.8%	10.4%	4.9%	9.6%	3.5%	6.0%
1970-1979	83,775	34.2%	35.8%	18.5%	12.4%	12.3%	7.1%	12.5%	6.5%	9.5%
1960-1969	65,866	34.4%	32.1%	17.3%	13.0%	11.1%	10.7%	14.3%	7.9%	9.7%
1950-1959	56,453	31.4%	33.1%	22.3%	16.4%	14.1%	17.3%	9.7%	11.0%	11.4%
Pre 1950	87,980	21.1%	32.0%	26.0%	18.5%	20.2%	27.6%	7.4%	20.1%	12.3%
HEATING FUEL:										
Electric Heat Billed	154,943	36.5%	31.8%	18.9%	14.1%	9.4%	9.3%	13.1%	6.7%	8.5%
Gas Heat Billed	234,536	36.9%	28.8%	17.6%	9.7%	14.5%	14.0%	8.4%	11.1%	7.2%
Other	49,617	29.9%	35.1%	26.4%	27.2%	15.3%	10.5%	9.6%	4.7%	15.6%
ANNUAL HOUSEHOLD INCOME:										
LICO 125	105,086	37.2%	32.2%	18.6%	16.9%	13.6%	11.7%	11.4%	8.0%	12.4%
NON-LICO 125	334,010	35.6%	30.1%	19.2%	12.1%	12.6%	12.0%	9.8%	9.1%	7.4%
Under $25,000	71,163	39.8%	27.8%	17.8%	16.8%	10.6%	12.1%	10.2%	6.4%	9.6%
$25-$49,999	128,882	36.0%	31.8%	20.2%	14.1%	13.6%	11.0%	11.2%	8.8%	10.8%
$50-$74,999	102,841	33.9%	32.0%	21.0%	14.0%	12.6%	13.1%	9.3%	8.9%	8.1%
$75-$99,999	64,060	32.6%	31.5%	17.1%	10.9%	10.9%	13.3%	11.3%	10.3%	7.3%
$100,000 and Over	72,150	38.1%	28.2%	17.2%	9.1%	15.5%	10.7%	8.6%	9.7%	5.8%

3.19 Dwelling Projects Undertaken in the Last 3 Years

Table # 3.19 shows the distribution of the various dwelling projects undertaken in the last three years. Overall, 65.5% of Manitoba Hydro's residential customers have undertaken a project of one kind in the last three years. Contributing to this activity was the federal government Home Renovation Tax Credit program, which ran from February 1, 2009 until February 1, 2010. The number one dwelling project is compact fluorescent light replacement (34.2%) followed window replacement (27.2%) and hot water tank replacement (23.5%). The Manitoba Hydro Home Improvement Loan program probably contributes to the popularity of window replacements. Note the percent values across each row exceed 100% since multiple responses were allowed for this question.

A higher percent of customers residing in Winnipeg (20.1%) replaced their heating systems compared to 11.1% of customers in Gas Available areas and 9.7% of customers in No Gas Available areas. Winnipeg customers mainly heat with natural gas. Over 22% of natural gas heat billed customers replaced their furnaces in the last three years. Contributing to the natural gas heating system replacements were three programs that ran during the time the survey was administered. The federal government's ecoENERGY retrofit grant program rebated $375 for replacing a standard or mid efficient furnace with a 92% high efficient gas furnace; $625 for a 92% high efficient gas furnace with a DC motor; and $790 for a 94% high efficient gas furnace with a DC motor. The Manitoba Hydro Power Smart furnace rebate program which rebated $245 for replacing any existing natural gas furnace with a high efficient gas furnace. From July 30, 2009 until October 15, 2009 the Manitoba Hydro program temporarily increased the rebate to $500. Finally, the federal government Home Renovation Tax Credit program contributed to the increase in replacements by refunding 15% of the replacement costs. Depending on the time frame, these three programs could be taken advantage of simultaneously.

Customers in rental properties such as multi-attached (42.7%) and apartment suites (85.5%) were the least likely to undertake a home improvement project.

As household income increases so does the likelihood that a home improvement project was undertaken in the last three years. Just over 23% of households, earning $100,000 or more per year, did not undertake a home improvement project in the last three years. This compares to 54.4% of households earning under $25,000 that did not undertake a home improvement project.

Table # 3.19
Dwelling Projects Undertaken in the Last 3 Years
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Dwelling ProjectsUndertaken in Last 3 Years

	# of Customers	No Projects	CFL Replace	Replace Windows	Hot Water Tank	Caulked	Heat System	Added Insulation	Air Cond	Upgrade Electrical
OVERALL:	439,096	34.5%	34.2%	27.2%	23.5%	16.0%	15.7%	9.0%	8.6%	7.3%
AREA:										
Winnipeg City	236,093	34.8%	35.7%	27.8%	22.2%	17.1%	20.1%	8.5%	11.2%	7.2%
Manitoba Hydro Gas	122,844	34.3%	33.2%	26.0%	25.6%	14.6%	11.1%	9.6%	6.4%	6.9%
Manitoba Hydro No Gas	80,159	33.6%	31.3%	27.6%	24.1%	14.9%	9.7%	9.5%	4.5%	8.4%
DWELLING TYPE:										
Single Detached	349,899	25.5%	39.1%	31.0%	27.0%	18.7%	17.9%	10.7%	9.3%	8.7%
Multi Attached	33,324	42.7%	30.1%	25.3%	18.4%	12.0%	15.3%	6.0%	12.6%	3.8%
Apartment Suite	55,873	85.5%	5.8%	4.8%	4.8%	1.6%	2.0%	0.3%	2.1%	0.8%
VINTAGE:										
2000-2009	40,581	64.1%	21.3%	1.9%	6.0%	4.2%	0.6%	2.2%	1.4%	0.8%
1990-1999	37,153	37.8%	32.9%	15.9%	28.9%	9.2%	5.8%	4.7%	4.4%	2.1%
1980-1989	67,289	30.1%	36.1%	34.8%	24.0%	14.6%	17.2%	3.8%	10.7%	3.4%
1970-1979	83,775	28.8%	36.1%	30.9%	26.3%	17.4%	19.9%	10.7%	10.6%	6.9%
1960-1969	65,866	28.0%	38.9%	32.5%	26.8%	17.4%	19.6%	11.1%	11.9%	8.4%
1950-1959	56,453	33.4%	32.9%	30.2%	23.3%	16.5%	18.1%	10.3%	9.7%	10.3%
Pre 1950	87,980	33.6%	34.7%	28.6%	23.9%	22.7%	17.3%	13.8%	7.0%	13.3%
HEATING FUEL:										
Electric Heat Billed	154,943	39.5%	28.8%	25.3%	21.6%	12.2%	9.5%	8.3%	6.4%	7.3%
Gas Heat Billed	234,536	23.4%	41.9%	31.9%	27.5%	20.2%	22.1%	10.6%	11.1%	8.0%
Other	49,617	70.9%	14.3%	11.1%	10.6%	8.1%	4.9%	3.5%	3.4%	4.0%
ANNUAL HOUSEHOLD INCOME:										
LICO 125	105,086	49.9%	21.1%	19.7%	18.3%	11.7%	12.4%	6.3%	6.0%	4.1%
NON-LICO 125	334,010	29.6%	38.3%	29.6%	25.1%	17.4%	16.7%	9.8%	9.4%	8.3%
Under $25,000	71,163	54.4%	17.0%	16.0%	16.4%	9.0%	9.4%	5.9%	3.8%	4.1%
$25-$49,999	128,882	38.9%	29.3%	26.3%	23.5%	15.7%	15.7%	8.1%	7.8%	6.1%
$50-$74,999	102,841	28.9%	39.9%	29.9%	24.4%	17.7%	16.1%	8.9%	9.5%	8.3%
$75-$99,999	64,060	25.3%	43.5%	31.4%	24.6%	17.2%	19.1%	10.6%	10.0%	7.6%
$100,000 and Over	72,150	23.1%	43.5%	32.4%	28.2%	20.0%	18.4%	12.4%	12.3%	11.1%

3.20 Top 4 Residential Out Buildings using Electricity

Table # 3.20 shows the distribution of the top four most popular residential out buildings using electricity found within the Manitoba Hydro provincial service territory. Overall, 44.3% of Manitoba Hydro's residential customers indicate no additional outbuildings using electricity. The most popular out building is an electrically serviced garage (45.0%). Workshops trail at 9.3% followed by storage sheds (7.8%) and barns (3.8%). Note the percent values across each row do not equal 100% since multiple responses were allowed for this question.

Farming activity is most evident in No Gas Available areas where 23.9% of customers indicate a workshop and/or storage shed (16.6%) and/or barn (12.5%) on their property.

Over 54% of single detached homes have electric service connected to a garage. As expected, almost all apartment suite customers (90.5%) have no additional out buildings.

Table # 3.20
Out Buildings Using Electricity
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Out Buildings Using Electricity

	# of Customers	None	Garage	Workshop	Storage Shed	Barn
OVERALL:	439,096	44.3%	45.0%	9.3%	7.8%	3.8%
AREA:						
Winnipeg City	236,093	52.4%	42.6%	1.3%	3.2%	0.0%
Manitoba Hydro Gas	122,844	38.7%	46.8%	14.9%	10.8%	5.3%
Manitoba Hydro No Gas	80,159	29.0%	49.2%	23.9%	16.6%	12.5%
DWELLING TYPE:						
Single Detached	349,899	34.0%	54.3%	11.4%	9.2%	4.8%
Multi Attached	33,324	75.4%	18.0%	1.8%	4.4%	0.0%
Apartment Suite	55,873	90.5%	2.9%	0.0%	1.1%	0.0%
VINTAGE:						
2000-2009	40,581	57.5%	31.5%	7.6%	7.2%	1.7%
1990-1999	37,153	48.1%	37.7%	8.4%	10.6%	2.1%
1980-1989	67,289	52.9%	35.2%	9.4%	8.1%	3.6%
1970-1979	83,775	46.5%	42.0%	10.0%	8.7%	4.0%
1960-1969	65,866	40.9%	48.7%	9.1%	7.8%	3.2%
1950-1959	56,453	32.8%	58.5%	8.9%	6.5%	3.5%
Pre 1950	87,980	37.9%	53.2%	9.9%	6.5%	6.1%
HEATING FUEL:						
Electric Heat Billed	154,943	40.1%	41.8%	18.3%	13.3%	8.9%
Gas Heat Billed	234,536	41.7%	52.7%	3.5%	4.6%	0.2%
Other	49,617	69.7%	18.6%	8.4%	5.6%	4.8%
ANNUAL HOUSEHOLD INCOME:						
LICO 125	105,086	54.3%	36.3%	6.6%	5.7%	2.8%
NON-LICO 125	334,010	41.1%	47.7%	10.1%	8.4%	4.1%
Under $25,000	71,163	53.7%	34.6%	8.6%	6.3%	4.0%
$25-$49,999	128,882	44.7%	44.1%	10.5%	8.6%	4.2%
$50-$74,999	102,841	43.1%	45.1%	11.0%	7.8%	4.8%
$75-$99,999	64,060	41.0%	49.2%	7.5%	7.9%	2.5%
$100,000 and Over	72,150	39.0%	53.0%	6.7%	7.5%	2.7%

4.0 RESIDENTIAL SPACE HEATING

4.01 Residential Space Heating Fuel

Table # 4.01 shows the distribution of the residential space heating fuels in use within the Manitoba Hydro provincial service territory. The fuels are defined by whether the customer pays directly or not for a particular fuel. Overall, the most popular residential heating fuel is natural gas billed (53.4%) followed by electric billed (35.3%). These customers have the heating consumption recorded on their utility bill. There are 7.2% of customers that heat with natural gas and 1.3% that heat with electricity but their space heat consumption is not recorded on their bill. The space heat component for these customers originates from a central or common source and is paid for by the owner or landlord. These are mainly apartment suite customers. The remaining 2.8% other is composed of customers heating with coal, oil, propane or wood.

The majority of residential customers in Winnipeg City (74.4%) use natural gas to heat their homes and they are directly billed for any consumption by Manitoba Hydro. Another 12.5% heat with natural gas but their gas usage is not recorded on their utility bill. In effect, 86.9% of residential customers in Winnipeg heat by natural gas, whether they are billed directly or not by Manitoba Hydro. In natural gas available areas, it is an almost even split between electric heat and natural gas heat. In no natural gas available areas, the majority of customers heat with electricity (89.0%)

A comparison of primary space heating fuels by dwelling type shows that 49.6% of apartment suites are heated by natural gas but that the customers does not have the gas consumption recorded on their utility bill. The natural gas consumption is billed to the owner or landlord.

It appears electric heat is more popular in newer dwellings than it is in older ones. Electric billed space heat is 52.8% of brand new homes and its saturation decreases to 24.7% in dwellings built prior to 1950.

Just over 63.7% of residential customers classed in the other heating fuel category are natural gas heat not billed. These are mainly apartment suite customers that do not pay for space heat on their utility bill.

The higher the annual household income is the more likely the dwelling will be heated by natural gas. In low-income households of under $25,000, 43.2% heat by electricity compared to 70.4% of households earning $100,000 plus annually that heat with natural gas.

Table # 4.01
Residential Space Heating Fuel
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

		% Weighted Frequency of Space Heating Fuel				
	# of Customers	Electric Billed	Electric Not Billed	Natural Gas Billed	Natural Gas Not Billed	Other
OVERALL:	439,096	35.3%	1.3%	53.4%	7.2%	2.8%
AREA:						
Winnipeg City	236,093	11.1%	1.6%	74.4%	12.5%	0.5%
Manitoba Hydro Gas	122,844	46.8%	0.9%	48.0%	1.8%	2.5%
Manitoba Hydro No Gas	80,159	89.0%	1.1%	0.0%	0.0%	9.9%
DWELLING TYPE:						
Single Detached	349,899	36.2%	0.0%	60.7%	0.0%	3.2%
Multi Attached	33,324	25.5%	0.0%	59.6%	11.7%	3.2%
Apartment Suite	55,873	35.6%	10.4%	4.4%	49.6%	0.0%
VINTAGE:						
2000-2009	40,581	52.8%	3.6%	42.9%	0.0%	0.7%
1990-1999	37,153	40.4%	1.4%	55.8%	1.3%	1.2%
1980-1989	67,289	44.7%	0.8%	48.2%	5.1%	1.2%
1970-1979	83,775	41.9%	0.5%	52.0%	3.6%	2.0%
1960-1969	65,866	29.3%	2.2%	54.0%	10.9%	3.7%
1950-1959	56,453	21.9%	1.3%	62.2%	12.3%	2.3%
Pre 1950	87,980	24.7%	0.8%	56.5%	12.0%	6.0%
HEATING FUEL:						
Electric Heat Billed	154,943	100.0%	0.0%	0.0%	0.0%	0.0%
Gas Heat Billed	234,536	0.0%	0.0%	100.0%	0.0%	0.0%
Other	49,617	0.0%	11.7%	0.0%	63.7%	24.6%
ANNUAL HOUSEHOLD INCOME:						
LICO 125	105,086	34.4%	2.1%	48.4%	12.5%	2.5%
NON-LICO 125	334,010	35.6%	1.1%	55.0%	5.5%	2.9%
Under $25,000	71,163	43.2%	2.8%	38.0%	12.4%	3.7%
$25-$49,999	128,882	38.6%	1.2%	46.0%	10.1%	4.2%
$50-$74,999	102,841	35.6%	1.2%	55.6%	5.7%	2.0%
$75-$99,999	64,060	31.0%	0.7%	63.0%	4.4%	0.9%
$100,000 and Over	72,150	24.9%	0.9%	70.4%	1.6%	2.2%

4.02 Average Annual Kilowatt Hours Weather Adjusted

Table # 4.02 shows the average electrical consumption for calendar year 2009, weather adjusted, across the three heating fuel categories. Overall, the average residential customer consumed 15,665 kW.h in 2009. The average electric heat billed customer consumed 25,384 kW.h and the average natural gas heat billed customer consumed 11,002 kW.h. The other heating fuel customer consumed an average of 7,353 kW.h in 2009.

Other heating fuel customers in Winnipeg have the lowest average consumption of 3,978 kW.h compared to customers in the other areas. This is due to the high percent of apartment customers in Winnipeg that do not pay directly for their heating costs. Their space heating component is from a central source and is include in rent or common service fees.

Electric heat billed apartment suite customers consumed an average of 8,969 kW.h compared to electric heat billed single detached customers which consumed an average of 28,574 kW.h. Natural gas heat billed apartment suite customers consumed an average of 5,618 kW.h compared to natural gas heat billed single detached customers which consumed an average of 11,290 kW.h.

Examining usage by dwelling vintage, natural gas heat billed customers in newer homes (15,025 kW.h) use more compared to their older homes counterparts (about 11,000 kW.h). For natural gas heat billed customers, electric consumption decreases as dwelling vintage increases. The main reason, for the sudden increase of approximately 4,000 kW.h recorded in newer in dwellings, is the increase in electric water tanks installs associated with high efficiency furnaces.

The higher the annual household income, the higher the average electrical consumption is regardless of heating fuel type. This is a result of higher income households residing in larger dwellings and using more energy consuming appliances. Appliance and electronics usage will be explored in further detail in Sections 8.0 and 9.0.

Table # 4.02
Average Annual Kilowatt Hours Weather Adjusted
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

Weighted Average Annual kW.h Weather Adjusted

	# of Customers	Overall	Electric Billed	Natural Gas Billed	Other
OVERALL:	439,096	15,665	25,384	11,002	7,353
AREA:					
Winnipeg City	236,093	9,963	13,592	10,595	3,978
Manitoba Hydro Gas	122,844	19,096	26,986	12,215	11,650
Manitoba Hydro No Gas	80,159	27,198	28,412	-	17,380
DWELLING TYPE:					
Single Detached	349,899	17,719	28,574	11,290	16,883
Multi Attached	33,324	10,237	16,346	8,589	6,359
Apartment Suite	55,873	6,039	8,969	5,618	4,329
VINTAGE:					
2000-2009	40,581	20,179	25,102	15,025	11,294
1990-1999	37,153	16,515	24,346	11,604	5,567
1980-1989	67,289	16,136	22,416	11,817	5,839
1970-1979	83,775	17,051	24,860	11,783	8,437
1960-1969	65,866	15,470	28,472	10,805	7,784
1950-1959	56,453	12,298	26,410	9,333	4,436
Pre 1950	87,980	13,847	28,007	9,446	8,477
HEATING FUEL:					
Electric Heat Billed	154,943	25,384	25,384	-	-
Gas Heat Billed	234,536	11,002	-	11,002	-
Other	49,617	7,353	-	-	7,353
ANNUAL HOUSEHOLD INCOME:					
LICO 125	105,086	11,785	20,209	8,195	5,038
NON-LICO 125	334,010	16,885	26,958	11,780	8,678
Under $25,000	71,163	12,328	19,941	7,143	5,349
$25-$49,999	128,882	14,773	24,727	8,988	7,126
$50-$74,999	102,841	16,160	25,918	11,028	9,033
$75-$99,999	64,060	17,184	29,131	11,998	9,813
$100,000 and Over	72,150	18,493	31,267	14,585	9,356

4.03 Average Annual Kilowatt Hours Per Square Foot Weather Adjusted

Table # 4.03 shows the average electrical consumption per square foot for 2009 weather adjusted across the three heating fuel categories. Overall, the average residential customer consumed 12.9 kW.h/sqft in 2009. The average electric heat billed customer consumed 20.9 kW.h/sqft and the average natural gas heat billed customer consumed 8.8 kW.h/ sqft.

Electric heat billed (13.1 kW.h/sqft) and other fuel customers (4.9 kW.h/sqft) in Winnipeg City have lower average consumption per square foot compared to customers outside the capital city. This is due to the high percent of electric heat billed customers in Winnipeg that reside in apartment suites. The other heat customers are also in apartment suites and are not paying Manitoba Hydro directly for their heating costs, hence the lower use per square foot.

Electric heat billed single detached customers use over 2.5 times as much electricity per square foot compared to natural gas heat billed customers in single detached dwellings. Electric heat billed apartment suite customers use almost double the electricity per square foot compared to natural gas heat billed customers in apartment suites.

Examining usage by dwelling vintage, brand new all-electric homes use the least amount at 17.5 kW.h/sqft. Use per square foot increases as all-electric dwelling vintage increases.

The higher the annual household income, the higher the average electrical use per square foot is regardless of heating fuel type. This is a result of higher income households using more electrical consuming appliances and electronics. Appliance and electronic usage will be explored in further detail in Sections 8.0 and 9.0.

Table # 4.03
Average Annual Kilowatt Hours Per Square Foot Weather Adjusted
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	Weighted Average Annual kW.h/SqFt Weather Adjusted				
	# of Customers	Overall	Electric Billed	Natural Gas Billed	Other
OVERALL:	439,096	12.9	20.9	8.8	7.0
AREA:					
Winnipeg City	236,093	8.6	13.1	8.6	4.9
Manitoba Hydro Gas	122,844	15.0	21.5	9.3	10.4
Manitoba Hydro No Gas	80,159	22.1	23.3	-	12.7
DWELLING TYPE:					
Single Detached	349,899	14.1	22.9	8.9	13.3
Multi Attached	33,324	9.7	16.5	7.8	5.3
Apartment Suite	55,873	6.9	10.1	5.5	5.1
VINTAGE:					
2000-2009	40,581	13.6	17.5	9.2	9.1
1990-1999	37,153	11.9	18.8	7.3	5.6
1980-1989	67,289	12.3	17.8	8.1	6.3
1970-1979	83,775	14.2	20.7	9.9	7.3
1960-1969	65,866	13.4	25.3	8.8	7.2
1950-1959	56,453	11.6	23.7	8.8	6.2
Pre 1950	87,980	12.4	25.0	8.6	7.3
HEATING FUEL:					
Electric Heat Billed	154,943	20.9	20.9	-	-
Gas Heat Billed	234,536	8.8	-	8.8	-
Other	49,617	7.0	-	-	7.0
ANNUAL HOUSEHOLD INCOME:					
LICO 125	105,086	11.6	19.7	7.7	6.1
NON-LICO 125	334,010	13.3	21.3	9.1	7.5
Under $25,000	71,163	12.4	19.8	7.0	6.4
$25-$49,999	128,882	13.1	21.3	8.1	7.2
$50-$74,999	102,841	13.0	20.4	9.1	7.6
$75-$99,999	64,060	13.1	21.6	9.4	7.1
$100,000 and Over	72,150	12.5	21.9	9.6	6.6

4.04 Average Annual Cubic Meters (Gas Heat Billed) Weather Adjusted

Table # 4.04 shows the average annual natural gas consumption in total and per square foot for 2009 natural gas heat billed customers only. Overall, the average residential natural gas heat billed customer consumed 2,522 cubic meters in total or 2.04 cubic meters per square foot.

Apartment suite customers, that have their natural gas heating portion as part of their utility bill, consumed the least at 704 cubic meters or 0.72 cubic meters per square foot.

Examining usage by dwelling vintage, average consumption per square foot goes up as dwelling age increases.

The higher the annual household income is, the higher the average total natural gas consumption per customer. However, as annual household income increases, the average natural gas consumption per square foot decreases.

Table # 4.04
Average Annual Cubic Meters (Gas Heat Billed) Weather Adjusted
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

Weighted Average Annual Cubic Meters Weather Adjusted

	# of Customers	Cubic Meters	Cubic Meters/SqFt
OVERALL:	234,536	2,522	2.04
AREA:			
Winnipeg City	175,590	2,522	2.05
Manitoba Hydro Gas	58,946	2,522	2.00
Manitoba Hydro No Gas	.	.	.
DWELLING TYPE:			
Single Detached	212,217	2,587	2.08
Multi Attached	19,860	2,052	1.78
Apartment Suite	2,459	704	0.72
VINTAGE:			
2000-2009	17,415	2,121	1.29
1990-1999	20,722	2,683	1.72
1980-1989	32,454	2,411	1.65
1970-1979	43,570	2,427	2.02
1960-1969	35,556	2,579	2.11
1950-1959	35,126	2,440	2.30
Pre 1950	49,692	2,769	2.47
HEATING FUEL:			
Electric Heat Billed	.	.	.
Gas Heat Billed	234,536	2,522	2.04
Other	.	.	.
ANNUAL HOUSEHOLD INCOME:			
LICO 125	50,886	2,406	2.28
NON-LICO 125	183,650	2,554	1.97
Under $25,000	27,006	2,362	2.31
$25-$49,999	59,273	2,406	2.17
$50-$74,999	57,137	2,480	2.04
$75-$99,999	40,337	2,490	1.92
$100,000 and Over	50,782	2,816	1.83

4.05 Residential Primary Space Heating Systems

Table # 4.05 shows the distribution of the primary residential space heating systems in use within the Manitoba Hydro provincial service territory. Overall, the most popular residential heating system is the forced air furnace (72.8%), this includes all electric and gas forced air furnaces as well as heat pump systems, followed by baseboards (13.6%).

Boiler systems are most popular in Winnipeg (11.8%) compared to 8.3% overall. Natural gas high efficiency furnaces make up 26.7% of heating systems in Winnipeg. No natural gas available areas have the highest saturation rates of electric central forced air furnaces (53.5%) and electric baseboard systems (29.5%). Heat pumps systems are installed in only 0.3% of dwellings in Winnipeg compared to over 3% of dwellings outside Winnipeg.

An almost equal percent of natural gas high-efficiency furnaces and electric forced air furnaces are installed in dwellings built in the 2000s. Natural gas high-efficiency forced air furnaces are in 34.3% of newer dwellings and 31.7% of newer dwellings have electric forced air furnaces. A significant percent of dwellings (18.5%) built prior to 1950 use boiler systems for space heat compared to 8.3% overall. Heat pumps systems are installed in 7.6% of dwellings built in the 2000s compared to 1.7% overall.

Natural gas heat billed dwellings (96.0%) are almost all using force air furnaces of which 36.6% are high-efficient units. Translated into units, there are 85,840 high-efficiency gas furnaces, 79,039 mid-efficient gas furnaces, and 60,276 standard efficient furnaces in use by natural gas billed customers.

The use of electric baseboard systems decreases as annual household income increases. In low-income households of under $25,000, 25.5% heat by baseboards compared to only 5.0% of households earning $100,000 plus annually. Heat pump systems are in 2.8% of households earning $100,000 plus annually compared to 1.7% overall.

Table # 4.05
Residential Primary Space Heating Systems
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Primary Space Heating Systems

	# of Customers	N.Gas Hi-Eff	N.Gas Mid-Eff	N.Gas Std-Eff	Electric Furnace	Base board	Boilers	Heat Pump	Other
OVERALL:	439,096	19.5%	18.0%	13.7%	19.8%	13.6%	8.3%	1.7%	5.3%
AREA:									
Winnipeg City	236,093	26.7%	24.7%	19.6%	3.9%	7.6%	11.8%	0.3%	5.5%
Manitoba Hydro Gas	122,844	18.6%	16.9%	11.5%	28.3%	14.8%	4.0%	3.2%	2.8%
Manitoba Hydro No Gas	80,159	0.0%	0.0%	0.0%	53.5%	29.5%	4.8%	3.7%	8.5%
DWELLING TYPE:									
Single Detached	349,899	22.7%	20.3%	15.1%	22.9%	10.2%	4.1%	2.0%	2.7%
Multi Attached	33,324	18.1%	20.0%	19.9%	8.7%	16.5%	4.8%	0.3%	11.7%
Apartment Suite	55,873	0.9%	2.1%	1.4%	6.8%	33.3%	37.0%	0.4%	18.0%
VINTAGE:									
2000-2009	40,581	34.3%	8.1%	0.0%	31.7%	13.5%	2.6%	7.6%	2.1%
1990-1999	37,153	19.8%	31.6%	4.1%	26.7%	10.9%	2.5%	2.7%	1.8%
1980-1989	67,289	18.2%	11.4%	18.6%	21.9%	21.8%	6.1%	1.2%	0.8%
1970-1979	83,775	15.9%	20.9%	15.1%	22.6%	18.0%	4.3%	0.8%	2.5%
1960-1969	65,866	18.4%	21.3%	13.2%	17.1%	11.3%	8.7%	1.0%	9.2%
1950-1959	56,453	22.4%	20.2%	18.1%	13.5%	7.6%	8.6%	0.5%	9.1%
Pre 1950	87,980	16.1%	15.1%	16.9%	13.2%	10.0%	18.5%	1.2%	9.1%
HEATING FUEL:									
Electric Heat Billed	154,943	0.0%	0.0%	0.0%	56.1%	37.0%	2.3%	4.6%	0.0%
Gas Heat Billed	234,536	36.6%	33.7%	25.7%	0.0%	0.0%	4.0%	0.0%	0.0%
Other	49,617	0.0%	0.0%	0.0%	0.0%	5.0%	47.5%	0.5%	47.0%
ANNUAL HOUSEHOLD INCOME:									
LICO 125	105,086	14.5%	15.1%	17.4%	15.1%	19.7%	10.2%	0.5%	7.5%
NON-LICO 125	334,010	21.1%	18.9%	12.6%	21.3%	11.7%	7.7%	2.1%	4.6%
Under $25,000	71,163	10.7%	12.1%	13.7%	18.4%	25.5%	10.4%	0.6%	8.6%
$25-$49,999	128,882	15.6%	15.8%	13.0%	21.7%	15.4%	10.3%	1.4%	6.8%
$50-$74,999	102,841	20.0%	18.7%	15.1%	21.2%	12.6%	6.6%	1.5%	4.4%
$75-$99,999	64,060	27.0%	20.6%	13.5%	19.7%	8.4%	6.0%	2.4%	2.4%
$100,000 and Over	72,150	28.1%	24.4%	13.4%	15.9%	5.0%	7.3%	2.8%	3.2%

4.06 Age (Years) of Residential Primary Space Heating Systems

Table # 4.06 shows the distribution of primary residential space heating system age ranges within the Manitoba Hydro provincial service territory. The average age for any residential space heating system is 16.4 years.

Apartment suite heating systems are, on average, the oldest at 24.4 years compared the average ages of the other dwelling types. Over 51% of apartment building heating systems are over 25 years.

Natural gas heat billed systems are, on average, the youngest at 13.2 years compared the average ages of the other heating fuel types. About one quarter of natural gas heat billed customers installed new space heating systems within the last 3 years. This finding coincides with the natural gas furnace replacement to high efficiency programs that were offered by the various levels of government and by Manitoba Hydro.

Higher income households have, on average, newer heating systems than do lower income households. For household earning under $25,000, 40.5% heat with systems over 25 years of age compared to 14.7% of customers in the $100,000 plus income category. The average age of a heating system in a low income occupied dwelling is 20.5 years compared to 12.9 years for a heating system in a high income occupied dwelling.

Table # 4.06
Age (Years) of Residential Primary Space Heating Systems
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	% Weighted Frequency of Age (Years) of Space Heating System						
	# of Customers	Average Age	Under 4	4 to 9	10 to 15	16 to 25	Over 25
OVERALL:	439,096	16.4	20.7%	19.4%	14.3%	19.3%	26.2%
AREA:							
Winnipeg City	236,093	16.0	24.3%	19.4%	10.7%	18.9%	26.7%
Manitoba Hydro Gas	122,844	15.9	17.8%	21.1%	19.1%	18.8%	23.2%
Manitoba Hydro No Gas	80,159	18.2	14.5%	16.9%	17.6%	21.3%	29.7%
DWELLING TYPE:							
Single Detached	349,899	14.9	21.9%	22.1%	15.4%	19.3%	21.2%
Multi Attached	33,324	18.2	21.9%	13.3%	17.1%	10.8%	36.9%
Apartment Suite	55,873	24.4	12.3%	6.2%	6.1%	24.4%	51.1%
VINTAGE:							
2000-2009	40,581	4.2	46.0%	54.1%	0.0%	0.0%	0.0%
1990-1999	37,153	12.8	7.5%	8.4%	58.5%	23.8%	1.8%
1980-1989	67,289	17.8	18.9%	8.7%	5.4%	53.3%	13.9%
1970-1979	83,775	19.0	19.0%	17.9%	12.7%	10.3%	40.1%
1960-1969	65,866	17.8	19.2%	18.9%	13.5%	14.9%	33.5%
1950-1959	56,453	17.1	20.2%	18.9%	13.7%	15.8%	31.5%
Pre 1950	87,980	18.4	19.0%	18.6%	11.7%	14.6%	36.1%
HEATING FUEL:							
Electric Heat Billed	154,943	18.2	17.9%	15.8%	13.8%	22.5%	30.1%
Gas Heat Billed	234,536	13.2	25.3%	24.4%	15.7%	17.8%	16.8%
Other	49,617	25.8	7.5%	7.3%	9.7%	16.7%	58.8%
ANNUAL HOUSEHOLD INCOME:							
LICO 125	105,086	19.4	15.9%	16.4%	12.7%	17.8%	37.2%
NON-LICO 125	334,010	15.4	22.2%	20.4%	14.8%	19.8%	22.8%
Under $25,000	71,163	20.5	12.9%	15.4%	14.7%	16.5%	40.5%
$25-$49,999	128,882	17.7	18.9%	17.9%	12.3%	20.5%	30.4%
$50-$74,999	102,841	15.8	22.1%	20.1%	14.4%	18.9%	24.6%
$75-$99,999	64,060	14.1	25.9%	18.6%	16.1%	21.8%	17.7%
$100,000 and Over	72,150	12.9	25.0%	25.9%	15.9%	18.6%	14.7%

4.07 Residential Supplementary Space Heating Fuels

Table # 4.07 shows the distribution of the supplementary residential heating fuels in use within the Manitoba Hydro provincial service territory. Overall, most residential customers (75.0%) do not use any supplementary heating fuel that is different from their primary space heating fuel. Electricity is used by 14.4% of residential customers as a supplemental space heating fuel.

Supplemental wood heat is used by 24.9% of customers located in no natural gas available areas.

Supplementary electric heat is more popular in older dwellings than it is in newer ones. Almost 23% of dwellings built prior to 1950 use electricity for supplemental heat compared to 7.1% of customers residing in dwelling built in the 2000s.

Supplemental wood heat is used by 18.8% of electric heat billed customers. Supplemental electric heat is used by 22.6% of customers in the natural gas heat billed category.

The higher the annual household income is, the more likely some sort of supplemental heating fuel will be used. In low-income households of under $25,000, 80.1% do not use any supplemental sources compared to 71.3% of households earning $100,000 plus annually that do not use any supplemental fuel.

Table # 4.07
Residential Supplementary Space Heating Fuels
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Supplementary Space Heating Fuels				
		None	Electric	Natural Gas	Wood	Other
OVERALL:	439,096	75.0%	14.4%	0.8%	8.6%	1.4%
AREA:						
Winnipeg City	236,093	77.5%	18.4%	0.3%	3.1%	0.7%
Manitoba Hydro Gas	122,844	74.8%	13.4%	1.8%	8.4%	1.6%
Manitoba Hydro No Gas	80,159	67.8%	4.1%	0.3%	24.9%	2.9%
DWELLING TYPE:						
Single Detached	349,899	72.0%	15.5%	0.8%	10.3%	1.6%
Multi Attached	33,324	80.0%	17.0%	0.3%	2.0%	0.7%
Apartment Suite	55,873	90.9%	6.1%	0.9%	1.5%	0.5%
VINTAGE:						
2000-2009	40,581	84.2%	7.1%	1.3%	5.8%	1.7%
1990-1999	37,153	78.0%	11.1%	1.1%	9.0%	0.9%
1980-1989	67,289	72.6%	10.8%	1.5%	13.3%	1.8%
1970-1979	83,775	76.4%	11.2%	0.8%	10.7%	0.9%
1960-1969	65,866	76.9%	14.0%	0.2%	7.4%	1.4%
1950-1959	56,453	75.0%	18.0%	0.5%	5.8%	0.7%
Pre 1950	87,980	68.4%	22.8%	0.3%	6.6%	1.9%
HEATING FUEL:						
Electric Heat Billed	154,943	77.0%	0.0%	2.0%	18.8%	2.3%
Gas Heat Billed	234,536	73.5%	22.6%	0.0%	3.2%	0.7%
Other	49,617	75.7%	20.2%	0.5%	2.2%	1.4%
ANNUAL HOUSEHOLD INCOME:						
LICO 125	105,086	79.4%	12.9%	0.5%	6.0%	1.2%
NON-LICO 125	334,010	73.6%	14.9%	0.8%	9.3%	1.4%
Under $25,000	71,163	80.1%	10.4%	0.7%	7.2%	1.5%
$25-$49,999	128,882	76.3%	13.4%	0.4%	8.7%	1.2%
$50-$74,999	102,841	73.3%	15.1%	1.0%	9.3%	1.4%
$75-$99,999	64,060	73.6%	15.5%	0.7%	9.4%	0.9%
$100,000 and Over	72,150	71.3%	18.2%	1.1%	7.8%	1.8%

4.08 Most Common Supplementary Space Heating Systems

Table # 4.08 shows the distribution of the supplementary residential space heating systems in use within the Manitoba Hydro provincial service territory. Overall, the most popular residential supplemental heating system is the electric baseboard (13.8%) followed closely by the electric portable heater (13.5%). Just over 48% of residential customers do not use any supplemental heating system.

A higher percent of residential customers in no natural gas available areas (21.4%) use wood stoves for supplemental heat compared to 6.4% of residential customers overall.

Electric baseboards (19.4%) and electric portable heaters (19.2%) are used as supplemental heating systems in older homes.

Electric heat billed dwellings (14.2%) tend to use wood stoves for supplemental heat.

The use of fireplace systems increase as annual household income increases. In low-income households of under $25,000, 5.1% use fireplaces for supplemental heat compared to 25.6% of households earning $100,000 plus annually.

Table # 4.08
Five Most Common Supplementary Space Heating Systems
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Supplementary Space Heating Systems					
		None	Electric Baseboard	Portable Heater	Gas Fireplace	Wood Stove	Wood Fireplace
OVERALL:	439,096	48.4%	13.8%	13.5%	5.8%	6.4%	7.4%
AREA:							
Winnipeg City	236,093	51.4%	11.9%	15.5%	6.0%	1.5%	8.1%
Manitoba Hydro Gas	122,844	47.4%	16.6%	11.2%	8.4%	6.0%	6.6%
Manitoba Hydro No Gas	80,159	40.9%	15.1%	11.1%	1.5%	21.4%	6.4%
DWELLING TYPE:							
Single Detached	349,899	45.7%	14.8%	14.3%	6.8%	7.9%	7.9%
Multi Attached	33,324	57.6%	11.4%	14.1%	4.0%	0.3%	6.0%
Apartment Suite	55,873	59.9%	8.6%	8.0%	1.1%	0.0%	4.7%
VINTAGE:							
2000-2009	40,581	54.1%	7.3%	9.3%	14.1%	4.0%	4.3%
1990-1999	37,153	51.3%	10.0%	8.9%	13.2%	6.9%	6.1%
1980-1989	67,289	43.8%	12.5%	12.5%	6.7%	9.6%	15.5%
1970-1979	83,775	48.8%	11.6%	12.7%	3.9%	6.8%	11.2%
1960-1969	65,866	52.7%	15.3%	12.7%	4.5%	5.5%	4.7%
1950-1959	56,453	49.9%	15.1%	13.9%	4.4%	5.1%	2.7%
Pre 1950	87,980	43.4%	19.4%	19.2%	2.0%	5.7%	4.6%
HEATING FUEL:							
Electric Heat Billed	154,943	48.2%	14.0%	8.8%	2.9%	14.2%	7.1%
Gas Heat Billed	234,536	48.5%	13.6%	16.6%	8.9%	1.9%	8.2%
Other	49,617	48.7%	13.8%	13.5%	0.5%	3.0%	4.6%
ANNUAL HOUSEHOLD INCOME:							
LICO 125	105,086	52.0%	12.1%	13.5%	2.8%	4.8%	3.6%
NON-LICO 125	334,010	47.2%	14.3%	13.5%	6.8%	6.8%	8.6%
Under $25,000	71,163	54.1%	11.7%	11.2%	2.3%	6.3%	2.8%
$25-$49,999	128,882	49.5%	13.8%	13.4%	3.7%	6.7%	6.1%
$50-$74,999	102,841	48.2%	14.1%	13.7%	5.6%	7.3%	6.8%
$75-$99,999	64,060	47.2%	14.2%	13.8%	7.1%	6.0%	9.3%
$100,000 and Over	72,150	42.2%	15.0%	15.3%	12.3%	4.8%	13.3%

4.09 Central Forced Air Furnace Fan Motor

Table # 4.09 shows the distribution of central forced air furnace fan motor operation in use within the Manitoba Hydro provincial service territory. Overall, 25.1% of the total residential customer base operates a two speed forced air furnace. If the customers with no central forced air furnace systems are removed, the proportions of fan motor speeds are 59.7% two speed, 33.8% single speed, and 6.5% variable direct current motor (DCM) speed.

Two speed forced air furnaces are most common in newer homes. Over 38.8% of new homes have two speed furnaces compared to 18.1% of pre 1950 built dwellings.

Variable DCM furnaces are in 7.9% of natural gas heat billed dwellings.

Variable DCM furnaces increase with annual household income. In high-income households of $100,000 plus, 8.2% operate variable DCM furnaces compared to 1.3% of the under $25,000 group.

Table # 4.09
Central Forced Air Furnace Fan Motor
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	% Weighted Frequency of Forced Air Furnace Fan Motor				
	# of Customers	No CFA	One Speed	Two Speed	Variable DCM
OVERALL:	439,096	25.8%	44.3%	25.1%	4.8%
AREA:					
Winnipeg City	236,093	24.9%	38.3%	30.6%	6.3%
Manitoba Hydro Gas	122,844	20.1%	50.1%	25.5%	4.3%
Manitoba Hydro No Gas	80,159	37.2%	53.3%	8.4%	1.2%
DWELLING TYPE:					
Single Detached	349,899	15.3%	50.2%	28.8%	5.7%
Multi Attached	33,324	31.1%	42.1%	24.1%	2.8%
Apartment Suite	55,873	88.8%	8.7%	2.5%	0.0%
VINTAGE:					
2000-2009	40,581	18.3%	38.3%	38.8%	4.6%
1990-1999	37,153	14.1%	55.5%	26.0%	4.4%
1980-1989	67,289	27.6%	41.1%	24.5%	6.8%
1970-1979	83,775	23.5%	45.0%	26.4%	5.1%
1960-1969	65,866	25.8%	46.5%	23.4%	4.4%
1950-1959	56,453	24.5%	44.0%	26.3%	5.2%
Pre 1950	87,980	35.9%	42.8%	18.1%	3.1%
HEATING FUEL:					
Electric Heat Billed	154,943	38.9%	49.6%	9.9%	1.7%
Gas Heat Billed	234,536	3.8%	48.2%	40.2%	7.9%
Other	49,617	89.0%	9.9%	1.1%	0.0%
ANNUAL HOUSEHOLD INCOME:					
LICO 125	105,086	37.0%	40.3%	20.5%	2.1%
NON-LICO 125	334,010	22.3%	45.6%	26.5%	5.6%
Under $25,000	71,163	44.0%	38.6%	16.1%	1.3%
$25-$49,999	128,882	30.2%	45.5%	21.2%	3.1%
$50-$74,999	102,841	22.4%	46.1%	26.5%	5.0%
$75-$99,999	64,060	16.1%	44.5%	31.5%	7.9%
$100,000 and Over	72,150	13.5%	45.3%	33.1%	8.2%

4.10 Annual Space Heating System Maintenance Checks

Table # 4.10 shows the annual space heating system maintenance routine of residential customers within the Manitoba Hydro provincial service territory. Overall, 38.3% of the total residential customer base performs annual maintenance checks and 27.5% perform bi-annual maintenance checks. For 34.2% of customers, maintenance checks are either not applicable or never done. The reasons for not doing any space heating maintenance checks are that some customers rent their dwellings or they reside in dwellings where heat is supplied from a central source and they do not have the ability to maintain the heating system.

As expected, apartment suite customers (93.2%) are the least likely group to maintain the space heating system. These customers reside in structures where heat is supplied from a central source and they do not have the ability to perform any maintenance checks.

Table # 4.10
Annual Space Heating System Maintenance Checks
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	% Weighted Frequency of Annual Maintenance Checks				
	# of Customers	Not Applicable	Never	Annually	Bi-Annually
OVERALL:	439,096	21.4%	12.9%	38.3%	27.5%
AREA:					
Winnipeg City	236,093	24.3%	10.3%	35.1%	30.3%
Manitoba Hydro Gas	122,844	16.3%	15.5%	40.4%	27.8%
Manitoba Hydro No Gas	80,159	20.3%	16.5%	44.6%	18.5%
DWELLING TYPE:					
Single Detached	349,899	8.9%	14.2%	44.6%	32.3%
Multi Attached	33,324	40.4%	11.3%	30.5%	17.9%
Apartment Suite	55,873	87.8%	5.4%	3.9%	2.9%
VINTAGE:					
2000-2009	40,581	21.4%	19.3%	36.6%	22.7%
1990-1999	37,153	12.9%	15.6%	40.1%	31.3%
1980-1989	67,289	23.1%	14.1%	37.9%	24.9%
1970-1979	83,775	19.7%	12.2%	38.3%	29.9%
1960-1969	65,866	22.7%	10.1%	38.3%	28.9%
1950-1959	56,453	21.4%	10.5%	40.9%	27.1%
Pre 1950	87,980	24.1%	12.1%	37.1%	26.8%
HEATING FUEL:					
Electric Heat Billed	154,943	27.2%	17.7%	38.6%	16.5%
Gas Heat Billed	234,536	5.3%	12.3%	42.7%	39.7%
Other	49,617	78.8%	0.9%	16.5%	3.8%
ANNUAL HOUSEHOLD INCOME:					
LICO 125	105,086	33.2%	12.5%	34.5%	19.8%
NON-LICO 125	334,010	17.6%	13.0%	39.5%	29.8%
Under $25,000	71,163	36.7%	12.7%	33.6%	17.0%
$25-$49,999	128,882	25.7%	11.7%	39.0%	23.6%
$50-$74,999	102,841	18.6%	14.0%	38.2%	29.2%
$75-$99,999	64,060	14.3%	12.4%	42.0%	31.3%
$100,000 and Over	72,150	8.6%	14.0%	38.7%	38.7%

4.11 Furnace Filter Maintenance

Table # 4.11 shows the furnace filter maintenance routine of residential customers within the Manitoba Hydro provincial service territory. Overall, 52.5% of the total residential customer base performs quarterly filter maintenance and 15.3% perform annual maintenance. For 31.7% of customers, filter maintenance is not applicable because either there is no forced air furnace, they rent their dwelling, or they reside in dwellings where heat is supplied from a central source and they do not have the ability to maintain any furnace filters.

As expected, apartment suite customers (91.6%) are the least likely group to maintain furnace filters. These customers reside in dwellings where heat is supplied from a central source and they do not have the ability to maintain any furnace filters.

Table # 4.11
Furnace Filter Maintenance
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	% Weighted Frequency of Furnace Filter Maintenance				
	# of Customers	Not Applicable	Seldom	Quarterly	Annually
OVERALL:	439,096	31.7%	0.6%	52.5%	15.3%
AREA:					
Winnipeg City	236,093	30.4%	0.6%	54.6%	14.4%
Manitoba Hydro Gas	122,844	25.3%	0.4%	57.3%	17.0%
Manitoba Hydro No Gas	80,159	45.0%	0.9%	39.0%	15.1%
DWELLING TYPE:					
Single Detached	349,899	20.6%	0.7%	61.3%	17.4%
Multi Attached	33,324	47.1%	0.4%	39.8%	12.7%
Apartment Suite	55,873	91.6%	0.3%	4.9%	3.3%
VINTAGE:					
2000-2009	40,581	22.7%	0.6%	67.3%	9.4%
1990-1999	37,153	19.4%	0.0%	62.3%	18.4%
1980-1989	67,289	31.6%	0.8%	50.4%	17.2%
1970-1979	83,775	29.2%	0.4%	55.2%	15.2%
1960-1969	65,866	33.3%	0.8%	51.4%	14.4%
1950-1959	56,453	30.0%	0.7%	52.3%	17.1%
Pre 1950	87,980	43.3%	0.5%	41.5%	14.7%
HEATING FUEL:					
Electric Heat Billed	154,943	42.5%	0.7%	42.6%	14.2%
Gas Heat Billed	234,536	10.6%	0.6%	69.9%	18.9%
Other	49,617	97.6%	0.0%	1.2%	1.2%
ANNUAL HOUSEHOLD INCOME:					
LICO 125	105,086	44.5%	0.9%	41.6%	13.0%
NON-LICO 125	334,010	27.6%	0.5%	55.9%	16.0%
Under $25,000	71,163	52.0%	0.7%	35.1%	12.3%
$25-$49,999	128,882	36.5%	0.7%	47.6%	15.3%
$50-$74,999	102,841	27.8%	0.8%	53.8%	17.6%
$75-$99,999	64,060	20.4%	0.5%	63.7%	15.4%
$100,000 and Over	72,150	18.5%	0.0%	66.7%	14.8%

4.12 Annual Cords of Wood Burned

Table # 4.12 shows the annual cords of wood burned by residential customers within the Manitoba Hydro provincial service territory. This includes customers that use wood as a heating fuel for both primary and secondary heat. The annual average is 2.1 cords of wood burned by those who actually burn wood for supplementary space heat. The majority of residential customers (84.1%) do not burn wood.

Customers, from no natural gas available areas, burn, on average, the highest amount of wood at 3.1 cords.

Other heating fuel customers burn, on average, the highest amount of wood at 3.9 cords. These are customers that use wood heating systems for primary or supplementary space heat.

Table # 4.12
Annual Cords of Wood Burned
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	Average Cords	% Weighted Frequency of Annual Cords of Wood Burned: None	Under 1	1 to 2	3 to 4	5 to 6	7 to 8	9 Plus
OVERALL:	439,096	2.1	84.1%	8.5%	3.1%	1.9%	1.3%	0.6%	0.7%
AREA:									
Winnipeg City	236,093	0.6	90.1%	8.5%	1.3%	0.0%	0.0%	0.0%	0.0%
Manitoba Hydro Gas	122,844	2.4	85.7%	6.5%	3.8%	1.4%	1.1%	0.4%	1.1%
Manitoba Hydro No Gas	80,159	3.1	64.0%	11.2%	7.0%	8.2%	5.3%	2.4%	1.8%
DWELLING TYPE:									
Single Detached	349,899	2.2	81.5%	9.4%	3.7%	2.4%	1.5%	0.7%	0.8%
Multi Attached	33,324	1.3	92.6%	5.1%	1.3%	0.0%	1.0%	0.0%	0.0%
Apartment Suite	55,873	0.5	95.3%	4.7%	0.0%	0.0%	0.0%	0.0%	0.0%
VINTAGE:									
2000-2009	40,581	2.3	91.5%	2.7%	3.3%	1.2%	0.6%	0.4%	0.4%
1990-1999	37,153	2.2	85.7%	6.4%	2.8%	3.2%	1.3%	0.2%	0.4%
1980-1989	67,289	1.7	71.9%	17.3%	4.9%	2.8%	1.1%	1.0%	0.9%
1970-1979	83,775	1.8	79.5%	12.8%	3.5%	1.5%	1.4%	0.5%	0.8%
1960-1969	65,866	2.4	88.3%	5.5%	1.9%	1.8%	1.6%	0.3%	0.6%
1950-1959	56,453	2.9	89.7%	4.4%	1.2%	1.5%	2.2%	0.6%	0.5%
Pre 1950	87,980	2.3	86.9%	5.9%	3.2%	1.8%	0.8%	0.7%	0.7%
HEATING FUEL:									
Electric Heat Billed	154,943	2.7	75.1%	9.4%	5.2%	5.1%	3.0%	1.1%	1.2%
Gas Heat Billed	234,536	0.7	89.5%	8.7%	1.9%	0.0%	0.0%	0.0%	0.0%
Other	49,617	3.9	86.8%	4.6%	2.0%	0.9%	2.2%	1.5%	2.1%
ANNUAL HOUSEHOLD INCOME:									
LICO 125	105,086	2.4	89.1%	5.6%	1.5%	1.7%	1.1%	0.5%	0.6%
NON-LICO 125	334,010	2.0	82.5%	9.4%	3.6%	2.0%	1.4%	0.6%	0.7%
Under $25,000	71,163	2.7	88.3%	5.2%	1.7%	2.3%	1.1%	0.7%	0.7%
$25-$49,999	128,882	2.4	84.3%	7.7%	2.7%	1.8%	1.9%	0.8%	0.8%
$50-$74,999	102,841	2.1	83.6%	8.1%	3.6%	2.6%	1.0%	0.3%	0.9%
$75-$99,999	64,060	1.7	83.1%	9.7%	3.6%	1.7%	1.3%	0.6%	0.2%
$100,000 and Over	72,150	1.4	81.1%	12.5%	4.0%	1.0%	0.7%	0.4%	0.3%

4.13 Space Heating System Thermostat Controls

Table # 4.13 shows the distribution of space heating system thermostat controls in use within the Manitoba Hydro provincial service territory. Overall, there are two equally popular thermostat controls, the programmable thermostat (43.1%) and the manual control (39.1%).

A comparison of thermostat controls by dwelling type shows individual room control thermostats are most popular in apartments suites (30.7%) compared to 12.5% of thermostats overall.

It appears programmable thermostats are more popular in newer dwellings than they are in older ones. The set-back model saturations steadily decrease as dwelling age increases. Programmable thermostats are use in 56.7% of dwellings built in the 2000s compared to 34.8% of dwellings built prior to 1950.

Just over 34% of electric heat billed customers regulate temperature by individual room controls and 59.4% of natural gas heat billed customers use programmable thermostats.

The higher the annual household income is the more likely dwelling temperature will be controlled by a programmable thermostat. In low-income households of under $25,000, 21.0% control temperature with a set-back thermostat compared to 68.2% of households earning $100,000 plus annually. Since low-income household tend to use electric baseboard systems for heat, 22.3% indicate temperature regulation by individual room thermostats.

Table # 4.13
Space Heating System Thermostat Controls
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Thermostat Controls: Individual Room	Manual Control	Programmable Thermostat	Central /Other
OVERALL:	439,096	12.5%	39.1%	43.1%	5.3%
AREA:					
Winnipeg City	236,093	7.1%	34.4%	50.3%	8.2%
Manitoba Hydro Gas	122,844	13.7%	44.3%	40.4%	1.6%
Manitoba Hydro No Gas	80,159	26.5%	45.1%	25.9%	2.4%
DWELLING TYPE:					
Single Detached	349,899	9.2%	41.9%	48.4%	0.6%
Multi Attached	33,324	16.1%	39.0%	40.8%	4.2%
Apartment Suite	55,873	30.7%	22.2%	11.3%	35.8%
VINTAGE:					
2000-2009	40,581	12.5%	30.3%	56.7%	0.6%
1990-1999	37,153	10.0%	39.6%	48.8%	1.7%
1980-1989	67,289	19.9%	33.6%	42.5%	4.1%
1970-1979	83,775	17.4%	36.1%	44.0%	2.6%
1960-1969	65,866	10.4%	39.1%	41.7%	8.8%
1950-1959	56,453	6.3%	42.9%	43.5%	7.3%
Pre 1950	87,980	8.8%	47.9%	34.8%	8.6%
HEATING FUEL:					
Electric Heat Billed	154,943	34.3%	38.9%	26.9%	0.0%
Gas Heat Billed	234,536	0.0%	40.6%	59.4%	0.0%
Other	49,617	3.5%	33.0%	16.6%	46.9%
ANNUAL HOUSEHOLD INCOME:					
LICO 125	105,086	17.3%	45.2%	29.5%	8.0%
NON-LICO 125	334,010	11.0%	37.2%	47.4%	4.5%
Under $25,000	71,163	22.3%	47.7%	21.0%	9.0%
$25-$49,999	128,882	14.3%	44.3%	34.0%	7.4%
$50-$74,999	102,841	12.0%	40.2%	43.4%	4.4%
$75-$99,999	64,060	8.0%	32.1%	57.0%	2.9%
$100,000 and Over	72,150	4.2%	26.4%	68.2%	1.2%

4.14 Nightly Thermostat Setting Adjustments

Table # 4.14 shows the how residential customers adjust their heating system thermostats on a nightly basis. Overall, 24.7% never make any nightly adjustments on their thermostats. There are 45.0% who turn down their thermostat settings every night, 11.5% most nights and 15.1% occasionally turn down the thermostat setting.

A comparison of nightly thermostat adjustments by dwelling type shows apartment customers (51.4%) are the least likely group to turn down their temperatures settings.

Results indicate nightly thermostat adjustments are a more common behavior of customers living in newer dwellings than in older ones. Nightly temperature adjustments steadily decrease as dwelling age increases. Almost half the customers residing in dwellings built in the 2000's always turn down their thermostats at night compared to 36.6% of customers residing in pre 1950 dwellings.

Regular nightly temperature adjustments are more common with natural gas heat billed customers (55.1%) than with electric heat billed customers (38.6%).

The higher the annual household income is the more likely the dwelling occupants will lower the temperature on a nightly basis. In low-income households of under $25,000, 34.7% lower their thermostat settings every night compared to 55.6% of households earning $100,000 plus annually.

Table # 4.14
Nightly Thermostat Setting Adjustments
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Setting Adjustments: Adjust Nightly	Adjust Most Nights	Adjust Occasionally	Never Adjust
OVERALL:	439,096	45.0%	11.5%	15.1%	28.4%
AREA:					
Winnipeg City	236,093	46.7%	11.2%	13.7%	28.4%
Manitoba Hydro Gas	122,844	46.6%	10.8%	15.9%	26.8%
Manitoba Hydro No Gas	80,159	37.6%	13.4%	18.2%	30.8%
DWELLING TYPE:					
Single Detached	349,899	48.6%	11.2%	15.3%	24.8%
Multi Attached	33,324	44.0%	15.0%	13.7%	27.4%
Apartment Suite	55,873	23.0%	11.0%	14.7%	51.4%
VINTAGE:					
2000-2009	40,581	49.9%	11.4%	12.0%	26.7%
1990-1999	37,153	51.2%	10.0%	13.4%	25.4%
1980-1989	67,289	46.9%	10.0%	16.7%	26.3%
1970-1979	83,775	47.2%	11.5%	16.7%	24.7%
1960-1969	65,866	47.2%	12.2%	13.5%	27.1%
1950-1959	56,453	42.5%	11.0%	16.2%	30.4%
Pre 1950	87,980	36.6%	13.1%	15.1%	35.2%
HEATING FUEL:					
Electric Heat Billed	154,943	38.6%	14.0%	18.2%	29.2%
Gas Heat Billed	234,536	55.1%	10.5%	13.5%	20.9%
Other	49,617	17.6%	8.0%	13.1%	61.3%
ANNUAL HOUSEHOLD INCOME:					
LICO 125	105,086	37.0%	13.3%	15.8%	34.0%
NON-LICO 125	334,010	47.6%	10.9%	14.9%	26.6%
Under $25,000	71,163	34.7%	13.9%	16.7%	34.7%
$25-$49,999	128,882	41.6%	11.7%	14.6%	32.2%
$50-$74,999	102,841	45.3%	11.7%	15.3%	27.7%
$75-$99,999	64,060	51.1%	10.5%	14.7%	23.7%
$100,000 and Over	72,150	55.6%	9.4%	14.6%	20.5%

4.15 Average Space Heat Temperature Settings (Celsius)

Table # 4.15 shows the distribution of average residential space heating temperature settings in degree Celsius within the Manitoba Hydro provincial service territory. The average temperature setting for daytime is 19.7°C, for evening it is 20.1°C and for nighttime it is 18.7°C. On average, there is a 1.0°C variation in temperatures settings between daytime and nighttime. This observation is more or less consistent for all areas, dwelling types, vintages, heating fuels and annual household incomes.

Table # 4.15
Average Space Heat Temperature Settings (Celsius)
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	Average Temp	Average Space Heat Temperature Settings: Day	Evening	Night
OVERALL:	439,096	19.5	19.7	20.1	18.7
AREA:					
Winnipeg City	236,093	19.4	19.6	20.1	18.7
Manitoba Hydro Gas	122,844	19.6	19.9	20.2	18.7
Manitoba Hydro No Gas	80,159	19.5	19.9	20.0	18.8
DWELLING TYPE:					
Single Detached	349,899	19.4	19.7	20.1	18.6
Multi Attached	33,324	19.5	19.7	20.1	18.7
Apartment Suite	55,873	19.9	20.1	20.3	19.3
VINTAGE:					
2000-2009	40,581	19.5	19.8	20.1	18.6
1990-1999	37,153	19.7	20.0	20.3	18.8
1980-1989	67,289	19.6	19.9	20.2	18.8
1970-1979	83,775	19.5	19.7	20.1	18.7
1960-1969	65,866	19.4	19.7	20.1	18.5
1950-1959	56,453	19.6	19.8	20.1	18.8
Pre 1950	87,980	19.3	19.4	19.9	18.6
HEATING FUEL:					
Electric Heat Billed	154,943	19.5	19.7	20.0	18.7
Gas Heat Billed	234,536	19.4	19.6	20.1	18.5
Other	49,617	20.0	20.1	20.4	19.5
ANNUAL HOUSEHOLD INCOME:					
LICO 125	105,086	19.7	20.0	20.2	19.0
NON-LICO 125	334,010	19.4	19.6	20.1	18.6
Under $25,000	71,163	19.7	20.0	20.1	19.0
$25-$49,999	128,882	19.6	19.9	20.1	18.7
$50-$74,999	102,841	19.5	19.7	20.1	18.7
$75-$99,999	64,060	19.4	19.5	20.0	18.5
$100,000 and Over	72,150	19.4	19.4	20.1	18.5

4.16 Residential Dehumidifiers and Humidifiers

Table # 4.16 shows the distribution of dehumidifiers and humidifiers within the Manitoba Hydro provincial service territory. There are 29.5% of dwellings with dehumidifiers and 18.4% with humidifiers.

Comparing by area, the highest percent of dehumidifiers is outside Winnipeg in natural gas available areas (35.1%) and no natural gas available areas (36.5%). Humidifiers are most popular in Winnipeg (21.3%).

Apartment suite customers (2.7%) are the least likely dwelling type to have a dehumidifier.

Annual household income influences the saturation of dehumidifiers and humidifiers. As income increases so does the saturation of these two residential end uses. High-income households have the highest saturation of dehumidifiers (36.7%) and humidifiers (21.6%) compared to the low-income households of 20.4% and 16.3% respectively.

Table # 4.16
Residential Dehumidifiers and Humidifiers
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Dehumidifiers	% Weighted Frequency of Humidifiers
OVERALL:	439,096	29.5%	18.4%
AREA:			
Winnipeg City	236,093	24.2%	21.3%
Manitoba Hydro Gas	122,844	35.1%	16.5%
Manitoba Hydro No Gas	80,159	36.5%	12.7%
DWELLING TYPE:			
Single Detached	349,899	34.9%	17.3%
Multi Attached	33,324	17.1%	21.5%
Apartment Suite	55,873	2.7%	23.2%
VINTAGE:			
2000-2009	40,581	26.9%	21.4%
1990-1999	37,153	21.7%	20.6%
1980-1989	67,289	27.4%	16.2%
1970-1979	83,775	35.9%	18.0%
1960-1969	65,866	35.2%	16.8%
1950-1959	56,453	28.2%	18.3%
Pre 1950	87,980	26.0%	19.4%
HEATING FUEL:			
Electric Heat Billed	154,943	32.4%	15.3%
Gas Heat Billed	234,536	31.6%	20.2%
Other	49,617	10.2%	19.2%
ANNUAL HOUSEHOLD INCOME:			
LICO 125	105,086	21.4%	17.9%
NON-LICO 125	334,010	32.0%	18.6%
Under $25,000	71,163	20.4%	16.3%
$25-$49,999	128,882	27.5%	18.2%
$50-$74,999	102,841	29.4%	19.2%
$75-$99,999	64,060	35.6%	16.4%
$100,000 and Over	72,150	36.7%	21.6%

5.0 RESIDENTIAL VENTILATION AND AIR QUALITY

5.01 Residential Ventilation Systems

Table # 5.01 shows the distribution of the various forms of residential ventilation systems in use within the Manitoba Hydro provincial service territory. Overall, the most popular form of residential ventilation is the furnace fan (76.7%) followed by the kitchen or bath fan (57.1%) and the opening of doors and windows (43.9%). Note the percent values across each row exceed 100% since multiple responses were allowed for this question.

In general, the popularity sequence of each ventilation system is constant by area, dwellings type, vintage, heating fuel and annual household income. The exception is observed when No Gas available areas, new housing stock and upper income households are examined.

Heat recovery ventilation systems are most popular in No Gas available areas at 11.8% compared to 6.9% overall.

For dwellings built since the 1990s, the more expensive ventilation forms of central exhaust and heat recovery systems are much more popular. There are 37.1% of dwellings built in the 2000s and 22.2% of dwellings built in the 1990s with central exhaust systems. The overall saturation for central exhaust is 10.5%. A similar observation is made with heat recovery systems. There are 30.0% of dwellings built in the 2000s and 14.4% of dwellings built in the 1990s with heat recovery systems. The overall saturation for residential heat recovery systems is 6.9%.

Households earning $100,000 plus are more likely to have central exhaust (16.3%) and heat recovery (12.3%) systems compared to households earning less per year.

Table # 5.01
Residential Ventilation Systems
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Residential Ventilation Systems

	# of Customers	Furnace Fan	Bath/Kitch Fan	Window Door	Ceiling Fan	Portable Fan	Roof Turbine	Central Exhaust	Heat Recovery
OVERALL:	439,096	76.7%	57.1%	43.9%	34.3%	14.6%	11.4%	10.5%	6.9%
AREA:									
Winnipeg City	236,093	80.2%	57.9%	46.6%	27.3%	13.8%	9.0%	10.7%	3.6%
Manitoba Hydro Gas	122,844	80.0%	58.6%	40.2%	40.1%	13.4%	12.6%	12.8%	9.9%
Manitoba Hydro No Gas	80,159	61.2%	52.4%	41.6%	46.0%	18.7%	16.5%	6.2%	11.8%
DWELLING TYPE:									
Single Detached	349,899	84.2%	60.2%	44.2%	37.4%	14.7%	13.3%	10.9%	8.1%
Multi Attached	33,324	77.5%	53.9%	45.3%	27.9%	15.3%	8.4%	9.9%	3.7%
Apartment Suite	55,873	29.6%	39.6%	41.2%	18.2%	13.4%	1.0%	8.3%	1.1%
VINTAGE:									
2000-2009	40,581	83.9%	51.0%	32.9%	19.6%	5.9%	3.5%	37.1%	30.0%
1990-1999	37,153	86.3%	57.4%	35.3%	35.3%	12.5%	6.7%	22.2%	14.4%
1980-1989	67,289	71.7%	64.2%	44.9%	35.6%	11.2%	8.8%	9.8%	6.1%
1970-1979	83,775	77.1%	66.3%	45.7%	37.6%	15.7%	14.6%	7.3%	3.7%
1960-1969	65,866	79.4%	63.8%	44.3%	35.7%	13.0%	16.0%	4.6%	4.0%
1950-1959	56,453	82.0%	51.0%	45.8%	32.9%	19.0%	14.8%	5.6%	1.7%
Pre 1950	87,980	67.4%	44.4%	48.6%	36.1%	19.4%	10.3%	4.3%	2.1%
HEATING FUEL:									
Electric Heat Billed	154,943	60.7%	54.0%	39.9%	40.7%	16.1%	13.6%	9.1%	11.2%
Gas Heat Billed	234,536	96.0%	63.9%	45.4%	32.2%	13.0%	11.0%	12.8%	5.0%
Other	49,617	35.5%	34.7%	49.5%	23.6%	17.7%	6.3%	3.8%	2.1%
ANNUAL HOUSEHOLD INCOME:									
LICO 125	105,086	68.0%	47.3%	40.5%	32.6%	15.2%	9.9%	6.5%	2.7%
NON-LICO 125	334,010	79.4%	60.2%	45.0%	34.8%	14.4%	11.9%	11.7%	8.2%
Under $25,000	71,163	60.8%	43.0%	37.6%	32.8%	15.8%	9.1%	7.1%	2.6%
$25-$49,999	128,882	72.7%	57.6%	44.6%	35.9%	16.8%	12.3%	8.2%	4.1%
$50-$74,999	102,841	79.7%	57.9%	46.2%	34.6%	13.9%	13.4%	10.4%	6.6%
$75-$99,999	64,060	85.4%	61.9%	42.4%	34.8%	12.7%	10.3%	12.3%	11.6%
$100,000 and Over	72,150	87.6%	64.6%	46.7%	31.7%	12.1%	10.1%	16.3%	12.3%

5.02 Residential Air Filtration Systems

Table # 5.02 shows the distribution of residential air filtration systems within the Manitoba Hydro provincial service territory. Overall, 66.9% of Manitoba Hydro's residential customers use a furnace air filter. There are another 9.8% of customers who use an electrostatic air cleaning system in conjunction with their forced air furnace to further filter dust particles. Just over 15% of residential customers indicate using no air filtration system and 3.6% use room specific filtration systems.

A high percent of apartment customers (64.2%) indicate no air filtration system is used and a high percent (6.2%) of these customers indicate the use of individual room air filter systems.

Older dwellings are less likely to use air filtration systems. Of dwellings built prior to 1950, 28.5% use no air filtration system, compared to 11.7% of dwellings built in the 2000s with no such system.

For natural gas heat billed customers, 13.7% use an electrostatic air filter to clean the air in their homes compared to 6.3% of electric heat billed customers. However, only 56.1% of electric heat billed customers use forced air furnace systems compared to 96.0% of natural gas heat billed customers (Table # 4.05).

The saturation of electrostatic air filters increases along with annual household income. Only 4.9% of households earning less than $25,000 use electrostatic air filters. This compares to 14.9% of households earning $100,000 or more that use electrostatic filters to clean the air.

Table # 5.02
Residential Air Filtration Systems
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Air Filtration Systems: None	Furnace Filter	Room Filters	Electrostatic
OVERALL:	439,096	19.7%	66.9%	3.6%	9.8%
AREA:					
Winnipeg City	236,093	17.8%	68.5%	2.0%	11.8%
Manitoba Hydro Gas	122,844	16.9%	71.7%	3.0%	8.4%
Manitoba Hydro No Gas	80,159	29.3%	55.2%	9.5%	5.9%
DWELLING TYPE:					
Single Detached	349,899	12.6%	73.0%	3.2%	11.2%
Multi Attached	33,324	18.8%	68.2%	3.8%	9.3%
Apartment Suite	55,873	64.2%	28.6%	6.2%	1.0%
VINTAGE:					
2000-2009	40,581	11.7%	74.3%	4.4%	9.6%
1990-1999	37,153	11.2%	70.9%	2.5%	15.4%
1980-1989	67,289	25.1%	62.5%	3.2%	9.2%
1970-1979	83,775	18.7%	65.5%	4.1%	11.6%
1960-1969	65,866	17.1%	67.7%	3.5%	11.6%
1950-1959	56,453	15.1%	73.7%	2.9%	8.3%
Pre 1950	87,980	28.5%	61.8%	4.2%	5.6%
HEATING FUEL:					
Electric Heat Billed	154,943	33.5%	54.5%	5.8%	6.3%
Gas Heat Billed	234,536	3.5%	82.3%	0.5%	13.7%
Other	49,617	52.8%	33.5%	11.7%	2.0%
ANNUAL HOUSEHOLD INCOME:					
LICO 125	105,086	27.9%	60.6%	4.1%	7.4%
NON-LICO 125	334,010	17.1%	68.9%	3.5%	10.5%
Under $25,000	71,163	34.0%	55.9%	5.2%	4.9%
$25-$49,999	128,882	23.2%	64.6%	4.1%	8.1%
$50-$74,999	102,841	17.3%	69.7%	3.0%	10.0%
$75-$99,999	64,060	11.7%	73.1%	2.9%	12.3%
$100,000 and Over	72,150	9.7%	72.6%	2.8%	14.9%

5.03 Central Forced Air Furnace Fresh Air Intake

Table # 5.03 shows the distribution of residential customers with fresh air intakes to their forced air furnaces within the Manitoba Hydro provincial service territory. A significant percent of customers (18.1%) do not know whether there is a fresh air intake to their forced air furnace. If the 18.1% “don’t know” and 23.3% “no central forced air furnace” are removed from analysis, then 72.5 % of customers with a central forced air furnace have a fresh air intake connected to their heating system.

The presence of fresh air intake systems is popular in newer homes. About two thirds of dwellings built since 1990 indicate fresh air intake connections. If only the customers who indicated “don’t know” and “no central furnace” are removed from analysis then approximately 91% of newer homes with forced air furnaces have fresh air intakes.

By heating fuel, 59.2% of natural gas heat billed customers and 28.2% of electric heat billed customers have fresh air intakes in their homes. If the customers who indicated “don’t know” and “no central furnace” are removed from analysis, then 78.7% of natural gas heat customers compares to 58.8% of all-electric customers who have fresh air intakes connected to their forced air furnace systems.

Almost 60% of households earning $100,000 plus annually have fresh air intakes connected to forced air furnaces. If the customers who indicated “don’t know” and “no central furnace” are removed from analysis, then 79.1% of households earning $100,000 plus have fresh air intakes connected to their forced are furnace systems.

Table # 5.03
Central Forced Air Furnace Fresh Air Intake
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Furnace Fresh Air Intake: Yes	No	NO CFA	Don't Know
OVERALL:	439,096	42.5%	16.1%	23.3%	18.1%
AREA:					
Winnipeg City	236,093	45.7%	13.3%	19.8%	21.2%
Manitoba Hydro Gas	122,844	46.0%	17.5%	20.0%	16.6%
Manitoba Hydro No Gas	80,159	27.5%	22.3%	38.8%	11.3%
DWELLING TYPE:					
Single Detached	349,899	48.4%	18.8%	15.9%	16.9%
Multi Attached	33,324	37.8%	11.3%	22.5%	28.3%
Apartment Suite	55,873	7.9%	2.4%	70.4%	19.3%
VINTAGE:					
2000-2009	40,581	66.3%	6.2%	16.1%	11.4%
1990-1999	37,153	66.0%	8.0%	13.7%	12.3%
1980-1989	67,289	46.2%	11.2%	28.3%	14.3%
1970-1979	83,775	42.1%	18.4%	22.9%	16.7%
1960-1969	65,866	38.7%	20.8%	20.6%	20.0%
1950-1959	56,453	35.8%	19.1%	18.0%	27.1%
Pre 1950	87,980	26.2%	20.5%	32.6%	20.7%
HEATING FUEL:					
Electric Heat Billed	154,943	28.2%	19.8%	39.3%	12.8%
Gas Heat Billed	234,536	59.2%	16.0%	4.0%	20.8%
Other	49,617	8.2%	5.6%	64.5%	21.7%
ANNUAL HOUSEHOLD INCOME:					
LICO 125	105,086	30.9%	14.3%	32.0%	22.8%
NON-LICO 125	334,010	46.1%	16.7%	20.6%	16.6%
Under $25,000	71,163	25.6%	14.0%	39.2%	21.2%
$25-$49,999	128,882	36.3%	17.1%	27.3%	19.3%
$50-$74,999	102,841	44.1%	16.8%	20.3%	18.8%
$75-$99,999	64,060	52.4%	16.4%	14.6%	16.7%
$100,000 and Over	72,150	58.9%	15.5%	12.5%	13.1%

5.04 Air Quality During Winter Months

Table # 5.04 shows the distribution of how residential customers within the Manitoba Hydro provincial service territory rate their air quality during the winter months. The majority (68.4%) rate their air quality as “comfortable” followed by “too dry” (26.4%) and trailed by “too humid” (5.3%).

A high percent of residential customers in dwellings built prior to 1950 (35.4%) indicate their air quality as “too dry”. Low humidity appears to be a problem, as well, with apartment dwellers (44.5%). Other heating fuel customers (41.5%) report low humidity. This group is mainly composed of apartment suite customers that do not pay directly for their space heat.

Table # 5.04
Air Quality During Winter Months
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	% Weighted Frequency of Air Quality in Winter			
	# of Customers	Too Dry	Too Humid	Comfortable
OVERALL:	439,096	26.4%	5.3%	68.4%
AREA:				
Winnipeg City	236,093	29.6%	5.0%	65.4%
Manitoba Hydro Gas	122,844	21.0%	5.4%	73.6%
Manitoba Hydro No Gas	80,159	24.8%	6.2%	69.1%
DWELLING TYPE:				
Single Detached	349,899	22.6%	5.2%	72.2%
Multi Attached	33,324	35.1%	4.6%	60.4%
Apartment Suite	55,873	44.5%	6.5%	49.0%
VINTAGE:				
2000-2009	40,581	19.6%	3.7%	76.7%
1990-1999	37,153	23.0%	4.3%	72.7%
1980-1989	67,289	24.4%	5.6%	70.0%
1970-1979	83,775	25.2%	6.6%	68.2%
1960-1969	65,866	22.6%	7.3%	70.2%
1950-1959	56,453	27.8%	5.0%	67.2%
Pre 1950	87,980	35.4%	3.7%	60.9%
HEATING FUEL:				
Electric Heat Billed	154,943	25.4%	6.8%	67.9%
Gas Heat Billed	234,536	23.8%	4.2%	72.0%
Other	49,617	41.5%	5.9%	52.6%
ANNUAL HOUSEHOLD INCOME:				
LICO 125	105,086	28.7%	6.6%	64.7%
NON-LICO 125	334,010	25.6%	4.9%	69.5%
Under $25,000	71,163	28.0%	5.5%	66.5%
$25-$49,999	128,882	26.3%	6.1%	67.6%
$50-$74,999	102,841	28.2%	4.5%	67.4%
$75-$99,999	64,060	25.9%	5.2%	69.0%
$100,000 and Over	72,150	22.5%	5.0%	72.5%

6.0 RESIDENTIAL AIR CONDITIONING

6.01 Residential Air Conditioning Systems

Table # 6.01 shows the distribution of residential air conditioning systems within the Manitoba Hydro provincial service territory. Over 58% of residential customers have a central air conditioning system installed in their dwellings. Almost 22% do not have any mechanical air conditioning system at all.

Over 44% of No Gas Available area residential customers do not have any air conditioning systems. Just under 70% of Winnipeg residential customers have central air conditioners installed at their dwellings.

Window air conditioner units are popular in rental dwellings such as apartment suites (54.1%). Close to 64% of single detached dwellings have central air conditioning systems.

Newer residential building construction has a higher saturation rate of central air conditioning units. Over 71% of dwellings built since the 1990s have central air conditioners. Heat pump systems are in 7.6% of dwellings constructed during the 2000s. Older dwellings are more likely not to have any air conditioning system. Over 38% of dwellings built before 1950 do not have air conditioners of any kind.

Over 80% of natural gas heat billed customers have central air conditioning compared to 37.5% of electric heat billed residential customers. The reason for this difference is that 36.3% of all-electric customers have baseboard systems (Table # 4.05) and baseboard systems are not conducive to central air conditioning.

Low-income households earning under $25,000 (36.3%) are less likely to have a central conditioner compared to 77.7% of households earning $100,000 and over. Lower income groups, however, are more likely to cool their dwellings by window air units (30.5%) compared to higher income earners (7.3%).

Table # 6.01
Residential Air Conditioning Systems
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Air Conditioning Systems: No Air Conditioner	Heat Pump System	Window Air	Central Air
OVERALL:	439,096	21.6%	1.6%	18.5%	58.3%
AREA:					
Winnipeg City	236,093	13.4%	0.2%	17.2%	69.3%
Manitoba Hydro Gas	122,844	22.7%	3.2%	18.3%	55.9%
Manitoba Hydro No Gas	80,159	44.4%	3.7%	22.5%	29.4%
DWELLING TYPE:					
Single Detached	349,899	22.1%	2.0%	12.3%	63.6%
Multi Attached	33,324	19.3%	0.3%	23.3%	57.1%
Apartment Suite	55,873	20.2%	0.0%	54.1%	25.7%
VINTAGE:					
2000-2009	40,581	10.6%	7.6%	9.0%	72.8%
1990-1999	37,153	12.9%	2.7%	13.0%	71.4%
1980-1989	67,289	13.4%	1.2%	20.8%	64.6%
1970-1979	83,775	16.1%	0.8%	19.9%	63.3%
1960-1969	65,866	24.5%	1.0%	16.5%	58.1%
1950-1959	56,453	24.5%	0.5%	17.4%	57.7%
Pre 1950	87,980	38.1%	0.9%	24.2%	36.9%
HEATING FUEL:					
Electric Heat Billed	154,943	31.9%	4.6%	25.9%	37.5%
Gas Heat Billed	234,536	11.4%	0.0%	8.2%	80.4%
Other	49,617	37.9%	0.0%	43.7%	18.4%
ANNUAL HOUSEHOLD INCOME:					
LICO 125	105,086	27.8%	0.5%	27.2%	44.5%
NON-LICO 125	334,010	19.7%	2.0%	15.7%	62.6%
Under $25,000	71,163	32.6%	0.6%	30.5%	36.3%
$25-$49,999	128,882	23.6%	1.4%	23.4%	51.6%
$50-$74,999	102,841	21.1%	1.3%	16.3%	61.3%
$75-$99,999	64,060	17.1%	2.4%	11.2%	69.3%
$100,000 and Over	72,150	12.1%	2.8%	7.3%	77.7%

6.02 Central Air Conditioner Age Distribution

Table # 6.02 shows the distribution of residential central air conditioning system age ranges within the Manitoba Hydro provincial service territory. Of the customers who use central air conditioning systems and whose usage appears on their Manitoba Hydro bill, the average age for such a system is 12.6 years. Just over 19% of central air conditioners have been purchased within the last three years.

Winnipeg central air conditioners, on average, are the oldest at 13.3 years. Over 17% of these central air conditioning units are over 25 years compared to 15% overall.

Apartment suite central conditioning systems are not included since the energy use is not recorded in most cases on the customer's monthly bill. Apartment central air conditioning costs is usually part of rent or a common service fee and the usage shows up on the landlord's bill (which is part of the commercial sector). In addition, apartment suite occupants have no input into the central air conditioning system change-out or maintenance.

Low-income households earning under $25,000 (24.0%) are more likely to have older central conditioners, over 25 years of age, compared to 9.0% of households earning $100,000 and over. Central air conditioners in dwellings occupied by the lowest income group are, on average, 3.6 years older than units in dwellings occupied by the highest income group.

Table # 6.02
Central Air Conditioner Age Distribution (Excluding Apartment Suites)
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Central Air Conditioner Ages (Years)

	# of Central Air Customers	Average Age	0-3	4-9	10-15	16-20	21-25	Over 25
OVERALL:	241,455	12.6	19.1%	25.6%	20.2%	11.1%	9.0%	15.0%
AREA:								
Winnipeg City	150,692	13.3	18.2%	23.1%	19.7%	12.3%	9.5%	17.2%
Manitoba Hydro Gas	67,868	11.7	20.5%	27.9%	22.5%	9.1%	8.3%	11.7%
Manitoba Hydro No Gas	22,895	10.7	21.3%	35.2%	17.1%	8.5%	7.7%	10.1%
DWELLING TYPE:								
Single Detached	222,443	12.5	18.8%	26.1%	20.5%	10.8%	9.3%	14.5%
Multi Attached	19,012	13.1	23.2%	20.1%	17.1%	14.0%	5.2%	20.4%
Apartment Suite	-	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VINTAGE:								
2000-2009	25,405	4.4	42.5%	57.5%	0.0%	0.0%	0.0%	0.0%
1990-1999	25,469	11.4	7.7%	19.7%	54.6%	18.0%	0.0%	0.0%
1980-1989	39,385	14.8	15.3%	15.2%	15.8%	18.2%	28.1%	7.3%
1970-1979	50,752	14.3	17.5%	22.4%	17.3%	9.7%	8.0%	25.1%
1960-1969	36,573	13.4	20.1%	20.3%	20.1%	11.3%	9.3%	19.0%
1950-1959	32,303	13.3	17.8%	23.8%	21.8%	9.9%	6.2%	20.6%
Pre 1950	31,567	12.9	17.4%	30.8%	17.4%	8.3%	3.8%	22.3%
HEATING FUEL:								
Electric Heat Billed	50,243	10.7	26.4%	31.6%	12.9%	9.4%	8.0%	11.7%
Gas Heat Billed	186,842	13.1	17.2%	24.0%	22.2%	11.5%	9.4%	15.7%
Other	4,370	13.1	18.8%	26.8%	19.2%	9.5%	3.5%	22.2%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	42,507	14.2	15.1%	21.7%	20.6%	13.6%	8.1%	20.9%
NON-LICO 125	198,947	12.2	20.0%	26.4%	20.1%	10.5%	9.2%	13.8%
Under $25,000	22,842	14.7	13.6%	23.9%	20.4%	9.7%	8.4%	24.0%
$25-$49,999	62,371	13.0	16.4%	26.1%	20.4%	12.4%	8.5%	16.3%
$50-$74,999	58,831	13.0	19.4%	25.3%	17.0%	11.3%	9.3%	17.7%
$75-$99,999	42,876	12.1	20.8%	24.4%	22.9%	9.5%	10.2%	12.3%
$100,000 and Over	54,535	11.1	23.0%	27.0%	21.3%	11.1%	8.6%	9.0%

6.03 Average Air Conditioner Temperature Settings

Table # 6.03 shows the distribution of the average residential air conditioner temperature settings in degree Celsius. Of the customers who use air conditioning systems, the average temperature setting for daytime is 21.2°C, for evening is 21.1°C and for nighttime it is 20.9°C. There appears to be very little temperature variation throughout the day for central air conditioning. This observation holds for all areas, dwelling types, vintages, heating fuels and annual household incomes.

Table # 6.03
Average Air Conditioner Temperature Settings (Celsius)
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Air Cond Customers	Average Temperature Settings (Celsius) Daytime	Evening	Night
OVERALL:	344,061	21.2	21.1	20.9
AREA:				
Winnipeg City	204,529	21.2	21.1	21.0
Manitoba Hydro Gas	94,994	21.2	21.1	21.0
Manitoba Hydro No Gas	44,538	20.8	20.7	20.6
DWELLING TYPE:				
Single Detached	272,578	21.3	21.2	21.0
Multi Attached	26,884	20.7	20.6	20.5
Apartment Suite	44,599	20.7	20.7	20.5
VINTAGE:				
2000-2009	36,276	21.2	21.0	20.8
1990-1999	32,375	21.6	21.4	21.3
1980-1989	58,308	21.4	21.3	21.1
1970-1979	70,310	21.1	21.1	20.9
1960-1969	49,713	21.2	21.0	20.9
1950-1959	42,615	21.1	20.9	20.8
Pre 1950	54,463	20.8	20.7	20.7
HEATING FUEL:				
Electric Heat Billed	105,448	20.9	20.8	20.7
Gas Heat Billed	207,811	21.4	21.3	21.1
Other	30,802	20.5	20.6	20.4
ANNUAL HOUSEHOLD INCOME:				
LICO 125	75,833	21.0	20.9	20.7
NON-LICO 125	268,228	21.2	21.1	21.0
Under $25,000	47,965	20.9	20.8	20.6
$25-$49,999	98,429	21.0	20.9	20.8
$50-$74,999	81,171	21.2	21.1	20.9
$75-$99,999	53,099	21.3	21.2	21.1
$100,000 and Over	63,398	21.5	21.3	21.2

7.0 RESIDENTIAL HOT WATER

7.01 Residential Hot Water Tanks

Table # 7.01 shows the distribution of residential hot water tanks within the Manitoba Hydro provincial service territory. Almost 46% of residential customers use electric hot water tanks for their own private household use and 41.4% use natural gas hot water tanks. The shared tanks (11.9%) are found in apartment buildings and serve many residences.

In Winnipeg, 19.1% of customers use shared hot water tank sources. This is due to the high percent of apartment customers in the area, who usually get their hot water from common service sources. Almost 59% of Winnipeg residential customers have their own natural gas hot water tanks. The majority of no natural gas available area customers (95.5%) use electric hot water tanks.

Apartment suite customers (86.4%) rely on common service sources for their hot water needs.

By dwelling vintage, brand new homes appear to have switched over to electric hot water tanks. For dwellings built in the 2000s, 75.5% use electric hot water tanks and 11.5% use natural gas hot water tanks.

There are 21.8% of natural gas heat billed dwellings with electric hot water tanks. Electric heat billed dwellings (89.8%) almost always heat their water with electric tanks. Other heating fuel customers (67.5%) reside in apartment suites (table 3.02). The other heating fuel category is mainly composed of apartment suite customers that do not pay directly for their space heat. Heat is either included in rent or a common service fee. Since heat is from a common source, hot water is also from a common source. This is the reason why 75.4% of other heating fuel customers derive their hot water from a shared tank.

Twenty one percent of low-income customers use shared hot water tank sources. This is due to the high percent of low-income customers who reside in apartments and apartment suites usually get their hot water from common service sources.

Table # 7.01
Residential Hot Water Tank Types
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Residential Hot Water Tank Types

	# of Customers	Electric Tank	Electric Instantaneous	Natural Gas Tank	Natural Gas Instantaneous	Other Fuel Tank	Shared Tank
OVERALL:	439,096	45.7%	0.2%	41.1%	0.2%	0.7%	12.2%
AREA:							
Winnipeg City	236,093	22.0%	0.0%	58.4%	0.4%	0.2%	19.1%
Manitoba Hydro Gas	122,844	58.7%	0.4%	34.7%	0.1%	0.2%	5.9%
Manitoba Hydro No Gas	80,159	95.5%	0.2%	0.0%	0.0%	2.8%	1.5%
DWELLING TYPE:							
Single Detached	349,899	52.3%	0.2%	46.6%	0.3%	0.7%	0.0%
Multi Attached	33,324	32.0%	0.0%	50.8%	0.0%	1.9%	15.4%
Apartment Suite	55,873	12.6%	0.0%	1.1%	0.0%	0.0%	86.4%
VINTAGE:							
2000-2009	40,581	75.5%	0.6%	11.5%	0.0%	0.6%	11.9%
1990-1999	37,153	43.6%	0.4%	46.2%	0.0%	0.4%	9.5%
1980-1989	67,289	46.5%	0.1%	39.8%	0.4%	0.3%	13.0%
1970-1979	83,775	46.0%	0.2%	44.8%	0.3%	0.8%	7.9%
1960-1969	65,866	40.2%	0.0%	45.2%	0.2%	0.5%	13.9%
1950-1959	56,453	33.7%	0.1%	51.6%	0.1%	0.7%	13.7%
Pre 1950	87,980	43.7%	0.0%	40.3%	0.4%	1.2%	14.5%
HEATING FUEL:							
Electric Heat Billed	154,943	89.8%	0.4%	0.5%	0.0%	0.6%	8.7%
Gas Heat Billed	234,536	21.8%	0.1%	76.6%	0.4%	0.0%	1.1%
Other	49,617	20.7%	0.0%	0.0%	0.0%	4.0%	75.4%
ANNUAL HOUSEHOLD INCOME:							
LICO 125	105,086	38.4%	0.3%	39.7%	0.3%	0.8%	20.6%
NON-LICO 125	334,010	48.0%	0.1%	41.6%	0.2%	0.6%	9.5%
Under $25,000	71,163	47.2%	0.4%	29.9%	0.1%	0.8%	21.6%
$25-$49,999	128,882	46.3%	0.1%	37.0%	0.4%	0.7%	15.6%
$50-$74,999	102,841	43.5%	0.2%	45.0%	0.0%	0.9%	10.4%
$75-$99,999	64,060	48.2%	0.0%	44.1%	0.1%	0.3%	7.3%
$100,000 and Over	72,150	44.1%	0.0%	51.2%	0.6%	0.5%	3.6%

7.02 Private Use Electric Hot Water Tank Age Distributions

Table # 7.02 shows the distribution of private household use, residential, electric hot water tank age distribution within the Manitoba Hydro provincial service territory. Of the 201,250 customers who have an electric hot water tank for their own use, the average age is 7.2 years.

Winnipeg residential customers, on average, have the newest electric tanks at 6.2 years compared to customers outside Winnipeg. Over 43% of electric water tanks in Winnipeg are three years or less.

Households earning under $25,000 have, on average, the oldest electric hot water tanks at 8.6 years compared to the $100,000 and over household income group of 5.4 years. As household income increases, the age of an electric tank decreases.

Table # 7.02
Private Use Electric Hot Water Tank Age Distribution
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Private Use Electric Water Tank Ages (Years)

	# of Elec Tank Customers	Average Age	3 & Under	3 to 9	10 to 15	16 to 25	Over 25
OVERALL:	201,250	7.2	36.1%	35.8%	20.3%	5.0%	2.8%
AREA:							
Winnipeg City	51,909	6.2	43.4%	35.3%	15.5%	3.5%	2.4%
Manitoba Hydro Gas	72,625	7.0	36.2%	38.0%	18.6%	4.4%	2.9%
Manitoba Hydro No Gas	76,716	8.0	31.1%	34.0%	25.3%	6.6%	3.0%
DWELLING TYPE:							
Single Detached	183,572	7.2	35.6%	36.5%	19.4%	5.3%	3.1%
Multi Attached	10,662	6.2	44.1%	30.1%	24.8%	1.1%	0.0%
Apartment Suite	7,016	6.9	36.0%	23.9%	38.1%	2.0%	0.0%
VINTAGE:							
2000-2009	30,857	4.3	43.8%	56.2%	0.0%	0.0%	0.0%
1990-1999	16,324	7.5	31.4%	28.9%	39.6%	0.0%	0.0%
1980-1989	31,365	7.1	35.3%	31.4%	28.3%	2.4%	2.6%
1970-1979	38,730	8.3	32.6%	32.4%	25.2%	4.5%	5.3%
1960-1969	26,443	6.7	41.0%	32.5%	20.6%	3.8%	2.0%
1950-1959	19,105	8.1	35.5%	29.8%	23.3%	7.3%	4.2%
Pre 1950	38,425	8.1	33.1%	34.4%	15.5%	13.4%	3.7%
HEATING FUEL:							
Electric Heat Billed	139,679	7.5	33.3%	34.3%	24.9%	4.9%	2.6%
Gas Heat Billed	51,326	5.8	46.9%	36.8%	9.7%	3.8%	2.8%
Other	10,245	8.7	19.5%	50.4%	11.6%	12.9%	5.6%
ANNUAL HOUSEHOLD INCOME:							
LICO 125	40,652	8.2	31.3%	32.3%	25.0%	8.0%	3.5%
NON-LICO 125	160,598	6.9	37.3%	36.6%	19.2%	4.2%	2.6%
Under $25,000	33,885	8.6	28.9%	32.4%	24.8%	9.7%	4.2%
$25-$49,999	59,781	7.8	32.3%	35.7%	22.5%	5.6%	3.9%
$50-$74,999	44,934	7.0	37.0%	35.0%	21.3%	4.0%	2.8%
$75-$99,999	30,846	6.4	40.4%	36.8%	18.5%	2.7%	1.6%
$100,000 and Over	31,804	5.4	45.4%	39.5%	12.1%	2.6%	0.5%

7.03 Private Use Natural Gas Hot Water Tank Age Distributions

Table # 7.03 shows the distribution of private household use, residential, natural gas hot water tank age distribution within the Manitoba Hydro provincial service territory. Of the 181,553 customers who have a natural gas hot water tank for their own use, the average age is 7.6 years.

Households earning under $25,000 have, on average, the oldest natural gas hot water tanks at 9.4 years compared to the $100,000 and over household income group of 7.1 years. As household income increases, the age of a natural gas water tank decreases.

Table # 7.03
Private Use Natural Gas Hot Water Tank Age Distribution
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Private Use N. Gas Water Tank Ages (Years)

	# of N Gas Tank Customers	Average Age	3 & Under	3 to 9	10 to 15	16 to 25	Over 25
OVERALL:	181,553	7.6	25.3%	43.1%	26.0%	4.9%	0.7%
AREA:							
Winnipeg City	138,798	7.6	24.1%	44.6%	26.0%	5.1%	0.3%
Manitoba Hydro Gas	42,754	7.6	29.4%	38.2%	26.1%	4.5%	1.8%
Manitoba Hydro No Gas	-	-	-	-	-	-	-
DWELLING TYPE:							
Single Detached	164,045	7.5	26.2%	42.6%	25.3%	5.3%	0.6%
Multi Attached	16,912	8.0	16.8%	49.0%	32.9%	1.4%	0.0%
Apartment Suite	596	13.0	32.3%	16.1%	16.1%	0.0%	35.5%
VINTAGE:							
2000-2009	4,650	6.2	14.6%	85.4%	0.0%	0.0%	0.0%
1990-1999	17,173	7.3	30.1%	33.2%	36.7%	0.0%	0.0%
1980-1989	27,006	7.1	25.0%	47.5%	25.4%	1.5%	0.6%
1970-1979	37,774	7.2	27.2%	44.9%	24.4%	2.8%	0.8%
1960-1969	29,951	7.2	24.3%	48.9%	25.3%	1.1%	0.6%
1950-1959	29,213	7.8	24.4%	40.9%	30.0%	3.8%	0.8%
Pre 1950	35,786	8.7	24.5%	34.0%	23.8%	16.8%	0.9%
HEATING FUEL:							
Electric Heat Billed	816	10.7	20.4%	28.7%	9.7%	41.2%	0.0%
Gas Heat Billed	180,737	7.6	25.4%	43.2%	26.1%	4.8%	0.7%
Other	-	-	-	-	-	-	-
ANNUAL HOUSEHOLD INCOME:							
LICO 125	41,999	8.4	22.2%	38.4%	31.7%	6.4%	1.3%
NON-LICO 125	139,554	7.3	26.3%	44.5%	24.3%	4.5%	0.5%
Under $25,000	21,354	9.4	17.5%	37.7%	32.4%	9.9%	2.5%
$25-$49,999	48,205	7.5	28.1%	40.6%	26.1%	5.0%	0.3%
$50-$74,999	46,299	7.5	25.7%	43.8%	24.9%	4.9%	0.7%
$75-$99,999	28,351	7.1	24.3%	48.2%	23.9%	3.7%	0.0%
$100,000 and Over	37,345	7.1	26.6%	44.6%	25.3%	3.0%	0.4%

7.04 Residential Hot Water Tanks and High Efficiency Gas Furnaces

Table # 7.04 shows the distribution of the types of private household use water tanks that are associated with high efficiency natural gas furnaces. Overall, 56.8% of customers with high efficiency natural gas furnaces have natural gas hot water tanks and 43.2% have electric hot water tanks.

Some interesting observations are made by dwelling vintage. Dwellings built in the 2000s tend to install an electric water tank (82.7%) along with a high efficiency natural gas furnace. Dwellings, built from the 1950s through to the 1990s, are one third electric water tanks. For dwellings built prior 1950, if a high efficiency natural gas furnace is installed, 47.5% have an electric hot water tank. Closer inspection of this vintage group reveals the reason for this discrepancy when compared to other decades. The majority of pre 1950s vintage customers, installing high efficiency gas furnaces, are from the former Winnipeg Hydro service area. Until recently, customers from the former Winnipeg Hydro area could rent an electric hot water tank for about $4 per month. As a result, many customers in the former Winnipeg Hydro area installed electric water tanks instead of natural gas units. The former Winnipeg Hydro area contains a much older housing stock compared to other areas. As a result, when a high efficient gas furnace is installed in this area, chances are greater that the customer already has an electric hot water tank.

Households earning under $25,000, with a high efficiency natural gas furnace, are more likely to have a natural gas water tank (67.6%). Households earning $100,000 and over, with a high efficiency natural gas furnace, are more likely to have a 50:50 split between electric and natural gas hot water tanks.

Table # 7.04
Residential Hot Water Tank Types Associated with High Efficiency Gas Furnaces By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Hi Eff Customers	% Weighted Frequency of Water Tank Types: Electric	Natural Gas
OVERALL:	85,793	43.2%	56.8%
AREA:			
Winnipeg City	62,932	40.3%	59.7%
Manitoba Hydro Gas	22,861	51.1%	48.9%
Manitoba Hydro No Gas	-	-	-
DWELLING TYPE:			
Single Detached	79,292	45.1%	54.9%
Multi Attached	6,021	21.7%	78.4%
Apartment Suite	480	480	480
VINTAGE:			
2000-2009	13,917	82.7%	17.3%
1990-1999	7,351	31.8%	68.3%
1980-1989	12,262	33.9%	66.1%
1970-1979	13,329	32.5%	67.5%
1960-1969	12,100	33.0%	67.1%
1950-1959	12,642	31.6%	68.4%
Pre 1950	14,193	47.5%	52.6%
HEATING FUEL:			
Electric Heat Billed	-	-	-
Gas Heat Billed	85,793	43.2%	56.8%
Other	-	-	-
ANNUAL HOUSEHOLD INCOME:			
LICO 125	15,188	27.8%	72.2%
NON-LICO 125	70,605	46.5%	53.5%
Under $25,000	7,643	32.5%	67.6%
$25-$49,999	20,095	36.1%	63.9%
$50-$74,999	20,515	38.3%	61.7%
$75-$99,999	17,293	53.4%	46.6%
$100,000 and Over	20,249	50.5%	49.5%

7.05 Number of Residential Showerheads Installed

Table # 7.05 shows the distribution of number of residential showerheads within the Manitoba Hydro provincial service territory. Only 2.2% residential customers have no showerheads in their dwellings. The majority (53.0%) of residential dwellings have one showerhead. Almost 38% of dwellings have two and 7.2% have three or more showerheads.

Almost all apartment suite customers (83.6%) have only one showerhead while 51.3% of single detached dwellings have two or more showerheads.

By dwelling vintage, three quarters of newer homes built since 1990 have two or more showerheads. This compares to 44.8% of dwellings overall. The older homes are less likely to have any showerheads at all. Just over 8% of homes built prior to 1950 have no showerheads compared to 2.2% overall.

The other heating fuel category is mainly composed of apartment suite customers that do not pay directly for their space heat. Heat is either included in rent or a common service fee. As a result of being mainly apartment suite customers, the majority of this heating fuel group has only one showerhead (81.3%).

Low-income households are more likely to have only one (72.4%) showerhead. High-income households are more likely to have two or more (70.3%) showerheads.

Table # 7.05
Number of Residential Showerheads Installed
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Number of Showerheads			
		None	One	Two	Three +
OVERALL:	439,096	2.2%	53.0%	37.6%	7.2%
AREA:					
Winnipeg City	236,093	1.8%	54.2%	36.8%	7.2%
Manitoba Hydro Gas	122,844	1.9%	46.1%	42.3%	9.7%
Manitoba Hydro No Gas	80,159	4.1%	59.9%	32.7%	3.3%
DWELLING TYPE:					
Single Detached	349,899	2.4%	46.3%	42.7%	8.6%
Multi Attached	33,324	3.2%	71.8%	22.1%	2.9%
Apartment Suite	55,873	0.7%	83.6%	14.9%	0.9%
VINTAGE:					
2000-2009	40,581	0.0%	24.6%	54.1%	21.3%
1990-1999	37,153	0.2%	28.3%	53.0%	18.5%
1980-1989	67,289	0.1%	40.1%	47.1%	12.7%
1970-1979	83,775	0.8%	53.1%	40.8%	5.2%
1960-1969	65,866	0.9%	59.9%	37.2%	2.0%
1950-1959	56,453	2.1%	68.7%	27.7%	1.5%
Pre 1950	87,980	8.2%	71.1%	19.6%	1.2%
HEATING FUEL:					
Electric Heat Billed	154,943	2.0%	57.2%	36.0%	4.8%
Gas Heat Billed	234,536	1.6%	44.2%	44.1%	10.1%
Other	49,617	6.1%	81.3%	11.3%	1.2%
ANNUAL HOUSEHOLD INCOME:					
LICO 125	105,086	4.2%	69.0%	24.8%	2.1%
NON-LICO 125	334,010	1.6%	48.0%	41.6%	8.8%
Under $25,000	71,163	5.2%	72.4%	21.4%	1.0%
$25-$49,999	128,882	2.9%	61.3%	32.3%	3.5%
$50-$74,999	102,841	1.7%	52.1%	39.0%	7.2%
$75-$99,999	64,060	0.3%	43.2%	47.5%	9.1%
$100,000 and Over	72,150	0.7%	29.0%	52.0%	18.3%

7.06 Number of Showers Taken per Day

Table # 7.06 shows the distribution of the number of showers taken per day by residential customers within the Manitoba Hydro provincial service territory. There are 9.1% who indicate taking no showers and 9.0% who indicate taking the occasional shower. The percent of customers whose household take either one (34.8%) or two (31.5%) showers per day is roughly equal.

About one quarter apartment suite customers indicate they do not take showers on a daily basis.

By dwelling vintage, occupants of older homes (16.5%), built prior to 1950, are less likely to take showers on a daily basis.

The Other heating fuel category is mainly composed of apartment suite customers that do not pay directly for their space heat. Heat is either included in rent or a common service fee. As a result of being mainly composed of apartment suites, customers in this heating fuel group (26.6%) are less likely to shower on a daily basis.

Low-income households are less likely to shower on a daily basis with 38.0% indicating either never or rarely. This compares to only 5.0% of high-income households who indicate none or rare showers. Almost 77% of the group earning $100,000 and over indicate their household takes at least two showers per day, compared 47.1% overall.

Table # 7.06
Number of Showers Taken per Day
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of the Number of Daily Showers				
		None	Rarely	One	Two	Three +
OVERALL:	439,096	9.1%	9.0%	34.8%	31.5%	15.6%
AREA:						
Winnipeg City	236,093	10.5%	8.6%	34.1%	30.5%	16.4%
Manitoba Hydro Gas	122,844	7.5%	9.6%	34.1%	32.6%	16.1%
Manitoba Hydro No Gas	80,159	7.5%	9.4%	37.9%	32.9%	12.3%
DWELLING TYPE:						
Single Detached	349,899	6.3%	8.3%	34.2%	33.7%	17.6%
Multi Attached	33,324	11.0%	8.1%	37.5%	27.4%	16.0%
Apartment Suite	55,873	25.3%	14.4%	37.1%	20.8%	2.5%
VINTAGE:						
2000-2009	40,581	4.8%	4.0%	31.7%	40.5%	19.0%
1990-1999	37,153	6.6%	8.4%	33.8%	31.2%	20.0%
1980-1989	67,289	7.4%	6.3%	33.3%	33.9%	19.2%
1970-1979	83,775	6.2%	10.0%	33.2%	32.9%	17.7%
1960-1969	65,866	7.7%	9.0%	38.5%	30.9%	13.9%
1950-1959	56,453	10.1%	12.3%	36.3%	28.7%	12.8%
Pre 1950	87,980	16.5%	10.7%	35.6%	26.8%	10.4%
HEATING FUEL:						
Electric Heat Billed	154,943	8.6%	10.0%	37.7%	31.2%	12.4%
Gas Heat Billed	234,536	5.6%	7.2%	33.3%	34.0%	19.8%
Other	49,617	26.6%	14.5%	32.9%	20.8%	5.3%
ANNUAL HOUSEHOLD INCOME:						
LICO 125	105,086	16.7%	13.9%	41.3%	18.4%	9.7%
NON-LICO 125	334,010	6.7%	7.5%	32.8%	35.7%	17.4%
Under $25,000	71,163	22.0%	16.0%	45.5%	12.7%	3.8%
$25-$49,999	128,882	11.4%	12.8%	41.0%	26.5%	8.3%
$50-$74,999	102,841	6.0%	6.7%	37.2%	35.0%	15.1%
$75-$99,999	64,060	2.9%	4.3%	25.1%	43.3%	24.4%
$100,000 and Over	72,150	2.1%	2.9%	18.3%	43.6%	33.1%

7.07 Number of Tub Baths Taken per Day

Table # 7.07 shows the distribution of the average number of tub baths per day by residential customers within the Manitoba Hydro provincial service territory. Daily tub baths are less popular than daily showers. There are 30.9% who indicate taking no tub baths and 33.9% who indicate taking the occasional tub bath.

Low-income households are more likely to take a tub bath with 34.9% indicating taking one once a day. This compares to 24.0% of high-income households who indicate one tub bath per day.

Table # 7.07
Number of Tub Baths Taken per Day
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of the Number of Daily Tub Baths				
		None	Rarely	One	Two	Three +
OVERALL:	439,096	30.9%	33.9%	28.2%	5.9%	1.1%
AREA:						
Winnipeg City	236,093	33.2%	34.2%	25.7%	5.8%	1.0%
Manitoba Hydro Gas	122,844	26.0%	35.3%	31.9%	5.7%	1.1%
Manitoba Hydro No Gas	80,159	31.8%	30.6%	29.9%	6.5%	1.2%
DWELLING TYPE:						
Single Detached	349,899	30.1%	34.9%	28.6%	5.3%	1.1%
Multi Attached	33,324	35.7%	33.8%	23.2%	6.1%	1.2%
Apartment Suite	55,873	33.6%	27.6%	28.8%	9.4%	0.7%
VINTAGE:						
2000-2009	40,581	30.0%	36.4%	27.7%	4.6%	1.4%
1990-1999	37,153	30.4%	38.1%	25.7%	4.9%	0.9%
1980-1989	67,289	34.0%	35.5%	24.7%	5.5%	0.4%
1970-1979	83,775	30.9%	35.1%	27.0%	5.4%	1.6%
1960-1969	65,866	29.4%	32.3%	30.9%	6.7%	0.6%
1950-1959	56,453	32.2%	31.8%	28.4%	6.3%	1.3%
Pre 1950	87,980	29.6%	31.1%	31.1%	6.8%	1.3%
HEATING FUEL:						
Electric Heat Billed	154,943	31.1%	32.0%	30.4%	5.4%	1.0%
Gas Heat Billed	234,536	30.9%	36.7%	26.3%	4.9%	1.2%
Other	49,617	30.8%	26.4%	30.5%	12.0%	0.5%
ANNUAL HOUSEHOLD INCOME:						
LICO 125	105,086	34.2%	25.6%	32.3%	6.0%	2.0%
NON-LICO 125	334,010	29.9%	36.5%	26.9%	5.9%	0.8%
Under $25,000	71,163	34.1%	25.2%	34.9%	4.6%	1.2%
$25-$49,999	128,882	33.4%	29.3%	29.6%	6.6%	1.1%
$50-$74,999	102,841	30.5%	36.9%	25.0%	6.5%	1.1%
$75-$99,999	64,060	26.0%	40.3%	27.9%	4.6%	1.3%
$100,000 and Over	72,150	28.4%	40.6%	24.0%	6.2%	0.8%

7.08 Residential Water Conservation Measures

Table # 7.08 shows the distribution of the various water conservation measures undertaken by Manitoba Hydro's residential sector. Just over 41% indicate no water conservation measures have been undertaken. The most popular measure is the installation of lower flow showerheads (36.3%) followed by the installation of lower flush toilets (24.8%). Note the percent values across each row exceed 100% since multiple responses were allowed for this question.

The vast majority of apartment dwellers (82.7%) indicated no water conservation measures untaken. Since 86.0% of apartment suite customers (Table # 7.01) obtain their water from a common source and the water usage is most likely incorporated into the rent, apartment dwellers have no incentive to conserve water.

By heating fuel, natural gas heat billed customers are more likely to conserve water compared to electric heat billed customers. The Other heating fuel category is mainly composed of apartment suite customers that do not pay directly for their space heat. Heat is either included in rent or a common service fee. As a result of being mainly apartment suites, the majority of this heating fuel group (71.4%) does not engage in water conservation activities.

Almost 57% of under $25,000 household customers do not engage in any water conservation measures compared to 28.6% of the $100,000 and over group who indicate no engagement in water conservation activity. Water conservation activities, in general, tend to increase with household income.

Table # 7.08
Residential Water Conservation Measures
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Water Conservation Measures

	# of Customers	Lower Flow Showerheads	Faucet Aerators	Tank Blanket	Low Flush Toilets	Lower Tank Temp	Pipe Wrap	No Meaasures
OVERALL:	439,096	36.3%	13.1%	2.2%	24.8%	14.8%	16.1%	41.4%
AREA:								
Winnipeg City	236,093	36.2%	13.8%	2.0%	24.7%	15.6%	14.2%	43.1%
Manitoba Hydro Gas	122,844	35.6%	11.6%	2.1%	23.7%	14.0%	18.2%	40.4%
Manitoba Hydro No Gas	80,159	37.5%	13.3%	3.2%	27.1%	13.4%	18.7%	37.9%
DWELLING TYPE:								
Single Detached	349,899	40.7%	14.4%	2.6%	28.2%	16.8%	18.9%	33.8%
Multi Attached	33,324	30.4%	12.5%	1.7%	19.6%	13.5%	9.8%	52.1%
Apartment Suite	55,873	11.9%	5.3%	0.5%	6.9%	2.6%	2.8%	82.7%
VINTAGE:								
2000-2009	40,581	36.2%	12.2%	2.4%	26.5%	9.5%	13.2%	45.0%
1990-1999	37,153	35.2%	12.0%	1.5%	19.3%	13.0%	18.1%	47.1%
1980-1989	67,289	38.1%	13.4%	1.7%	23.2%	14.2%	16.6%	41.1%
1970-1979	83,775	37.1%	13.0%	2.2%	26.2%	15.9%	16.5%	36.9%
1960-1969	65,866	38.2%	15.0%	2.8%	27.9%	15.7%	16.7%	37.8%
1950-1959	56,453	35.9%	11.7%	2.0%	25.1%	15.4%	15.8%	42.1%
Pre 1950	87,980	33.4%	13.5%	2.7%	23.9%	16.2%	15.8%	44.2%
HEATING FUEL:								
Electric Heat Billed	154,943	34.8%	11.5%	2.4%	23.6%	11.9%	16.0%	44.2%
Gas Heat Billed	234,536	40.9%	15.1%	2.2%	28.6%	18.8%	17.9%	33.3%
Other	49,617	19.0%	8.8%	1.8%	11.0%	4.8%	8.0%	71.4%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	105,086	27.5%	9.8%	1.9%	16.7%	13.1%	11.8%	53.0%
NON-LICO 125	334,010	39.0%	14.2%	2.4%	27.4%	15.3%	17.5%	37.8%
Under $25,000	71,163	24.0%	8.7%	1.7%	13.7%	12.4%	10.9%	56.9%
$25-$49,999	128,882	32.6%	12.0%	2.4%	21.2%	13.5%	14.8%	45.4%
$50-$74,999	102,841	37.5%	13.0%	2.2%	24.8%	13.7%	16.9%	41.0%
$75-$99,999	64,060	46.7%	16.9%	2.3%	29.8%	16.4%	18.2%	31.3%
$100,000 and Over	72,150	43.9%	16.3%	2.6%	37.9%	19.5%	20.7%	28.6%

7.09 Residential Water Pump Systems

Table # 7.09 shows the distribution of the most common residential water pump systems within the Manitoba Hydro provincial service territory. Most residential customers (55.6%) indicate they do not have any water pump systems. The most common water pump system is the sump pump (14.1%) followed equally by well pumps (12.3%) and pressure pumps (10.2%). Note the percent values across each row do not equal 100% since multiple responses were allowed for this question.

Residential customers outside Winnipeg City indicate more water pump systems particularly in no gas available areas. In no gas available areas, 29.4% have a well pump; 31.4% have a pressure pump; 20.1% have a sump pump; and 24.8% have a sewage pump.

By dwelling vintage, people in newer homes appear more likely to have extra water pump systems compared to people living in older homes. Only 36.1% of customers in brand new homes report not having an extra water pump system. For 2000s built homes, sump pumps are the most common at 32.0%.

Almost 69% of natural gas heat billed customers do not have extra water pump systems compared to 39.5% of electric heat billed customers. The reason for this difference is natural gas customers tend to be urban while electric heat customers are more likely rural. Urban settings have extensive sewage and water infrastructures so urban dwellers do not need to establish their own systems.

High-income customers have the highest saturations of sump pump systems. Of the $100,000 plus group, 20.4% have sump pumps.

Table # 7.09
Residential Water Pump Systems
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Residential Pump System

	# of Customers	No Pump	Well Pump	Pressure Pump	Sump Pump	Sewage Pump
OVERALL:	439,096	55.6%	12.3%	10.2%	14.1%	9.7%
AREA:						
Winnipeg City	236,093	66.9%	0.8%	0.8%	10.3%	0.6%
Manitoba Hydro Gas	122,844	48.0%	23.1%	14.4%	17.6%	17.2%
Manitoba Hydro No Gas	80,159	33.8%	29.4%	31.4%	20.1%	24.8%
DWELLING TYPE:						
Single Detached	349,899	56.4%	15.2%	12.4%	16.9%	11.9%
Multi Attached	33,324	60.1%	1.4%	1.0%	5.9%	0.6%
Apartment Suite	55,873	-	-	-	-	-
VINTAGE:						
2000-2009	40,581	36.1%	18.8%	10.9%	32.0%	16.8%
1990-1999	37,153	41.7%	21.0%	14.6%	26.4%	14.7%
1980-1989	67,289	48.6%	14.6%	10.4%	16.5%	10.8%
1970-1979	83,775	61.1%	12.4%	10.4%	9.4%	10.8%
1960-1969	65,866	65.0%	10.1%	9.2%	8.8%	6.3%
1950-1959	56,453	61.9%	7.3%	8.9%	11.3%	6.0%
Pre 1950	87,980	59.3%	8.3%	9.1%	9.1%	7.2%
HEATING FUEL:						
Electric Heat Billed	154,943	39.5%	24.8%	21.6%	16.4%	19.9%
Gas Heat Billed	234,536	68.7%	5.1%	2.5%	14.6%	3.2%
Other	49,617	43.9%	6.9%	11.0%	4.9%	8.3%
ANNUAL HOUSEHOLD INCOME:						
LICO 125	105,086	58.3%	6.9%	8.6%	8.8%	6.4%
NON-LICO 125	334,010	54.7%	13.9%	10.7%	15.8%	10.7%
Under $25,000	71,163	54.9%	9.4%	10.4%	9.1%	7.4%
$25-$49,999	128,882	54.1%	12.5%	12.5%	11.0%	10.7%
$50-$74,999	102,841	53.8%	13.8%	10.2%	14.5%	10.1%
$75-$99,999	64,060	57.1%	12.8%	7.5%	18.4%	8.9%
$100,000 and Over	72,150	60.1%	12.0%	8.0%	20.4%	10.1%

8.0 RESIDENTIAL MAJOR APPLIANCES

8.01 Electric Cooking Appliances

Table # 8.01 shows the distribution of residential electric cooking appliances within the Manitoba Hydro provincial service territory. The standard non-self-cleaning range (46.1%) is the most popular major cooking appliance followed by the self-cleaning range (37.2%) and trailed by convection ranges (14.5%). Microwave ovens (95.6%) are in almost all residential homes. Note the percent values across each row exceed 100% since multiple responses were allowed for this question.

Apartment suite customers (68.0%) are the most likely to have standard non-self-cleaning range compared to the other dwelling types.

Newer residential dwellings, built in the 2000s, have a higher saturation rate of self-cleaning ranges (47.6%) and convection ranges (29.0%). As dwelling ages increases the percent of standard non-self-cleaning ranges also increases. In dwellings built prior to 1950, 59.7% have standard non-self-cleaning ranges compared to 26.2% in dwellings built during the 2000s. The saturations of self-cleaning ranges, convection ovens, counter cook tops, wall ovens and microwave ovens decrease with increasing dwelling age.

Low-income households (68.3%) tend to use the more economically priced standard non-self-cleaning ranges. The costlier cooking appliances such as self-cleaning ranges, convection ovens, counter cook tops and wall ovens increase in use as household income increases. In households earning $100,000 or more, 46.0% use a self cleaning range and 25.0% have a convection range.

Table # 8.01
Electric Cooking Appliances
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Electric Cooking Appliances

	# of Customers	Standard Range	Self-Clean Range	Convection Range	Counter Cooktop	Wall Oven	Microwave
OVERALL:	439,096	46.1%	37.2%	14.5%	7.4%	6.4%	95.6%
AREA:							
Winnipeg City	236,093	45.3%	38.9%	14.2%	6.3%	5.5%	94.9%
Manitoba Hydro Gas	122,844	44.5%	35.6%	14.9%	9.4%	8.3%	96.7%
Manitoba Hydro No Gas	80,159	50.8%	34.9%	14.7%	7.5%	6.4%	95.8%
DWELLING TYPE:							
Single Detached	349,899	42.0%	39.3%	16.3%	8.3%	7.3%	96.5%
Multi Attached	33,324	51.9%	38.8%	10.6%	3.5%	3.6%	94.5%
Apartment Suite	55,873	68.0%	23.3%	5.5%	4.1%	2.7%	90.6%
VINTAGE:							
2000-2009	40,581	26.2%	47.6%	29.0%	8.2%	7.1%	98.6%
1990-1999	37,153	36.6%	41.3%	16.7%	8.7%	8.4%	96.7%
1980-1989	67,289	43.7%	38.6%	14.9%	10.2%	8.6%	97.5%
1970-1979	83,775	43.1%	40.1%	15.4%	7.6%	5.4%	96.2%
1960-1969	65,866	45.3%	38.5%	14.2%	9.4%	8.4%	97.0%
1950-1959	56,453	53.5%	34.7%	9.7%	5.1%	5.2%	94.2%
Pre 1950	87,980	59.7%	27.5%	8.8%	4.1%	4.0%	91.4%
HEATING FUEL:							
Electric Heat Billed	154,943	50.9%	35.1%	14.7%	7.9%	6.0%	95.6%
Gas Heat Billed	234,536	38.4%	42.2%	15.7%	7.8%	7.1%	96.4%
Other	49,617	67.2%	20.4%	7.9%	4.1%	4.7%	91.3%
ANNUAL HOUSEHOLD INCOME:							
LICO 125	105,086	63.6%	27.3%	7.7%	5.0%	3.5%	90.7%
NON-LICO 125	334,010	40.5%	40.3%	16.6%	8.2%	7.4%	97.1%
Under $25,000	71,163	68.3%	23.5%	5.2%	4.3%	3.4%	88.5%
$25-$49,999	128,882	54.1%	33.8%	11.6%	6.9%	5.1%	95.7%
$50-$74,999	102,841	41.5%	41.3%	15.4%	7.2%	6.6%	97.5%
$75-$99,999	64,060	36.5%	42.9%	17.2%	8.0%	7.3%	97.2%
$100,000 and Over	72,150	24.9%	46.0%	25.0%	11.2%	10.9%	98.2%

8.02 Natural Gas Cooking Appliances

Table # 8.02 shows the distribution of residential natural gas cooking appliances within the Manitoba Hydro provincial service territory. Overall, the saturation of natural gas cooking appliances is quite low in the residential sector. Only 1.9% of customers use a natural gas range, 2.1% use natural gas cook-tops and 0.1% use natural gas wall ovens.

Comparing by area, natural gas cooking appliances have higher saturation rates in natural gas available areas compared to Winnipeg City. In natural gas available areas, 3.1% have natural gas counter cook tops, 2.7% have a natural gas ranges, and 0.3% of customers have natural gas wall ovens. This compared to customers in Winnipeg where 2.1% have natural gas counter cook tops, 2.0% have a natural gas ranges, and 0.1% of customers have natural gas wall ovens. The reason for this discrepancy is the higher mix of new construction in natural gas available areas compared to Winnipeg City as a whole.

Differences in natural gas cooking appliance use become more evident when dwelling vintage is compared. Newer residential dwellings have a higher saturation rate of natural gas cooking appliances. In dwellings built during the 2000s, 5.2% have natural gas counter cook-tops and 2.4% have natural gas ranges. Prior to the 1990s construction era, the percent of natural gas appliances in those dwellings drops.

Since natural gas appliances are significantly more expensive than electric cooking appliances, data shows the presence of natural gas cooking appliances increases with household income. In households that earn $100,000 plus, 5.3% have natural gas counter cook-tops and 3.7% have natural gas ranges. Comparing to the lowest end of the income scale, 0.1% have natural gas cook-tops and 0.9% have natural gas ranges.

Table # 8.02
Natural Gas Cooking Appliances
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Natural Gas Cooking Appliances

	# of Customers	Counter Cooktop	Range	Wall Oven
OVERALL:	439,096	2.1%	1.9%	0.1%
AREA:				
Winnipeg City	236,093	2.1%	2.0%	0.1%
Manitoba Hydro Gas	122,844	3.1%	2.7%	0.3%
Manitoba Hydro No Gas	80,159	0.0%	0.0%	0.0%
DWELLING TYPE:				
Single Detached	349,899	2.5%	2.2%	0.1%
Multi Attached	33,324	0.4%	0.7%	0.0%
Apartment Suite	55,873	0.4%	0.9%	0.0%
VINTAGE:				
2000-2009	40,581	5.2%	2.4%	0.0%
1990-1999	37,153	4.6%	3.3%	0.4%
1980-1989	67,289	2.0%	1.5%	0.1%
1970-1979	83,775	1.4%	1.6%	0.2%
1960-1969	65,866	1.4%	1.3%	0.0%
1950-1959	56,453	0.6%	1.7%	0.0%
Pre 1950	87,980	1.8%	2.5%	0.1%
HEATING FUEL:				
Electric Heat Billed	154,943	0.6%	0.4%	0.0%
Gas Heat Billed	234,536	3.3%	3.1%	0.2%
Other	49,617	1.1%	1.3%	0.0%
ANNUAL HOUSEHOLD INCOME:				
LICO 125	105,086	0.3%	0.9%	0.0%
NON-LICO 125	334,010	2.7%	2.3%	0.1%
Under $25,000	71,163	0.1%	0.9%	0.2%
$25-$49,999	128,882	0.9%	1.0%	0.0%
$50-$74,999	102,841	2.6%	2.1%	0.1%
$75-$99,999	64,060	2.5%	2.7%	0.0%
$100,000 and Over	72,150	5.3%	3.7%	0.3%

8.03(a) Size (Cubic Feet) of Primary Use Refrigerator

Table # 8.03(a) shows the distribution of the sizes of the primary use refrigerators within the Manitoba Hydro provincial service territory. Overall, 44.0% have the medium sized 13 to 16 cubic foot model and 42.1% use the large 17 to 20 cubic foot model. The average size of a residential refrigerator is 15.9 cubic feet.

The average residential refrigerator in an apartment suite is the smallest when compared to other dwelling types. Apartment refrigerators are on average 14.3 cubic feet. The saturation of small 12 cubic feet or less refrigerators in apartment suites is 16.7% compared to 7.3% overall.

Newer dwellings will have the large or extra large refrigerators. There were 50.2% of customers in 2000s homes with 17 to cubic foot models compared to 42.1% overall. The extra-large over 20 cubic foot models are most popular in brand new homes. The saturation of extra large refrigerators is 13.9% in 2000s dwellings compared to 6.3% overall. Brand new homes have the largest sized refrigerators at an average of 17.0 cubic feet.

High-income households will have larger main refrigerators than the low-income households. The average size of the primary use refrigerator in an under $25,000 household is 14.7 cubic feet compared to 17.3 cubic feet of an average size refrigerator in a $100,000 plus household. Almost 16 % of under $25,000 households have small refrigerator while 13.7% of $100,000 plus households have extra large refrigerators.

Table # 8.03 (a)
Size (Cubic Feet) of Primary Use Refrigerator
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Size (Cubic Feet) of Primary Use Refrigerator

	# of Customers	Average Size	No Fridge	Small 12 & Under	Medium 13 to 16	Large 17 to20	X-Large 21 & Over
OVERALL:	439,096	15.9	0.3%	7.3%	44.0%	42.1%	6.3%
AREA:							
Winnipeg City	236,093	15.9	0.2%	7.0%	45.3%	41.8%	5.7%
Manitoba Hydro Gas	122,844	15.9	0.4%	8.2%	43.5%	41.4%	6.6%
Manitoba Hydro No Gas	80,159	16.1	0.2%	7.0%	41.0%	44.2%	7.7%
DWELLING TYPE:							
Single Detached	349,899	16.2	0.2%	5.7%	40.7%	46.2%	7.3%
Multi Attached	33,324	15.4	0.4%	8.6%	51.6%	35.8%	3.7%
Apartment Suite	55,873	14.3	0.5%	16.7%	60.5%	20.6%	1.7%
VINTAGE:							
2000-2009	40,581	17.0	0.7%	2.8%	32.4%	50.2%	13.9%
1990-1999	37,153	16.4	0.0%	4.0%	41.1%	46.6%	8.3%
1980-1989	67,289	16.2	0.4%	5.3%	41.1%	46.4%	6.8%
1970-1979	83,775	16.1	0.0%	5.1%	44.5%	44.1%	6.3%
1960-1969	65,866	15.7	0.1%	11.0%	41.8%	41.0%	6.1%
1950-1959	56,453	15.5	0.3%	10.3%	47.4%	37.2%	4.9%
Pre 1950	87,980	15.2	0.3%	9.8%	51.7%	35.4%	2.7%
HEATING FUEL:							
Electric Heat Billed	154,943	15.8	0.4%	7.7%	44.9%	41.2%	5.8%
Gas Heat Billed	234,536	16.3	0.2%	5.0%	40.7%	46.6%	7.6%
Other	49,617	14.4	0.3%	17.0%	57.1%	23.6%	2.0%
ANNUAL HOUSEHOLD INCOME:							
LICO 125	105,086	15.0	0.5%	13.8%	50.4%	32.2%	3.1%
NON-LICO 125	334,010	16.2	0.2%	5.3%	42.0%	45.3%	7.3%
Under $25,000	71,163	14.7	0.9%	15.7%	53.0%	28.7%	1.8%
$25-$49,999	128,882	15.4	0.0%	9.2%	51.1%	35.7%	4.1%
$50-$74,999	102,841	16.1	0.3%	6.1%	42.3%	45.5%	5.8%
$75-$99,999	64,060	16.5	0.1%	3.2%	39.1%	49.2%	8.4%
$100,000 and Over	72,150	17.3	0.1%	1.2%	29.2%	55.8%	13.7%

8.03(b) Age (Years) of Primary Use Refrigerator

Table # 8.03(b) shows the distribution of the ages of primary use refrigerators within the Manitoba Hydro provincial service territory. Overall, the average age of a primary use residential refrigerator is 9.8 years. Nineteen percent of the residential customers have an old refrigerator over 15 years of age.

Refrigerators in apartment suites are the oldest with an average age of 11.8 years. Almost 28% apartment suite customers have an old refrigerator over 15 years of age.

In new homes built during the 2000's, 41.4% of refrigerators were purchased within the last three years compared to 22.6% overall. A few customers do take along an older refrigerator for primary use into a newly constructed home.

As household income increases, the average age of the refrigerator decreases. The average age of a refrigerator in an under $25,000 household is 12.2 years compared to 8.0 years for a refrigerator in a $100,000 plus household. Just over 27% of the under $25,000 household customers have an old refrigerator over 15 years of age.

Table # 8.03 (b)
Age (Years) of Primary Use Refrigerator
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	% Weighted Frequency of Age (Years) of Primary Use Refrigerator							
	# of Customers	Average Age	No Fridge	Under 4	4 to 9	10 to 15	16 to 25	Over 25
OVERALL:	439,096	9.8	0.3%	22.6%	32.6%	25.5%	14.7%	4.3%
AREA:								
Winnipeg City	236,093	10.0	0.2%	22.8%	32.1%	24.9%	15.7%	4.4%
Manitoba Hydro Gas	122,844	9.6	0.4%	22.0%	33.4%	27.0%	13.3%	3.9%
Manitoba Hydro No Gas	80,159	9.8	0.2%	23.2%	32.5%	25.1%	14.1%	4.9%
DWELLING TYPE:								
Single Detached	349,899	9.5	0.2%	22.7%	34.3%	25.3%	13.5%	4.0%
Multi Attached	33,324	9.5	0.4%	24.7%	32.4%	21.9%	17.9%	2.8%
Apartment Suite	55,873	11.8	0.5%	21.2%	21.6%	28.9%	20.6%	7.2%
VINTAGE:								
2000-2009	40,581	5.3	0.7%	41.4%	46.4%	8.8%	2.5%	0.2%
1990-1999	37,153	9.8	0.0%	18.4%	22.9%	46.7%	10.9%	1.2%
1980-1989	67,289	10.8	0.4%	17.4%	35.1%	15.5%	28.6%	3.0%
1970-1979	83,775	10.2	0.0%	21.3%	31.9%	21.6%	21.8%	3.3%
1960-1969	65,866	10.2	0.1%	21.2%	30.6%	31.2%	11.2%	5.7%
1950-1959	56,453	10.5	0.3%	19.8%	30.6%	32.4%	10.6%	6.4%
Pre 1950	87,980	10.1	0.3%	23.9%	31.5%	27.0%	10.0%	7.2%
HEATING FUEL:								
Electric Heat Billed	154,943	10.0	0.4%	23.1%	31.1%	23.3%	17.5%	4.6%
Gas Heat Billed	234,536	9.4	0.2%	23.0%	34.6%	25.6%	13.4%	3.2%
Other	49,617	11.5	0.3%	19.4%	27.5%	32.0%	12.1%	8.7%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	105,086	11.4	0.5%	19.3%	24.7%	30.6%	17.9%	7.0%
NON-LICO 125	334,010	9.3	0.2%	23.7%	35.0%	23.9%	13.7%	3.5%
Under $25,000	71,163	12.2	0.9%	15.8%	23.5%	32.5%	18.6%	8.7%
$25-$49,999	128,882	10.3	0.0%	21.8%	30.3%	26.9%	15.9%	5.1%
$50-$74,999	102,841	9.6	0.3%	22.8%	34.0%	24.8%	14.4%	3.7%
$75-$99,999	64,060	8.6	0.1%	26.8%	36.5%	21.2%	13.7%	1.7%
$100,000 and Over	72,150	8.0	0.1%	27.0%	40.0%	20.8%	10.3%	1.9%

8.04(a) Size (Cubic Feet) of Secondary Use Refrigerator

Table # 8.04(a) shows the distribution of the sizes of the secondary use refrigerators within the Manitoba Hydro provincial service territory. Overall, 57.4% of residential customers do not have a secondary use refrigerator. 19.1% have the medium sized 13 to 16 cubic foot model and 16.3% use the small 12 and under cubic foot model. The average size of a secondary use residential refrigerator is 13.2 cubic feet.

High-income households will have larger secondary refrigerators than the low-income households. The average size of the secondary use refrigerator in an under $25,000 household is 12.5 cubic feet compared to 13.5 cubic feet of an average size refrigerator in a $100,000 plus household. Over 73.2 % of under $25,000 households do not have a secondary refrigerator while 43.8% of $100,000 plus households do not have secondary refrigerators.

Table # 8.04 (a)
Size (Cubic Feet) of Secondary Use Refrigerator
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Size (Cubic Feet) of Secondary Use Refrigerator

	# of Customers	Average Size	No Fridge	Small 12 & Under	Medium 13 to 16	Large 17 to20	X-Large 21 & Over
OVERALL:	439,096	13.2	57.4%	16.3%	19.1%	6.9%	0.3%
AREA:							
Winnipeg City	236,093	13.2	62.1%	15.1%	16.2%	6.4%	0.3%
Manitoba Hydro Gas	122,844	13.2	52.6%	17.1%	23.0%	7.2%	0.2%
Manitoba Hydro No Gas	80,159	13.2	50.9%	18.8%	22.1%	7.7%	0.6%
DWELLING TYPE:							
Single Detached	349,899	13.2	49.9%	19.0%	22.6%	8.1%	0.4%
Multi Attached	33,324	12.8	64.2%	16.0%	14.8%	5.0%	0.0%
Apartment Suite	55,873	.	100.0%	0.0%	0.0%	0.0%	0.0%
VINTAGE:							
2000-2009	40,581	13.4	59.8%	14.7%	17.0%	8.3%	0.2%
1990-1999	37,153	13.5	53.0%	16.4%	21.0%	8.9%	0.7%
1980-1989	67,289	13.6	56.2%	13.8%	21.4%	8.2%	0.5%
1970-1979	83,775	13.2	50.3%	18.4%	23.6%	7.3%	0.4%
1960-1969	65,866	13.2	50.3%	20.1%	19.3%	9.8%	0.5%
1950-1959	56,453	12.9	60.4%	15.7%	18.8%	5.1%	0.0%
Pre 1950	87,980	12.5	69.1%	14.5%	13.4%	2.8%	0.2%
HEATING FUEL:							
Electric Heat Billed	154,943	13.2	57.8%	15.3%	19.9%	6.7%	0.3%
Gas Heat Billed	234,536	13.2	51.9%	18.9%	20.6%	8.3%	0.3%
Other	49,617	12.6	81.8%	7.5%	9.9%	0.6%	0.3%
ANNUAL HOUSEHOLD INCOME:							
LICO 125	105,086	12.7	69.4%	13.8%	13.1%	3.6%	0.2%
NON-LICO 125	334,010	13.3	53.6%	17.1%	21.1%	7.9%	0.4%
Under $25,000	71,163	12.5	73.2%	12.7%	11.7%	2.4%	0.0%
$25-$49,999	128,882	13.2	62.0%	14.3%	17.6%	5.7%	0.4%
$50-$74,999	102,841	13.1	53.6%	18.1%	21.1%	7.0%	0.2%
$75-$99,999	64,060	13.4	51.8%	16.9%	22.3%	8.6%	0.4%
$100,000 and Over	72,150	13.5	43.8%	20.4%	23.7%	11.5%	0.7%

8.04(b) Age (Years) of Secondary Use Refrigerator

Table # 8.04(b) shows the distribution of the ages of secondary use refrigerators within the Manitoba Hydro provincial service territory. Overall, the average age of a secondary use residential refrigerator is 16.4 years. Almost 21% of the residential customers have an old second refrigerator over 15 years of age.

In brand new homes, the average age of a second refrigerator is 12.0 years compared to about 17 years in other housing vintages. In brand new homes, 22.6% of customers have second refrigerators that are under ten years old compared to 12.9% overall.

As household income increases, the average age of the second refrigerator decreases. The average age of a second refrigerator in an under $25,000 household is 19.8 years compared to 13.5 years for a refrigerator in a $100,000 plus household. Almost 5% of the under $25,000 household customers have second refrigerator under 10 years of age compared to 22.7% of customers in the $100,000 plus household group.

Table # 8.04 (b)
Age (Years) of Secondary Use Refrigerator
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Age (Years) of Secondary Use Refrigerator

	# of Customers	Average Age	No Fridge	Under 4	4 to 9	10 to 15	16 to 25	Over 25
OVERALL:	439,096	16.4	57.4%	5.0%	7.9%	9.1%	8.5%	12.1%
AREA:								
Winnipeg City	236,093	15.5	62.1%	5.2%	7.4%	8.6%	7.5%	9.3%
Manitoba Hydro Gas	122,844	16.7	52.6%	5.0%	8.9%	9.7%	10.2%	13.7%
Manitoba Hydro No Gas	80,159	18.1	50.9%	4.6%	8.1%	9.7%	9.0%	17.8%
DWELLING TYPE:								
Single Detached	349,899	16.5	49.9%	5.5%	9.7%	10.5%	10.1%	14.4%
Multi Attached	33,324	14.9	64.2%	8.3%	2.9%	9.7%	6.7%	8.2%
Apartment Suite	55,873	.	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VINTAGE:								
2000-2009	40,581	12.0	59.8%	7.9%	14.7%	6.3%	4.3%	7.1%
1990-1999	37,153	15.7	53.0%	5.1%	7.0%	13.5%	11.7%	9.7%
1980-1989	67,289	17.1	56.2%	4.4%	7.8%	8.3%	10.7%	12.7%
1970-1979	83,775	17.0	50.3%	5.1%	8.1%	11.6%	9.9%	15.1%
1960-1969	65,866	17.3	50.3%	5.6%	7.9%	9.2%	11.3%	15.6%
1950-1959	56,453	17.2	60.4%	3.5%	7.2%	9.2%	7.1%	12.6%
Pre 1950	87,980	16.2	69.1%	4.6%	5.5%	6.6%	5.0%	9.1%
HEATING FUEL:								
Electric Heat Billed	154,943	17.3	57.8%	4.3%	7.7%	8.6%	8.1%	13.7%
Gas Heat Billed	234,536	15.8	51.9%	6.2%	9.2%	10.6%	9.8%	12.3%
Other	49,617	17.9	81.8%	2.0%	2.6%	3.6%	3.9%	6.2%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	105,086	18.0	69.4%	3.1%	4.5%	6.1%	6.2%	10.8%
NON-LICO 125	334,010	16.1	53.6%	5.6%	9.0%	10.1%	9.3%	12.5%
Under $25,000	71,163	19.8	73.2%	1.7%	3.0%	4.9%	6.3%	10.9%
$25-$49,999	128,882	17.6	62.0%	3.4%	6.7%	7.7%	7.8%	12.4%
$50-$74,999	102,841	16.1	53.6%	5.2%	9.0%	10.9%	9.0%	12.4%
$75-$99,999	64,060	16.8	51.8%	6.8%	8.0%	9.5%	9.1%	15.0%
$100,000 and Over	72,150	13.5	43.8%	9.4%	13.3%	13.0%	10.9%	9.7%

8.05(a) Type of Primary Use Freezer

Table # 8.05(a) shows the distribution of the sizes of the primary use freezers within the Manitoba Hydro provincial service territory. Overall, 21.4% of residential customers do not have a freezer, 58.7% have a chest type freezer and 20.0% have an upright freezer.

Apartment suite customers are the least likely to own a freezer. Almost 58% of these customers do not have a freezer.

Freezer ownership goes up with household income. Just over 29% of under $25,000 households do not have a freezer compared to 13.6% of $100,000 plus households that do not have a freezer in their dwellings.

Table # 8.05 (a)
Type of Primary Use Freezer
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	% Weighted Frequency of Type of Primary Use Freezer			
	# of Customers	No Freezer	Upright	Chest
OVERALL:	439,096	21.4%	20.0%	58.7%
AREA:				
Winnipeg City	236,093	29.1%	20.1%	50.9%
Manitoba Hydro Gas	122,844	12.8%	20.3%	66.9%
Manitoba Hydro No Gas	80,159	11.8%	19.0%	69.2%
DWELLING TYPE:				
Single Detached	349,899	14.8%	20.3%	64.9%
Multi Attached	33,324	29.0%	20.0%	51.0%
Apartment Suite	55,873	57.8%	17.8%	24.4%
VINTAGE:				
2000-2009	40,581	22.2%	29.0%	48.8%
1990-1999	37,153	12.1%	20.1%	67.8%
1980-1989	67,289	19.3%	21.3%	59.5%
1970-1979	83,775	16.3%	20.5%	63.2%
1960-1969	65,866	17.7%	19.4%	62.9%
1950-1959	56,453	23.7%	19.7%	56.6%
Pre 1950	87,980	32.4%	14.8%	52.8%
HEATING FUEL:				
Electric Heat Billed	154,943	18.3%	22.2%	59.4%
Gas Heat Billed	234,536	17.4%	20.2%	62.4%
Other	49,617	49.4%	11.5%	39.1%
ANNUAL HOUSEHOLD INCOME:				
LICO 125	105,086	27.1%	21.0%	51.9%
NON-LICO 125	334,010	19.6%	19.6%	60.8%
Under $25,000	71,163	29.1%	19.7%	51.2%
$25-$49,999	128,882	23.5%	17.8%	58.7%
$50-$74,999	102,841	21.1%	20.6%	58.3%
$75-$99,999	64,060	17.5%	20.1%	62.5%
$100,000 and Over	72,150	13.6%	23.1%	63.3%

8.05(b) Size (Cubic Feet) of Primary Use Freezer

Table # 8.05(b) shows the distribution of the sizes of the primary use freezers within the Manitoba Hydro provincial service territory. Overall, 29.1% have the small sized 12 and under cubic foot model followed closely by 27.1% with a medium sized 13 to 16 cubic foot model. The average size of a residential freezer is 13.9 cubic feet.

No distinguishing observations are made by area, dwelling vintage, heating fuel or household income. However, multi-family dwelling freezers are, on average, about 2 cubic feet smaller than the freezers in single detached dwellings.

Table # 8.05 (b)
Size (Cubic Feet) of Primary Use Freezer
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Size (Cubic Feet) of Primary Use Freezer

	# of Customers	Average Size	No Freezer	Small 12 & Under	Medium 13 to 16	Large 17 to20	X-Large 21 & Over
OVERALL:	439,096	13.9	21.4%	29.1%	27.1%	18.4%	4.1%
AREA:							
Winnipeg City	236,093	13.4	29.1%	30.3%	24.3%	13.7%	2.8%
Manitoba Hydro Gas	122,844	14.1	12.8%	30.5%	30.1%	20.9%	5.8%
Manitoba Hydro No Gas	80,159	14.7	11.8%	23.3%	31.0%	28.5%	5.5%
DWELLING TYPE:							
Single Detached	349,899	14.2	14.8%	27.8%	30.1%	22.4%	5.0%
Multi Attached	33,324	12.2	29.0%	41.7%	21.5%	5.8%	2.1%
Apartment Suite	55,873	11.3	57.8%	29.4%	12.0%	0.9%	0.0%
VINTAGE:							
2000-2009	40,581	13.7	22.2%	31.6%	25.1%	16.5%	4.6%
1990-1999	37,153	13.4	12.1%	37.5%	31.3%	14.3%	4.8%
1980-1989	67,289	13.7	19.3%	30.7%	28.7%	17.3%	4.1%
1970-1979	83,775	14.1	16.3%	26.5%	33.2%	20.2%	3.8%
1960-1969	65,866	14.2	17.7%	28.5%	26.5%	22.2%	5.0%
1950-1959	56,453	13.9	23.7%	27.4%	26.3%	18.9%	3.6%
Pre 1950	87,980	13.8	32.4%	26.9%	20.2%	16.9%	3.5%
HEATING FUEL:							
Electric Heat Billed	154,943	14.1	18.3%	28.3%	27.6%	21.3%	4.6%
Gas Heat Billed	234,536	13.8	17.4%	30.8%	29.3%	18.3%	4.2%
Other	49,617	13.3	49.4%	23.2%	15.3%	10.0%	2.1%
ANNUAL HOUSEHOLD INCOME:							
LICO 125	105,086	13.4	27.1%	32.2%	22.6%	14.6%	3.6%
NON-LICO 125	334,010	14.0	19.6%	28.1%	28.5%	19.6%	4.3%
Under $25,000	71,163	13.3	29.1%	31.4%	23.2%	13.5%	2.9%
$25-$49,999	128,882	14.0	23.5%	28.4%	25.3%	17.9%	4.8%
$50-$74,999	102,841	14.0	21.1%	28.1%	27.8%	18.8%	4.2%
$75-$99,999	64,060	14.1	17.5%	28.3%	27.9%	22.2%	4.2%
$100,000 and Over	72,150	13.9	13.6%	29.9%	32.5%	20.1%	3.9%

8.05(c) Age (Years) of Primary Use Freezer

Table # 8.05(c) shows the distribution of the ages of primary use freezers within the Manitoba Hydro provincial service territory. Overall, the average age of a primary use residential freezer is 15.4 years. Just over 34% of the residential customers have an old freezer over 15 years of age.

Freezers in apartment suites are the youngest with an average age of 11.3 years. Almost 39% of single detached customers have an old freezer over 15 years of age.

In brand new homes, 20.3% of customers purchased freezers within the last three years compared to 9.9% overall.

As household income increases, the average age of the freezer decreases. The average age of a freezer in an under $25,000 household is 16.7 years compared to 14.4 years for a freezer in a $100,000 plus household.

Table # 8.05 (c)
Age (Years) of Primary Use Freezer
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Age (Years) of Primary Use Freezer

	# of Customers	Average Age	No Freezer	Under 4	4 to 9	10 to 15	16 to 25	Over 25
OVERALL:	439,096	15.4	21.4%	9.9%	16.7%	17.9%	15.4%	18.8%
AREA:								
Winnipeg City	236,093	15.2	29.1%	8.6%	15.9%	16.0%	14.7%	15.8%
Manitoba Hydro Gas	122,844	15.4	12.8%	11.3%	19.3%	18.9%	16.3%	21.4%
Manitoba Hydro No Gas	80,159	16.0	11.8%	11.4%	15.2%	22.1%	15.8%	23.8%
DWELLING TYPE:								
Single Detached	349,899	15.8	14.8%	9.7%	17.5%	19.4%	17.2%	21.4%
Multi Attached	33,324	13.8	29.0%	12.2%	16.0%	15.4%	15.3%	12.1%
Apartment Suite	55,873	11.3	57.8%	9.7%	12.3%	9.9%	3.9%	6.3%
VINTAGE:								
2000-2009	40,581	10.1	22.2%	20.3%	25.0%	16.6%	8.2%	7.7%
1990-1999	37,153	14.8	12.1%	9.7%	17.2%	24.0%	22.4%	14.7%
1980-1989	67,289	15.2	19.3%	10.2%	17.7%	17.2%	18.4%	17.2%
1970-1979	83,775	15.7	16.3%	8.6%	18.1%	20.5%	15.7%	20.8%
1960-1969	65,866	16.8	17.7%	9.6%	14.1%	17.1%	18.0%	23.6%
1950-1959	56,453	16.5	23.7%	8.0%	15.5%	17.0%	13.7%	22.2%
Pre 1950	87,980	16.2	32.4%	7.5%	13.5%	15.2%	12.1%	19.2%
HEATING FUEL:								
Electric Heat Billed	154,943	14.9	18.3%	12.3%	16.6%	19.6%	14.0%	19.2%
Gas Heat Billed	234,536	15.6	17.4%	9.0%	18.0%	18.6%	17.7%	19.3%
Other	49,617	16.2	49.4%	6.4%	10.9%	9.4%	8.4%	15.4%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	105,086	16.2	27.1%	7.2%	16.7%	15.0%	13.9%	20.2%
NON-LICO 125	334,010	15.1	19.6%	10.7%	16.7%	18.8%	15.8%	18.4%
Under $25,000	71,163	16.7	29.1%	6.2%	15.7%	14.6%	13.5%	20.9%
$25-$49,999	128,882	15.8	23.5%	10.3%	15.0%	16.9%	13.4%	20.9%
$50-$74,999	102,841	15.3	21.1%	9.6%	17.6%	18.2%	14.5%	19.0%
$75-$99,999	64,060	14.7	17.5%	10.7%	18.2%	19.5%	18.3%	15.9%
$100,000 and Over	72,150	14.4	13.6%	12.3%	18.3%	21.1%	19.3%	15.4%

8.06(a) Type of Secondary Use Freezer

Table # 8.06(a) shows the distribution of the sizes of the secondary use freezers within the Manitoba Hydro provincial service territory. Overall, 83.4% of residential customers do not have a second freezer, 12.8% have a chest type second freezer and 3.8% have an upright second freezer.

Second freezers are more likely to be found in dwellings outside of Winnipeg. Most of residential customers from Winnipeg (92.5%) do not have a second freezer. In natural gas available areas, 23.4% of customers have a second freezer. In no natural gas available areas, 33.2% of customers have a second freezer.

Apartment suite customers are the least likely to own a second freezer. Almost all (97.0%) of these customers do not have a second freezer. This observation also holds for customers in multi-attached dwellings.

Table # 8.06 (a)
Type of Secondary Use Freezer
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	% Weighted Frequency of Type of Secondary Use Freezer			
	# of Customers	No Freezer	Upright	Chest
OVERALL:	439,096	83.4%	3.8%	12.8%
AREA:				
Winnipeg City	236,093	92.5%	2.5%	5.0%
Manitoba Hydro Gas	122,844	76.6%	4.6%	18.9%
Manitoba Hydro No Gas	80,159	66.8%	6.6%	26.6%
DWELLING TYPE:				
Single Detached	349,899	80.2%	4.3%	15.5%
Multi Attached	33,324	94.0%	3.4%	2.7%
Apartment Suite	55,873	97.0%	0.7%	2.3%
VINTAGE:				
2000-2009	40,581	86.5%	3.1%	10.5%
1990-1999	37,153	83.9%	3.4%	12.7%
1980-1989	67,289	82.9%	3.7%	13.4%
1970-1979	83,775	80.1%	4.6%	15.3%
1960-1969	65,866	82.2%	4.0%	13.8%
1950-1959	56,453	86.9%	3.8%	9.3%
Pre 1950	87,980	83.7%	3.5%	12.8%
HEATING FUEL:				
Electric Heat Billed	154,943	74.8%	4.8%	20.4%
Gas Heat Billed	234,536	88.5%	3.4%	8.1%
Other	49,617	86.0%	2.5%	11.5%
ANNUAL HOUSEHOLD INCOME:				
LICO 125	105,086	84.7%	3.9%	11.4%
NON-LICO 125	334,010	83.0%	3.8%	13.3%
Under $25,000	71,163	83.4%	3.9%	12.7%
$25-$49,999	128,882	81.7%	4.4%	13.9%
$50-$74,999	102,841	82.8%	2.4%	14.8%
$75-$99,999	64,060	84.8%	4.8%	10.3%
$100,000 and Over	72,150	85.7%	3.9%	10.4%

8.06(b) Size (Cubic Feet) of Secondary Use Freezer

Table # 8.06(b) shows the distribution of the sizes of the secondary use freezers within the Manitoba Hydro provincial service territory. Overall, 6.9% have the small sized 12 and under cubic foot model followed closely by 6.7% with a medium sized 13 to 16 cubic foot model. The average size of a residential second freezer is 13.2 cubic feet.

Table # 8.06 (b)
Size (Cubic Feet) of Secondary Use Freezer
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Size (Cubic Feet) of Secondary Use Freezer

	# of Customers	Average Size	No Freezer	Small 12 & Under	Medium 13 to 16	Large 17 to20	X-Large 21 & Over
OVERALL:	439,096	13.2	83.4%	6.9%	6.7%	2.6%	0.5%
AREA:							
Winnipeg City	236,093	12.4	92.5%	4.3%	2.2%	0.7%	0.3%
Manitoba Hydro Gas	122,844	13.4	76.6%	8.7%	10.3%	3.9%	0.5%
Manitoba Hydro No Gas	80,159	13.5	66.8%	12.0%	14.3%	6.0%	1.0%
DWELLING TYPE:							
Single Detached	349,899	13.2	80.2%	8.2%	7.9%	3.2%	0.6%
Multi Attached	33,324	12.6	94.0%	3.2%	2.2%	0.4%	0.3%
Apartment Suite	55,873	12.2	97.0%	1.4%	1.7%	0.0%	0.0%
VINTAGE:							
2000-2009	40,581	13.1	86.5%	5.8%	5.2%	2.3%	0.2%
1990-1999	37,153	13.5	83.9%	6.6%	6.1%	2.3%	1.1%
1980-1989	67,289	13.3	82.9%	6.4%	8.1%	2.0%	0.6%
1970-1979	83,775	13.3	80.1%	7.6%	8.6%	3.2%	0.4%
1960-1969	65,866	13.2	82.2%	7.0%	7.5%	2.9%	0.4%
1950-1959	56,453	12.7	86.9%	6.6%	4.6%	1.5%	0.4%
Pre 1950	87,980	13.1	83.7%	7.5%	5.3%	3.1%	0.4%
HEATING FUEL:							
Electric Heat Billed	154,943	13.4	74.8%	9.5%	11.0%	4.0%	0.7%
Gas Heat Billed	234,536	12.7	88.5%	6.0%	3.7%	1.5%	0.3%
Other	49,617	14.2	86.0%	3.3%	7.0%	3.5%	0.3%
ANNUAL HOUSEHOLD INCOME:							
LICO 125	105,086	12.9	84.7%	6.9%	6.1%	2.0%	0.3%
NON-LICO 125	334,010	13.3	83.0%	7.0%	6.8%	2.8%	0.5%
Under $25,000	71,163	12.7	83.4%	8.1%	6.2%	2.1%	0.2%
$25-$49,999	128,882	13.6	81.7%	6.6%	7.7%	3.5%	0.6%
$50-$74,999	102,841	12.8	82.8%	8.2%	6.5%	2.2%	0.4%
$75-$99,999	64,060	13.3	84.8%	6.1%	6.0%	2.7%	0.4%
$100,000 and Over	72,150	13.4	85.7%	5.5%	6.1%	1.9%	0.8%

8.06(c) Age (Years) of Secondary Use Freezer

Table # 8.06(c) shows the distribution of the ages of secondary use freezers within the Manitoba Hydro provincial service territory. Overall, the average age of a secondary use residential freezer is 16.7 years. There are 8.4% of the residential customers that have an old second freezer over 15 years of age.

Second Freezers in apartment suites are the youngest with an average age of 10.0 years. Just over 10% of single detached customers have an old second freezer over 15 years of age.

Table # 8.06 (c)
Age (Years) of Secondary Use Freezer
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Age (Years) of Secondary Use Freezer

	# of Customers	Average Age	No Freezer	Under 4	4 to 9	10 to 15	16 to 25	Over 25
OVERALL:	439,096	16.7	83.4%	1.4%	3.3%	3.5%	3.9%	4.5%
AREA:								
Winnipeg City	236,093	17.1	92.5%	0.6%	1.8%	1.2%	1.8%	2.2%
Manitoba Hydro Gas	122,844	16.3	76.6%	1.9%	5.2%	5.3%	5.0%	6.0%
Manitoba Hydro No Gas	80,159	16.9	66.8%	3.0%	5.1%	7.6%	8.5%	8.9%
DWELLING TYPE:								
Single Detached	349,899	16.8	80.2%	1.6%	4.0%	4.2%	4.8%	5.3%
Multi Attached	33,324	20.3	94.0%	0.2%	1.1%	0.5%	1.7%	2.6%
Apartment Suite	55,873	10.0	97.0%	0.9%	0.7%	1.1%	0.0%	0.4%
VINTAGE:								
2000-2009	40,581	13.8	86.5%	1.7%	3.4%	3.3%	2.4%	2.7%
1990-1999	37,153	15.2	83.9%	2.4%	2.6%	3.6%	4.0%	3.5%
1980-1989	67,289	16.8	82.9%	1.6%	4.0%	3.0%	4.1%	4.5%
1970-1979	83,775	16.2	80.1%	1.4%	3.7%	5.7%	4.6%	4.5%
1960-1969	65,866	18.1	82.2%	1.4%	2.4%	3.4%	5.3%	5.3%
1950-1959	56,453	17.2	86.9%	1.3%	1.8%	2.6%	3.8%	3.5%
Pre 1950	87,980	17.7	83.7%	0.8%	4.5%	2.5%	3.0%	5.6%
HEATING FUEL:								
Electric Heat Billed	154,943	16.5	74.8%	2.4%	4.8%	5.1%	6.5%	6.4%
Gas Heat Billed	234,536	17.0	88.5%	0.9%	2.4%	2.4%	2.6%	3.3%
Other	49,617	16.8	86.0%	0.8%	3.1%	3.8%	2.4%	4.0%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	105,086	17.6	84.7%	1.2%	2.8%	3.0%	3.4%	4.9%
NON-LICO 125	334,010	16.5	83.0%	1.5%	3.5%	3.7%	4.1%	4.3%
Under $25,000	71,163	16.5	83.4%	1.5%	3.6%	3.1%	3.9%	4.5%
$25-$49,999	128,882	18.2	81.7%	1.1%	2.9%	4.1%	4.3%	5.9%
$50-$74,999	102,841	16.6	82.8%	0.8%	4.4%	3.2%	4.5%	4.2%
$75-$99,999	64,060	14.8	84.8%	2.4%	2.7%	3.6%	3.3%	3.2%
$100,000 and Over	72,150	15.6	85.7%	1.8%	2.9%	3.1%	3.1%	3.4%

8.07 Age (Years) of Automatic Dishwasher

Table # 8.07 shows the distribution of the saturation and ages of automatic dishwashers within the Manitoba Hydro provincial service territory. About one third of residential customers do not have an automatic dishwasher. The average age of an automatic dishwasher is 8.0 years.

Comparing by area, automatic dishwashers are least common in natural gas not available areas, where 42.2% of customers do not have one.

Comparing by dwelling, automatic dishwashers are least common in apartment suites, where 48.0% of customers do not have one.

Comparing by dwelling vintage, as dwelling age increases, the presence of an automatic dishwasher decreases. Only 10.7% of customers residing in a dwelling built in the 2000s do not have a dishwasher compared to 55.3% of customers residing in a dwelling built prior to 1950 that do not have one.

As household income increases, so does the presence of an automatic dishwasher. Almost 61% of customers in the low income range do not have a dishwasher compared to only 12.2% of customers in the high income range that do not have one. The average age of an automatic dishwasher in a under $25,000 household is 9.3 years compared to 6.7 years in a $100,000 plus household.

Table # 8.07
Age (Years) of Automatic Dishwasher
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Age (Years) of Automatic Dishwasher

	# of Customers	Average Age	No Dishwasher	Under 4	4 to 9	10 to 15	16 to 25	Over 25
OVERALL:	439,096	8.0	33.8%	19.2%	25.5%	12.7%	7.4%	1.4%
AREA:								
Winnipeg City	236,093	8.3	32.0%	19.5%	25.8%	12.3%	8.6%	1.9%
Manitoba Hydro Gas	122,844	7.6	31.9%	20.0%	27.4%	13.5%	6.4%	0.9%
Manitoba Hydro No Gas	80,159	7.8	42.2%	17.1%	21.6%	12.8%	5.4%	0.8%
DWELLING TYPE:								
Single Detached	349,899	7.8	31.0%	19.7%	27.6%	13.9%	6.3%	1.5%
Multi Attached	33,324	7.7	39.2%	19.5%	24.9%	7.1%	8.7%	0.7%
Apartment Suite	55,873	9.9	48.0%	15.6%	12.7%	8.8%	13.5%	1.5%
VINTAGE:								
2000-2009	40,581	3.9	10.7%	47.4%	41.9%	0.0%	0.0%	0.0%
1990-1999	37,153	8.8	17.4%	18.7%	24.8%	30.6%	8.5%	0.0%
1980-1989	67,289	10.0	19.5%	18.5%	27.4%	12.6%	20.0%	2.0%
1970-1979	83,775	8.5	29.4%	17.8%	26.9%	16.0%	8.0%	2.0%
1960-1969	65,866	8.3	38.3%	15.6%	25.0%	13.6%	6.0%	1.6%
1950-1959	56,453	8.3	46.4%	14.8%	20.2%	11.2%	5.7%	1.7%
Pre 1950	87,980	7.4	55.3%	13.7%	19.1%	8.4%	2.4%	1.2%
HEATING FUEL:								
Electric Heat Billed	154,943	8.0	35.9%	20.0%	22.7%	11.5%	9.1%	0.8%
Gas Heat Billed	234,536	7.9	26.4%	21.0%	29.6%	14.6%	6.8%	1.7%
Other	49,617	9.5	62.5%	8.1%	14.4%	8.0%	5.2%	1.7%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	105,086	9.0	54.1%	11.2%	16.9%	9.6%	6.6%	1.7%
NON-LICO 125	334,010	7.8	27.4%	21.7%	28.2%	13.7%	7.7%	1.3%
Under $25,000	71,163	9.3	60.6%	8.4%	14.8%	9.2%	5.3%	1.6%
$25-$49,999	128,882	8.8	40.2%	16.2%	21.5%	11.5%	8.8%	1.9%
$50-$74,999	102,841	8.2	31.3%	18.5%	27.6%	13.6%	8.2%	0.8%
$75-$99,999	64,060	7.7	19.7%	25.2%	29.9%	16.4%	7.8%	1.1%
$100,000 and Over	72,150	6.7	12.2%	30.8%	36.3%	14.0%	5.5%	1.3%

8.08(a) Type of Automatic Clothes Washer

Table # 8.08(a) shows the distribution of automatic clothes washers within the Manitoba Hydro provincial service territory. Overall, 11.3% of residential customers do not have an automatic clothes washer inside their dwelling for their own private household use. Top load models are still the most popular with 64.0% of residential customers followed by front load washers (23.1%).

Comparing by dwelling type, 59.5% of apartment suite customers do not have an automatic clothes washers for their own private use.

The saturation of front load clothes washers is most prevalent in newly constructed dwellings. Of the dwellings built in the 2000's, 41.5% have front load clothes washers.

Private use automatic clothes washers are tied to household income. There is 23.4% of under $25,000 households with no automatic clothes washers compared to only 2.4% of the $100,000 plus group with no clothes washer. Front load clothes washers are quite expensive compared to top load models and as a result their saturation increases with household income. Only 9.5% of households earning under $25,000 have front load washers while 41.5% of $100,000 plus households have front load models in their homes.

Table # 8.08 (a)
Type of Automatic Clothes Washer
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	% Weighted Frequency of Type of Clothes Washer				
	# of Customers	None or Shared	Top Load	Front Load	Other
OVERALL:	439,096	11.3%	64.0%	23.1%	1.6%
AREA:					
Winnipeg City	236,093	14.2%	61.8%	23.1%	1.0%
Manitoba Hydro Gas	122,844	7.0%	67.0%	23.9%	2.1%
Manitoba Hydro No Gas	80,159	9.2%	66.2%	21.8%	2.8%
DWELLING TYPE:					
Single Detached	349,899	3.9%	68.8%	25.5%	1.8%
Multi Attached	33,324	7.4%	70.5%	20.2%	1.9%
Apartment Suite	55,873	59.5%	30.5%	9.6%	0.4%
VINTAGE:					
2000-2009	40,581	5.7%	48.3%	45.1%	1.0%
1990-1999	37,153	6.0%	65.7%	27.3%	1.0%
1980-1989	67,289	8.7%	65.6%	25.1%	0.6%
1970-1979	83,775	9.3%	66.9%	22.1%	1.6%
1960-1969	65,866	15.0%	64.6%	18.5%	1.9%
1950-1959	56,453	15.6%	67.9%	14.7%	1.8%
Pre 1950	87,980	14.3%	63.7%	19.4%	2.6%
HEATING FUEL:					
Electric Heat Billed	154,943	11.1%	63.5%	23.2%	2.2%
Gas Heat Billed	234,536	2.7%	70.3%	26.0%	1.0%
Other	49,617	52.3%	36.0%	9.0%	2.8%
ANNUAL HOUSEHOLD INCOME:					
LICO 125	105,086	20.5%	64.7%	11.7%	3.2%
NON-LICO 125	334,010	8.4%	63.8%	26.7%	1.1%
Under $25,000	71,163	23.4%	62.4%	9.5%	4.8%
$25-$49,999	128,882	14.2%	68.9%	15.4%	1.4%
$50-$74,999	102,841	9.0%	65.9%	24.5%	0.7%
$75-$99,999	64,060	5.5%	62.9%	30.7%	1.0%
$100,000 and Over	72,150	2.4%	55.3%	41.5%	0.9%

8.08(b) Age (Years) of Automatic Clothes Washer

Table # 8.08(b) shows the distribution of the ages of private-use automatic clothes washers within the Manitoba Hydro provincial service territory. Overall, on average, private-use automatic clothes washers are 9.3 years old.

In newly constructed homes, 44.2% of customers have purchased clothes washers within the last three years compared to 22.3% of residential customers overall.

As household income increases, the average age of the automatic clothes washer decreases. The average age of a clothes washer in an under $25,000 household is 11.3 years compared to 7.8 years for a clothes washer in a $100,000 plus household. In under $25,000 households, 13.0% of customers have purchased a clothes washer within the last three years compared to 30.8% of customers in the $100,000 plus group.

Table # 8.08 (b)
Age (Years) of Automatic Clothes Washer
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

			% Weighted Frequency of Age (Years) of Clothes Washer					
	# of Customers	Average Age	None or Shared	Under 4	4 to 9	10 to 15	16 to 25	Over 25
OVERALL:	439,096	9.3	11.3%	22.3%	29.9%	20.3%	13.5%	2.8%
AREA:								
Winnipeg City	236,093	9.7	14.2%	20.6%	28.4%	19.1%	15.0%	2.7%
Manitoba Hydro Gas	122,844	9.0	7.0%	24.3%	31.3%	22.3%	12.3%	2.9%
Manitoba Hydro No Gas	80,159	8.7	9.2%	24.0%	32.4%	20.8%	10.9%	2.7%
DWELLING TYPE:								
Single Detached	349,899	9.2	3.9%	23.6%	33.1%	22.8%	13.6%	3.1%
Multi Attached	33,324	9.2	7.4%	25.8%	32.4%	16.2%	15.4%	2.8%
Apartment Suite	55,873	10.8	59.5%	11.9%	8.8%	7.4%	11.6%	0.9%
VINTAGE:								
2000-2009	40,581	5.1	5.7%	44.2%	38.9%	8.8%	2.2%	0.2%
1990-1999	37,153	9.5	6.0%	19.8%	27.1%	33.8%	11.9%	1.3%
1980-1989	67,289	10.0	8.7%	20.9%	30.0%	19.7%	17.8%	2.9%
1970-1979	83,775	9.4	9.3%	22.2%	31.0%	20.9%	13.0%	3.7%
1960-1969	65,866	9.8	15.0%	19.4%	26.6%	22.1%	14.1%	2.8%
1950-1959	56,453	10.6	15.6%	17.8%	28.2%	17.9%	16.0%	4.6%
Pre 1950	87,980	9.6	14.3%	19.3%	29.5%	20.1%	14.5%	2.3%
HEATING FUEL:								
Electric Heat Billed	154,943	8.8	11.1%	25.2%	29.5%	19.7%	11.7%	2.8%
Gas Heat Billed	234,536	9.5	2.7%	23.2%	33.3%	22.7%	15.0%	3.1%
Other	49,617	10.9	52.3%	8.7%	15.4%	10.6%	12.0%	1.1%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	105,086	10.6	20.5%	16.1%	24.2%	19.7%	16.4%	3.0%
NON-LICO 125	334,010	9.0	8.4%	24.2%	31.7%	20.5%	12.6%	2.7%
Under $25,000	71,163	11.3	23.4%	13.0%	22.1%	20.8%	17.4%	3.4%
$25-$49,999	128,882	9.8	14.2%	19.8%	28.0%	19.5%	15.5%	3.0%
$50-$74,999	102,841	9.3	9.0%	21.8%	32.6%	21.3%	12.1%	3.2%
$75-$99,999	64,060	8.3	5.5%	28.7%	31.0%	22.0%	10.9%	1.9%
$100,000 and Over	72,150	7.8	2.4%	30.8%	36.4%	18.4%	10.2%	1.9%

8.09(a) Type of Automatic Clothes Dryer

Table # 8.09(a) shows the distribution of automatic clothes dryers within the Manitoba Hydro provincial service territory. Overall, 12.9% of residential customers do not have an automatic clothes dryer inside their dwelling for their own private household use. Electric models are still the most popular with 83.3% of residential customers trailed by natural gas clothes dryers (3.8%).

Comparing by dwelling type, 59.5% of apartment suite customers do not have an automatic clothes dryers for their own private use.

The saturation of clothes dryers is most prevalent in newer dwellings. Almost 94% of dwellings built in the 2000s have clothes dryers compared to about 83% of dwellings built prior to 1960.

Private use automatic clothes dryers are tied to household income. There is 26.8% of under $25,000 households with no automatic clothes dryers compared to only 3.6% of the $100,000 plus group with no clothes dryer. Natural gas clothes dryer saturation increases with household income. Only 2.7% of households earning under $25,000 have natural gas dryers while 5.5% of $100,000 plus households have natural gas models in their dwellings.

Table # 8.09 (a)
Type of Automatic Clothes Dryer
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	% Weighted Frequency of Type of Clothes Dryer			
	# of Customers	Electric	Natural Gas	None or Shared
OVERALL:	439,096	83.3%	3.8%	12.9%
AREA:				
Winnipeg City	236,093	78.9%	5.6%	15.5%
Manitoba Hydro Gas	122,844	89.0%	2.8%	8.2%
Manitoba Hydro No Gas	80,159	87.6%	0.2%	12.2%
DWELLING TYPE:				
Single Detached	349,899	89.7%	4.6%	5.7%
Multi Attached	33,324	88.8%	1.3%	9.9%
Apartment Suite	55,873	39.6%	0.9%	59.5%
VINTAGE:				
2000-2009	40,581	91.3%	2.4%	6.4%
1990-1999	37,153	88.6%	4.3%	7.1%
1980-1989	67,289	86.0%	4.3%	9.8%
1970-1979	83,775	86.9%	2.3%	10.8%
1960-1969	65,866	80.0%	4.0%	16.0%
1950-1959	56,453	77.2%	5.3%	17.5%
Pre 1950	87,980	78.3%	4.3%	17.4%
HEATING FUEL:				
Electric Heat Billed	154,943	87.1%	0.2%	12.8%
Gas Heat Billed	234,536	88.8%	6.9%	4.3%
Other	49,617	45.3%	1.0%	53.8%
ANNUAL HOUSEHOLD INCOME:				
LICO 125	105,086	73.3%	3.7%	23.0%
NON-LICO 125	334,010	86.4%	3.9%	9.7%
Under $25,000	71,163	70.5%	2.7%	26.8%
$25-$49,999	128,882	81.4%	3.3%	15.3%
$50-$74,999	102,841	85.0%	4.5%	10.5%
$75-$99,999	64,060	90.2%	3.1%	6.7%
$100,000 and Over	72,150	90.9%	5.5%	3.6%

8.09(b) Age (Years) of Automatic Clothes Dryer

Table # 8.09(b) shows the distribution of the ages of private-use automatic clothes dryers within the Manitoba Hydro provincial service territory. Overall, on average, private-use automatic clothes dryers are 10.0 years old.

In newly constructed homes, 41.7% of customers have purchased clothes dryers within the last three years compared to 20.3% of residential customers overall.

As household income increases, the average age of the automatic clothes dryer decreases. The average age of a clothes dryer in an under $25,000 household is 12.1 years compared to 8.4 years for a clothes dryer in a $100,000 plus household. In under $25,000 households, 10.7% of customers have purchased a clothes dryer within the last three years compared to 29.5% of customers in the $100,000 plus group.

Table # 8.09 (b)
Age (Years) of Automatic Clothes Dryer
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	Average Age	% Weighted Frequency of Age (Years) of Clothes Washer: None or Shared	Under 4	4 to 9	10 to 15	16 to 25	Over 25
OVERALL:	439,096	10.0	12.9%	20.3%	27.8%	20.8%	14.3%	4.0%
AREA:								
Winnipeg City	236,093	10.4	15.5%	19.0%	25.8%	19.8%	15.6%	4.3%
Manitoba Hydro Gas	122,844	9.4	8.2%	22.3%	30.4%	22.7%	12.9%	3.5%
Manitoba Hydro No Gas	80,159	9.6	12.2%	21.1%	29.3%	20.8%	12.6%	4.1%
DWELLING TYPE:								
Single Detached	349,899	9.9	5.7%	21.2%	30.8%	23.2%	14.7%	4.4%
Multi Attached	33,324	9.9	9.9%	24.3%	28.2%	17.5%	14.9%	5.1%
Apartment Suite	55,873	10.6	59.5%	12.1%	8.6%	7.7%	11.2%	0.9%
VINTAGE:								
2000-2009	40,581	5.4	6.4%	41.7%	38.6%	9.8%	3.0%	0.6%
1990-1999	37,153	9.9	7.1%	18.9%	25.2%	34.0%	12.2%	2.7%
1980-1989	67,289	10.8	9.8%	20.1%	26.4%	19.9%	19.6%	4.3%
1970-1979	83,775	10.2	10.8%	20.1%	28.0%	21.4%	14.9%	4.8%
1960-1969	65,866	10.5	16.0%	16.2%	26.4%	22.9%	14.3%	4.2%
1950-1959	56,453	11.0	17.5%	16.4%	25.0%	19.7%	16.5%	4.9%
Pre 1950	87,980	10.4	17.4%	16.9%	27.5%	19.4%	14.5%	4.4%
HEATING FUEL:								
Electric Heat Billed	154,943	9.5	12.8%	23.1%	27.1%	19.8%	13.3%	4.0%
Gas Heat Billed	234,536	10.1	4.3%	21.0%	31.0%	23.5%	15.9%	4.4%
Other	49,617	11.1	53.8%	8.2%	14.7%	11.2%	10.1%	2.2%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	105,086	11.3	23.0%	14.0%	21.9%	20.8%	15.9%	4.3%
NON-LICO 125	334,010	9.6	9.7%	22.3%	29.6%	20.7%	13.8%	3.9%
Under $25,000	71,163	12.1	26.8%	10.7%	19.4%	21.4%	16.8%	4.9%
$25-$49,999	128,882	10.7	15.3%	17.3%	26.4%	19.7%	16.6%	4.8%
$50-$74,999	102,841	9.8	10.5%	20.4%	30.4%	22.1%	13.0%	3.7%
$75-$99,999	64,060	8.9	6.7%	26.6%	29.2%	22.3%	12.3%	2.9%
$100,000 and Over	72,150	8.4	3.6%	29.5%	33.4%	18.9%	11.3%	3.3%

9.0 RESIDENTIAL ELECTRONICS AND LIGHTING

9.01(a) Type of Primary Use Television

Table # 9.01(a) shows the distribution of the types of primary use televisions within the Manitoba Hydro provincial service territory. Overall, 50.2% of residential customers have a cathode ray tube (CRT) television as their primary TV, followed by 28.5% with LCD TVs and 11.7% with plasma models.

The saturation rates for newer technology televisions are tied to household income. In households that earn $100,000 plus, 35.3% have LCD primary use TVs compared to households earning under $25,000 where 21.5% have LCD TVs. Older technology CRT TVs are most common in the under $25,000 households (64.0%) compared to only 34.9% of $100,000 plus households which have CRT TVs for their primary viewing use.

Table # 9.01(a)
Type of Primary Use Television
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Type of Primary Use Television					
		Tube (CRT)	Plasma	LCD	LED	Projection	No TV
OVERALL:	439,096	50.2%	11.7%	28.5%	2.8%	4.5%	2.2%
AREA:							
Winnipeg City	236,093	50.7%	11.4%	29.5%	2.4%	4.4%	1.7%
Manitoba Hydro Gas	122,844	48.9%	12.7%	27.0%	3.0%	5.5%	2.8%
Manitoba Hydro No Gas	80,159	50.8%	11.1%	27.8%	3.7%	3.5%	3.1%
DWELLING TYPE:							
Single Detached	349,899	49.1%	12.1%	28.7%	2.9%	5.1%	2.1%
Multi Attached	33,324	55.1%	11.7%	26.3%	2.0%	3.1%	1.8%
Apartment Suite	55,873	54.3%	9.5%	28.3%	2.7%	2.1%	3.1%
VINTAGE:							
2000-2009	40,581	37.9%	18.5%	30.7%	3.9%	7.0%	2.1%
1990-1999	37,153	42.6%	14.2%	31.5%	3.5%	5.9%	2.4%
1980-1989	67,289	45.2%	11.9%	31.6%	3.6%	6.2%	1.5%
1970-1979	83,775	48.9%	11.3%	29.3%	2.9%	5.5%	2.1%
1960-1969	65,866	50.1%	10.1%	31.5%	1.9%	3.9%	2.5%
1950-1959	56,453	55.8%	12.0%	25.7%	1.3%	3.4%	1.9%
Pre 1950	87,980	60.8%	8.9%	22.6%	2.9%	1.9%	3.0%
HEATING FUEL:							
Electric Heat Billed	154,943	49.3%	11.7%	27.6%	3.5%	4.5%	3.5%
Gas Heat Billed	234,536	48.6%	12.7%	29.9%	2.5%	5.2%	1.2%
Other	49,617	61.0%	7.3%	24.5%	2.3%	1.7%	3.2%
ANNUAL HOUSEHOLD INCOME:							
LICO 125	105,086	60.3%	7.8%	23.0%	2.6%	2.7%	3.7%
NON-LICO 125	334,010	47.0%	13.0%	30.2%	2.9%	5.1%	1.8%
Under $25,000	71,163	64.0%	5.6%	21.5%	2.7%	2.2%	3.9%
$25-$49,999	128,882	57.0%	10.5%	24.6%	3.0%	2.8%	2.2%
$50-$74,999	102,841	47.5%	12.3%	29.9%	2.6%	5.2%	2.7%
$75-$99,999	64,060	43.0%	12.5%	34.3%	1.7%	7.6%	1.0%
$100,000 and Over	72,150	34.9%	18.5%	35.3%	3.9%	6.4%	1.1%

9.01(b) Screen Size of Primary Use Television

Table # 9.01(b) shows the distribution of primary use television screen sizes within the Manitoba Hydro provincial service territory. Overall, the average screen size of a primary use television is 34 inches. The most popular screen size is between 21 to 29 inches (33.4%) followed by screen sizes of 30 to 39 inches (26.6%) and 40 to 49 inches (20.4%).

Big screen TVs are most evident in newer homes. The saturation rate for big screen TVs, over 49 inches, is 18.6% in dwellings built in the 2000s, compared to 9.8% overall. On average, screen size diminishes as dwelling age increases.

The saturation rate for big screen TVs is tied to household income. On average, screen size increases as household income increases. In households that earn $100,000 plus, 17.2% have big screen TVs compared to 3.0% of households earning under $25,000.

Table # 9.01 (b)
Screen Size of Primary Use Television
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	% Weighted Frequency of Screen Size of Primary Use Television							
	# of Customers	Average Size	Under 21"	21" to 29"	30" to 39"	40" to 49"	Over 49"	No TV
OVERALL:	439,096	34	7.6%	33.4%	26.6%	20.4%	9.8%	2.2%
AREA:								
Winnipeg City	236,093	34	7.6%	33.4%	26.7%	21.4%	9.2%	1.7%
Manitoba Hydro Gas	122,844	34	7.1%	33.0%	27.1%	18.7%	11.2%	2.8%
Manitoba Hydro No Gas	80,159	34	8.5%	33.9%	25.4%	19.8%	9.3%	3.1%
DWELLING TYPE:								
Single Detached	349,899	35	6.5%	32.5%	26.7%	21.4%	10.8%	2.1%
Multi Attached	33,324	33	9.5%	33.6%	28.1%	19.1%	7.8%	1.8%
Apartment Suite	55,873	31	13.8%	39.2%	24.8%	14.4%	4.7%	3.1%
VINTAGE:								
2000-2009	40,581	38	4.3%	23.3%	26.3%	25.5%	18.6%	2.1%
1990-1999	37,153	36	5.9%	26.9%	29.2%	23.5%	12.2%	2.4%
1980-1989	67,289	35	5.8%	31.6%	27.6%	21.4%	12.1%	1.5%
1970-1979	83,775	35	5.7%	31.2%	29.0%	22.2%	9.8%	2.1%
1960-1969	65,866	33	9.7%	33.3%	25.3%	21.2%	8.1%	2.5%
1950-1959	56,453	33	7.6%	38.5%	27.1%	17.0%	7.9%	1.9%
Pre 1950	87,980	31	11.7%	41.1%	23.2%	15.6%	5.4%	3.0%
HEATING FUEL:								
Electric Heat Billed	154,943	34	8.0%	33.4%	25.9%	19.8%	9.4%	3.5%
Gas Heat Billed	234,536	35	5.6%	31.9%	27.7%	22.6%	11.0%	1.2%
Other	49,617	30	16.3%	40.4%	23.6%	11.4%	5.1%	3.2%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	105,086	30	12.8%	40.0%	26.6%	12.1%	4.7%	3.7%
NON-LICO 125	334,010	35	6.0%	31.3%	26.6%	23.0%	11.4%	1.8%
Under $25,000	71,163	29	15.9%	43.1%	24.3%	9.8%	3.0%	3.9%
$25-$49,999	128,882	32	8.2%	39.8%	28.5%	14.8%	6.5%	2.2%
$50-$74,999	102,841	35	6.8%	31.0%	27.3%	21.9%	10.4%	2.7%
$75-$99,999	64,060	37	4.6%	26.8%	23.3%	29.8%	14.5%	1.0%
$100,000 and Over	72,150	39	2.4%	21.7%	27.5%	30.1%	17.2%	1.1%

9.01(c) Age (Years) of Primary Use Television

Table # 9.01(c) shows the distribution of primary use television ages within the Manitoba Hydro provincial service territory. Overall, the average age of a primary use television is 6.1 years. The majority (59.6%) of primary use TVs are 6 years old or less.

Newer TVs are most evident in newer homes. Almost 46% of TVs in dwellings built in the 2000s or 1990s are under 4 years old. On average, TV age increases as dwelling age increases.

Television age is also related to household income. On average, television age decreases as household income increases. In households that earn $100,000 plus, 49.2% have newer TVs compared to 25.6% of households earning under $25,000. Almost 20% of low income house have a primary use television that is over 12 years old.

Table # 9.01 (c)
Age (Years) of Primary Use Television
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Age (Years) of Primary Use Television

	# of Customers	Average Age	Under 4	4 to 6	7 to 9	10 to 12	Over 12	No TV
OVERALL:	439,096	6.1	38.1%	21.5%	14.6%	10.8%	12.8%	2.2%
AREA:								
Winnipeg City	236,093	6.1	38.9%	20.7%	15.1%	11.0%	12.7%	1.7%
Manitoba Hydro Gas	122,844	6.1	37.5%	21.8%	14.4%	10.8%	12.6%	2.8%
Manitoba Hydro No Gas	80,159	6.2	36.7%	23.3%	13.4%	10.2%	13.3%	3.1%
DWELLING TYPE:								
Single Detached	349,899	6.1	38.3%	21.3%	14.8%	10.5%	13.0%	2.1%
Multi Attached	33,324	6.1	38.2%	21.7%	13.3%	12.7%	12.2%	1.8%
Apartment Suite	55,873	6.1	37.1%	22.8%	14.0%	11.5%	11.5%	3.1%
VINTAGE:								
2000-2009	40,581	5.1	45.6%	24.2%	13.9%	6.8%	7.4%	2.1%
1990-1999	37,153	5.5	45.5%	22.0%	10.3%	8.3%	11.4%	2.4%
1980-1989	67,289	5.9	38.8%	25.0%	13.0%	9.7%	12.0%	1.5%
1970-1979	83,775	6.1	37.9%	21.8%	14.6%	12.7%	10.9%	2.1%
1960-1969	65,866	6.2	38.4%	19.1%	16.4%	10.3%	13.3%	2.5%
1950-1959	56,453	6.6	35.5%	19.3%	15.4%	13.1%	14.9%	1.9%
Pre 1950	87,980	6.7	32.6%	20.3%	15.9%	11.7%	16.6%	3.0%
HEATING FUEL:								
Electric Heat Billed	154,943	6.0	37.7%	22.9%	13.8%	10.0%	12.1%	3.5%
Gas Heat Billed	234,536	6.1	39.6%	20.2%	15.4%	10.8%	12.8%	1.2%
Other	49,617	6.6	32.5%	23.4%	12.9%	13.2%	14.9%	3.2%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	105,086	7.0	29.6%	20.5%	14.2%	14.9%	17.0%	3.7%
NON-LICO 125	334,010	5.8	40.8%	21.8%	14.7%	9.5%	11.4%	1.8%
Under $25,000	71,163	7.6	25.6%	19.1%	14.9%	16.8%	19.7%	3.9%
$25-$49,999	128,882	6.4	33.9%	23.0%	15.6%	10.7%	14.6%	2.2%
$50-$74,999	102,841	5.9	39.1%	23.1%	14.1%	9.7%	11.4%	2.7%
$75-$99,999	64,060	5.5	46.4%	19.3%	14.4%	9.8%	9.2%	1.0%
$100,000 and Over	72,150	5.1	49.2%	21.0%	13.3%	7.4%	8.0%	1.1%

9.01(d) Hours Per Day of Primary Use Television Viewing

Table # 9.01(d) shows the distribution of the hours per day of primary use television viewing within the Manitoba Hydro provincial service territory. Overall, the average daily primary use television viewing is 5.7 hours. Although most (40.9%) report watching television for between 4 to 6 hours a day, 16.0% report watching over 9 hours a day.

Television viewing is also related to household income. On average, television viewing decreases as household income increases. In households that earn $100,000 plus, 24.0% have their televisions on for 7 or more hours compared to 34.1% of households earning under $25,000.

Table # 9.01 (d)
Hours Per Day of Primary Television Viewing
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	Average Hours	% Weighted Frequency of Hours Per Day of Primary Television Viewing: 1 to 3	4 to 6	7 to 9	Over 9	No TV
OVERALL:	439,096	5.7	27.9%	40.9%	13.0%	16.0%	2.2%
AREA:							
Winnipeg City	236,093	5.7	28.1%	41.0%	13.5%	15.7%	1.7%
Manitoba Hydro Gas	122,844	5.6	27.8%	42.8%	11.6%	15.1%	2.8%
Manitoba Hydro No Gas	80,159	5.9	27.3%	37.7%	13.5%	18.5%	3.1%
DWELLING TYPE:							
Single Detached	349,899	5.6	28.1%	41.7%	12.4%	15.7%	2.1%
Multi Attached	33,324	6.3	22.9%	37.6%	16.1%	21.6%	1.8%
Apartment Suite	55,873	5.6	29.7%	37.8%	14.6%	14.8%	3.1%
VINTAGE:							
2000-2009	40,581	5.5	29.3%	43.1%	11.8%	13.7%	2.1%
1990-1999	37,153	5.3	30.2%	43.8%	10.4%	13.1%	2.4%
1980-1989	67,289	5.8	25.9%	41.8%	14.9%	16.0%	1.5%
1970-1979	83,775	6.0	24.2%	41.9%	14.2%	17.6%	2.1%
1960-1969	65,866	5.8	25.8%	44.0%	10.7%	17.0%	2.5%
1950-1959	56,453	5.7	29.3%	38.1%	15.2%	15.6%	1.9%
Pre 1950	87,980	5.6	31.9%	36.4%	12.2%	16.5%	3.0%
HEATING FUEL:							
Electric Heat Billed	154,943	5.8	25.0%	42.2%	13.1%	16.1%	3.5%
Gas Heat Billed	234,536	5.6	28.6%	41.6%	12.8%	15.9%	1.2%
Other	49,617	5.6	33.4%	33.7%	13.2%	16.6%	3.2%
ANNUAL HOUSEHOLD INCOME:							
LICO 125	105,086	6.3	21.4%	38.7%	15.8%	20.3%	3.7%
NON-LICO 125	334,010	5.5	29.9%	41.6%	12.1%	14.7%	1.8%
Under $25,000	71,163	6.1	25.1%	36.8%	14.6%	19.5%	3.9%
$25-$49,999	128,882	5.9	25.0%	41.8%	14.6%	16.4%	2.2%
$50-$74,999	102,841	5.6	29.4%	40.6%	12.2%	15.1%	2.7%
$75-$99,999	64,060	5.5	30.6%	40.7%	13.4%	14.3%	1.0%
$100,000 and Over	72,150	5.4	31.1%	43.8%	9.2%	14.8%	1.1%

9.02(a) Type of Secondary Use Television

Table # 9.02(a) shows the distribution of the types of secondary use televisions within the Manitoba Hydro provincial service territory. Overall, 31.5% of customers do not have a second television, 48.1% of residential customers have a cathode ray tube (CRT) television as their secondary TV, followed by 14.0% with LCD TVs. The CRT is a popular second TV choice by all customers.

The saturation rates for second televisions are tied to household income. In households that earn $100,000 plus, 13.2% do not have a second television compared to 54.9% of households earning under $25,000. Secondary LED TV saturation increases with household income. Only 6.3% of under $25,000 households have a secondary LED TV compared to 23.5% of $100,000 plus households.

Table # 9.02(a)
Type of Secondary Use Television
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Type of Secondary Use Television

	# of Customers	Tube (CRT)	Plasma	LCD	LED	Projection	No 2nd TV
OVERALL:	439,096	48.1%	2.7%	14.0%	1.4%	2.3%	31.5%
AREA:							
Winnipeg City	236,093	49.9%	2.9%	15.7%	1.1%	2.5%	27.9%
Manitoba Hydro Gas	122,844	47.1%	2.6%	12.6%	1.8%	2.7%	33.3%
Manitoba Hydro No Gas	80,159	44.4%	2.3%	11.2%	1.8%	1.4%	39.1%
DWELLING TYPE:							
Single Detached	349,899	50.3%	3.0%	14.9%	1.7%	2.8%	27.4%
Multi Attached	33,324	49.2%	2.2%	14.1%	0.7%	1.7%	32.1%
Apartment Suite	55,873	33.8%	0.9%	8.4%	0.3%	0.0%	56.8%
VINTAGE:							
2000-2009	40,581	41.8%	4.6%	21.4%	3.1%	3.8%	25.4%
1990-1999	37,153	44.8%	3.6%	17.5%	2.2%	2.3%	29.5%
1980-1989	67,289	51.0%	3.3%	14.9%	0.7%	3.1%	26.9%
1970-1979	83,775	52.6%	2.1%	14.4%	1.8%	3.3%	25.8%
1960-1969	65,866	51.3%	1.9%	12.5%	1.6%	1.8%	30.9%
1950-1959	56,453	48.9%	2.5%	12.1%	1.1%	1.6%	33.9%
Pre 1950	87,980	43.1%	2.1%	10.5%	0.5%	0.9%	42.8%
HEATING FUEL:							
Electric Heat Billed	154,943	45.4%	2.3%	12.1%	1.5%	1.5%	37.2%
Gas Heat Billed	234,536	53.1%	3.3%	16.8%	1.6%	3.2%	22.0%
Other	49,617	33.3%	0.8%	7.1%	0.0%	0.6%	58.3%
ANNUAL HOUSEHOLD INCOME:							
LICO 125	105,086	43.2%	1.2%	8.3%	0.7%	0.6%	46.1%
NON-LICO 125	334,010	49.7%	3.1%	15.8%	1.6%	2.9%	26.9%
Under $25,000	71,163	37.2%	0.9%	6.3%	0.4%	0.3%	54.9%
$25-$49,999	128,882	49.2%	2.7%	10.7%	1.0%	1.0%	35.4%
$50-$74,999	102,841	50.7%	2.7%	14.2%	1.4%	2.0%	29.0%
$75-$99,999	64,060	51.6%	2.5%	18.4%	1.7%	3.7%	22.1%
$100,000 and Over	72,150	50.1%	4.5%	23.5%	2.8%	5.9%	13.2%

9.02(b) Screen Size of Secondary Use Television

Table # 9.02(b) shows the distribution of secondary use television screen sizes within the Manitoba Hydro provincial service territory. Overall, the average screen size of a secondary use television is 26 inches. That is 8 inches smaller than the primary set. The most popular screen size is between 21 to 29 inches (26.4%) followed by screen size of under 21 inches (22.0%).

Secondary use big screen TVs are most evident in newer homes. The saturation rate for big screen TVs, 40 inches or more, is 12.5% in dwellings built in the 2000s, compared to 7.0% overall. On average, screen size diminishes as dwelling age increases.

The saturation rate for 40 inches or more secondary TVs is tied to household income. On average, screen size increases as household income increases. In households that earn $100,000 plus, 16.1% have second bigger screen TVs compared to a mere 0.9% of households earning under $25,000.

Table # 9.02 (b)
Screen Size of Secondary Use Television
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Screen Size of Secondary Use Television

	# of Customers	Average Size	Under 21"	21" to 29"	30" to 39"	40" to 49"	Over 49"	No 2nd TV
OVERALL:	439,096	26	22.0%	26.4%	13.2%	4.4%	2.6%	31.5%
AREA:								
Winnipeg City	236,093	26	22.0%	28.6%	14.2%	4.7%	2.7%	27.9%
Manitoba Hydro Gas	122,844	26	21.6%	25.0%	12.5%	4.7%	3.0%	33.3%
Manitoba Hydro No Gas	80,159	25	22.3%	22.2%	11.6%	3.1%	1.8%	39.1%
DWELLING TYPE:								
Single Detached	349,899	26	22.9%	27.6%	14.1%	5.0%	3.1%	27.4%
Multi Attached	33,324	25	22.9%	26.9%	12.5%	3.5%	2.1%	32.1%
Apartment Suite	55,873	24	15.4%	18.7%	8.4%	0.8%	0.0%	56.8%
VINTAGE:								
2000-2009	40,581	29	17.2%	27.0%	17.9%	6.5%	6.0%	25.4%
1990-1999	37,153	28	20.0%	22.8%	18.6%	5.3%	3.9%	29.5%
1980-1989	67,289	26	22.9%	30.1%	10.4%	6.5%	3.2%	26.9%
1970-1979	83,775	26	22.9%	29.9%	14.3%	3.7%	3.4%	25.8%
1960-1969	65,866	26	22.9%	27.1%	13.1%	4.3%	1.7%	30.9%
1950-1959	56,453	25	21.0%	28.5%	11.5%	3.6%	1.5%	33.9%
Pre 1950	87,980	24	23.2%	19.5%	11.2%	2.6%	0.7%	42.8%
HEATING FUEL:								
Electric Heat Billed	154,943	25	23.2%	23.7%	11.3%	3.1%	1.6%	37.2%
Gas Heat Billed	234,536	27	22.9%	29.9%	15.4%	6.2%	3.7%	22.0%
Other	49,617	25	13.5%	18.2%	9.2%	0.0%	0.9%	58.3%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	105,086	23	23.2%	20.9%	7.8%	1.2%	0.9%	46.1%
NON-LICO 125	334,010	27	21.6%	28.1%	15.0%	5.4%	3.2%	26.9%
Under $25,000	71,163	22	22.4%	15.4%	6.4%	0.9%	0.0%	54.9%
$25-$49,999	128,882	25	23.3%	27.1%	9.6%	2.9%	1.8%	35.4%
$50-$74,999	102,841	26	22.7%	28.2%	13.8%	4.4%	2.0%	29.0%
$75-$99,999	64,060	27	20.5%	30.6%	18.0%	5.2%	3.7%	22.1%
$100,000 and Over	72,150	30	19.5%	29.6%	21.6%	9.6%	6.5%	13.2%

9.02(c) Age (Years) of Secondary Use Television

Table # 9.02(c) shows the distribution of secondary use television ages within the Manitoba Hydro provincial service territory. Overall, the average age of a secondary use television is 7.8 years. Many customers (25.5%) have secondary use TVs that are 10 years old or more.

Newer secondary TVs are most evident in newer homes. Almost 22% of customers in dwellings built in the 2000s have second televisions that are under 4 years old compared to 15.8% overall.

Second television age is also related to household income. On average, second television age decreases as household income increases. In households that earn $100,000 plus, 26.4% have newer secondary TVs compared to 6.9% of households earning under $25,000.

Table # 9.02 (c)
Age (Years) of Secondary Use Television
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Age (Years) of Secondary Use Television

	# of Customers	Average Age	Under 4	4 to 6	7 to 9	10 to 12	Over 12	No 2nd TV
OVERALL:	439,096	7.8	15.8%	14.1%	13.2%	10.6%	14.9%	31.5%
AREA:								
Winnipeg City	236,093	7.6	17.5%	15.1%	14.2%	10.6%	14.7%	27.9%
Manitoba Hydro Gas	122,844	8.0	13.8%	13.6%	13.0%	11.1%	15.1%	33.3%
Manitoba Hydro No Gas	80,159	8.0	14.1%	11.6%	10.4%	9.8%	15.1%	39.1%
DWELLING TYPE:								
Single Detached	349,899	7.8	16.8%	15.0%	13.6%	11.1%	16.3%	27.4%
Multi Attached	33,324	7.5	16.9%	13.2%	14.2%	12.4%	11.1%	32.1%
Apartment Suite	55,873	7.8	9.4%	8.7%	9.9%	6.6%	8.7%	56.8%
VINTAGE:								
2000-2009	40,581	6.8	21.9%	18.3%	13.4%	10.9%	10.1%	25.4%
1990-1999	37,153	7.7	17.1%	13.5%	14.7%	10.6%	14.7%	29.5%
1980-1989	67,289	8.0	17.7%	12.6%	14.5%	9.7%	18.7%	26.9%
1970-1979	83,775	7.8	17.1%	15.4%	13.6%	12.4%	15.8%	25.8%
1960-1969	65,866	8.0	13.9%	14.3%	14.4%	10.6%	15.9%	30.9%
1950-1959	56,453	8.0	13.1%	15.1%	12.2%	10.2%	15.5%	33.9%
Pre 1950	87,980	7.8	13.2%	11.4%	10.6%	9.8%	12.3%	42.8%
HEATING FUEL:								
Electric Heat Billed	154,943	8.0	13.8%	11.8%	12.9%	9.9%	14.4%	37.2%
Gas Heat Billed	234,536	7.7	18.7%	16.6%	14.5%	11.5%	16.7%	22.0%
Other	49,617	7.9	8.7%	8.8%	7.4%	8.9%	8.0%	58.3%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	105,086	8.6	8.6%	10.1%	11.0%	10.3%	13.9%	46.1%
NON-LICO 125	334,010	7.6	18.1%	15.3%	13.8%	10.7%	15.2%	26.9%
Under $25,000	71,163	9.0	6.9%	7.1%	8.1%	9.8%	13.2%	54.9%
$25-$49,999	128,882	8.2	11.6%	13.4%	13.5%	10.8%	15.4%	35.4%
$50-$74,999	102,841	7.8	16.8%	14.0%	14.2%	10.0%	16.0%	29.0%
$75-$99,999	64,060	7.3	20.9%	16.1%	15.5%	10.4%	15.0%	22.1%
$100,000 and Over	72,150	6.9	26.4%	20.2%	13.9%	12.3%	14.0%	13.2%

9.02(d) Hours Per Day of Secondary Use Television Viewing

Table # 9.02(d) shows the distribution of the hours per day of secondary use television viewing within the Manitoba Hydro provincial service territory. Overall, the average daily secondary use television viewing is 3.2 hours compared to 5.7 hours of primary television viewing (Table 9.01(d)). Most customers (42.7%) report watching the second television for between 1 to 3 hours a day.

Table # 9.02 (d)
Hours Per Day of Secondary Television Viewing
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Hours per Day of Secondary Television Viewing

	# of Customers	Average Hours	Zero	1 to 3	4 to 6	7 to 9	Over 9	No 2nd TV
OVERALL:	439,096	3.2	6.4%	42.7%	11.8%	4.5%	3.2%	31.5%
AREA:								
Winnipeg City	236,093	3.3	6.9%	43.6%	12.9%	5.1%	3.6%	27.9%
Manitoba Hydro Gas	122,844	3.0	5.9%	43.8%	10.6%	3.6%	2.7%	33.3%
Manitoba Hydro No Gas	80,159	3.1	5.7%	38.3%	10.3%	4.1%	2.5%	39.1%
DWELLING TYPE:								
Single Detached	349,899	3.2	6.7%	45.5%	12.6%	4.7%	3.2%	27.4%
Multi Attached	33,324	3.4	7.1%	39.8%	12.1%	4.9%	4.1%	32.1%
Apartment Suite	55,873	3.2	4.6%	26.7%	6.4%	2.8%	2.7%	56.8%
VINTAGE:								
2000-2009	40,581	3.0	6.0%	50.8%	11.1%	4.3%	2.4%	25.4%
1990-1999	37,153	3.0	8.9%	41.0%	13.8%	4.3%	2.4%	29.5%
1980-1989	67,289	3.0	4.5%	49.2%	13.8%	3.5%	2.0%	26.9%
1970-1979	83,775	3.3	6.0%	45.1%	13.5%	6.6%	3.1%	25.8%
1960-1969	65,866	3.3	6.5%	42.5%	11.7%	4.2%	4.2%	30.9%
1950-1959	56,453	3.4	6.8%	39.2%	11.8%	3.7%	4.6%	33.9%
Pre 1950	87,980	3.1	7.2%	34.6%	8.1%	4.2%	3.1%	42.8%
HEATING FUEL:								
Electric Heat Billed	154,943	3.1	5.6%	40.9%	10.4%	3.4%	2.5%	37.2%
Gas Heat Billed	234,536	3.2	7.3%	47.9%	13.8%	5.6%	3.4%	22.0%
Other	49,617	3.6	5.1%	23.6%	6.4%	2.5%	4.1%	58.3%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	105,086	3.3	5.7%	31.9%	9.0%	4.1%	3.3%	46.1%
NON-LICO 125	334,010	3.2	6.7%	46.1%	12.7%	4.6%	3.1%	26.9%
Under $25,000	71,163	2.9	6.8%	27.9%	5.9%	2.4%	2.0%	54.9%
$25-$49,999	128,882	3.1	6.4%	40.6%	11.1%	3.6%	2.9%	35.4%
$50-$74,999	102,841	3.1	6.3%	44.9%	12.4%	4.6%	2.8%	29.0%
$75-$99,999	64,060	3.3	5.0%	49.4%	14.6%	5.5%	3.5%	22.1%
$100,000 and Over	72,150	3.4	7.7%	51.7%	15.4%	7.1%	5.0%	13.2%

9.03(a) Residential Television Set-Top or Cable Converter Box

Table # 9.03(a) shows the distribution of the television set-top or cable converter boxes used by residential customers within the Manitoba Hydro provincial service territory. Overall, 38.2% of residential customers have boxes through a cable TV service followed by 25.3% through a satellite service and 15.7% with service through a telephone company. There are 18.5% of customers with no television set-top or cable converter boxes at all.

In Winnipeg, 49.6% have cable service boxes. Outside the city, satellite TV is popular. There are 38.8% of customers in natural gas available areas and 60.4% in no natural gas available areas utilizing boxes through a satellite service.

Residents in multi attached dwellings are more likely to subscribe to a cable service. Almost 58% of apartment suite customers and 55.6% of multi-attached customers have cable TV services. This compares to 30.4% of single detached customers with satellite service.

Newer constructed dwellings have satellite boxes more so than older dwellings. For dwellings built in the 2000s, 37.3% have satellite TV set-top boxes compared to 18.8% of dwellings built prior to 1950.

The saturation rates for television set-top or converter boxes are tied to household income. In households that earn under $25,000, 27.1% have no converter or set-top boxes. This compares to 13.3% of $100,000 plus households with no converter or set-top boxes.

Table # 9.03 (a)
Residential Set-Top or Cable Converter Box
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	% Weighted Frequency of Set-Top or Cable Converter Box					
	# of Customers	No Box	Cable	Telephone	Satellite	No TV
OVERALL:	439,096	18.5%	38.2%	15.7%	25.3%	2.2%
AREA:						
Winnipeg City	236,093	14.8%	49.6%	27.6%	6.4%	1.7%
Manitoba Hydro Gas	122,844	22.8%	32.5%	3.2%	38.8%	2.8%
Manitoba Hydro No Gas	80,159	22.8%	13.7%	0.0%	60.4%	3.1%
DWELLING TYPE:						
Single Detached	349,899	18.9%	33.5%	15.1%	30.4%	2.1%
Multi Attached	33,324	17.1%	55.6%	17.3%	8.2%	1.8%
Apartment Suite	55,873	16.8%	57.8%	18.5%	3.8%	3.1%
VINTAGE:						
2000-2009	40,581	13.7%	33.1%	13.8%	37.3%	2.1%
1990-1999	37,153	20.3%	31.8%	10.7%	34.9%	2.4%
1980-1989	67,289	15.3%	41.7%	14.2%	27.4%	1.5%
1970-1979	83,775	18.6%	38.9%	15.4%	25.1%	2.1%
1960-1969	65,866	17.4%	38.6%	17.4%	24.2%	2.5%
1950-1959	56,453	19.0%	40.6%	18.9%	19.8%	1.9%
Pre 1950	87,980	22.8%	38.4%	17.0%	18.8%	3.0%
HEATING FUEL:						
Electric Heat Billed	154,943	21.2%	24.5%	4.5%	46.2%	3.5%
Gas Heat Billed	234,536	15.8%	45.5%	23.3%	14.2%	1.2%
Other	49,617	22.8%	46.9%	14.7%	12.5%	3.2%
ANNUAL HOUSEHOLD INCOME:						
LICO 125	105,086	22.1%	43.6%	14.2%	16.4%	3.7%
NON-LICO 125	334,010	17.3%	36.6%	16.2%	28.1%	1.8%
Under $25,000	71,163	27.1%	38.9%	10.3%	19.8%	3.9%
$25-$49,999	128,882	19.5%	39.8%	13.8%	24.7%	2.2%
$50-$74,999	102,841	16.3%	37.4%	17.1%	26.5%	2.7%
$75-$99,999	64,060	16.1%	36.0%	18.4%	28.6%	1.0%
$100,000 and Over	72,150	13.3%	37.9%	20.3%	27.4%	1.1%

9.03(b) Features of Primary Set-Top or Cable Converter Box

Table # 9.03(b) shows the distribution of primary set-top or cable converter box features within the Manitoba Hydro provincial service territory. Overall, the most popular feature is the basic digital box with no personal video recorder (PVR) (57.5%). The PVR feature is new. It is used by 14.3% of customers either in digital or high definition (HD) capability.

The HD feature is most evident in newer homes. The saturation rate for all HD boxes is 26.9% in dwellings built in the 2000s, compared to 15.8% overall.

The HD feature is most popular with high income households. The saturation rate for all HD boxes is 30.5% of households earning $100,000 or more.

Table # 9.03 (b)
Features of Primary Set-Top or Cable Converter Box
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Features of Primary Set-Top or Converter Box					
		No Box	Digital	Digital PVR	HD	HD PVR	No TV
OVERALL:	439,096	18.5%	57.5%	6.0%	7.5%	8.3%	2.2%
AREA:							
Winnipeg City	236,093	14.8%	60.0%	7.8%	5.1%	10.7%	1.7%
Manitoba Hydro Gas	122,844	22.8%	54.3%	4.9%	9.1%	6.1%	2.8%
Manitoba Hydro No Gas	80,159	22.8%	54.8%	2.5%	12.0%	4.7%	3.1%
DWELLING TYPE:							
Single Detached	349,899	18.9%	56.4%	5.9%	8.4%	8.4%	2.1%
Multi Attached	33,324	17.1%	61.0%	9.5%	3.2%	7.4%	1.8%
Apartment Suite	55,873	16.8%	62.1%	5.1%	4.5%	8.4%	3.1%
VINTAGE:							
2000-2009	40,581	13.7%	50.9%	6.4%	11.2%	15.7%	2.1%
1990-1999	37,153	20.3%	51.3%	5.6%	9.7%	10.7%	2.4%
1980-1989	67,289	15.3%	58.4%	6.9%	8.7%	9.2%	1.5%
1970-1979	83,775	18.6%	57.2%	5.7%	7.4%	9.0%	2.1%
1960-1969	65,866	17.4%	58.9%	6.3%	8.4%	6.5%	2.5%
1950-1959	56,453	19.0%	60.7%	6.5%	6.5%	5.5%	1.9%
Pre 1950	87,980	22.8%	59.4%	5.2%	4.2%	5.5%	3.0%
HEATING FUEL:							
Electric Heat Billed	154,943	21.2%	56.7%	3.8%	9.0%	5.8%	3.5%
Gas Heat Billed	234,536	15.8%	57.8%	7.4%	7.1%	10.7%	1.2%
Other	49,617	22.8%	58.2%	6.4%	4.9%	4.6%	3.2%
ANNUAL HOUSEHOLD INCOME:							
LICO 125	105,086	22.1%	62.4%	3.8%	4.7%	3.3%	3.7%
NON-LICO 125	334,010	17.3%	55.9%	6.7%	8.4%	9.9%	1.8%
Under $25,000	71,163	27.1%	60.9%	2.7%	3.5%	1.9%	3.9%
$25-$49,999	128,882	19.5%	63.3%	4.5%	6.6%	4.0%	2.2%
$50-$74,999	102,841	16.3%	57.6%	6.7%	7.5%	9.2%	2.7%
$75-$99,999	64,060	16.1%	53.6%	9.2%	8.9%	11.2%	1.0%
$100,000 and Over	72,150	13.3%	46.8%	8.3%	12.1%	18.4%	1.1%

9.03(c) Age (Years) of Primary Set-Top or Cable Converter Box

Table # 9.03(c) shows the age distribution of primary set-top or cable converter boxes within the Manitoba Hydro provincial service territory. The average age is 4.0 years. Just over 40% of customers have boxes that are under 4 years old followed by 31.4% of customers with boxes between 4 and 6 years old.

Customers from Winnipeg have newer boxes with an average age of 3.4 years. Over 47% of Winnipeg customers have boxes under 4 years old.

Customers in newer dwellings have newer boxes with an average age of 3.7 years. There are 49.0% of customers in dwellings built in the 2000s that have boxes under 4 years old.

High household income customers have newer boxes with an average age of 3.5 years. There are 52.4% of customers with household incomes of $100,000 or more that have boxes under 4 years old.

Table # 9.03 (c)
Age (Years) of Primary Set-Top or Cable Converter Box
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Age of Primary Set-Top or Cable Converter Box

	# of Customers	Average Age	No Box	Under 4	4 to 6	7 to 9	10 to 12	Over 12	No TV
OVERALL:	439,096	4.0	18.5%	40.1%	31.4%	3.4%	1.7%	2.6%	2.2%
AREA:									
Winnipeg City	236,093	3.4	14.8%	47.3%	34.9%	0.6%	0.4%	0.4%	1.7%
Manitoba Hydro Gas	122,844	4.4	22.8%	33.6%	29.8%	6.1%	2.0%	2.9%	2.8%
Manitoba Hydro No Gas	80,159	5.6	22.8%	29.0%	23.7%	7.6%	4.9%	8.9%	3.1%
DWELLING TYPE:									
Single Detached	349,899	4.2	18.9%	39.1%	30.5%	4.3%	2.0%	3.2%	2.1%
Multi Attached	33,324	3.6	17.1%	42.7%	36.8%	0.2%	0.5%	0.9%	1.8%
Apartment Suite	55,873	3.3	16.8%	45.4%	34.3%	0.0%	0.0%	0.4%	3.1%
VINTAGE:									
2000-2009	40,581	3.7	13.7%	49.0%	27.0%	5.6%	0.6%	2.1%	2.1%
1990-1999	37,153	4.4	20.3%	37.7%	28.9%	4.0%	2.0%	4.7%	2.4%
1980-1989	67,289	4.1	15.3%	42.2%	32.2%	3.6%	2.8%	2.5%	1.5%
1970-1979	83,775	4.1	18.6%	38.2%	33.6%	3.6%	1.8%	2.2%	2.1%
1960-1969	65,866	4.3	17.4%	37.5%	33.1%	3.1%	2.6%	3.9%	2.5%
1950-1959	56,453	3.7	19.0%	42.5%	32.0%	2.4%	0.8%	1.6%	1.9%
Pre 1950	87,980	3.9	22.8%	37.8%	30.3%	2.9%	0.9%	2.2%	3.0%
HEATING FUEL:									
Electric Heat Billed	154,943	4.9	21.2%	33.6%	26.2%	6.6%	3.2%	5.7%	3.5%
Gas Heat Billed	234,536	3.6	15.8%	45.0%	34.6%	1.7%	0.8%	0.9%	1.2%
Other	49,617	3.7	22.8%	37.9%	32.8%	1.5%	0.9%	0.9%	3.2%
ANNUAL HOUSEHOLD INCOME:									
LICO 125	105,086	4.2	22.1%	32.6%	34.8%	2.6%	1.1%	3.0%	3.7%
NON-LICO 125	334,010	4.0	17.3%	42.5%	30.4%	3.7%	1.8%	2.5%	1.8%
Under $25,000	71,163	4.7	27.1%	26.5%	33.4%	3.3%	1.1%	4.6%	3.9%
$25-$49,999	128,882	4.3	19.5%	35.5%	33.6%	3.8%	2.0%	3.5%	2.2%
$50-$74,999	102,841	3.9	16.3%	41.6%	32.2%	3.3%	1.8%	2.0%	2.7%
$75-$99,999	64,060	3.6	16.1%	48.2%	28.7%	3.3%	1.4%	1.4%	1.0%
$100,000 and Over	72,150	3.5	13.3%	52.4%	27.1%	3.3%	1.6%	1.1%	1.1%

9.04(a) Type of Primary Use Computer

Table # 9.04(a) shows the distribution of the types of primary use computers within the Manitoba Hydro provincial service territory. Overall, 79.1% of residential customers have a computer while 20.9% do not have a computer in their residence. The most popular primary use computer is the desk top (61.0%) configuration.

Apartment suite customers are the least likely of the dwelling types to have a computer. Almost 31% of apartment customers do not have a computer.

The saturation rates for computers are tied to household income. In households that earn $100,000 plus, only 4.0% do not have a computer at home. This compares to households earning under $25,000 where 51.8% do not have a computer.

Table # 9.04 (a)
Type of Primary Use Computer
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Type of Primary Use Computer: Desk Top	Lap Top	No Computer
OVERALL:	439,096	61.0%	18.2%	20.9%
AREA:				
Winnipeg City	236,093	63.6%	19.3%	17.2%
Manitoba Hydro Gas	122,844	60.3%	15.8%	23.9%
Manitoba Hydro No Gas	80,159	54.3%	18.7%	27.0%
DWELLING TYPE:				
Single Detached	349,899	63.3%	17.3%	19.4%
Multi Attached	33,324	56.2%	24.0%	19.8%
Apartment Suite	55,873	49.1%	20.3%	30.6%
VINTAGE:				
2000-2009	40,581	59.5%	25.3%	15.3%
1990-1999	37,153	67.1%	12.5%	20.4%
1980-1989	67,289	62.6%	19.6%	17.8%
1970-1979	83,775	63.0%	18.4%	18.6%
1960-1969	65,866	65.4%	16.1%	18.5%
1950-1959	56,453	56.1%	16.5%	27.4%
Pre 1950	87,980	55.7%	18.7%	25.6%
HEATING FUEL:				
Electric Heat Billed	154,943	54.7%	18.4%	26.9%
Gas Heat Billed	234,536	67.4%	17.4%	15.3%
Other	49,617	50.1%	21.5%	28.4%
ANNUAL HOUSEHOLD INCOME:				
LICO 125	105,086	47.4%	10.7%	42.0%
NON-LICO 125	334,010	65.3%	20.6%	14.2%
Under $25,000	71,163	38.7%	9.5%	51.8%
$25-$49,999	128,882	57.2%	15.1%	27.7%
$50-$74,999	102,841	68.5%	21.0%	10.5%
$75-$99,999	64,060	67.4%	24.3%	8.2%
$100,000 and Over	72,150	73.1%	22.9%	4.0%

9.04(b) Screen Type of Primary Use Computer

Table # 9.04(b) shows the distribution of primary use computer screen types within the Manitoba Hydro provincial service territory. Overall, the most popular screen type of a primary use computer is the LCD (64.2%). The LCD saturation includes both desktop and laptop screens. If the "no computer" responses are removed from the analysis, then the LCD screen represents 81.1% of the residential primary use computer screens.

Table # 9.04 (b)
Screen Type of Primary Use Computer
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Screen Type: Tube (CRT)	LCD	No Computer
OVERALL:	439,096	15.0%	64.2%	20.9%
AREA:				
Winnipeg City	236,093	15.6%	67.2%	17.2%
Manitoba Hydro Gas	122,844	14.7%	61.4%	23.9%
Manitoba Hydro No Gas	80,159	13.6%	59.4%	27.0%
DWELLING TYPE:				
Single Detached	349,899	15.6%	65.0%	19.4%
Multi Attached	33,324	11.5%	68.7%	19.8%
Apartment Suite	55,873	13.3%	56.2%	30.6%
VINTAGE:				
2000-2009	40,581	11.3%	73.4%	15.3%
1990-1999	37,153	16.5%	63.1%	20.4%
1980-1989	67,289	16.1%	66.1%	17.8%
1970-1979	83,775	15.3%	66.2%	18.6%
1960-1969	65,866	16.1%	65.3%	18.5%
1950-1959	56,453	15.7%	56.9%	27.4%
Pre 1950	87,980	13.6%	60.8%	25.6%
HEATING FUEL:				
Electric Heat Billed	154,943	13.8%	59.3%	26.9%
Gas Heat Billed	234,536	15.7%	69.0%	15.3%
Other	49,617	15.4%	56.2%	28.4%
ANNUAL HOUSEHOLD INCOME:				
LICO 125	105,086	14.3%	43.7%	42.0%
NON-LICO 125	334,010	15.2%	70.6%	14.2%
Under $25,000	71,163	14.3%	33.9%	51.8%
$25-$49,999	128,882	15.2%	57.1%	27.7%
$50-$74,999	102,841	17.3%	72.1%	10.5%
$75-$99,999	64,060	15.6%	76.2%	8.2%
$100,000 and Over	72,150	11.4%	84.7%	4.0%

9.04(c) Age (Years) of Primary Use Computer

Table # 9.04(c) shows the distribution of primary use computer ages within the Manitoba Hydro provincial service territory. Overall, the average age of a primary use computer is 4.4 years. The majority of customers (64.3%) have primary use computers that are 6 years old or less.

Computer age is related to household income. On average, computer age decreases as household income increases. In households that earn $100,000 plus, the average age is 4.0 years compared to 5.3 years in households earning under $25,000.

Table # 9.04 (c)
Age (Years) of Primary use Computer
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Age (Years) of Primary Use Computer

	# of Customers	Average Age	Under 4	4 to 6	7 to 9	10 to 12	Over 12	No Computer
OVERALL:	439,096	4.4	36.8%	27.4%	9.7%	3.3%	1.9%	20.9%
AREA:								
Winnipeg City	236,093	4.4	38.7%	28.7%	10.4%	3.1%	2.0%	17.2%
Manitoba Hydro Gas	122,844	4.5	34.9%	26.7%	8.9%	4.1%	1.5%	23.9%
Manitoba Hydro No Gas	80,159	4.4	34.4%	24.8%	9.0%	2.9%	1.9%	27.0%
DWELLING TYPE:								
Single Detached	349,899	4.4	37.3%	27.8%	10.3%	3.4%	1.8%	19.4%
Multi Attached	33,324	4.2	39.4%	29.7%	6.6%	1.8%	2.8%	19.8%
Apartment Suite	55,873	4.5	32.2%	23.6%	7.7%	4.1%	1.9%	30.6%
VINTAGE:								
2000-2009	40,581	4.0	43.7%	28.9%	9.9%	1.0%	1.2%	15.3%
1990-1999	37,153	4.7	31.1%	32.0%	10.2%	5.4%	0.9%	20.4%
1980-1989	67,289	4.3	39.7%	27.8%	10.3%	2.5%	2.0%	17.8%
1970-1979	83,775	4.5	36.0%	30.5%	8.4%	4.7%	1.9%	18.6%
1960-1969	65,866	4.6	36.1%	28.2%	11.3%	3.1%	2.9%	18.5%
1950-1959	56,453	4.6	33.2%	24.2%	9.7%	3.0%	2.4%	27.4%
Pre 1950	87,980	4.3	37.6%	23.1%	9.1%	3.3%	1.3%	25.6%
HEATING FUEL:								
Electric Heat Billed	154,943	4.4	34.4%	25.6%	8.0%	3.3%	1.8%	26.9%
Gas Heat Billed	234,536	4.4	39.4%	29.7%	10.7%	3.0%	1.9%	15.3%
Other	49,617	4.7	32.1%	22.3%	10.4%	5.1%	1.7%	28.4%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	105,086	5.0	24.7%	19.2%	7.3%	4.0%	2.9%	42.0%
NON-LICO 125	334,010	4.3	40.7%	30.0%	10.5%	3.1%	1.5%	14.2%
Under $25,000	71,163	5.3	19.6%	14.4%	7.1%	4.6%	2.7%	51.8%
$25-$49,999	128,882	4.7	30.9%	25.7%	9.3%	3.7%	2.7%	27.7%
$50-$74,999	102,841	4.4	40.8%	31.9%	11.5%	3.9%	1.4%	10.5%
$75-$99,999	64,060	4.1	48.1%	29.4%	10.7%	2.6%	1.0%	8.2%
$100,000 and Over	72,150	4.0	48.8%	35.3%	9.6%	1.4%	1.0%	4.0%

9.04(d) Daily Usage of Primary Use Computer

Table # 9.05(d) shows the daily usage of primary use computer screen types within the Manitoba Hydro provincial service territory. Overall, the most customers (59.1%) turn the computer on when necessary. If the "no computer" responses are removed from the analysis, then 74.7% of customers with a computer at their residence turn the unit on only when necessary while 25.3% leave the system on 24 hours.

Daily computer use is tied to household income. If the "no computer" responses are removed from the analysis, then 35.4% of high-income customers with a computer at their residence leave the system on 24 hours. In households earning under $25,000 who have a computer, 8.1% leave the computer on 24 hours.

Table # 9.04 (d)
Daily Usage of Primary Computer
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Daily Usage: 24 Hours	On When Necessary	No Computer
OVERALL:	439,096	20.0%	59.1%	20.9%
AREA:				
Winnipeg City	236,093	21.2%	61.7%	17.2%
Manitoba Hydro Gas	122,844	20.2%	55.9%	23.9%
Manitoba Hydro No Gas	80,159	16.4%	56.7%	27.0%
DWELLING TYPE:				
Single Detached	349,899	21.0%	59.6%	19.4%
Multi Attached	33,324	18.2%	62.0%	19.8%
Apartment Suite	55,873	14.8%	54.6%	30.6%
VINTAGE:				
2000-2009	40,581	21.6%	63.1%	15.3%
1990-1999	37,153	22.4%	57.2%	20.4%
1980-1989	67,289	18.9%	63.3%	17.8%
1970-1979	83,775	23.0%	58.4%	18.6%
1960-1969	65,866	20.6%	60.9%	18.5%
1950-1959	56,453	19.5%	53.1%	27.4%
Pre 1950	87,980	16.2%	58.2%	25.6%
HEATING FUEL:				
Electric Heat Billed	154,943	16.7%	56.4%	26.9%
Gas Heat Billed	234,536	22.9%	61.8%	15.3%
Other	49,617	16.8%	54.8%	28.4%
ANNUAL HOUSEHOLD INCOME:				
LICO 125	105,086	10.6%	47.4%	42.0%
NON-LICO 125	334,010	23.0%	62.8%	14.2%
Under $25,000	71,163	8.1%	40.1%	51.8%
$25-$49,999	128,882	13.9%	58.4%	27.7%
$50-$74,999	102,841	21.7%	67.8%	10.5%
$75-$99,999	64,060	27.2%	64.6%	8.2%
$100,000 and Over	72,150	34.0%	62.1%	4.0%

9.05 Type of Secondary Use Computer

Table # 9.05 shows the distribution of the types of secondary use computers within the Manitoba Hydro provincial service territory. Overall, 69.1% of residential customers do not have a second computer. If the "no computer" responses are removed from the analysis, then the lap top represents 59.5% of types of residential secondary use computers.

The saturation rates for second computers are tied to household income. In households that earn $100,000 plus, 58.7% have a second computer at home. This compares to households earning under $25,000 where only 6.6% have a second computer.

Table # 9.05
Type of Secondary Use Computer
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Type of Secondary Computer

	# of Customers	Desk Top	Lap top	No 1st or 2nd Computer
OVERALL:	439,096	12.5%	18.4%	69.1%
AREA:				
Winnipeg City	236,093	13.6%	20.8%	65.6%
Manitoba Hydro Gas	122,844	12.2%	16.2%	71.6%
Manitoba Hydro No Gas	80,159	9.9%	14.5%	75.6%
DWELLING TYPE:				
Single Detached	349,899	13.7%	19.8%	66.6%
Multi Attached	33,324	15.6%	15.0%	69.5%
Apartment Suite	55,873	3.4%	11.7%	84.8%
VINTAGE:				
2000-2009	40,581	15.6%	24.2%	60.2%
1990-1999	37,153	12.4%	19.2%	68.4%
1980-1989	67,289	14.9%	19.8%	65.4%
1970-1979	83,775	12.8%	18.7%	68.5%
1960-1969	65,866	11.8%	16.3%	71.9%
1950-1959	56,453	8.0%	15.9%	76.1%
Pre 1950	87,980	12.6%	17.2%	70.3%
HEATING FUEL:				
Electric Heat Billed	154,943	10.1%	14.8%	75.1%
Gas Heat Billed	234,536	15.3%	22.0%	62.8%
Other	49,617	7.0%	12.7%	80.4%
ANNUAL HOUSEHOLD INCOME:				
LICO 125	105,086	5.1%	7.6%	87.3%
NON-LICO 125	334,010	14.9%	21.8%	63.4%
Under $25,000	71,163	2.8%	3.8%	93.4%
$25-$49,999	128,882	8.4%	10.0%	81.6%
$50-$74,999	102,841	14.1%	21.2%	64.8%
$75-$99,999	64,060	18.3%	26.5%	55.2%
$100,000 and Over	72,150	22.1%	36.5%	41.3%

9.06 Residential Home Internet Access

Table # 9.06 shows the distribution of home internet access within the Manitoba Hydro provincial service territory. Overall, 72.4% of residential customers have internet access from their homes.

Home internet access decreases outside the City of Winnipeg. Just over 77% of Winnipeg residential customers have home internet access compared to 63.1% of residential customers in no natural gas available areas.

Of the dwelling types, apartment suite customers are the least likely to have home internet service. There are 59.0% of apartment suite customers with internet compared to 74.4% single detached customers with internet.

Of the heating fuel types, natural gas heat billed customers (80.3%) are the most likely to have home internet service compared to 64.4% of electric heat billed customers.

Home internet access is related to household income. In households that earn $100,000 plus, 91.9% have internet access at home. This compares to households earning under $25,000 where only 38.9% have a internet access.

Table # 9.06
Residential Home Internet Access
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Home Internet Access: No	Yes
OVERALL:	439,096	27.6%	72.4%
AREA:			
Winnipeg City	236,093	22.9%	77.1%
Manitoba Hydro Gas	122,844	30.7%	69.3%
Manitoba Hydro No Gas	80,159	36.9%	63.1%
DWELLING TYPE:			
Single Detached	349,899	25.6%	74.4%
Multi Attached	33,324	27.1%	72.9%
Apartment Suite	55,873	41.0%	59.0%
VINTAGE:			
2000-2009	40,581	21.7%	78.3%
1990-1999	37,153	27.8%	72.2%
1980-1989	67,289	24.2%	75.9%
1970-1979	83,775	24.8%	75.2%
1960-1969	65,866	25.6%	74.4%
1950-1959	56,453	35.7%	64.3%
Pre 1950	87,980	32.1%	67.9%
HEATING FUEL:			
Electric Heat Billed	154,943	35.6%	64.4%
Gas Heat Billed	234,536	19.7%	80.3%
Other	49,617	40.2%	59.8%
ANNUAL HOUSEHOLD INCOME:			
LICO 125	105,086	50.4%	49.6%
NON-LICO 125	334,010	20.5%	79.5%
Under $25,000	71,163	61.1%	38.9%
$25-$49,999	128,882	36.4%	63.6%
$50-$74,999	102,841	16.1%	84.0%
$75-$99,999	64,060	13.4%	86.6%
$100,000 and Over	72,150	8.1%	91.9%

9.07 Number of Areas in Home with Compact Fluorescent Bulbs (CFL)

Table # 9.07 shows the number of areas in residential dwellings with CFL bulbs within the Manitoba Hydro provincial service territory. Overall, 66.9% of residential customers have at least one area in their home with a CFL bulb installed. Residential areas include kitchen, dining room, living room, laundry area, hallways, bathrooms, and basements

By dwelling type, apartment suite customers are the least likely to have installed CFL bulbs. About one half of the apartment suite customers have no CFL bulbs compared 30.5% of single detached residential customers with no CFLs.

Of the heating fuel types, natural gas heat billed customers (71.0%) are the most likely to have CFL bulbs installed compared to 64.4% of electric heat billed customers.

In households that earn $100,000 plus, 73.0% have CFLs in use in their homes. This compares to households earning under $25,000 where 60.3% have CFL bulbs in use.

Table # 9.07
Number of Areas in the Home with Compact Fluorescent Bulbs (CFL)
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Areas in the Home with CFL Bulbs

	# of Customers	No Areas	One	Two	Three	Four	Five	Six
OVERALL:	439,096	33.1%	13.7%	13.5%	13.2%	10.6%	9.0%	6.9%
AREA:								
Winnipeg City	236,093	32.6%	12.8%	12.9%	14.3%	11.2%	9.0%	7.2%
Manitoba Hydro Gas	122,844	34.0%	14.5%	14.1%	12.5%	10.2%	8.4%	6.2%
Manitoba Hydro No Gas	80,159	33.0%	15.2%	14.2%	11.3%	9.2%	9.9%	7.2%
DWELLING TYPE:								
Single Detached	349,899	30.5%	13.9%	13.0%	13.8%	11.1%	9.9%	7.8%
Multi Attached	33,324	31.1%	11.3%	14.1%	15.7%	8.7%	9.9%	9.1%
Apartment Suite	55,873	50.7%	14.2%	15.9%	8.1%	8.5%	2.6%	0.0%
VINTAGE:								
2000-2009	40,581	40.8%	11.6%	10.8%	9.6%	10.2%	10.2%	6.9%
1990-1999	37,153	32.2%	14.1%	14.2%	16.6%	9.8%	9.1%	4.1%
1980-1989	67,289	30.8%	16.3%	16.6%	12.3%	9.6%	8.7%	5.7%
1970-1979	83,775	32.7%	13.1%	12.9%	13.9%	12.4%	8.9%	6.1%
1960-1969	65,866	32.4%	12.7%	15.0%	12.5%	10.1%	9.4%	8.0%
1950-1959	56,453	34.4%	14.4%	11.9%	14.3%	9.5%	7.3%	8.2%
Pre 1950	87,980	31.8%	13.4%	12.5%	13.4%	11.1%	9.5%	8.2%
HEATING FUEL:								
Electric Heat Billed	154,943	35.6%	13.8%	13.7%	11.7%	9.8%	9.1%	6.3%
Gas Heat Billed	234,536	29.0%	13.4%	12.9%	14.9%	11.5%	10.0%	8.2%
Other	49,617	44.4%	14.7%	15.6%	10.2%	8.3%	4.1%	2.8%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	105,086	37.3%	13.8%	14.1%	13.5%	7.4%	6.5%	7.4%
NON-LICO 125	334,010	31.8%	13.7%	13.3%	13.1%	11.6%	9.8%	6.8%
Under $25,000	71,163	39.7%	14.2%	15.0%	13.8%	6.1%	5.5%	6.0%
$25-$49,999	128,882	36.0%	13.9%	14.3%	12.0%	9.5%	6.9%	7.4%
$50-$74,999	102,841	31.4%	13.9%	10.5%	13.4%	12.5%	11.6%	6.8%
$75-$99,999	64,060	29.5%	12.3%	13.9%	13.8%	11.8%	12.4%	6.4%
$100,000 and Over	72,150	27.0%	14.0%	14.6%	14.1%	13.0%	9.6%	7.7%

9.08 Number of Areas in Home with Incandescent Bulbs

Table # 9.08 shows the number of areas in residential dwellings with incandescent bulbs within the Manitoba Hydro provincial service territory. Overall, 81.3% of residential customers have at least one area in their home with an incandescent bulb installed. Incandescent bulbs are still the most popular residential lighting type.

No distinguishing observations are made by location, dwelling type, dwelling vintage, heating fuel or household income.

Table # 9.08
Number of Areas in the Home with Incandescent Bulbs
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Areas in Home with Incandescent Bulbs

	# of Customers	No Areas	One	Two	Three	Four	Five	Six
OVERALL:	439,096	18.7%	10.0%	10.8%	14.2%	18.3%	16.1%	12.0%
AREA:								
Winnipeg City	236,093	21.3%	9.7%	10.7%	14.2%	20.0%	14.0%	10.0%
Manitoba Hydro Gas	122,844	15.8%	9.8%	9.9%	14.4%	17.2%	18.6%	14.4%
Manitoba Hydro No Gas	80,159	15.4%	11.2%	12.2%	13.8%	15.0%	18.4%	14.0%
DWELLING TYPE:								
Single Detached	349,899	17.6%	10.0%	11.2%	13.3%	16.3%	17.7%	13.8%
Multi Attached	33,324	28.0%	10.3%	10.8%	10.0%	15.0%	13.3%	12.6%
Apartment Suite	55,873	19.7%	9.8%	8.0%	22.1%	32.7%	7.8%	0.0%
VINTAGE:								
2000-2009	40,581	20.5%	11.4%	10.8%	11.1%	13.8%	18.3%	14.2%
1990-1999	37,153	13.5%	12.9%	10.3%	19.1%	19.7%	15.8%	8.7%
1980-1989	67,289	16.0%	10.1%	9.3%	15.1%	21.5%	18.0%	10.0%
1970-1979	83,775	18.0%	10.0%	11.0%	14.9%	17.9%	16.1%	12.1%
1960-1969	65,866	18.9%	10.8%	9.2%	14.0%	19.2%	15.1%	12.9%
1950-1959	56,453	24.0%	7.1%	13.1%	12.2%	16.6%	14.3%	12.7%
Pre 1950	87,980	19.2%	9.4%	11.5%	13.5%	18.2%	15.8%	12.5%
HEATING FUEL:								
Electric Heat Billed	154,943	16.7%	11.9%	10.2%	13.8%	16.7%	17.8%	13.0%
Gas Heat Billed	234,536	19.5%	9.2%	11.2%	13.0%	17.4%	16.8%	12.9%
Other	49,617	20.9%	8.1%	10.1%	21.0%	27.8%	7.5%	4.6%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	105,086	20.9%	7.0%	8.5%	14.6%	21.9%	15.7%	11.4%
NON-LICO 125	334,010	18.0%	11.0%	11.5%	14.1%	17.2%	16.2%	12.1%
Under $25,000	71,163	18.2%	6.9%	9.0%	14.8%	23.0%	16.4%	11.7%
$25-$49,999	128,882	18.7%	10.7%	9.1%	14.5%	17.4%	16.2%	13.4%
$50-$74,999	102,841	19.8%	9.7%	12.6%	12.7%	18.7%	14.8%	11.7%
$75-$99,999	64,060	19.7%	13.2%	10.9%	12.8%	17.3%	15.0%	11.0%
$100,000 and Over	72,150	16.5%	9.4%	12.5%	16.3%	15.8%	18.5%	10.9%

9.09 Number of Areas in Home with LED Bulbs

Table # 9.09 shows the number of areas in residential dwellings with LED bulbs within the Manitoba Hydro provincial service territory. Overall, only 10.4% of residential customers have at least one area in their home with an LED bulb installed. LED bulbs are the least popular residential lighting type.

No distinguishing observations are made by location, dwelling type, dwelling vintage, heating fuel or household income.

Table # 9.09
Number of Areas in the Home with LED Bulbs
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Areas in Home with LED Bulbs						
		No Areas	One	Two	Three	Four	Five	Six
OVERALL:	439,096	89.6%	4.1%	1.8%	1.4%	1.1%	1.1%	0.9%
AREA:								
Winnipeg City	236,093	89.1%	4.6%	2.1%	1.2%	1.2%	1.1%	0.8%
Manitoba Hydro Gas	122,844	89.5%	4.3%	1.7%	1.6%	1.1%	1.2%	0.7%
Manitoba Hydro No Gas	80,159	91.3%	2.1%	1.4%	2.0%	1.0%	1.1%	1.2%
DWELLING TYPE:								
Single Detached	349,899	89.7%	4.0%	1.8%	1.6%	0.8%	1.1%	1.0%
Multi Attached	33,324	87.2%	4.7%	1.4%	0.7%	3.2%	2.2%	0.8%
Apartment Suite	55,873	90.5%	4.3%	2.1%	0.8%	1.8%	0.5%	0.0%
VINTAGE:								
2000-2009	40,581	85.5%	6.9%	3.0%	1.8%	0.6%	1.1%	1.0%
1990-1999	37,153	91.4%	3.8%	1.3%	0.6%	1.1%	1.1%	0.7%
1980-1989	67,289	88.5%	4.4%	2.1%	1.5%	1.2%	1.6%	0.7%
1970-1979	83,775	89.6%	3.4%	1.9%	1.5%	0.9%	1.4%	1.3%
1960-1969	65,866	89.8%	3.2%	1.7%	2.3%	1.5%	0.8%	0.7%
1950-1959	56,453	89.3%	4.4%	1.4%	1.7%	1.4%	1.1%	0.6%
Pre 1950	87,980	91.5%	3.6%	1.6%	0.7%	1.0%	0.6%	0.9%
HEATING FUEL:								
Electric Heat Billed	154,943	90.5%	3.1%	1.6%	1.5%	1.0%	1.5%	0.8%
Gas Heat Billed	234,536	88.8%	4.6%	2.0%	1.5%	1.1%	1.1%	1.0%
Other	49,617	90.7%	4.4%	1.8%	1.1%	1.7%	0.0%	0.3%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	105,086	89.4%	2.8%	1.6%	1.0%	2.2%	1.7%	1.2%
NON-LICO 125	334,010	89.7%	4.4%	1.9%	1.6%	0.8%	0.9%	0.7%
Under $25,000	71,163	90.4%	1.9%	1.6%	1.0%	2.5%	1.5%	1.2%
$25-$49,999	128,882	89.5%	4.0%	2.0%	1.7%	1.1%	0.8%	1.1%
$50-$74,999	102,841	89.6%	3.6%	2.0%	1.5%	0.8%	1.6%	0.9%
$75-$99,999	64,060	89.1%	4.8%	2.1%	1.7%	0.4%	1.4%	0.5%
$100,000 and Over	72,150	89.5%	6.2%	1.3%	1.3%	0.9%	0.3%	0.4%

9.10 Number of Areas in Home with Halogen Bulbs

Table # 9.10 shows the number of areas in residential dwellings with halogen bulbs within the Manitoba Hydro provincial service territory. Overall, 27.7% of residential customers have at least one area in their home with a halogen bulb installed.

By location, Winnipeg City residential dwellings (31.7%) are the most likely to have halogen bulbs.

By dwelling type, apartment suite customers are the least likely to have installed halogen bulbs. Almost 19% of the apartment suite customers have halogen bulbs compared 29.1% of single detached residential customers with halogen fixtures.

Newly constructed dwellings are the most likely to have halogen bulbs. Just over 40% of dwellings constructed in the 2000s have halogen bulbs.

Of the heating fuel types, natural gas heat billed customers (32.8%) are the most likely to have halogen bulbs installed compared to 22.3% of electric heat billed customers.

In households that earn $100,000 plus, 44.4% have halogen bulbs in use in their homes. This compares to households earning under $25,000 where 12.7% have halogen bulbs in use.

Table # 9.10
Number of Areas in the Home with Halogen Bulbs
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Areas in Home with Halogen Bulbs

	# of Customers	No Areas	One	Two	Three	Four	Five	Six
OVERALL:	439,096	72.3%	16.0%	6.5%	3.0%	1.5%	0.6%	0.2%
AREA:								
Winnipeg City	236,093	68.3%	17.7%	7.6%	3.8%	1.9%	0.5%	0.4%
Manitoba Hydro Gas	122,844	75.4%	14.9%	5.5%	2.1%	1.2%	0.8%	0.1%
Manitoba Hydro No Gas	80,159	79.2%	12.9%	4.6%	2.0%	0.5%	0.9%	0.0%
DWELLING TYPE:								
Single Detached	349,899	70.9%	16.9%	6.9%	3.1%	1.3%	0.7%	0.2%
Multi Attached	33,324	71.9%	15.2%	7.9%	2.8%	1.2%	0.4%	0.7%
Apartment Suite	55,873	81.1%	10.8%	3.1%	2.1%	2.7%	0.3%	0.0%
VINTAGE:								
2000-2009	40,581	59.9%	21.3%	8.8%	4.0%	2.7%	3.1%	0.2%
1990-1999	37,153	69.2%	15.6%	8.5%	4.8%	1.5%	0.4%	0.0%
1980-1989	67,289	72.6%	16.3%	5.5%	3.4%	1.6%	0.6%	0.0%
1970-1979	83,775	73.4%	16.5%	5.6%	2.1%	1.9%	0.5%	0.1%
1960-1969	65,866	73.3%	16.2%	6.3%	3.0%	0.8%	0.2%	0.3%
1950-1959	56,453	76.6%	13.4%	4.8%	2.3%	2.0%	0.0%	0.9%
Pre 1950	87,980	74.5%	14.7%	7.2%	2.6%	0.5%	0.4%	0.1%
HEATING FUEL:								
Electric Heat Billed	154,943	77.7%	13.9%	4.3%	2.1%	1.2%	0.9%	0.0%
Gas Heat Billed	234,536	67.2%	18.4%	8.3%	3.5%	1.5%	0.6%	0.4%
Other	49,617	79.2%	11.4%	4.4%	3.1%	1.9%	0.0%	0.0%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	105,086	84.6%	9.2%	3.2%	1.5%	0.8%	0.6%	0.2%
NON-LICO 125	334,010	68.4%	18.2%	7.5%	3.4%	1.7%	0.7%	0.2%
Under $25,000	71,163	87.3%	8.1%	1.9%	1.0%	1.0%	0.7%	0.1%
$25-$49,999	128,882	78.2%	13.4%	4.9%	1.9%	0.9%	0.4%	0.3%
$50-$74,999	102,841	72.2%	16.7%	6.3%	3.2%	0.7%	0.4%	0.5%
$75-$99,999	64,060	62.7%	21.2%	10.2%	3.5%	2.1%	0.3%	0.1%
$100,000 and Over	72,150	55.6%	22.9%	10.6%	6.0%	3.2%	1.7%	0.0%

9.11 Number of Areas in Home with Tube Fluorescent Bulbs

Table # 9.11 shows the number of areas in residential dwellings with tube fluorescent bulbs within the Manitoba Hydro provincial service territory. Overall, 61.6% of residential customers have at least one area in their home with a tube fluorescent bulb installed.

By dwelling type, apartment suite customers are the least likely to have installed tube fluorescent bulbs. Almost 47% of the apartment suite customers have tube fluorescent bulbs compared 64.7% of single detached residential customers with tube fluorescent fixtures.

Of the heating fuel types, natural gas heat billed customers (66.7%) are the most likely to have tube fluorescent bulbs installed compared to 58.7% of electric heat billed customers.

In households that earn $100,000 plus, 67.8% have tube fluorescent bulbs in use in their homes. This compares to households earning under $25,000 where 55.5% have tube fluorescent bulbs in use.

Table # 9.11
Number of Areas in the Home with Tube Flourescent Bulbs
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Areas in Home with Fluorescent Bulbs

	# of Customers	No Areas	One	Two	Three	Four	Five	Six
OVERALL:	439,096	38.4%	29.7%	18.5%	10.9%	2.1%	0.3%	0.2%
AREA:								
Winnipeg City	236,093	38.1%	30.7%	18.2%	10.7%	2.1%	0.2%	0.2%
Manitoba Hydro Gas	122,844	37.9%	28.5%	19.7%	11.3%	1.8%	0.5%	0.3%
Manitoba Hydro No Gas	80,159	40.0%	28.5%	17.8%	10.9%	2.4%	0.4%	0.0%
DWELLING TYPE:								
Single Detached	349,899	35.3%	28.8%	20.6%	12.7%	2.2%	0.3%	0.2%
Multi Attached	33,324	45.1%	29.1%	13.1%	9.3%	1.9%	1.2%	0.3%
Apartment Suite	55,873	53.4%	35.2%	8.9%	0.8%	1.7%	0.0%	0.0%
VINTAGE:								
2000-2009	40,581	43.7%	35.2%	14.4%	4.8%	1.4%	0.4%	0.2%
1990-1999	37,153	28.6%	30.5%	24.2%	15.6%	1.1%	0.0%	0.0%
1980-1989	67,289	37.6%	31.2%	18.5%	10.7%	1.7%	0.1%	0.1%
1970-1979	83,775	35.6%	29.0%	19.9%	12.3%	2.4%	0.4%	0.5%
1960-1969	65,866	40.6%	26.1%	19.8%	11.6%	1.6%	0.3%	0.0%
1950-1959	56,453	38.4%	28.6%	17.2%	11.4%	3.8%	0.6%	0.2%
Pre 1950	87,980	41.5%	29.7%	16.6%	9.7%	2.1%	0.4%	0.1%
HEATING FUEL:								
Electric Heat Billed	154,943	41.3%	29.5%	16.4%	10.1%	2.1%	0.5%	0.2%
Gas Heat Billed	234,536	33.3%	29.6%	21.6%	12.9%	2.1%	0.2%	0.2%
Other	49,617	52.8%	30.6%	10.5%	4.0%	1.9%	0.3%	0.0%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	105,086	43.6%	28.4%	15.0%	10.9%	1.4%	0.6%	0.2%
NON-LICO 125	334,010	36.7%	30.1%	19.6%	10.9%	2.3%	0.2%	0.2%
Under $25,000	71,163	44.5%	28.6%	14.1%	10.7%	1.3%	0.6%	0.2%
$25-$49,999	128,882	39.9%	29.1%	18.7%	9.7%	2.1%	0.4%	0.2%
$50-$74,999	102,841	39.4%	28.0%	17.9%	11.9%	2.2%	0.4%	0.2%
$75-$99,999	64,060	33.6%	35.1%	18.6%	10.6%	2.2%	0.0%	0.0%
$100,000 and Over	72,150	32.2%	29.2%	23.4%	12.3%	2.6%	0.1%	0.2%

9.12 Halogen Torchiere Floor Lamps

Table # 9.12 shows distribution of halogen torchiere floor lamps in residential dwelling within the Manitoba Hydro provincial service territory. Overall, 74.7% of residential customers do not have a halogen torchiere lamp in their home, 14.9% have one and 10.3% have two or more.

In households that earn $100,000 plus, 31.1% do have a halogen torchiere floor lamp compared to 17.5% of households earning under $25,000. High income households (16.2%) are the most likely to have two or more of these lamps.

Table # 9.12
Halogen Torchiere Floor Lamps
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	% Weighted Frequency of Halogen Torchiere Lamps			
	# of Customers	None	One	Two or More
OVERALL:	439,096	74.7%	14.9%	10.3%
AREA:				
Winnipeg City	236,093	72.7%	15.9%	11.4%
Manitoba Hydro Gas	122,844	76.1%	14.1%	9.8%
Manitoba Hydro No Gas	80,159	78.6%	13.5%	8.0%
DWELLING TYPE:				
Single Detached	349,899	74.4%	15.0%	10.7%
Multi Attached	33,324	72.4%	17.6%	10.0%
Apartment Suite	55,873	78.4%	13.2%	8.4%
VINTAGE:				
2000-2009	40,581	74.3%	11.6%	14.1%
1990-1999	37,153	71.1%	16.7%	12.2%
1980-1989	67,289	73.7%	15.4%	10.9%
1970-1979	83,775	71.8%	16.0%	12.2%
1960-1969	65,866	75.5%	13.9%	10.6%
1950-1959	56,453	76.2%	16.1%	7.7%
Pre 1950	87,980	78.5%	14.4%	7.1%
HEATING FUEL:				
Electric Heat Billed	154,943	78.1%	13.2%	8.7%
Gas Heat Billed	234,536	72.5%	15.8%	11.7%
Other	49,617	74.8%	16.3%	8.9%
ANNUAL HOUSEHOLD INCOME:				
LICO 125	105,086	80.6%	12.4%	7.1%
NON-LICO 125	334,010	72.9%	15.7%	11.4%
Under $25,000	71,163	82.5%	10.5%	7.0%
$25-$49,999	128,882	75.6%	15.6%	8.8%
$50-$74,999	102,841	74.3%	15.8%	9.9%
$75-$99,999	64,060	71.6%	17.0%	11.4%
$100,000 and Over	72,150	68.9%	15.0%	16.2%

9.13 Types of Outdoor Seasonal Lights

Table # 9.13 shows distribution of various types of residential outdoor seasonal lights within the Manitoba Hydro provincial service territory. Overall, 52.2% of residential customers put up outdoor seasonal lights. The LED variety is the most popular at 28.5%, followed by 13.9% putting up incandescent and 9.8% putting up both incandescent and LED outdoor seasonal lights.

By dwelling type, apartment suite customers are the least likely to put up outdoor seasonal lights. Just over 24% of the apartment suite customers put up seasonal lights compared 58.0% of single detached residential customers.

Of the heating fuel types, the other heating fuel category is the least likely to put up seasonal lights. Just over three quarters indicated “no”. The category is mainly composed of apartment suite customers that do not pay directly for their space heat. Heat is either included in rent or a common service fee.

In households that earn $100,000 plus, 67.9% put up outdoor seasonal lights compared to 33.9% of households earning under $25,000. LED outdoor lights are quite popular with the $100,000 plus group where 42.0% put up this variety compared to 17.3% of the under $25,000 group.

Table # 9.13
Types of Outdoor Seasonal Lights
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Outdoor Seasonal Lights: None	LED	Incandescent Bulbs	Incandescent & LED
OVERALL:	439,096	47.8%	28.5%	13.9%	9.8%
AREA:					
Winnipeg City	236,093	52.1%	28.1%	12.2%	7.5%
Manitoba Hydro Gas	122,844	41.2%	30.6%	15.9%	12.3%
Manitoba Hydro No Gas	80,159	45.3%	26.0%	15.9%	12.8%
DWELLING TYPE:					
Single Detached	349,899	42.0%	31.4%	15.4%	11.2%
Multi Attached	33,324	61.3%	22.5%	10.5%	5.7%
Apartment Suite	55,873	75.9%	13.7%	6.8%	3.6%
VINTAGE:					
2000-2009	40,581	41.4%	36.5%	13.7%	8.5%
1990-1999	37,153	35.6%	35.4%	17.1%	11.9%
1980-1989	67,289	42.8%	32.7%	13.7%	10.9%
1970-1979	83,775	41.6%	29.8%	16.5%	12.2%
1960-1969	65,866	48.5%	28.6%	14.0%	8.9%
1950-1959	56,453	55.2%	23.5%	12.6%	8.7%
Pre 1950	87,980	60.4%	20.4%	11.3%	7.9%
HEATING FUEL:					
Electric Heat Billed	154,943	47.2%	27.8%	14.7%	10.4%
Gas Heat Billed	234,536	42.3%	32.4%	15.1%	10.2%
Other	49,617	75.5%	12.0%	6.1%	6.3%
ANNUAL HOUSEHOLD INCOME:					
LICO 125	105,086	63.0%	19.5%	11.6%	5.9%
NON-LICO 125	334,010	43.0%	31.3%	14.7%	11.0%
Under $25,000	71,163	66.1%	17.3%	12.0%	4.6%
$25-$49,999	128,882	52.5%	23.4%	14.9%	9.3%
$50-$74,999	102,841	46.2%	28.2%	14.1%	11.5%
$75-$99,999	64,060	38.3%	36.2%	14.9%	10.6%
$100,000 and Over	72,150	32.1%	42.0%	13.0%	12.9%

10.0 RESIDENTIAL HOT TUBS, SAUNAS AND SWIMMING POOLS

10.01 Hot Tubs, Saunas and Swimming Pool

Table # 10.01 shows the distribution of residential hot tubs, pools and saunas within the Manitoba Hydro provincial service territory. Although the overall saturations for these items are low, some interesting observations are made when results are examined by dwelling vintage and annual household income.

Hot tubs and/or whirlpool tubs tend to be installed in newer dwellings. Over 21% of dwellings built in the 1990s and 17.9% of dwellings built in the 2000s have hot tubs and/or whirlpools compared to 10.3% overall. Outdoor swimming pools (apartment dwellings are excluded) are most common in dwellings built during the 1970s (4.7%) and 1980s (4.0%) compared to 2.9% overall.

High-income households, as expected, are more likely to have these luxury items compared to lower-income households. As household income increases so do the saturations of hot tubs, saunas and swimming pools. Over 21% of $100,000 plus households have hot tubs and/or whirlpool tubs, 3.4% have saunas and 6.2% have outdoor swimming pools. This compares to only 2.4% of under $25,000 households who have hot tubs and/or whirlpool tubs, 0.4% who have saunas and 0.2% who have outdoor swimming pools.

Table # 10.01
Hot Tubs, Saunas and Swimming Pools
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Hot Tubs, Saunas and Pools: Hot Tub	Sauna	Outdoor Pool
OVERALL:	439,096	10.3%	1.7%	2.9%
AREA:				
Winnipeg City	236,093	8.1%	1.2%	3.2%
Manitoba Hydro Gas	122,844	14.1%	2.3%	2.4%
Manitoba Hydro No Gas	80,159	10.7%	2.1%	2.8%
DWELLING TYPE:				
Single Detached	349,899	11.9%	1.9%	3.5%
Multi Attached	33,324	5.6%	1.7%	1.7%
Apartment Suite	55,873	2.7%	0.3%	0.0%
VINTAGE:				
2000-2009	40,581	17.9%	1.6%	2.9%
1990-1999	37,153	21.8%	2.0%	3.5%
1980-1989	67,289	13.5%	2.2%	4.0%
1970-1979	83,775	9.1%	2.1%	4.7%
1960-1969	65,866	9.6%	1.9%	3.5%
1950-1959	56,453	5.2%	1.6%	1.0%
Pre 1950	87,980	4.2%	0.8%	0.9%
HEATING FUEL:				
Electric Heat Billed	154,943	9.9%	2.0%	2.4%
Gas Heat Billed	234,536	11.7%	1.6%	3.8%
Other	49,617	4.7%	0.8%	0.3%
ANNUAL HOUSEHOLD INCOME:				
LICO 125	105,086	3.3%	0.5%	1.2%
NON-LICO 125	334,010	12.5%	2.1%	3.4%
Under $25,000	71,163	2.4%	0.4%	0.2%
$25-$49,999	128,882	5.6%	1.1%	1.7%
$50-$74,999	102,841	11.9%	1.8%	3.4%
$75-$99,999	64,060	13.1%	2.0%	4.0%
$100,000 and Over	72,150	21.5%	3.4%	6.2%

10.02 Outdoor Swimming Pool Characteristics

Table # 10.02 examines outdoor swimming pool characteristics within the Manitoba Hydro provincial service territory. Apartment dwellers are excluded from this analysis since any pool use at their complex would not be part of their Manitoba Hydro bill. Overall, there are an estimated 12,771 outdoor swimming pools. The most popular outdoor swimming pool heating fuel is natural gas (57.9%) followed by solar heat (25.1%). The three-quarter horse power pump is the most popular (29.0%) followed by the one horse power pump (28.4%). Over 30% of swimming pool owners, however, do not know the horse power of their pool pump.

Solar heat (61.1%) is a very popular heat source for pools located in no gas available areas. Winnipeg pools (82.5%) are mainly heated by natural gas. Interestingly, new homes are most likely to have solar heated (47.3%) swimming pools. Comparing the data by heating fuel type, the majority of natural gas customers (78.3%) heat their pools with natural gas. All-electric customers, however, are most likely to heat their pools with solar heat (52.3%).

Table # 10.02
Outdoor Swimming Pool Characteristics
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Outdoor Swimming Pool Characteristics

	# of Outdoor Pool Customers	Pool Heating Fuels				Pool Pumps			Don't Know
		Electric	Nat Gas	Propane	Solar	3/4 HP	1 HP	1 1/4 HP	
OVERALL:	12,771	13.9%	57.9%	3.2%	25.1%	29.0%	28.4%	12.5%	30.1%
AREA:									
Winnipeg City	7,583	6.3%	82.5%	0.0%	11.3%	22.8%	26.0%	13.6%	37.6%
Manitoba Hydro Gas	2,986	20.5%	37.9%	7.7%	33.9%	34.9%	32.5%	11.0%	21.6%
Manitoba Hydro No Gas	2,202	30.9%	0.0%	8.0%	61.1%	42.2%	30.9%	10.9%	16.0%
DWELLING TYPE:									
Single Detached	12,212	14.5%	55.9%	3.3%	26.3%	30.3%	29.7%	13.1%	26.9%
Multi Attached	559	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Apartment Suite	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VINTAGE:									
2000-2009	1,178	25.9%	26.9%	0.0%	47.3%	27.1%	53.3%	13.4%	6.2%
1990-1999	1,312	19.2%	61.2%	0.0%	19.7%	18.8%	25.0%	31.5%	24.8%
1980-1989	2,657	14.4%	52.3%	2.8%	30.6%	30.6%	28.9%	9.0%	31.5%
1970-1979	3,923	6.1%	59.6%	4.1%	30.2%	28.2%	21.5%	12.0%	38.3%
1960-1969	2,326	10.6%	68.4%	7.3%	13.7%	31.6%	27.5%	10.2%	30.7%
1950-1959	565	15.6%	70.5%	0.0%	14.0%	58.0%	0.0%	0.0%	42.0%
Pre 1950	809	31.5%	68.5%	0.0%	0.0%	19.6%	51.1%	9.8%	19.6%
HEATING FUEL:									
Electric Heat Billed	3,712	28.2%	10.8%	8.7%	52.3%	39.3%	33.9%	6.5%	20.3%
Gas Heat Billed	8,924	8.1%	78.3%	0.9%	12.7%	25.2%	25.0%	15.2%	34.7%
Other	135	0.0%	0.0%	0.0%	100.0%	0.0%	100.0%	0.0%	0.0%
ANNUAL HOUSEHOLD INCOME:									
LICO 125	1,278	6.9%	68.1%	0.0%	25.0%	25.0%	0.0%	6.2%	68.8%
NON-LICO 125	11,493	14.6%	56.7%	3.5%	25.2%	29.5%	31.5%	13.2%	25.8%
Under $25,000	161	54.5%	0.0%	0.0%	45.5%	100.0%	0.0%	0.0%	0.0%
$25-$49,999	2,130	3.9%	58.8%	7.6%	29.8%	22.9%	25.1%	7.4%	44.6%
$50-$74,999	3,459	11.6%	52.5%	4.9%	31.0%	30.6%	21.0%	11.8%	36.7%
$75-$99,999	2,556	18.9%	53.0%	0.0%	28.1%	28.6%	49.2%	3.2%	19.0%
$100,000 and Over	4,464	16.0%	66.4%	1.7%	16.0%	28.4%	24.7%	21.3%	25.6%

11.0 RESIDENTIAL VEHICLES

11.01 Number of Vehicle Blocker Heaters Plugged During Winter Months

Table # 11.01 shows the number of residential vehicle block heaters plugged in during the winter months within the Manitoba Hydro provincial service territory. Overall, 28.3% of residential customers do not plug in any blocker heaters. At least one block heater is plugged in by 46.9% of residential customers.

Apartment suite customers, are the least likely to plug in a block heater. Almost 54% do not plug in. This is due to either many apartment customers either not owning a vehicle, or the vehicle is parked in an indoor parkade.

By dwelling vintage, newer residences built since the 1990s (over 40%) are less likely to plug in block heaters compared to older dwellings. Newer dwellings have insulated garages that do not require regular plug-in of block heaters.

Many other heating fuel customers (41.5%) do not plug in block heaters. The reason for this high number is that the other heating fuel category consists mainly of apartment suite customers that do not pay directly for their space heat.

High-income households, as expected, are more likely to have a multiple number of block heaters plugged in compared to lower-income households. Less than 1% of households earning less than $25,000 have three or more vehicles plugged in compared to 6.5% in the $100,000 plus group. In the under $25,000 group, 42.0% have no block heaters plugged. This is due to either many of the lowest income customers not owning a vehicle, or this group tending to reside in apartment suites.

Table # 11.01
Number of Vehicle Block Heaters Plugged During Winter Months
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Number of Vehicles Plugged: No Vehicles Plugged	One Plugged	Two Plugged	Three or More Plugged
OVERALL:	439,096	28.3%	46.9%	22.2%	2.7%
AREA:					
Winnipeg City	236,093	30.8%	46.7%	20.6%	2.0%
Manitoba Hydro Gas	122,844	28.5%	45.4%	22.9%	3.2%
Manitoba Hydro No Gas	80,159	20.5%	49.8%	25.9%	3.9%
DWELLING TYPE:					
Single Detached	349,899	24.5%	46.8%	25.5%	3.2%
Multi Attached	33,324	25.0%	56.5%	17.5%	1.0%
Apartment Suite	55,873	53.6%	41.8%	4.1%	0.4%
VINTAGE:					
2000-2009	40,581	42.4%	34.2%	21.6%	1.9%
1990-1999	37,153	40.4%	39.4%	18.1%	2.2%
1980-1989	67,289	31.0%	42.6%	22.1%	4.3%
1970-1979	83,775	23.7%	49.5%	23.6%	3.3%
1960-1969	65,866	23.7%	48.1%	26.4%	1.8%
1950-1959	56,453	23.5%	50.1%	23.4%	3.0%
Pre 1950	87,980	25.5%	53.7%	19.0%	1.9%
HEATING FUEL:					
Electric Heat Billed	154,943	26.5%	48.1%	22.1%	3.3%
Gas Heat Billed	234,536	26.7%	46.3%	24.5%	2.5%
Other	49,617	41.5%	45.6%	11.6%	1.4%
ANNUAL HOUSEHOLD INCOME:					
LICO 125	105,086	37.7%	50.9%	10.1%	1.4%
NON-LICO 125	334,010	25.3%	45.6%	26.0%	3.1%
Under $25,000	71,163	42.0%	51.3%	6.2%	0.6%
$25-$49,999	128,882	28.6%	55.1%	14.5%	1.9%
$50-$74,999	102,841	24.4%	47.2%	26.0%	2.3%
$75-$99,999	64,060	21.7%	39.5%	36.0%	2.9%
$100,000 and Over	72,150	25.6%	33.8%	34.1%	6.5%

11.02 Normal Block Heater Plug-In Routine

Table # 11.02 shows the normal block heater plug-in routine during the winter months for the most commonly used vehicle within the Manitoba Hydro provincial service territory. Overall, for 46.7% of residential customers, temperature is the basis as to whether a blocker heater is plugged in. On a daily basis, 11.8% plug-in their block heaters and 13.3% plugged in on weekly or an occasional basis.

Aside from apartment dwellers and the lowest income customers, the block heater plug-in routine is similar by dwelling type, dwelling vintage, heating fuel and annual household income. Apartment dwellers and the lowest income customers are less likely to own vehicles.

Table # 11.02
Normal Block Heater Plug-In Routine
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	% Weighted Frequency of Block Heater Plug-In Routine				
	# of Customers	No Vehicles Plugged	Every Day	Weekly Occasional	Temperature Dependent
OVERALL:	439,096	28.3%	11.8%	13.3%	46.7%
AREA:					
Winnipeg City	236,093	30.8%	10.8%	10.7%	47.7%
Manitoba Hydro Gas	122,844	28.5%	12.0%	15.3%	44.2%
Manitoba Hydro No Gas	80,159	20.5%	14.4%	17.6%	47.5%
DWELLING TYPE:					
Single Detached	349,899	24.5%	11.2%	14.2%	50.1%
Multi Attached	33,324	25.0%	14.7%	12.3%	48.0%
Apartment Suite	55,873	53.6%	13.7%	8.1%	24.7%
VINTAGE:					
2000-2009	40,581	42.4%	7.6%	8.9%	41.2%
1990-1999	37,153	40.4%	8.4%	10.9%	40.4%
1980-1989	67,289	31.0%	11.4%	12.1%	45.6%
1970-1979	83,775	23.7%	12.6%	13.8%	49.9%
1960-1969	65,866	23.7%	10.7%	15.0%	50.6%
1950-1959	56,453	23.5%	15.1%	13.7%	47.7%
Pre 1950	87,980	25.5%	13.4%	15.1%	46.1%
HEATING FUEL:					
Electric Heat Billed	154,943	26.5%	13.3%	15.7%	44.5%
Gas Heat Billed	234,536	26.7%	10.5%	12.0%	50.9%
Other	49,617	41.5%	13.4%	11.4%	33.7%
ANNUAL HOUSEHOLD INCOME:					
LICO 125	105,086	37.7%	10.9%	16.5%	34.9%
NON-LICO 125	334,010	25.3%	12.1%	12.2%	50.4%
Under $25,000	71,163	42.0%	10.1%	19.3%	28.7%
$25-$49,999	128,882	28.6%	11.8%	14.2%	45.5%
$50-$74,999	102,841	24.4%	14.3%	11.9%	49.4%
$75-$99,999	64,060	21.7%	11.6%	10.9%	55.8%
$100,000 and Over	72,150	25.6%	10.1%	9.6%	54.6%

11.03 Block Heaters and Interior Car Warmers

Table # 11.03 shows the distribution of block heater and interior car warmer use within the Manitoba Hydro provincial service territory. Overall, 24.0% of residential customers use a block heater timer and only 6.7% plug-in an interior car warmer.

Block heater timer saturation is similar by dwelling type, dwelling vintage, heating fuel and annual household income.

Interior car warmer saturation (10.6%) is highest in multi attached dwellings. Included in this category are duplexes as well as town/rowhouses. These dwellings tend to have outdoor parking and therefore interior car warmer saturation is highest in this group.

Block heater saturation (16.9%) and interior car warmer saturation (2.9%) are least common in housing built in the 2000 decade. Recently constructed homes have well insulated garages. Use of an interior car warmer or block heater is not as necessary as in older dwelling vintages that have either no garage or a poorly insulated one.

Table # 11.03
Block Heater Timers and Interior Car Warmers
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Timers and Warmers: Block Heater Timers	Interior Car Warmers
OVERALL:	439,096	24.0%	6.7%
AREA:			
Winnipeg City	236,093	25.2%	7.9%
Manitoba Hydro Gas	122,844	21.7%	4.4%
Manitoba Hydro No Gas	80,159	24.4%	6.7%
DWELLING TYPE:			
Single Detached	349,899	26.2%	6.2%
Multi Attached	33,324	20.7%	10.6%
Apartment Suite	55,873	12.8%	7.5%
VINTAGE:			
2000-2009	40,581	16.9%	2.9%
1990-1999	37,153	18.8%	5.9%
1980-1989	67,289	23.9%	7.8%
1970-1979	83,775	26.7%	6.9%
1960-1969	65,866	27.6%	7.3%
1950-1959	56,453	27.4%	8.2%
Pre 1950	87,980	22.4%	6.4%
HEATING FUEL:			
Electric Heat Billed	154,943	22.0%	6.2%
Gas Heat Billed	234,536	27.2%	6.9%
Other	49,617	15.6%	7.3%
ANNUAL HOUSEHOLD INCOME:			
LICO 125	105,086	20.7%	5.0%
NON-LICO 125	334,010	25.1%	7.2%
Under $25,000	71,163	18.3%	5.0%
$25-$49,999	128,882	22.8%	7.6%
$50-$74,999	102,841	25.6%	7.0%
$75-$99,999	64,060	27.7%	6.4%
$100,000 and Over	72,150	26.5%	6.6%

12.0 RESIDENTIAL SERVICES AND PROGRAMS

12.01 Usual Bill Payment Methods

Table # 12.01 shows the distribution of the more popular bill payment methods used by residential customers within the Manitoba Hydro provincial service territory. The most popular bill payment method, overall, is online banking (32.5%) followed by the Pre-Authorized Payment Plan or PAPP (29.4%). PAPP is followed by in-person payment at a designated agency (11.9%) other than a Manitoba Hydro office. In-person bill payment, either at a designated agency or at a Manitoba Hydro office, is regularly used by 19.4% or approximately 85,000 residential customers. The "Other" methods (11.3%) include Telpay and payment by a social services agency.

Online banking is the most popular bill payment method in Winnipeg (38.0%). More customers in No Gas Available areas (13.9%) and Gas Available areas (11.3%) prefer in-person bill payment at a Manitoba Hydro Office than do customers from Winnipeg (3.4%).

Electric heat billed customers (10.8%) prefer in-person bill payment at a Manitoba Hydro Office more so than do natural gas heat billed customers (4.9%).

In-person bill payments decrease as income increases. Over 34% of low-income households, earning under $25,000, pay their bills in-person compared to 8.1% of the $100,000 and over group. The use of online banking for bill payments increases as income increases. Only 13.5% of low-income households, earning under $25,000, pay their bills through online banking compared to 46.1% of the $100,000 and over group.

Table # 12.01
Usual Bill Payment Methods
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Usual Bill Payment Methods

	# of Customers	District Office	In-Person Agency	Mail	Online Banking	PAPP	Other
OVERALL:	439,096	7.5%	11.9%	7.5%	32.5%	29.4%	11.3%
AREA:							
Winnipeg City	236,093	3.4%	11.4%	6.2%	38.0%	28.0%	13.0%
Manitoba Hydro Gas	122,844	11.3%	11.3%	7.8%	28.0%	33.5%	8.1%
Manitoba Hydro No Gas	80,159	13.9%	14.0%	10.6%	23.0%	27.7%	10.8%
DWELLING TYPE:							
Single Detached	349,899	7.8%	12.2%	7.5%	32.0%	29.2%	11.2%
Multi Attached	33,324	6.5%	7.5%	7.6%	36.7%	29.3%	12.5%
Apartment Suite	55,873	6.3%	12.4%	7.1%	32.6%	30.8%	10.7%
VINTAGE:							
2000-2009	40,581	5.2%	6.5%	9.0%	39.3%	32.0%	7.9%
1990-1999	37,153	5.9%	13.1%	8.2%	26.6%	34.5%	11.8%
1980-1989	67,289	6.2%	7.5%	7.0%	32.4%	36.6%	10.4%
1970-1979	83,775	8.2%	11.5%	6.4%	31.7%	30.0%	12.3%
1960-1969	65,866	6.2%	15.3%	5.8%	30.6%	30.6%	11.5%
1950-1959	56,453	10.1%	14.1%	6.7%	35.1%	22.7%	11.3%
Pre 1950	87,980	9.0%	13.5%	9.6%	32.3%	23.6%	12.0%
HEATING FUEL:							
Electric Heat Billed	154,943	10.8%	12.6%	9.1%	26.6%	30.5%	10.4%
Gas Heat Billed	234,536	4.9%	10.6%	5.9%	35.9%	30.5%	12.2%
Other	49,617	9.5%	15.4%	9.6%	34.6%	21.3%	9.6%
ANNUAL HOUSEHOLD INCOME:							
LICO 125	105,086	11.2%	19.3%	7.6%	19.5%	28.9%	13.6%
NON-LICO 125	334,010	6.4%	9.5%	7.4%	36.5%	29.6%	10.5%
Under $25,000	71,163	12.3%	21.8%	8.2%	13.5%	30.7%	13.6%
$25-$49,999	128,882	9.3%	14.5%	8.0%	25.2%	31.0%	12.0%
$50-$74,999	102,841	5.9%	9.9%	8.0%	37.1%	28.0%	11.1%
$75-$99,999	64,060	5.1%	7.3%	6.0%	45.2%	25.5%	10.8%
$100,000 and Over	72,150	4.0%	4.1%	6.3%	46.1%	31.1%	8.4%

12.02 MYBILL Awareness and Potential Interest

Table # 12.02 shows the distribution of the awareness of and potential interest of residential customers to use MYBILL within the Manitoba Hydro provincial service territory. The vast majority of customers (93.8%) are not aware of what is MYBILL.

As household income increases so does the awareness of MYBILL. Only 1.6% of low-income households, earning under $25,000, are aware of MYBILL compared to 9.8% of the $100,000 and over group.

There were 5.1%, or about 22,400 customers, who indicated already using the email bill delivery service. Potential interest for signing up for MYBILL was indicated by 8.4% or approximately 36,900 customers.

As household income increases so does the potential of signing up for MYBILL. Only 2.1% of low-income households, earning under $25,000, are interested in signing up for MYBILL compared to 13.6% of the $100,000 and over group.

Table # 12.02
MYBILL Awareness and Potential Interest
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of MYBILL Awareness and Potential Interest

	# of Customers	MYBILL Awareness		MYBILL Interest			Use MYBILL	No Home Internet
		Yes	No	Yes	No	Not Sure		
OVERALL:	439,096	6.2%	93.8%	8.4%	44.9%	13.8%	5.1%	27.8%
AREA:								
Winnipeg City	236,093	6.2%	93.8%	8.9%	48.2%	14.8%	5.1%	23.1%
Manitoba Hydro Gas	122,844	6.5%	93.5%	8.8%	41.2%	13.7%	5.5%	30.8%
Manitoba Hydro No Gas	80,159	5.7%	94.4%	6.4%	40.8%	11.4%	4.7%	36.9%
DWELLING TYPE:								
Single Detached	349,899	6.7%	93.3%	8.5%	46.0%	14.2%	5.7%	25.7%
Multi Attached	33,324	3.1%	96.9%	7.2%	47.5%	16.3%	2.0%	27.1%
Apartment Suite	55,873	5.0%	95.1%	8.7%	36.4%	10.4%	3.5%	41.0%
VINTAGE:								
2000-2009	40,581	10.0%	90.0%	10.4%	43.1%	16.0%	8.7%	21.9%
1990-1999	37,153	6.3%	93.7%	8.9%	44.6%	13.3%	5.4%	27.8%
1980-1989	67,289	6.5%	93.5%	7.9%	49.4%	13.2%	5.5%	24.2%
1970-1979	83,775	5.2%	94.8%	8.8%	45.5%	16.7%	4.0%	25.0%
1960-1969	65,866	7.9%	92.1%	8.6%	46.2%	13.1%	6.3%	25.7%
1950-1959	56,453	5.4%	94.6%	6.8%	41.6%	11.0%	5.0%	35.7%
Pre 1950	87,980	4.4%	95.6%	8.2%	42.9%	13.3%	3.4%	32.3%
HEATING FUEL:								
Electric Heat Billed	154,943	5.5%	94.5%	8.2%	40.8%	10.7%	4.7%	35.7%
Gas Heat Billed	234,536	6.9%	93.1%	8.8%	49.3%	16.3%	5.7%	19.9%
Other	49,617	5.0%	95.0%	7.2%	37.0%	12.0%	3.6%	40.2%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	105,086	1.9%	98.1%	3.8%	36.4%	7.6%	1.7%	50.6%
NON-LICO 125	334,010	7.6%	92.5%	9.8%	47.6%	15.8%	6.2%	20.6%
Under $25,000	71,163	1.6%	98.4%	2.1%	29.1%	6.2%	1.4%	61.2%
$25-$49,999	128,882	4.1%	95.9%	8.1%	41.3%	10.7%	3.4%	36.5%
$50-$74,999	102,841	7.2%	92.8%	8.1%	54.1%	15.4%	6.1%	16.4%
$75-$99,999	64,060	10.0%	90.0%	10.8%	49.7%	18.1%	7.9%	13.5%
$100,000 and Over	72,150	9.8%	90.2%	13.6%	49.5%	21.0%	7.9%	8.1%

12.03 Annual Visits to the Manitoba Hydro Website

Table # 12.03 shows the distribution of annual Manitoba Hydro website visits by residential customers within the Manitoba Hydro provincial service territory. Over three quarters of residential customers indicated they have never accessed the website either because of no interest (49.2%) or no home internet (27.6%). Only 7.2% had accessed the website over five times in the last year.

The low access rate of the Manitoba Hydro website is fairly consistent by area, dwelling type, dwelling vintage and heating fuel. The exception is by apartment suite customers and by annual household income. Just over 14% of apartment suite customers accessed the Manitoba Hydro website at least once in the last year compared to 23.2% overall. As income increases so does the website access rate. There were 37.1% of $100,000 plus households who accessed the website at least once in the last year compared to only 9.6% of those from the under $25,000 households.

Table # 12.03
Annual Visits to the Manitoba Hydro Website
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Annual Visits To MH Website: Zero	1 to 5	6 to 10	Over 10	No Home Internet
OVERALL:	439,096	49.2%	16.0%	2.6%	4.6%	27.6%
AREA:						
Winnipeg City	236,093	50.1%	19.2%	2.8%	5.0%	22.9%
Manitoba Hydro Gas	122,844	49.5%	13.2%	2.8%	3.9%	30.7%
Manitoba Hydro No Gas	80,159	46.3%	10.8%	1.9%	4.2%	36.9%
DWELLING TYPE:						
Single Detached	349,899	50.3%	16.5%	2.8%	4.8%	25.6%
Multi Attached	33,324	44.6%	21.6%	3.5%	3.2%	27.1%
Apartment Suite	55,873	45.0%	9.1%	1.4%	3.6%	41.0%
VINTAGE:						
2000-2009	40,581	55.3%	12.0%	2.8%	8.3%	21.7%
1990-1999	37,153	52.1%	13.6%	2.2%	4.3%	27.8%
1980-1989	67,289	51.3%	19.0%	2.3%	3.3%	24.2%
1970-1979	83,775	50.6%	18.0%	3.2%	3.4%	24.8%
1960-1969	65,866	50.6%	16.3%	2.6%	4.9%	25.6%
1950-1959	56,453	41.9%	12.6%	3.6%	6.3%	35.7%
Pre 1950	87,980	45.9%	16.5%	1.8%	3.6%	32.1%
HEATING FUEL:						
Electric Heat Billed	154,943	46.7%	11.7%	2.2%	3.8%	35.6%
Gas Heat Billed	234,536	52.6%	19.5%	3.2%	5.1%	19.7%
Other	49,617	41.2%	12.7%	1.5%	4.4%	40.2%
ANNUAL HOUSEHOLD INCOME:						
LICO 125	105,086	37.0%	9.3%	1.4%	1.9%	50.4%
NON-LICO 125	334,010	53.1%	18.1%	3.0%	5.4%	20.5%
Under $25,000	71,163	29.3%	7.2%	1.0%	1.4%	61.1%
$25-$49,999	128,882	47.9%	11.2%	1.4%	3.1%	36.4%
$50-$74,999	102,841	56.9%	18.9%	3.2%	4.9%	16.1%
$75-$99,999	64,060	55.4%	20.0%	4.2%	7.0%	13.4%
$100,000 and Over	72,150	54.8%	25.4%	4.3%	7.4%	8.1%

12.04 Energy Matters Reading Habits

Table # 12.04 shows the distribution of the monthly bill insert reading habits of residential within the Manitoba Hydro provincial service territory. Over 22% of residential customers always read “Energy Matters” on a monthly basis. The majority (58.1%) will sometimes read the bill insert while the remaining 19.4% never read the insert.

Readership of Energy Matters is fairly consistent by area, dwelling type, dwelling vintage and heating fuel. The exception is by annual household income. As household income increases the regular reading of the bill insert decreases. Only 16.0% of $100,000 plus households always read “Energy Matters” compared to 30.1% of the under $25,000 households.

Table # 12.04
Energy Matters Reading Habits
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Reading Habits: Always	Occasional	Never
OVERALL:	439,096	22.5%	58.1%	19.4%
AREA:				
Winnipeg City	236,093	22.8%	57.1%	20.1%
Manitoba Hydro Gas	122,844	21.8%	60.3%	17.9%
Manitoba Hydro No Gas	80,159	22.8%	57.8%	19.4%
DWELLING TYPE:				
Single Detached	349,899	23.2%	58.9%	17.9%
Multi Attached	33,324	18.1%	59.4%	22.6%
Apartment Suite	55,873	21.1%	52.1%	26.7%
VINTAGE:				
2000-2009	40,581	19.8%	59.3%	20.9%
1990-1999	37,153	20.7%	58.3%	21.0%
1980-1989	67,289	20.5%	57.2%	22.3%
1970-1979	83,775	19.9%	60.6%	19.5%
1960-1969	65,866	25.5%	57.9%	16.6%
1950-1959	56,453	25.0%	58.0%	16.9%
Pre 1950	87,980	24.8%	56.0%	19.3%
HEATING FUEL:				
Electric Heat Billed	154,943	22.5%	60.5%	17.1%
Gas Heat Billed	234,536	23.2%	58.1%	18.8%
Other	49,617	19.9%	50.7%	29.5%
ANNUAL HOUSEHOLD INCOME:				
LICO 125	105,086	28.5%	52.4%	19.1%
NON-LICO 125	334,010	20.7%	59.9%	19.5%
Under $25,000	71,163	30.1%	49.3%	20.7%
$25-$49,999	128,882	25.6%	57.6%	16.8%
$50-$74,999	102,841	21.9%	59.6%	18.5%
$75-$99,999	64,060	16.4%	65.4%	18.2%
$100,000 and Over	72,150	16.0%	59.0%	25.0%

12.05 Residential Program Insert Readership and Resulting Participation

Table # 12.05 shows the distribution of residential program insert reading habits and the resulting participation within the Manitoba Hydro provincial service territory. Almost 23% of residential customers always read a residential program insert. The majority (61.2%) will sometimes read the program insert while the remaining 15.9% never read the insert. Almost 20% indicated they participated in a residential program as a result of reading an insert.

The readership of residential program inserts is fairly consistent by area, dwelling type, and heating fuel. The exception is by dwelling vintage and annual household income. As dwelling age decreases or when household income increases the regular reading of the program insert decreases. For customers in new homes, 19.5% always read a residential program insert compared to 24.6% of customers in pre-1950 dwellings. Only 18.3% of $100,000 plus households always read a residential program insert compared to 27.6% of the under $25,000 households. Even though high income groups are less likely to always read a residential program insert when compared to low-income households, the high income groups are more likely to participate in a residential program as a result of reading an insert. About one quarter of the $100,000 and over households have participated in a residential program as a result of reading an insert compared to only 9.8% of the under $25,000 households.

Table # 12.05
Power Smart Insert Readership and Resulting Participation
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Readership and Resulting Participation

	# of Customers	Power Smart Insert Readership			Participation	
		Always	Occasional	Never	Yes	No
OVERALL:	439,096	22.9%	61.2%	15.9%	19.9%	80.1%
AREA:						
Winnipeg City	236,093	23.4%	60.9%	15.7%	22.2%	77.8%
Manitoba Hydro Gas	122,844	21.8%	61.8%	16.4%	18.7%	81.3%
Manitoba Hydro No Gas	80,159	22.9%	61.2%	15.9%	14.7%	85.3%
DWELLING TYPE:						
Single Detached	349,899	23.8%	61.5%	14.7%	21.5%	78.5%
Multi Attached	33,324	21.1%	60.2%	18.7%	20.4%	79.6%
Apartment Suite	55,873	18.1%	59.8%	22.1%	9.0%	91.0%
VINTAGE:						
2000-2009	40,581	19.5%	63.4%	17.1%	14.6%	85.5%
1990-1999	37,153	19.6%	61.5%	19.0%	15.2%	84.8%
1980-1989	67,289	21.1%	62.8%	16.0%	21.6%	78.5%
1970-1979	83,775	21.9%	63.2%	14.9%	20.9%	79.1%
1960-1969	65,866	25.8%	60.2%	14.0%	23.0%	77.0%
1950-1959	56,453	24.9%	61.0%	14.1%	20.2%	79.9%
Pre 1950	87,980	24.6%	57.9%	17.5%	19.4%	80.6%
HEATING FUEL:						
Electric Heat Billed	154,943	22.2%	61.7%	16.1%	15.5%	84.5%
Gas Heat Billed	234,536	24.0%	61.6%	14.5%	23.9%	76.1%
Other	49,617	20.0%	57.8%	22.2%	14.5%	85.6%
ANNUAL HOUSEHOLD INCOME:						
LICO 125	105,086	27.0%	55.0%	18.0%	14.8%	85.2%
NON-LICO 125	334,010	21.6%	63.2%	15.3%	21.5%	78.6%
Under $25,000	71,163	27.6%	51.5%	20.9%	9.8%	90.2%
$25-$49,999	128,882	25.3%	61.4%	13.4%	18.9%	81.1%
$50-$74,999	102,841	22.1%	63.0%	14.9%	22.5%	77.5%
$75-$99,999	64,060	19.2%	67.3%	13.5%	23.4%	76.6%
$100,000 and Over	72,150	18.3%	62.6%	19.1%	24.5%	75.5%

12.06 Participation Rates in Residential Programs

Table # 12.06 shows the distribution of the various residential programs participated by customers within the Manitoba Hydro provincial service territory. Table # 12.06 is continued onto page 89. Almost 65% of residential customers indicated they have never participated in any residential program offered by Manitoba Hydro. For the programs presented on page 215, natural gas furnace replacement (7.7%) and residential loans (5.4%) were the most popular programs participated by residential customers. Note the percent values, for programs identified in Table # 12.06 on pages 215 and 217, across each row exceed 100% since multiple responses were allowed for this question.

Almost 12% of customers from Winnipeg participated in the natural gas, high efficiency furnace rebate program. Taking all natural gas heat billed customers, 14.0% participated in the furnace program.

As household income increases, natural gas, high efficiency furnace rebate program participation increases. Over 9% of $100,000 plus households took advantage of the furnace rebate program compared to 3.6% of the under $25,000 households.

For residential loans, gas heat billed customers (7.7%) have a higher participation rate in the loan programs compared to electric heat billed customers (3.2%). One reason for this difference is the recent rebate promotions to switch to high efficiency natural gas furnaces that were offered by Manitoba Hydro and the federal government.

As household income increases, the participation in the residential loan program also increases. Of $100,000 plus households, 8.0% have participated in the residential loan programs compared to 1.9% of the under $25,000 households.

Table # 12.06
Participation Rates in Residential Programs
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Participation Rates In Residential Programs

	# of Customers	Never	N Gas Furnace	N Gas Boiler	New Home	Residential Loan	WISE	Earth Power	Online Evaluaion
OVERALL:	439,096	64.7%	7.7%	0.5%	0.2%	5.4%	0.7%	0.4%	0.8%
AREA:									
Winnipeg City	236,093	61.2%	11.8%	0.6%	0.2%	6.7%	1.1%	0.2%	1.3%
Manitoba Hydro Gas	122,844	66.7%	4.8%	0.3%	0.4%	4.2%	0.2%	0.7%	0.2%
Manitoba Hydro No Gas	80,159	72.0%	0.0%	0.0%	0.2%	3.0%	0.3%	0.8%	0.2%
DWELLING TYPE:									
Single Detached	349,899	61.1%	8.8%	0.4%	0.2%	6.1%	0.7%	0.5%	0.7%
Multi Attached	33,324	64.0%	7.7%	0.4%	0.4%	6.0%	0.7%	0.0%	2.6%
Apartment Suite	55,873	88.2%	1.0%	0.0%	0.0%	0.3%	0.9%	0.0%	0.0%
VINTAGE:									
2000-2009	40,581	75.2%	0.4%	0.0%	2.4%	1.0%	0.2%	1.6%	0.0%
1990-1999	37,153	73.6%	3.0%	0.0%	0.0%	0.9%	0.5%	0.2%	0.2%
1980-1989	67,289	63.4%	9.9%	0.0%	0.0%	4.8%	0.5%	0.1%	1.0%
1970-1979	83,775	60.5%	8.0%	0.4%	0.0%	7.5%	0.8%	0.7%	1.0%
1960-1969	65,866	60.5%	10.1%	1.0%	0.0%	5.3%	1.5%	0.2%	1.1%
1950-1959	56,453	62.7%	10.7%	0.3%	0.0%	7.8%	0.8%	0.0%	0.4%
Pre 1950	87,980	65.8%	7.6%	1.1%	0.0%	6.1%	0.5%	0.4%	1.1%
HEATING FUEL:									
Electric Heat Billed	154,943	72.5%	0.0%	0.0%	0.3%	3.2%	0.2%	1.0%	0.2%
Gas Heat Billed	234,536	56.2%	14.0%	0.6%	0.2%	7.7%	1.0%	0.1%	1.2%
Other	49,617	80.5%	0.0%	0.0%	0.0%	0.8%	1.0%	0.3%	0.8%
ANNUAL HOUSEHOLD INCOME:									
LICO 125	105,086	74.8%	6.5%	0.8%	0.0%	3.6%	1.1%	0.0%	0.3%
NON-LICO 125	334,010	61.6%	8.1%	0.4%	0.3%	5.9%	0.6%	0.6%	0.9%
Under $25,000	71,163	80.3%	3.6%	0.8%	0.0%	1.9%	0.7%	0.0%	0.1%
$25-$49,999	128,882	68.6%	7.8%	0.4%	0.0%	3.7%	1.0%	0.4%	0.4%
$50-$74,999	102,841	60.7%	8.4%	0.2%	0.3%	6.9%	0.5%	0.3%	0.9%
$75-$99,999	64,060	58.2%	9.6%	0.8%	0.7%	7.0%	0.6%	0.8%	1.3%
$100,000 and Over	72,150	54.0%	9.1%	0.5%	0.3%	8.0%	0.6%	0.7%	1.5%

12.06 Participation Rates in Residential Programs (Continued)

Table # 12.06 continues to show the distribution of the various residential programs participated by customers within the Manitoba Hydro provincial service territory. This table is continued from page 215. For the programs presented on page 217, compact fluorescent lighting (CFL) promotions (12.8%), seasonal LED lights turn-in program (8.2%), home insulation program (6.6%), in-home energy evaluation program (6.1%), and energy efficient appliance rebate program (5.8%) were the most popular programs participated by residential customers. Note the percent values across each row exceed 100% since multiple responses were allowed for this question as presented on pages 215 and 217.

In general, program participation is lowest among apartment suite dwellers. As household income increases, program participation increases. The Lower Income Energy Efficiency Program (LIEEP) was participated by 2.3% of LICO-125 customers. This translates to 2,417 customers. Although overall LIEEP participation is low (0.5%), 1.5% of customers residing in pre 1950s dwellings participated in the low income program.

Table # 12.06 (Continued)
Participation Rates in Residential Programs
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Participation Rates In Power Smart Programs

	# of Customers	Home Insulation	Appliance	CFL	LED	Turn-In Halogen	Fixtures	Mail-In Eval	In-Home Eval	Lower Income
OVERALL:	439,096	6.6%	5.8%	12.8%	8.2%	1.5%	3.5%	1.0%	6.1%	0.5%
AREA:										
Winnipeg City	236,093	6.0%	5.8%	13.5%	9.2%	1.8%	3.7%	1.3%	7.9%	0.8%
Manitoba Hydro Gas	122,844	7.6%	5.7%	12.9%	8.5%	1.3%	3.3%	0.6%	4.8%	0.2%
Manitoba Hydro No Gas	80,159	7.2%	5.6%	10.4%	5.0%	1.1%	3.5%	0.7%	3.0%	0.3%
DWELLING TYPE:										
Single Detached	349,899	7.7%	6.3%	13.7%	9.1%	1.7%	3.9%	1.0%	7.2%	0.5%
Multi Attached	33,324	5.6%	8.3%	14.9%	7.0%	2.6%	5.8%	2.4%	5.1%	2.2%
Apartment Suite	55,873	0.0%	0.9%	5.6%	3.5%	0.0%	0.0%	0.0%	0.0%	0.0%
VINTAGE:										
2000-2009	40,581	0.6%	7.0%	10.6%	8.8%	0.4%	4.3%	0.0%	1.7%	0.0%
1990-1999	37,153	3.2%	7.0%	13.4%	8.8%	2.1%	2.6%	0.2%	2.0%	0.0%
1980-1989	67,289	3.3%	5.7%	14.4%	12.0%	2.2%	4.2%	0.8%	5.1%	0.1%
1970-1979	83,775	9.7%	6.9%	13.0%	8.4%	2.8%	3.9%	1.0%	7.4%	0.4%
1960-1969	65,866	8.8%	5.6%	13.7%	9.2%	1.8%	4.3%	1.5%	6.5%	0.3%
1950-1959	56,453	7.0%	3.9%	12.6%	6.4%	0.7%	3.2%	1.4%	6.7%	0.8%
Pre 1950	87,980	8.8%	4.9%	11.5%	5.1%	0.5%	2.4%	1.2%	8.7%	1.5%
HEATING FUEL:										
Electric Heat Billed	154,943	6.5%	5.0%	11.1%	6.2%	1.2%	3.3%	0.5%	3.5%	0.2%
Gas Heat Billed	234,536	7.6%	6.8%	14.7%	10.1%	2.1%	3.9%	1.3%	8.7%	0.5%
Other	49,617	2.8%	3.2%	9.1%	5.6%	0.3%	2.6%	1.2%	2.0%	1.6%
ANNUAL HOUSEHOLD INCOME:										
LICO 125	105,086	4.6%	3.1%	8.1%	5.4%	1.0%	2.4%	0.7%	3.3%	2.3%
NON-LICO 125	334,010	7.3%	6.6%	14.3%	9.1%	1.7%	3.9%	1.1%	7.0%	0.0%
Under $25,000	71,163	4.3%	2.3%	7.5%	3.2%	0.6%	1.1%	0.8%	2.7%	2.6%
$25-$49,999	128,882	5.5%	4.8%	11.4%	7.7%	1.7%	3.8%	0.6%	4.3%	0.4%
$50-$74,999	102,841	7.6%	6.1%	14.6%	7.7%	2.1%	4.0%	1.2%	7.3%	0.0%
$75-$99,999	64,060	8.6%	7.6%	14.8%	10.9%	1.5%	3.7%	1.2%	7.3%	0.0%
$100,000 and Over	72,150	8.0%	8.7%	16.0%	12.4%	1.5%	4.8%	1.4%	9.9%	0.0%

12.07 Total Number of Residential Programs Participated

Table # 12.07 shows the distribution of the total number of residential programs participated by residential customers within the Manitoba Hydro provincial service territory. Almost 65% of residential customers indicated they have never participated in any residential program offered by Manitoba Hydro. At least one program was participated by 19.5% of customers; 9.4% of customers participated in two programs; and 6.4% of customers participated in three or more programs.

Apartment suite customers have the lowest residential program participation rate. Over 88% of these customers have never participated in any program.

Gas heat billed customers (43.8%) have a higher participation rate in residential programs compared to electric heat billed customers (27.5%). One reason for this difference is the recent rebate promotions to switch to high efficiency natural gas furnaces that were offered by Manitoba Hydro and the federal government.

As household income increases, the participation rate of residential programs also increases. Of $100,000 plus households, 46% have participated in residential programs compared to 19.7% of the under $25,000 households.

Table # 12.07
Total Number of Residential Programs Participated
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Total Number of Programs			
		None	One	Two	Three or More
OVERALL:	439,096	64.7%	19.5%	9.4%	6.4%
AREA:					
Winnipeg City	236,093	61.2%	20.0%	10.8%	8.0%
Manitoba Hydro Gas	122,844	66.7%	19.0%	8.9%	5.4%
Manitoba Hydro No Gas	80,159	72.0%	18.6%	6.1%	3.3%
DWELLING TYPE:					
Single Detached	349,899	61.1%	21.3%	10.6%	7.1%
Multi Attached	33,324	64.0%	18.1%	8.0%	9.9%
Apartment Suite	55,873	88.2%	9.1%	2.7%	0.0%
VINTAGE:					
2000-2009	40,581	75.2%	16.1%	5.6%	3.2%
1990-1999	37,153	73.6%	14.9%	7.6%	4.0%
1980-1989	67,289	63.4%	20.7%	9.7%	6.2%
1970-1979	83,775	60.5%	20.9%	10.3%	8.4%
1960-1969	65,866	60.5%	20.7%	11.5%	7.3%
1950-1959	56,453	62.7%	21.5%	10.2%	5.6%
Pre 1950	87,980	65.8%	18.5%	8.7%	7.1%
HEATING FUEL:					
Electric Heat Billed	154,943	72.5%	17.7%	5.9%	3.9%
Gas Heat Billed	234,536	56.2%	22.4%	12.6%	8.8%
Other	49,617	80.5%	11.4%	5.0%	3.1%
ANNUAL HOUSEHOLD INCOME:					
LICO 125	105,086	74.8%	14.2%	7.0%	4.1%
NON-LICO 125	334,010	61.6%	21.2%	10.1%	7.1%
Under $25,000	71,163	80.3%	11.8%	5.3%	2.7%
$25-$49,999	128,882	68.6%	18.0%	7.8%	5.6%
$50-$74,999	102,841	60.7%	22.7%	9.4%	7.2%
$75-$99,999	64,060	58.2%	21.4%	12.2%	8.3%
$100,000 and Over	72,150	54.0%	23.4%	13.7%	8.9%

13.0 RESIDENTIAL CUSTOMER DEMOGRAPHICS

13.01 Residential People Per Household

Table # 13.01 shows the distribution of residential people per household within the Manitoba Hydro provincial service territory. On average, there are 2.4 people per household. The most common type of household is the two-person (46.2%) followed by the one-person household (23.1%). Three or more person households make up the remaining 30.7% of the mix.

Apartment suites have, at 1.6, the lowest average people per household by dwelling type. Almost 53% of apartment suite households are single person.

Newer residential dwellings have the highest average people per household at 2.6. There 27.0% of dwellings, built since 2000, have four or more occupants compared to 18.5% with four or more people overall. New homes tend to be occupied by young growing families. On average, the number of people in a household decreases as the dwelling age increases.

As annual household income increases so does the people per household. The average ranges from 1.6 persons at the lower end to 3.1 persons at the upper end. The under $25,000 group tend to be single-person (58.8%) whereas the $100,000 plus group has a higher percent of four or more person (40.2%) households.

Table # 13.01
Residential People Per Household
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	Average PPH	% Weighted Frequency of People Per Household: One	Two	Three	Four	Five and Over
OVERALL:	439,096	2.4	23.1%	46.2%	12.2%	12.4%	6.1%
AREA:							
Winnipeg City	236,093	2.3	25.3%	43.4%	13.3%	12.5%	5.5%
Manitoba Hydro Gas	122,844	2.4	20.7%	48.4%	11.5%	13.0%	6.5%
Manitoba Hydro No Gas	80,159	2.4	20.3%	51.1%	9.8%	11.3%	7.6%
DWELLING TYPE:							
Single Detached	349,899	2.5	18.0%	47.5%	13.1%	14.2%	7.2%
Multi Attached	33,324	2.3	26.6%	44.5%	12.0%	12.0%	5.0%
Apartment Suite	55,873	1.6	52.7%	39.2%	6.6%	1.5%	0.0%
VINTAGE:							
2000-2009	40,581	2.6	17.4%	43.4%	12.2%	18.2%	8.8%
1990-1999	37,153	2.5	19.1%	44.9%	12.0%	16.8%	7.1%
1980-1989	67,289	2.4	20.5%	47.3%	12.1%	12.2%	7.9%
1970-1979	83,775	2.4	19.1%	47.2%	14.4%	13.5%	5.8%
1960-1969	65,866	2.3	23.0%	47.4%	10.9%	12.6%	6.1%
1950-1959	56,453	2.2	29.3%	45.8%	11.8%	9.0%	4.1%
Pre 1950	87,980	2.2	29.0%	45.6%	11.4%	9.1%	4.9%
HEATING FUEL:							
Electric Heat Billed	154,943	2.3	23.9%	49.4%	9.7%	10.6%	6.4%
Gas Heat Billed	234,536	2.5	18.5%	44.1%	14.7%	15.5%	7.2%
Other	49,617	1.8	41.8%	45.9%	8.1%	3.6%	0.6%
ANNUAL HOUSEHOLD INCOME:							
LICO 125	105,086	2.1	40.3%	36.0%	10.3%	7.2%	6.2%
NON-LICO 125	334,010	2.4	17.6%	49.4%	12.8%	14.1%	6.1%
Under $25,000	71,163	1.6	58.8%	31.8%	5.5%	1.7%	2.1%
$25-$49,999	128,882	2.1	26.9%	54.5%	9.2%	6.2%	3.3%
$50-$74,999	102,841	2.5	16.6%	51.5%	12.3%	11.8%	7.8%
$75-$99,999	64,060	2.8	8.2%	44.4%	20.2%	19.0%	8.2%
$100,000 and Over	72,150	3.1	3.4%	39.6%	16.8%	29.3%	10.9%

13.02 Residential Total Population Age Distribution

Table # 13.02 shows the distribution of the residential total population age distribution within the Manitoba Hydro provincial service territory. On average, the typical Manitoba Hydro residential person is 49.7 years of age. The "65 and over" age group makes up 19.4% of the residential population followed by the "55 to 64" age group which makes up 18.1% of the population.

The apartment suite population is, on average, the oldest at 52.9 years. Over one third of that population is "65 and Over" compared to 19.4% overall.

By dwelling vintage, brand new residential homes have, on average, the youngest population at 44.9 years. Of the population in dwelling built during the 2000s, 27.0% are 18 years of age or younger compared to 19.3% overall. New homes tend to be occupied by young growing families.

The population in electric heat billed dwellings is older than the population in natural gas heat billed dwellings, 51.4 years and 48.7 years respectively. This is partially due to the high percent of apartment suites, whose occupants pay for the heating portion through their utility bill, being electric. Apartment suites are heavily populated with people "65 and Over".

Comparing income groups, as annual household income increases average population age decreases. The average age of the population in the under $35,000 group is 61.7 years compared to an average age of 40.9 years in the $100,000 plus group. The "65 and Over" segment, relying on mainly on Canada pension and Old Age Security, comprises 55.2% of the under $25,000 population. This compares to only 4.5% of the $100,000 plus population that is "65 and Over".

Table # 13.02
Residential Total Population Age Distribution
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	Average Age	% Weighted Frequency of Population Total Age Distribution							
			0 to 5	6 to 18	19 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65 and Over
OVERALL:	439,096	49.7	5.3%	14.0%	6.1%	8.9%	10.8%	17.4%	18.1%	19.4%
AREA:										
Winnipeg City	236,093	48.6	6.2%	14.3%	4.9%	8.4%	10.3%	17.3%	16.8%	21.6%
Manitoba Hydro Gas	122,844	50.6	6.2%	14.3%	4.9%	8.4%	10.3%	17.3%	16.8%	21.6%
Manitoba Hydro No Gas	80,159	51.3	5.2%	15.4%	4.4%	6.2%	9.8%	18.1%	20.8%	20.1%
DWELLING TYPE:										
Single Detached	349,899	49.4	5.5%	14.5%	6.0%	8.5%	11.0%	17.8%	18.3%	18.5%
Multi Attached	33,324	50.4	5.1%	12.5%	7.8%	11.7%	10.8%	12.7%	15.4%	24.2%
Apartment Suite	55,873	52.9	1.4%	4.2%	8.0%	14.1%	6.6%	14.3%	16.7%	34.7%
VINTAGE:										
2000-2009	40,581	44.9	9.9%	17.1%	4.7%	11.3%	14.8%	15.3%	14.2%	12.9%
1990-1999	37,153	49.6	4.8%	17.0%	6.9%	5.3%	12.4%	18.3%	15.8%	19.4%
1980-1989	67,289	50.4	3.3%	13.8%	8.2%	7.0%	8.3%	20.5%	22.3%	16.8%
1970-1979	83,775	50.4	4.2%	14.2%	6.1%	8.7%	10.0%	16.6%	20.9%	19.5%
1960-1969	65,866	51.5	5.3%	14.1%	4.8%	8.1%	10.8%	15.3%	16.4%	25.2%
1950-1959	56,453	50.4	6.2%	11.6%	5.5%	11.0%	10.7%	16.0%	15.2%	23.9%
Pre 1950	87,980	48.9	5.2%	12.0%	6.3%	10.5%	11.0%	18.9%	18.0%	18.0%
HEATING FUEL:										
Electric Heat Billed	154,943	51.4	5.5%	14.5%	4.3%	7.7%	10.1%	16.8%	19.8%	21.4%
Gas Heat Billed	234,536	48.7	5.3%	14.1%	7.0%	9.3%	11.3%	17.6%	17.3%	18.1%
Other	49,617	49.3	1.8%	6.6%	9.0%	14.7%	10.0%	19.0%	14.7%	24.2%
ANNUAL HOUSEHOLD INCOME:										
LICO 125	105,086	56.0	6.6%	13.2%	5.2%	8.1%	7.9%	8.5%	11.8%	38.8%
NON-LICO 125	334,010	47.9	5.0%	14.2%	6.4%	9.1%	11.5%	19.5%	19.6%	14.9%
Under $25,000	71,163	61.7	2.6%	6.9%	4.0%	4.9%	4.0%	8.1%	14.3%	55.2%
$25-$49,999	128,882	55.0	4.6%	9.6%	3.8%	8.4%	7.8%	11.3%	19.2%	35.3%
$50-$74,999	102,841	47.4	5.7%	15.7%	5.6%	8.7%	12.1%	17.3%	20.9%	14.1%
$75-$99,999	64,060	42.9	5.7%	16.9%	6.8%	10.9%	13.4%	22.1%	18.1%	6.1%
$100,000 and Over	72,150	40.9	6.3%	17.4%	9.5%	9.7%	13.4%	23.9%	15.3%	4.5%

13.03 Residential Total Annual Household Income

Table # 13.03 shows the distribution of total annual household income within the Manitoba Hydro provincial service territory. On average, the typical residential Manitoba Hydro household earns $67,063 annually.

Winnipeg City households have the highest average annual income of $72,170. Nineteen percent of Winnipeg City households earn $100,000 and over.

By dwelling type, apartment suite households have the lowest average annual income of $45,652. Almost 30% the apartment suite households earn under $25,000.

In general, as dwelling vintage increase, average annual household income decreases. The average household income of customers residing in dwellings built in the 2000s is $85,992 compared to the average household income of $56,990 of customers residing in dwellings built prior to 1950. Almost 29% of occupants in dwellings built during the 2000s have annual household incomes of $100,000 or more compared to 16.4% overall.

The households in electric heat billed dwellings have a lower average annual income of $58,138 compared to natural gas heat billed households ($76,739). One reason for this difference is that a there is a higher proportion of apartments suites that comprise the electric heat billed group.

LICO-125 households have a much lower average annual income of $23,535 compared to NON-LICO-125 households with incomes of $80,758. Over 64% of LICO-125 households earn under $25,000 per year.

Table # 13.03
Residential Total Annual Household Income
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	Average Income	% Weighted Frequency of Total Annual Household Income: Under $25,000	$25,000 - $49,999	$50,000- $74,999	$75,000- $99,999	$100,000 & Over
OVERALL:	439,096	$67,063	16.2%	29.4%	23.4%	14.6%	16.4%
AREA:							
Winnipeg City	236,093	$72,170	14.1%	26.8%	24.4%	15.7%	19.0%
Manitoba Hydro Gas	122,844	$60,697	17.9%	32.9%	22.2%	13.8%	13.2%
Manitoba Hydro No Gas	80,159	$61,779	19.8%	31.6%	22.2%	12.7%	13.7%
DWELLING TYPE:							
Single Detached	349,899	$71,406	13.9%	27.9%	23.4%	15.8%	19.1%
Multi Attached	33,324	$57,360	18.2%	30.6%	28.7%	12.6%	9.9%
Apartment Suite	55,873	$45,652	29.7%	37.6%	20.4%	8.5%	3.9%
VINTAGE:							
2000-2009	40,581	$85,992	9.3%	22.7%	21.2%	18.1%	28.9%
1990-1999	37,153	$76,071	17.5%	23.0%	23.0%	15.0%	21.6%
1980-1989	67,289	$77,439	9.5%	26.7%	25.0%	18.2%	20.7%
1970-1979	83,775	$66,943	14.8%	31.2%	23.6%	14.1%	16.4%
1960-1969	65,866	$63,081	15.9%	31.0%	24.3%	14.7%	14.1%
1950-1959	56,453	$55,683	20.8%	34.8%	22.2%	12.9%	9.3%
Pre 1950	87,980	$56,990	22.7%	30.7%	23.4%	11.5%	11.6%
HEATING FUEL:							
Electric Heat Billed	154,943	$58,138	19.8%	32.1%	23.7%	12.8%	11.6%
Gas Heat Billed	234,536	$76,739	11.5%	25.3%	24.4%	17.2%	21.7%
Other	49,617	$49,198	27.1%	40.1%	18.2%	7.7%	6.9%
ANNUAL HOUSEHOLD INCOME:							
LICO 125	105,086	$23,535	64.1%	33.6%	2.3%	0.0%	0.0%
NON-LICO 125	334,010	$80,758	1.1%	28.0%	30.1%	19.2%	21.6%
Under $25,000	71,163	$17,997	100.0%	0.0%	0.0%	0.0%	0.0%
$25-$49,999	128,882	$37,035	0.0%	100.0%	0.0%	0.0%	0.0%
$50-$74,999	102,841	$61,442	0.0%	0.0%	100.0%	0.0%	0.0%
$75-$99,999	64,060	$85,558	0.0%	0.0%	0.0%	100.0%	0.0%
$100,000 and Over	72,150	$160,686	0.0%	0.0%	0.0%	0.0%	100.0%

13.04 Highest Level of Education Attained

Table # 13.04 shows the distribution of highest educational level attained by the heads of residential households. There is a fairly even distribution between high school, trades/college and university graduates. If the 13.3% "No Answer"" are removed from analysis, then 4.1% of heads of households have incomplete high school; 28.2% have complete high school; 33.9% have attained some level of trades training or college; and 33.8% have attained some level of university.

Winnipeg heads of households (35.0%) indicate the highest percent of some level of university. Over 5% of heads of households outside Winnipeg City indicate incomplete high school compared to 2.0% of residential customers from Winnipeg. If the 13.6% "No Answer"" are removed from analysis, then 2.3% of heads of households have incomplete high school; 24.1% have complete high school; 33.1% have attained some level of trades training or college; and 40.5% have attained some level of university.

The university educated residential customers are more likely to live in natural gas heat billed dwellings (34.0%) compared to electric heat billed dwellings (22.8%). If the 12.6% "No Answer"" are removed from analysis, then 2.4% of heads of natural gas billed households have incomplete high school; 25.0% have complete high school; 33.7% have attained some level of trades training or college; and 38.9% have attained some level of university.

Comparing income groups, as annual household income increases so does the likelihood of a university education. Almost 56% of the heads of $100,000 plus households have university education. Heads of households in low-income groups are the most likely to have incomplete high school (14.8%). If the 22.8% "No Answer"" are removed from analysis, then 19.2% of heads of under $25,000 households have incomplete high school; 41.8% have complete high school; 25.2% have attained some level of trades training or college; and 13.8% have attained some level of university. If the 5.8% "No Answer"" are removed from analysis, then 0.5% of heads of $100,000 and over households have incomplete high school; 11.2% have complete high school; 28.8% have attained some level of trades training or college; and 59.5% have attained some level of university.

Table # 13.04
Highest Level of Education Attained
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

	# of Customers	% Weighted Frequency of Highest Education Level Attained: Incomplete High School	Complete High Scool	Trades/ College	University	No Answer
OVERALL:	439,096	3.6%	24.4%	29.4%	29.2%	13.3%
AREA:						
Winnipeg City	236,093	2.0%	20.8%	28.6%	35.0%	13.6%
Manitoba Hydro Gas	122,844	5.3%	28.4%	31.7%	22.8%	11.8%
Manitoba Hydro No Gas	80,159	5.8%	29.0%	28.4%	22.2%	14.6%
DWELLING TYPE:						
Single Detached	349,899	3.5%	24.2%	29.9%	29.8%	12.6%
Multi Attached	33,324	1.7%	22.4%	25.6%	30.7%	19.7%
Apartment Suite	55,873	5.4%	26.8%	28.9%	25.0%	13.9%
VINTAGE:						
2000-2009	40,581	1.8%	23.3%	31.1%	33.1%	10.7%
1990-1999	37,153	3.9%	22.3%	33.4%	26.4%	14.1%
1980-1989	67,289	3.1%	21.6%	26.2%	33.5%	15.6%
1970-1979	83,775	4.0%	25.2%	29.7%	27.1%	14.1%
1960-1969	65,866	3.6%	24.2%	33.0%	28.1%	11.1%
1950-1959	56,453	2.8%	31.1%	27.4%	26.4%	12.3%
Pre 1950	87,980	4.9%	23.2%	27.8%	30.1%	14.0%
HEATING FUEL:						
Electric Heat Billed	154,943	5.6%	27.7%	29.8%	22.8%	14.2%
Gas Heat Billed	234,536	2.1%	21.9%	29.5%	34.0%	12.6%
Other	49,617	4.6%	26.5%	27.8%	27.0%	14.1%
ANNUAL HOUSEHOLD INCOME:						
LICO 125	105,086	10.4%	32.1%	24.6%	11.7%	21.3%
NON-LICO 125	334,010	1.5%	22.0%	31.0%	34.8%	10.8%
Under $25,000	71,163	14.8%	32.3%	19.5%	10.6%	22.8%
$25-$49,999	128,882	2.7%	34.0%	32.2%	16.0%	15.0%
$50-$74,999	102,841	0.7%	21.4%	32.3%	34.4%	11.2%
$75-$99,999	64,060	1.1%	16.9%	32.6%	38.2%	11.2%
$100,000 and Over	72,150	0.5%	10.6%	27.1%	55.9%	5.8%

13.05 Total Annual Residential Utility Bills

Table # 13.05 shows the distribution of the total annual residential utility bills within the Manitoba Hydro provincial service territory. The total bill includes all energy and service charges as well as all applicable taxes. Overall, the average residential annual bill is $1,882 and 43.7% of residential customers have annual bills of over $2,000.

Winnipeg (13.8%) has the highest percent of residential customers with annual bills of $500 or less. The reason for the higher percent of smaller annual utility bills in Winnipeg is due to the higher proportion of apartment suites that make up the dwelling mix in Winnipeg.

Apartment suites, on average, have the lowest annual bills. The average annual bill of an apartment suite is $521. Of all the apartment suites in the province, 61.8% pay $500 or less compared to 9.3% overall. Customers residing in single detached dwellings have the highest average annual bill of $2,137.

Other heating fuel customers, mainly composed of apartment suite customers who do not pay directly for their space heat, pay only for miscellaneous electricity use. The electric heat billed customer ($1,825) has a lower average annual bill compared to the natural gas heat billed customer ($2,185). There are several reasons for the higher average bill. First, natural gas heat billed customers have to pay two monthly service charges, one for the electric service and one for the natural gas service. Second, there is a higher mix of apartment suite customers in the electric heat billed group, which on average have lower bills. Third, many natural gas billed customers reside in Winnipeg and have to pay an additional 2.5% city tax.

Low-income households tend to have lower annual utility bills compared to those in the upper income bracket. The average annual bill of a customer in the under $25,000 household group is $1,434 compared to $2,386 for one in the $100,000 plus household group. As household income increases, the average annual bill increases. Almost 38% of $100,000 plus households have annual bills of over $2,500 compared to only 8.4% of the under $25,000 group. Conversely, only 2.3% of $100,000 plus households have annual bills of $500 or less compared to 18.0% of the under $25,000 group.

Table # 13.05
Total Annual Residential Utility Bill
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of the Total Annual Residential Utility Bill

	# of Customers	Average Annual Bill	$500 & Under	$501 to $1,000	$1,001 to $1,500	$1,501 to $2,000	$2,001 to $2,500	Over $2,500
OVERALL:	439,096	$1,882	9.3%	7.4%	12.0%	27.7%	23.5%	20.2%
AREA:								
Winnipeg City	236,093	$1,778	13.8%	7.6%	9.3%	27.4%	24.6%	17.3%
Manitoba Hydro Gas	122,844	$2,051	3.3%	6.2%	13.5%	29.4%	23.9%	23.8%
Manitoba Hydro No Gas	80,159	$1,926	5.0%	8.9%	17.4%	26.2%	19.4%	23.2%
DWELLING TYPE:								
Single Detached	349,899	$2,137	1.1%	2.9%	11.6%	31.7%	28.2%	24.6%
Multi Attached	33,324	$1,485	6.6%	17.6%	26.5%	30.6%	12.2%	6.6%
Apartment Suite	55,873	$521	61.8%	30.1%	5.2%	1.4%	0.8%	0.8%
VINTAGE:								
2000-2009	40,581	$1,919	5.9%	11.7%	11.8%	26.0%	23.0%	21.6%
1990-1999	37,153	$1,981	4.6%	9.4%	11.9%	27.4%	24.8%	21.9%
1980-1989	67,289	$1,799	7.9%	13.2%	11.3%	27.4%	22.5%	17.6%
1970-1979	83,775	$1,942	5.7%	7.0%	11.6%	29.6%	26.0%	20.0%
1960-1969	65,866	$1,892	12.4%	3.9%	9.7%	29.0%	24.0%	21.0%
1950-1959	56,453	$1,754	13.3%	3.7%	12.7%	32.2%	24.0%	14.2%
Pre 1950	87,980	$1,903	12.4%	5.6%	14.1%	23.2%	20.6%	24.2%
HEATING FUEL:								
Electric Heat Billed	154,943	$1,825	5.2%	13.2%	17.8%	25.9%	18.3%	19.6%
Gas Heat Billed	234,536	$2,185	0.0%	1.0%	9.4%	34.0%	31.5%	24.2%
Other	49,617	$626	65.5%	19.7%	6.1%	3.9%	1.6%	3.3%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	105,086	$1,541	16.5%	11.3%	15.5%	28.8%	17.1%	10.8%
NON-LICO 125	334,010	$1,989	7.0%	6.2%	10.8%	27.4%	25.4%	23.2%
Under $25,000	71,163	$1,434	18.0%	13.1%	19.3%	27.2%	13.9%	8.4%
$25-$49,999	128,882	$1,708	12.3%	9.1%	15.3%	30.2%	18.6%	14.6%
$50-$74,999	102,841	$1,939	7.1%	6.8%	9.5%	28.5%	28.6%	19.7%
$75-$99,999	64,060	$2,068	5.0%	4.0%	9.0%	28.3%	28.1%	25.7%
$100,000 and Over	72,150	$2,386	2.3%	2.9%	4.9%	22.2%	30.1%	37.7%

13.06 Residential Percent Income Burden

Table # 13.05 shows the distribution of the energy burden ranges of residential customers within the Manitoba Hydro provincial service. Energy burden is defined as the per cent of energy costs (all applicable energy costs, service charges, and taxes included) over the total annual household income. Overall, 47.3% of Manitoba Hydro residential customers spend 3.0% or less of their total household income on energy costs. The average residential income burden is 4.1%.

Customers residing in Winnipeg have the lowest percent income burden of 3.5% compared to those from other areas. The reason for the lower percent income burden of Winnipeg customers is due to the higher proportion of apartment suites that make up the dwelling mix in Winnipeg.

Apartment suites, on average, have the lowest annual bills resulting in the lowest income burden. The income burden of apartment suite customers is 1.6% compared to 4.5% for customers residing in single detached dwellings. Almost 88% of apartment suite customers have an income burden 3% or less.

As dwelling age increases, so does the income burden for the customers residing in older structures. Customers residing in dwelling constructed in the 2000s have an income burden of 3.2% compared to 4.8% for customers residing in dwellings built prior to 1950.

Other heating fuel customers, mainly composed of apartment suite customers who do not pay directly for their space heat, pay only for miscellaneous electricity use. Like apartment suite customers, these have the lowest income burden of 1.7% compared to 4.5% for electric heat billed and 4.3% for natural gas heat billed customers.

Although low-income households tend to have lower annual utility bills compared to those in the upper income brackets, low-income households bear the highest income burden. The average percent income burden for a customer in the under $25,000 household group is 8.2% compared to 1.7% for one in the $100,000 plus household group. As household income increases, percent income burden decreases. Almost 96% of $100,000 plus households have an average percent income burden of 3% or less compared to 17.6% of the under $25,000 group. Conversely, zero customers of $100,000 plus households have an average percent income burden of over 12% compared to 19.5% of the under $25,000 group.

Table # 13.06
Residential Percent Energy Burden
By Area, Dwelling Type, Vintage, Heating Fuel, and Annual Household Income

% Weighted Frequency of Residential Percent Energy Burden

	# of Customers	Average % Burden	3% and Under	3.01% to 6%	6.01% to 9%	9.01% to 12%	12.01% to 15%	Over 15%
OVERALL:	439,096	4.1%	47.3%	33.3%	10.8%	5.0%	2.2%	1.3%
AREA:								
Winnipeg City	236,093	3.5%	56.3%	29.4%	7.9%	3.8%	1.6%	0.9%
Manitoba Hydro Gas	122,844	4.8%	35.5%	38.8%	15.5%	5.8%	2.8%	1.6%
Manitoba Hydro No Gas	80,159	4.7%	39.1%	36.3%	12.1%	7.4%	3.1%	2.0%
DWELLING TYPE:								
Single Detached	349,899	4.5%	40.7%	36.8%	12.4%	5.9%	2.6%	1.5%
Multi Attached	33,324	3.7%	49.0%	35.6%	8.7%	4.1%	1.6%	1.0%
Apartment Suite	55,873	1.6%	87.7%	10.2%	2.0%	0.0%	0.0%	0.2%
VINTAGE:								
2000-2009	40,581	3.2%	60.7%	28.2%	7.4%	2.3%	1.0%	0.6%
1990-1999	37,153	3.8%	48.0%	38.0%	8.3%	2.9%	1.7%	1.1%
1980-1989	67,289	3.3%	59.3%	28.7%	7.6%	3.0%	0.6%	0.8%
1970-1979	83,775	4.2%	44.4%	35.3%	11.6%	5.1%	2.6%	1.0%
1960-1969	65,866	4.3%	44.7%	33.2%	12.7%	5.4%	2.8%	1.2%
1950-1959	56,453	4.4%	41.3%	34.9%	13.6%	6.5%	2.3%	1.4%
Pre 1950	87,980	4.8%	40.4%	34.4%	11.9%	7.5%	3.5%	2.4%
HEATING FUEL:								
Electric Heat Billed	154,943	4.5%	42.4%	34.5%	12.5%	6.3%	2.7%	1.6%
Gas Heat Billed	234,536	4.3%	42.9%	37.0%	11.2%	5.2%	2.4%	1.3%
Other	49,617	1.7%	83.7%	12.2%	3.5%	0.3%	0.0%	0.3%
ANNUAL HOUSEHOLD INCOME:								
LICO 125	105,086	7.2%	19.6%	22.8%	27.9%	16.3%	8.3%	5.1%
NON-LICO 125	334,010	3.1%	56.1%	36.6%	5.4%	1.5%	0.3%	0.1%
Under $25,000	71,163	8.2%	17.6%	15.1%	25.1%	22.7%	12.2%	7.3%
$25-$49,999	128,882	4.7%	25.1%	48.4%	20.9%	4.2%	0.8%	0.5%
$50-$74,999	102,841	3.2%	43.0%	54.2%	2.4%	0.5%	0.0%	0.0%
$75-$99,999	64,060	2.4%	77.2%	22.6%	0.3%	0.0%	0.0%	0.0%
$100,000 and Over	72,150	1.7%	95.9%	4.1%	0.0%	0.0%	0.0%	0.0%

14.0 APPENDIX

14.01 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
POWER SMART

*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)
2 ☐ Side by Side (Two Attached Units)
3 ☐ Duplex (Upper Unit)
4 ☐ Duplex (Lower Unit)
5 ☐ Triplex/Fourplex
6 ☐ Mobile Home/Trailer
7 ☐ Rowhouse/Townhouse (Exterior Entrance)
8 ☐ Apartment Suite or Condominium unit
9 ☐ Cottage or Seasonal Home
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
2 ☐ 1 1/2 storey
3 ☐ 1 3/4 storey
4 ☐ 2 storey
5 ☐ 2 1/2 storey
6 ☐ 3 storey
7 ☐ Bi-level
8 ☐ 2 level split
9 ☐ 4 level split
10 ☐ Cab - Over
11 ☐ Suite
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
2 ☐ 1990 - 1999
3 ☐ 1980 - 1989
4 ☐ 1970 - 1979
5 ☐ 1960 - 1969
6 ☐ 1950 - 1959
7 ☐ 1940 - 1949
8 ☐ 1930 - 1939
9 ☐ 1920 - 1929
10 ☐ 1910 - 1919
11 ☐ 1900 - 1909
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.

1 ☐ Under 500 sq ft	7 ☐ 1,501-1,700 sq ft	13 ☐ 2,701-2,900 sq ft
2 ☐ 501-700 sq ft	8 ☐ 1,701-1,900 sq ft	14 ☐ 2,901-3,100 sq ft
3 ☐ 701-900 sq ft	9 ☐ 1,901-2,100 sq ft	15 ☐ 3,101-3,300 sq ft
4 ☐ 901-1,100 sq ft	10 ☐ 2,101-2,300 sq ft	16 ☐ 3,301-3,500 sq ft
5 ☐ 1,101-1,300 sq ft	11 ☐ 2,301-2,500 sq ft	17 ☐ over 3,500 sq ft
6 ☐ 1,301-1,500 sq ft	12 ☐ 2,501-2,700 sq ft	

8 **What is the ELECTRIC PANEL size servicing your residence?**

1 ☐ 60 amp	3 ☐ 150 amp	5 ☐ 400 amp	7 ☐ Do not know
2 ☐ 100 amp	4 ☐ 200 amp	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?

1 ☐ Excellent	3 ☐ Average	5 ☐ Poor
2 ☐ Very Good	4 ☐ Fair	

c) What best describes the quality of EXTERIOR DOORS in your residence?

1 ☐ Excellent	3 ☐ Average	5 ☐ Poor
2 ☐ Very Good	4 ☐ Fair	

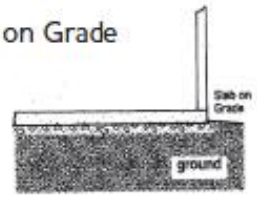
10 **What best describes the overall level of INSULATION in your residence?**
(EXCLUDE BASEMENT)

1 ☐ Excellent	3 ☐ Average	5 ☐ Poor
2 ☐ Very Good	4 ☐ Fair	

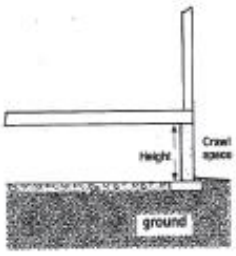
11 **Please indicate which of the following best describes the BASEMENT (foundation) of your residence:**

a) 1 ☐ No Basement (foundation) – Go to Question 12

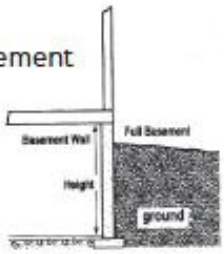
2 ☐ Slab on Grade



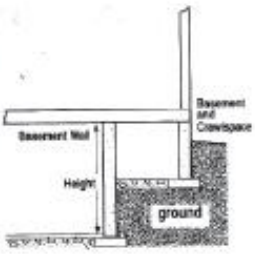
6 ☐ Crawl Space (including cottages and mobile homes)



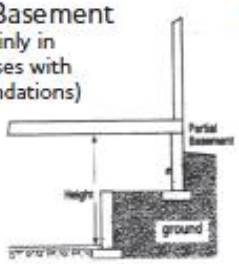
3 ☐ Full Basement



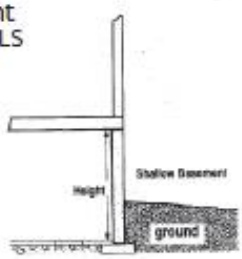
7 ☐ Partial Basement and Crawl Space (includes houses with ground level additions)



4 ☐ Partial Basement (found mainly in older houses with stone foundations)



8 ☐ Shallow Basement (includes SPLIT LEVELS and BI-LEVELS)



5 ☐ Other: _____ 9 ☐ Do Not Know

b) What percentage of your home's BASEMENT (foundation) walls are insulated?

1 ☐ No Insulation – Go to Question 12
2 ☐ 10% Insulated
3 ☐ 20% Insulated
4 ☐ 30% Insulated
5 ☐ 40% Insulated
6 ☐ 50% Insulated
7 ☐ 60% Insulated
8 ☐ 70% Insulated
9 ☐ 80% Insulated
10 ☐ 90% Insulated
11 ☐ 100% Insulated
12 ☐ 2 ft Below Grade Only
13 ☐ Other: _____
14 ☐ Do not know

c) Main type of INSULATION

1 ☐ Fibreglass Batting
2 ☐ Rigid
3 ☐ Spray Foam
4 ☐ Other: _____
5 ☐ Do not know

d) What % of your basement is finished?

1 ☐ No Basement
2 ☐ 0%
3 ☐ 1 - 20%
4 ☐ 21 - 40%
5 ☐ 41 - 60%
6 ☐ 61 - 80%
7 ☐ 81 - 100%
8 ☐ Do not know

12 **Does this residence have any of the following PROBLEMS?**
(CHECK ALL THAT APPLY.)

- 1 ☐ Odours, cooking smells, stale air
- 1 ☐ High humidity in winter
- 1 ☐ Low humidity in winter
- 1 ☐ Window condensation
- 1 ☐ Condensation in attic
- 1 ☐ Mold and mildew
- 1 ☐ Ice dams on roof
- 1 ☐ Water leakage in basement
- 1 ☐ Cold floor on slab on grade foundation
- 1 ☐ Difficult to heat rooms
- 1 ☐ Inadequate supply of hot water
- 1 ☐ Short life of hot water tank (less than five years)
- 1 ☐ No problems

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.)

- 1 ☐ None
- 1 ☐ Workshop
- 1 ☐ Garage
- 1 ☐ Storage Shed
- 1 ☐ Barn
- 1 ☐ Pumphouse
- 1 ☐ Grain Dryer
- 1 ☐ Grain Bin(s)
- 1 ☐ Greenhouse
- 1 ☐ Other: _____

16 **Are any ADDITIONAL BUILDINGS using NATURAL GAS at this location?**
(CHECK ALL THAT APPLY.)

- 1 ☐ None
- 1 ☐ Workshop
- 1 ☐ Garage
- 1 ☐ Storage Shed
- 1 ☐ Barn
- 1 ☐ Pumphouse
- 1 ☐ Grain Dryer
- 1 ☐ Grain Bin(s)
- 1 ☐ Greenhouse
- 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.)

- 1 ☐ None
- 1 ☐ Forced Air Furnace
- 1 ☐ Electric Baseboards
- 1 ☐ Electric Portable Heater
- 1 ☐ Stove/Spaceheater
- 1 ☐ Gas Fireplace (not decorative)
- 1 ☐ Wood Stove
- 1 ☐ Wood Fireplace (with glass doors)
- 1 ☐ Wood Fireplace (no glass doors)
- 1 ☐ Outside Wood Boiler
- 1 ☐ Pellet Stove
- 1 ☐ Heat Pump
- 1 ☐ Other: _____
- 1 ☐ Do not know

7 **How is the central forced air furnace fan motor normally operated?**

- 1 ☐ No Central Forced Air Furnace
- 2 ☐ Comes on only when furnace is running
- 3 ☐ Two speed (high, low) - continuous
- 4 ☐ Continuous - one speed on
- 5 ☐ Continuous Variable Direct Current Motor (on select hi-efficiency furnaces)
- 6 ☐ Do not know

8 **Do you perform annual maintenance checks on your heating system?**

- 1 ☐ Not applicable
- 2 ☐ No, never
- 3 ☐ Once a year
- 4 ☐ Every 2 to 3 years
- 5 ☐ Every 4 or more years
- 6 ☐ Do not know

9 **Do you regularly change or clean your furnace filter?**

- 1 ☐ Not applicable
- 2 ☐ No, never
- 3 ☐ Yes, every 3 to 4 months
- 4 ☐ Yes, every year or more
- 5 ☐ Do not know

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.)

- 1 ☐ No wood used
- 2 ☐ Under 1
- 3 ☐ 1 - 2
- 4 ☐ 3 - 4
- 5 ☐ 5 - 6
- 6 ☐ 7 - 8
- 7 ☐ 9+
- 8 ☐ Do not know

11 **What type of THERMOSTAT controls the main heating system?**

- 1 ☐ No Thermostat
- 2 ☐ Individual Unit or Room Control
- 3 ☐ Manual Central Control
- 4 ☐ Programmable Thermostat
- 5 ☐ Flue Gauge (located on a wood stove chimney)
- 6 ☐ Other: _____
- 7 ☐ Do not know

12 **How often do you TURN DOWN the temperature at night during the heating season?**

- 1 ☐ Every Night
- 2 ☐ Most Nights
- 3 ☐ Occasionally
- 4 ☐ Never
- 5 ☐ No Thermostat
- 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 ☐	2 ☐	3 ☐
18°-19°	65°-67°	1 ☐	2 ☐	3 ☐
20°-21°	68°-70°	1 ☐	2 ☐	3 ☐
22°-23°	71°-73°	1 ☐	2 ☐	3 ☐
24°-25°	74°-77°	1 ☐	2 ☐	3 ☐
26° plus	78° plus	1 ☐	2 ☐	3 ☐
Do not know		1 ☐	2 ☐	3 ☐

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 ☐ Central Exhaust System
1 ☐ Heat Recovery Ventilator
1 ☐ Furnace Fan
1 ☐ Kitchen/Bathroom Fans
1 ☐ Ceiling Fans
1 ☐ Portable Fans
1 ☐ Roof Turbine Vent
1 ☐ Windows/Doors
1 ☐ Other: _____
1 ☐ No Ventilation System
1 ☐ Do not know

2 **What type of AIR FILTRATION system is used?**

1 ☐ None
2 ☐ Standard Furnace Air Filter
3 ☐ Room Air Filter(s)
4 ☐ Electrostatic (Electronic) Air Filter/Cleaner
5 ☐ Other: _____
6 ☐ Do not know

3 **Is there a FRESH AIR INTAKE to your central forced air furnace?**

1 ☐ Yes
2 ☐ No
3 ☐ No Central Forced Air Furnace
4 ☐ Do not know

4 **What best describes the air quality in your home during the winter months?**
1 ☐ Too Dry 2 ☐ Too Humid 3 ☐ 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 ☐	2 ☐	3 ☐
18°-19°	65°-67°	1 ☐	2 ☐	3 ☐
20°-21°	68°-70°	1 ☐	2 ☐	3 ☐
22°-23°	71°-73°	1 ☐	2 ☐	3 ☐
24°-25°	74°-77°	1 ☐	2 ☐	3 ☐
26° plus	78° plus	1 ☐	2 ☐	3 ☐
Do not know		1 ☐	2 ☐	3 ☐

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 With:_____ Year Converted: _____ (e.g., 1992)
3 ☐ Do not know

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
2 ☐ Rarely shower
3 ☐ One
4 ☐ Two
5 ☐ Three
6 ☐ Four
7 ☐ Five
8 ☐ Six or more

10 On average, how many tub baths are taken by your household per day?

1 ☐ None
2 ☐ Rarely take tub baths
3 ☐ One
4 ☐ Two
5 ☐ Three
6 ☐ Four
7 ☐ Five
8 ☐ Six or more

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 Energy Efficient Faucet Aerator(s)
1 ☐ Installed Water Heater Blanket/Insulation
1 ☐ Installed Energy Efficient Toilets (1.6 or less gal/flush)
1 ☐ Lowered Water Heater Temperature
1 ☐ Installed Pipe Wrap
1 ☐ None
1 ☐ Do not know

12 Do you have an ELECTRIC WATER PUMP installed on your water system?
(CHECK ALL THAT APPLY.)

1 ☐ No Pump
1 ☐ Well Pump
1 ☐ Pressure Pump
1 ☐ Sump Pump
1 ☐ Sewage 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 ☐ None
1 ☐ Electric Range with Standard Oven
1 ☐ Electric Range with Self-Cleaning Oven
1 ☐ Electric Range with Convection Oven
1 ☐ Electric Counter Cooktop
1 ☐ Electric Wall Oven
1 ☐ Gas Cooktop
1 ☐ Gas Range
1 ☐ Gas Wall Oven
1 ☐ Wood Stove/Oven
1 ☐ Other: _____

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)

1☐ None – Go to Question 5 2☐ One 3☐ Two 4☐ Three or More

*a) Please describe the **MAIN** stand-alone FREEZER that is used.*

- TYPE: 1☐ Frost-Free 2☐ Manual Defrost
- STYLE: 1☐ Upright 2☐ Chest
- 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

b) Location of main freezer?

1☐ Garage 3☐ Porch 5☐ Other: _____
2☐ Basement 4☐ Main floor or above

*c) Please describe the **SECOND** stand-alone FREEZER that is used.*

1☐ None – Go to Question 5

- TYPE: 1☐ Frost-Free 2☐ Manual Defrost
- STYLE: 1☐ Upright 2☐ Chest
- 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

d) Is the second freezer operating all year?

1☐ Yes, all year 2☐ No, only part of the year.

e) Location of second freezer?

1☐ Garage 3☐ Porch 5☐ Other: _____
2☐ Basement 4☐ Main floor or above

5 **Is there an automatic DISHWASHER used in your home?**

1☐ No Dishwasher – Go to Question 6 2☐ Yes

- LOADS PER WEEK: ____ (loads/week)
  (Average number of times the dishwasher 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

a) What type of DRYING CYCLE do you use most often:

1☐ Heat Dry (Sanitizing Cycle) 2☐ Air Dry (Econo) 3☐ Do not know

b) Do you use the Water Heat Temperature Boost option?

1 ☐ Not available
2 ☐ Available, and used always
3 ☐ Available, but choose not to use it
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
2 ☐ Hot/Warm
3 ☐ Hot/Cold
4 ☐ Warm/Warm
5 ☐ Warm/Cold
6 ☐ Cold/Cold
7 ☐ Do not know

- LOADS PER WEEK: ____ (loads/week)
  (Average number of times the clothes washer is operating each week.)

- AGE: (years)
  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 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
  2 ☐ Natural Gas
  3 ☐ Propane
  4 ☐ Other: _____
- DRYER TEMP: (Used most often.)
  1 ☐ Cold (Low)
  2 ☐ Delicate
  3 ☐ Warm (Medium)
  4 ☐ Permanent Press
  5 ☐ Hot (High)
  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
  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

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.*

1 ☐ Do not have a television set – Go to Question 3

- TYPE: 1 ☐ Tube (CRT) 2 ☐ Plasma 3 ☐ LCD 4 ☐ LED 5 ☐ Projection 6 ☐ Do not know
- SIZE: 1 ☐ Under 21" 2 ☐ 21" - 29" 3 ☐ 30" - 39" 4 ☐ 40" - 49" 5 ☐ Over 49" 6 ☐ Do not know
- AGE: (years) 1 ☐ 0 - 3 years 2 ☐ 4 - 6 years 3 ☐ 7 - 9 years 4 ☐ 10 - 12 years 5 ☐ Over 12 years 6 ☐ Do not know
- USAGE: 1 ☐ 0 hours 2 ☐ 1 - 3 hours 3 ☐ 4 - 6 hours 4 ☐ 7 - 9 hours 5 ☐ Over 9 hours 6 ☐ Do not know

*b) Please describe the **SECOND TELEVISION** that is used in your home.*

1 ☐ Do not have a second television set – Go to Question 2

- TYPE: 1 ☐ Tube (CRT) 2 ☐ Plasma 3 ☐ LCD 4 ☐ LED 5 ☐ Projection 6 ☐ Do not know
- SIZE: 1 ☐ Under 21" 2 ☐ 21" - 29" 3 ☐ 30" - 39" 4 ☐ 40" - 49" 5 ☐ Over 49" 6 ☐ Do not know
- AGE: (years) 1 ☐ 0 - 3 years 2 ☐ 4 - 6 years 3 ☐ 7 - 9 years 4 ☐ 10 - 12 years 5 ☐ Over 12 years 6 ☐ Do not know
- USAGE: 1 ☐ 0 hours 2 ☐ 1 - 3 hours 3 ☐ 4 - 6 hours 4 ☐ 7 - 9 hours 5 ☐ Over 9 hours 6 ☐ Do not know

*c) Please describe the **THIRD TELEVISION** that is used in your home.*

1 ☐ Do not have a third television set – Go to Question 2

- TYPE: 1 ☐ Tube (CRT) 2 ☐ Plasma 3 ☐ LCD 4 ☐ LED 5 ☐ Projection 6 ☐ Do not know
- SIZE: 1 ☐ Under 21" 2 ☐ 21" - 29" 3 ☐ 30" - 39" 4 ☐ 40" - 49" 5 ☐ Over 49" 6 ☐ Do not know
- AGE: (years) 1 ☐ 0 - 3 years 2 ☐ 4 - 6 years 3 ☐ 7 - 9 years 4 ☐ 10 - 12 years 5 ☐ Over 12 years 6 ☐ Do not know
- USAGE: 1 ☐ 0 hours 2 ☐ 1 - 3 hours 3 ☐ 4 - 6 hours 4 ☐ 7 - 9 hours 5 ☐ Over 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.*

1 ☐ Do not have a set-top or cable converter box – Go to Question 3

- SERVICE PROVIDER: 1 ☐ Cable company 2 ☐ Telephone company 3 ☐ Satellite 4 ☐ Do not know
- FEATURES: 1 ☐ Digital 2 ☐ Digital PVR 3 ☐ HD 4 ☐ HD PVR 5 ☐ Do not know
- AGE: (years) 1 ☐ 0 - 3 years 2 ☐ 4 - 6 years 3 ☐ 7 - 9 years 4 ☐ 10 - 12 years 5 ☐ Over 12 years 6 ☐ Do not know

*b) Please describe the **SECOND MAIN SET-TOP OR CABLE CONVERTER BOX** that is used in your home.*

1 ☐ Do not have a second set-top or cable converter box – Go to Question 3

- SERVICE PROVIDER: 1 ☐ Cable company 2 ☐ Telephone company 3 ☐ Satellite 4 ☐ Do not know
- FEATURES: 1 ☐ Digital 2 ☐ Digital PVR 3 ☐ HD 4 ☐ HD PVR 5 ☐ Do not know
- AGE: (years) 1 ☐ 0 - 3 years 2 ☐ 4 - 6 years 3 ☐ 7 - 9 years 4 ☐ 10 - 12 years 5 ☐ Over 12 years 6 ☐ Do not know

*c) Please describe the **THIRD MAIN SET-TOP OR CABLE CONVERTER BOX** that is used in your home.*

1 ☐ Do not have a third set-top or cable converter box – Go to Question 3

- SERVICE PROVIDER: 1 ☐ Cable company 2 ☐ Telephone company 3 ☐ Satellite 4 ☐ Do not know
- FEATURES: 1 ☐ Digital 2 ☐ Digital PVR 3 ☐ HD 4 ☐ HD PVR 5 ☐ Do not know
- AGE: (years) 1 ☐ 0 - 3 years 2 ☐ 4 - 6 years 3 ☐ 7 - 9 years 4 ☐ 10 - 12 years 5 ☐ Over 12 years 6 ☐ 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.*

1 ☐ Do not have a computer – Go to Question 5

- TYPE: 1 ☐ Desktop 2 ☐ Laptop 3 ☐ Do not know
- SCREEN: 1 ☐ Tube (CRT) 2 ☐ LCD
- AGE: (years) 1 ☐ 0 - 3 years 2 ☐ 4 - 6 years 3 ☐ 7 - 9 years 4 ☐ 10 - 12 years 5 ☐ Over 12 years 6 ☐ Do not know
- USAGE: 1 ☐ On 24 hours 2 ☐ On when necessary 3 ☐ 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
- 2 ☐ In-Person - at a designated agency
- 3 ☐ By Mail
- 4 ☐ On-Line
- 5 ☐ Pre-Authorized Payment Plan
- 6 ☐ Other: _____
- 7 ☐ Do not know

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 Flourescent 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 11 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?**

1 ☐ One (myself) 3 ☐ Three 5 ☐ Five 7 ☐ Seven or more
2 ☐ Two 4 ☐ Four 6 ☐ Six 8 ☐ 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)

1 ☐ Under $20,000 7 ☐ $50,000-$54,999 13 ☐ $80,000-$89,999
2 ☐ $20,000-$24,999 8 ☐ $55,000-$59,999 14 ☐ $90,000-$99,999
3 ☐ $25,000-$29,999 9 ☐ $60,000-$64,999 15 ☐ $100,000-$124,999
4 ☐ $30,000-$34,999 10 ☐ $65,000-$69,999 16 ☐ $125,000-$149,999
5 ☐ $35,000-$39,999 11 ☐ $70,000-$74,999 17 ☐ $150,000 or over
6 ☐ $40,000-$49,999 12 ☐ $75,000-$79,999 18 ☐ Choose not to answer

5 **Please indicate the highest EDUCATION LEVEL attained by each head of household?**

	Person 1	Person 2
No Formal Education	1 ☐	1 ☐
Elementary (Grades 1-6)	2 ☐	2 ☐
Junior High (Grades 7-9)	3 ☐	3 ☐
Senior High (Grades 10-12)	4 ☐	4 ☐
Trade School	5 ☐	5 ☐
Community College	6 ☐	6 ☐
University (Bachelor)	7 ☐	7 ☐
Graduate (Master's or PHD)	8 ☐	8 ☐
Other _____	9 ☐	9 ☐
Choose not to answer	10 ☐	10 ☐

We welcome any comments you may wish to make. Please record your comments in the space below.

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.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide each customer demographic survey that has been prepared for residential customers since January 2011. If no survey has been prepared since January 2011, please provide the most recent survey.

RATIONALE FOR QUESTION:

The reasonableness of Company's proposed rates, as differentially affecting different customers, is to be considered.

RESPONSE:

Please refer to Manitoba Hydro's response to GAC/MH-I-29.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Disaggregated by heating and non-heating accounts, for residential customers, for each month January 2013 to present inclusive, please provide the following:

a) The number of accounts receiving a notice of disconnection for nonpayment;
b) The number of accounts actually being disconnected for nonpayment;
c) The number of accounts entering into a deferred payment arrangement;
d) The total number of bills issued; and
e) The total dollars billed for current service (i.e., not including arrears);
f) The total dollars of payments received.

RATIONALE FOR QUESTION:

The reasonableness of Company's proposed rates, as differentially affecting different customers, is to be considered.

RESPONSE:

a) The number of residential customers receiving a notice of disconnection for nonpayment is not disaggregated by heating and non-heating accounts. Please see below for the total number of accounts receiving a disconnection notice by month for the past two years. Data is not available for January and February, 2013.

DATE	Disconnection Notices
Jan-13	n/a
Feb-13	n/a
Mar-13	10,139
Apr-13	13,159
May-13	10,675
Jun-13	11,035
Jul-13	9,012
Aug-13	6,539
Sep-13	6,990
Oct-13	6,500
Nov-13	4,692
Dec-13	5,995
Jan-14	7,364
Feb-14	7,405
Mar-14	12,063
Apr-14	15,019
May-14	11,419
Jun-14	12,518
Jul-14	10,981
Aug-14	8,084
Sep-14	8,561
Oct-14	8,218
Nov-14	5,434
Dec-14	6,250

b) The number of residential accounts being disconnected for nonpayment is not disaggregated by heating and non-heating. Please refer to Manitoba Hydro's response to GAC/MH-I-21(c) for the total number of disconnections for nonpayment per month from October 2013 to December 2014.

c) The number of residential customers entering into a deferred payment arrangement is not disaggregated by heating and non-heating accounts. Please refer to Manitoba Hydro's response to GAC/MH-I-38a for the total number of accounts entering into a payment arrangement in 2013 and 2014.

(d) Information regarding the number of bills issued is not available for the customer segments indicated above. On average, each Manitoba Hydro energy customer receives one bill per month. Please refer to Manitoba Hydro's response to GAC/MH-I-9a which provides the number of residential customers by month.

(e)

Revenue - Residential ($1000s)				
	2014		***2013***	
	Heating	***Non-heating***	***Heating***	***Non-heating***
January	$49,178	$30,520	$41,523	$28,060
February	$45,999	$28,554	$41,459	$27,176
March	$41,233	$26,219	$33,875	$23,025
April	$36,550	$25,822	$34,048	$24,590
May	$24,230	$21,040	$21,057	$19,076
June	$15,812	$19,636	$14,154	$17,968
July	$13,631	$20,896	$12,847	$21,839
August	$14,331	$24,100	$12,472	$20,205
September	$13,339	$19,126	$13,392	$22,987
October	$18,763	$21,044	$17,165	$19,350
November	$26,625	$21,921	$26,143	$21,837
December	$38,687	$25,803	$37,968	$25,002

(f) Payment application information is not available for the customer segments indicated above. Please refer to Manitoba Hydro's response to GAC/MH-I-4a for payment application information for electric accounts.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide disaggregated by postal code for the Company's service territory, the following for the most recent 12 month period available for residential accounts:

a) The number of accounts receiving a notice of disconnection for nonpayment;
b) The number of accounts actually being disconnected for nonpayment;
c) The number of accounts entering into a deferred payment arrangement;
d) The total number of bills issued; and
e) The total dollars billed for current service (i.e., not including arrears);
f) The total dollars of payments received.

RATIONALE FOR QUESTION:

The reasonableness of Company's proposed rates, as differentially affecting different customers, is to be considered.

RESPONSE:

Manitoba Hydro does not track the information requested in a, b, c, d, or f by postal code. The information requested in e is:

Postal Code	2014 Annual Billed Revenue ($000s)
R0A	$30,171
R0B	$29,806
R0C	$48,331
R0E	$48,079
R0G	$33,912
R0H	$10,694
R0J	$24,593
R0K	$23,503
R0L	$25,911
R0M	$19,505
R1A	$9,601
R1N	$10,079
R2C	$12,189
R2E	$5,226
R2G	$9,762
R2H	$4,701
R2J	$8,952
R2K	$9,632
R2L	$4,415
R2M	$12,011
R2N	$10,420
R2P	$7,600
R2R	$5,253
R2V	$10,518
R2W	$9,410
R2X	$5,092
R2Y	$6,378
R3A	$1,358
R3B	$2,460
R3C	$3,620
R3E	$5,238
R3G	$7,716
R3J	$8,682
R3K	$4,453

Postal Code	2014 Annual Billed Revenue ($000s)
R3L	$5,342
R3M	$7,348
R3N	$6,308
R3P	$7,510
R3R	$9,345
R3S	$362
R3T	$13,519
R3V	$2,142
R3W	$2,836
R3X	$6,561
R3Y	$6,639
R4A	$2,094
R4G	$335
R4H	$1,423
R4J	$624
R4K	$607
R4L	$1,166
R5A	$1,912
R5G	$10,423
R5H	$4,375
R6M	$3,881
R6W	$8,108
R7A	$14,118
R7B	$8,877
R7C	$1,960
R7N	$6,106
R8A	$5,033
R8N	$9,177
R9A	$6,492
Other - postal codes with less than 50 customers	$157

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a copy of all written documents, of any nature, including tariffs, staff training manuals and staff "procedures" manuals, that describe and explain the circumstances under which termination of service is appropriate as well as the circumstances under which termination of service is not appropriate.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Please see Attachment 1 to this response which provides a copy of Manitoba Hydro's Disconnection & Reconnection Policy for electric service customers and Attachment 2 which provides a copy of PUB Order 14/08 related to natural gas and combined natural gas/electric services.

20. Reconnection of the Same Customer

20.1 - General

A service will be reconnected preferably in the presence of the customer to avoid or minimize damage to appliances or other equipment.

A service that was disconnected for non-payment will be reconnected for the same customer when all overdue amounts owing on the electricity account are paid as follows (in order of preference):

a) in full;

b) by short-term payment arrangement if there are extenuating circumstances; or

c) by other payment arrangements (see Corporate Policy G1-4, Ref. 144 regarding approval).

20.2 - Reconnection Fee

A reconnection fee will be required as follows unless approval is obtained to waive the charge (see Corporate Policy G1-4, Ref. 144 regarding approval).

A reconnection fee (and appropriate GST) will be required:

- when a customer's electrical service has been reconnected after being disconnected for non-payment, or
- when a customer's electrical service has been previously disconnected and is being reconnected with a load restrictor device installed during the non-heating season, May 15th to September 14th, or
- when a load restrictor device has been removed from the electrical service and the customer has been restored to full service.

A reconnection fee is not to be applied:

- when a customer with both natural gas and electric service at the same premise has a load restrictor device installed on their electrical service during the period of September 15th to May 14th

Effective April 1, 2000 the reconnection fee will be as follows:

a) during normal working hours - $50;

b) outside normal working hours - $65; or

c) If special conditions exist, such as travel to a remote area or repeated reconnection of the same service for the same customer, the full cost of reconnection will be charged to the customer (see Corporate Policy G1-4, Ref. 144 regarding approval)

21. Collection Action
21.1 - General

Outstanding accounts will be subject to collection action in accordance with CPA2105, V Appendix 'A' Collection Procedures.

21.2 - Late Payment Charge

The Corporation may charge a late payment charge on an outstanding balance equal to or greater than $21 on a customer's account.

The late payment charge is calculated and compounded monthly on the outstanding balance at a rate of 1.25% per month (nominal rate of 15% per annum). This equates to an effective rate of 16.08% per annum.

21.3 - NSF Cheque Fee

The Corporation will charge a fee of $20 on cheques returned by the bank for non-sufficient funds.

21.4 - Disconnection of Service

If a customer's account becomes delinquent, the Corporation may at its option, disconnect the service in accordance with the Manitoba Hydro Act. Disconnection procedures will normally be applied to accounts exceeding $100 and will usually commence the due date of the third unpaid bill for residential accounts.

Electrically heated home or **standard heated home** with **no natural gas service.** A weather Dependent Disconnect, Corporation-Imposed Moratorium will establish when disconnection can occur (see Corporate Policy G1-4, Ref. 144 regarding approval).

Natural gas and combined gas/electric serviced homes will be disconnected as follow:
As per Public Utilities Board Order 14/08, disconnection can only occur from May 15 to September 30. Disconnection will not occur for an occupied residential premise from October 1 to May 14. A "Load Limiter" may be installed at any time except where there is no access or for safety or technical reasons. However, by September 30, where natural gas is the heat source, gas and combined gas/electric services disconnected for non-payment will be reconnected and the electric service shall be load limited.

Prior to starting disconnection procedures, the Corporation may review the following:

a) alternate payment arrangements;

b) conditions for deferring disconnection; or

c) installation of load restricting device.

21.5 - Alternate Payment Arrangements

Prior to disconnecting a delinquent account, the Corporation will consider alternate payment arrangements as follows (see Corporate Policy G1-4, Ref. 144 regarding approval):

a) if there are conditions for deferring disconnection (see CPA2105,V Collection Action; Conditions for Deferring Disconnection for details), the following alternate payment arrangements should be considered:

i) payment of current bill plus arrangements equivalent to the amount required to pay arrears over 4 equal bi-weekly installments; or

ii) in special circumstances a reasonable initial payment with arrangements for the orderly repayment of arrears plus full payment of current bills (not normally exceeding 5 months).

b) Customers who fail to keep their previously agreed upon payment arrangements should be contacted for the missed payment. In the case of repeat offenders who fail to keep their arrangements, disconnect action may be implemented even though the account is less than 90 days in arrears;

c) if there are no extenuating circumstances, advise customer to pursue other financial arrangements immediately and suspend further action for a reasonable time, (not normally exceeding 5 business days) if customer agrees to do so.

Note: Advise Credit & Collections Section of Residential customers in bankruptcy.

21.6 - Conditions for Deferring Disconnection

Conditions for deferring disconnection include, but are NOT necessarily limited to, the following situations:

a) young children, senior citizens or mentally or physically disabled persons occupying residence;

b) occupant uses life supporting apparatus, (rocking bed, iron lung resuscitator, kidney dialysis machine etc.);

c) outside temperature is near or below freezing and there is no other source of heating;

d) a reasonable billing dispute between the customer and the Corporation exists;

e) the Rentalsman's office is involved;

f) temporary unemployment, temporary financial distress, or other extenuating circumstances.

21.7 - Load-Restriction Device

A load-restriction device may be installed to minimize capacity or regulate time of operation for a delinquent account customer. The customer must be advised on its purpose and operation. The load-restriction device may be removed as follows:

a) upon payment of account, to restore full service capacity; or

b) upon failure of customer to make suitable payment arrangement, to fully disconnect the service.

Type of restriction devices are as follows:

i) **Load Limiter Device**

Load limiter device may be installed to limit the capacity of electrical service to 15 amps; the customer must be advised on its purpose and how it can be reset. Installation can take place on the following service accounts:

Standard heated home, where the primary heating source is NOT electricity a load limiter device may be installed at any time except where there is no access to the meter or for safety and technical reasons.

As per Public Utilities Board Order No 14/08, homes serviced with natural gas with an electrical service disconnected for non-payment, will be reconnected by September 30 with a load limiter device.

NOTE: If heating is affected, only upon approval (see Corporate Policy G1-4, Ref. 144 regarding approval) will disconnection of a service occur.

ii) **Timed Disconnect Device**

Timed disconnect device may be installed to cycle electrical service 30 minutes of full service every hour. The customer must be advised on its purpose and operation. See Customer Service Operations website for Timed Disconnect Device regarding the installation. Installation can take place on the following service accounts:

- **Electrically heated home** - where the primary heating source is electricity with NO natural gas service

- **Standard heated home** - where the primary heating source is NOT electricity with NO natural gas service

A timed disconnect device is **not** to be installed on a home with natural gas service.

NOTE: If heating is affected, only upon approval (see Corporate Policy G1-4, Ref. 144 regarding approval) will disconnection of a service occur.

21.8 - Disconnection Procedures

If the decision is made to disconnect a service for non-payment the following factors must be considered:

a) ensure notice has been given to the customer by one of the following methods:

- by telephone;
- by mail; or
- in person

b) ensure that the customer has been allowed time to prepare against loss of perishable food and damage to water pipes which would result from service disconnection in the winter;

c) whenever possible, arrange disconnection of the service;

i) in the customer's presence;

ii) normally from Monday to Thursday; and

iii) before noon.

NOTE: If heating is affected, only upon approval (see Corporate Policy G1-4, Ref. 144 regarding approval) will disconnection of a service occur.

M A N I T O B A	**)**	**Order No. 14/08**
	)	
THE PUBLIC UTILITIES BOARD ACT	**)**	**February 29, 2008**

BEFORE: Graham F. J. Lane, CA, Chairman
Len Evans, LLD, Member
Monica Girouard, CGA, Member

CENTRA GAS MANITOBA INC. – AN ORDER APPROVING GAS AND COMBINED GAS/ELECTRIC SERVICES DISCONNECTION AND RECONNECTION POLICY AND PROCEDURES

The Public Utilities Board (Board) in Order No. 13/04 dated February 13, 2004, approved the conditions precedent and procedures of Centra Gas Manitoba Inc. (Centra) known as Service Disconnection and Reconnection Policy and Procedures for the discontinuance of service as set out in Section 104.1(6) of *The Public Utilities Board Act*.

In Order No. 131/04 dated October 28, 2004, the Board allowed *inter alia* Manitoba Hydro to provide a single bill to customers reflecting the combined cost of receiving gas and electric services.

The current Service Disconnection and Reconnection Policy and Procedures as approved is designed to meet the conditions applicable to gas customers who receive their gas bills separate from their electric bills. The introduction of a single bill from Manitoba Hydro reflecting both gas and electricity charges prompted a review of these Procedures and Policies.

The Disconnection and Reconnection Policy and Procedures approved in this Order now includes all customers who have both gas and electric service and applies to arrears in both the gas and electric accounts as reflected in a single bill. This Order allows for the installation of an electrical load limiter at any time of the year where the customer’s bill is in arrears. Centra is also required to reconnect the gas service by October 1 of each year thereby eliminating the potential risk of harm to a customer because of a lack of heat. Customers will have the

right to appeal to the Board the disconnection and reconnection of service including the installation of the load limiter.

Centra is obligated to conduct an assessment of a customer's ability to reset the electrical load limiter as well as other risks to the customer. A risk assessment is also required for all disconnected customers. In the circumstance where a customer poses a threat to the safety or well-being of Centra's employees or agents, Centra will need to take all the necessary precautions for the protection of its staff and agents when visiting the premises for the purpose of reconnection.

IT IS THEREFORE ORDERED THAT:

1. The Service Disconnection and Reconnection Policy and Procedures attached as Appendix "A" and effective February 29, 2008 BE AND IS HEREBY APPROVED.

THE PUBLIC UTILITIES BOARD

"GRAHAM F. J. LANE, CA"
Chairman

"H. M. SINGH"
Acting Secretary

Certified a true copy of
Order No. 14/08 issued by The
Public Utilities Board

Acting Secretary

Manitoba Hydro/Centra Gas
Gas and Combined Gas/Electric Services Disconnection and Reconnection Policy and Procedures

(This document replaces Board Order No. 13/04 pursuant to Sec. 104 of *The Public Utilities Board Act*.)

POLICY AND PROCEDURES

1.0 PURPOSE:

The purpose of this document is to outline and define the disconnection and reconnection policies and procedures for customers with gas or combined gas/electric services.

Disconnection, in accordance with the steps outlined in the following policy and procedures, will occur if a customer is in arrears and full payment or payment arrangements suitable to the Company have not been made.

Reconnection, in accordance with the following policy and procedures, will occur as soon as it is reasonably possible after the account returns to good standing.

2.0 Scope:

The policy and procedures apply to customers with gas or combined gas/electric services. Procedures are detailed to reflect the variety of situations that may occur for each of the following customer segments as a result of the introduction of the consolidated billing statement. The policy and procedures that follow do not apply to customers with electric only service.

Customer segments include:

2.1 Residential owners and tenants responsible for gas and combined gas/electric services

2.2 Residential landlords responsible for providing tenant gas and combined gas/electric services covered under *The Residential Tenancies Act* (C.C.S.M. c R119)

2.3 Mixed Use Residential/Non-residential
For purposes of this Policy and Procedures, "mixed use residential/non-residential premises" is defined as all premises in which there is a mix of residential and non-residential uses, where the person occupying the premises is billed for provision of the gas or combined gas/electric services.

2.4 Commercial Customers
Commercial customers will receive notice prior to disconnection and actual disconnections will occur throughout the year. In exceptional circumstances these procedures may be varied by the Company for Commercial premises where, in its opinion, the Company is at substantial risk regarding the collection of outstanding arrears.

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3.0 POLICY:

3.1 The consolidated billing statement may include any individual product or service (gas, electric, loans or other charges) on separate billing statements or any combination of products and services on a single billing statement submitted to the customer by Centra Gas and/or Manitoba Hydro or by Manitoba Hydro on behalf of Centra Gas.

3.2 The Company will normally confine collection activity to the person(s) identified on the account who requested the service(s) with an implied agreement to pay or the person or agency who has agreed to pay for the service(s), with the following exception: where a reasonable person would expect that a customer not named on the bill is implicitly responsible for the service(s), i.e. husband or wife (legal or common-law), that person will also be presumed to have liability for the outstanding balance.

3.3 The Manitoba Hydro/Centra Gas, Gas and Combined Gas/Electric Services Disconnection and Reconnection Policy and Procedures are subject to the Public Utilities Board's (Board) review, approval and supervision. The Company agrees that the Board act as a review body with respect to combined gas/electric service(s) disconnection or reconnection policy and procedures. The Board may, on its own initiative, or at the request of a customer, review the Company's actions and make recommendations with respect to same.

3.4 Every effort will be made by the Company to resolve outstanding accounts, disconnection and reconnection issues directly with its customers. If a solution cannot be reached on a gas or combined gas/electric service(s) disconnection or reconnection, the customer may apply to the Board for dispute resolution.

3.5 Customers may direct payment application to any individual product or service on their consolidated billing statement; however, failure to bring the account to good standing will result in applicable disconnection procedures for gas and/or electric services from May 15 to September 30, or electric limited service at any time during the year.

3.6 Disconnection for non-payment can only occur from May 15 to September 30 on gas and combined gas/electric services in arrears. Disconnection will not occur on gas or combined gas/electric services for occupied residential premises from October 1 to May 14. A "Load Limiter" may be installed at any time except where there is no access or for safety or technical reasons.

3.7 By September 30, where gas is the heat source, gas and combined gas/electric services disconnected for non-payment will be reconnected and the electric service shall be load limited except as provided for in clauses 3.6 and 3.13.

3.8 Load limiters may be maintained until the account returns to good standing. If the customer's consolidated billing statement remains in arrears after May 14 the load limiter may be removed and the gas and/or electric service(s) will be subject to disconnection.

Manitoba Hydro/Centra Gas
Gas and Combined Gas/Electric Services Disconnection and Reconnection Policy and Procedures

3.9 Up to September 30, gas disconnection will occur Mondays to Thursdays and is permissible on Fridays on condition that the Company provides the identical level of customer service between the hours of 9 a.m. and 2 p.m. on the Saturday following any Friday on which disconnection was completed. Customer service shall include responding to telephone inquiries, bill payment services, an opportunity to make payment arrangements and reconnection services.

3.10 If a customer has one billing statement for one or more products or services, arrears will be based on the outstanding account balance regardless of which product or service is in arrears. The gas or combined gas/electric services will be subject to the applicable disconnection procedures.

3.11 If a customer has separate billing statements for a single premise, and one billing statement is in arrears, all services will be subject to applicable disconnection procedures regardless of which billing statement is in arrears.

3.12 If a landlord is responsible for the provision of gas or combined gas/electric services to tenant occupied premises, arrears will be based on the outstanding account balance and will be subject to Residential Tenancy Branch (RTB) procedures at the tenant occupied premises. Landlords failing to bring their outstanding account balance to good standing will be subject to disconnection of services at their personal residence and any vacant premises under the same name.

3.13 At confirmed vacant premises, gas and combined gas/electric services may be disconnected during the heating season. The Company will keep records of all notification efforts and rationale for conclusion that the premises are vacant.

3.14 At suspected vacant premises, where gas or combined gas/electric services have been disconnected for non-payment, the Company will attempt to contact owners or landlords and keep records of all notification efforts. Such premises will be considered occupied until vacancy is confirmed.

3.15 This policy does not affect the Company's right to disconnect in times of emergency and/or for reasons of safety.

3.16 The Company will attempt to notify disconnected gas and combined gas/electric customers in writing or by phone, to advise if full payment or payment arrangements suitable to the Company are not made, electrical service may be load limited by the start of the next heating season.

3.17 Where the customer or any of the permanent residents of the premises appear to be physically incapable of resetting the load limiter or where the Company does not reasonably believe that the customer or any of the other permanent residents notified fully understands the consequences of load limited or disconnected service, the Company will fully reconnect service(s) and contact the appropriate social agency.

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3.18 The Company will keep current data of all disconnected gas, combined gas/electric and load limited residential customers in accordance with the following procedures.

3.19 The Company may seek Board exemption from full disconnection procedures when faced with customers who consistently and deliberately show patterns of payment avoidance and who clearly understand the consequences of their actions.

4.0 PROCEDURES

4.1 DISCONNECTION PROCEDURE

Steps 1, 2 and 3 must be followed on gas and combined gas/electric services in arrears after which gas and electric disconnection may occur from May 15 to September 30. A load limiter may be installed at any time of the year where the account is in arrears and notice has been provided.

Step 1
Customers shall receive a billing statement each month (first in sequence) for products and services from the previous billing period. The due date which appears on the bill shall be no less than 14 days after the billing date.

Step 2
If payment is not received prior to the next month's bill preparation (second in sequence), a message similar to the following and developed in collaboration with staff of the Board and Manitoba Hydro shall appear on the billing statement:

> **"Our records indicate your account is past due. Please give this your prompt attention. If payment or payment arrangements have been made, kindly disregard this notice.**
>
> [The following is applicable to residential premises including the mixed use residential/non-residential segment.]
>
> **"Information on service disconnection, limited electric service, payment arrangements and financial assistance is enclosed."**

The Company shall inform the customers about those social service agencies which may be in a position to offer assistance.

Step 3
If payment is not received prior to the preparation of the next month's bill (third in sequence), a message similar to the following and developed in collaboration with staff of the Board and Manitoba Hydro shall appear on the billing statement. Reconnection fees will be charged as approved by the Board from time to time:

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IMPORTANT PAST DUE NOTICE
Your **account** is past due. If suitable payment arrangements or full payment of the arrears are not made on or before (enter Date {14 calendar days from date of issue}) your account will be subject to collection action which may include limited electric service or full disconnection of service(s). Please call the phone number on the front of your billing statement or pay in person at a Manitoba Hydro Office. If payment of the arrears has already been made, please notify Manitoba Hydro immediately. If payment arrangements have already been made kindly disregard this notice.
If your energy service(s) are limited or disconnected, full payment of the arrears balance plus a reconnect fee for each service will be required before service(s) are fully restored. A security deposit may also be required.
Customers may appeal the Company's action by contacting the Public Utilities Board.
Manitoba Hydro is not responsible for any damages or losses that may occur as a result of energy services which are limited or disconnected for non-payment. Please ensure you protect people, animals and property that may be impacted.
Reconnect Fees will range from $XX to $XX plus GST.

4.2 Following completion of Steps 1, 2 and 3, disconnection may occur on gas and combined gas/electric services in arrears between May 15 and September 30. A load limiter may be installed once the Company has made contact with the customer to explain the load limiter and how to reset it. Contact may include in person or by telephone.

4.3 The following are exceptions to the above notice requirements before disconnection:

(a) Where the customer's account was past due and where a payment arrangement was made and subsequently broken, the Company may load limit or disconnect the customer's service with 7 calendar days notice.

(b) Where the customer's account was past due for products and services billed at a previous premise, the Company may, with 10 days notice, load limit or disconnect the customer's service at the new premise if the customer fails to make a payment arrangement.

4.4 A message similar to the following and developed in collaboration with staff of the Board and Manitoba Hydro shall appear on the billing statement where services have been load limited or fully disconnected:

Your account remains outstanding despite previous requests for payment. Failure to pay the outstanding account balance can jeopardize your credit rating and subject your account to legal action. If your electric service is currently load limited, your service(s) will be subject to full disconnection on or after May 15. Please call the phone number on the front of your billing statement or pay in person at a Manitoba Hydro Office. If payment of the arrears has already been made, please notify Manitoba Hydro immediately. If payment arrangements have already been made kindly disregard this notice.

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4.5 The load limiter will be removed when the account returns to good standing. If full payment of the arrears or payment arrangements, suitable to the Company, are not made the load limiter may be removed after May 14 and the gas and/or electric service(s) will be subject to disconnection.

4.6 Where the Company discovers unauthorized use of a disconnected or load limited service, the Company may re-establish the load limiter or disconnect the service and install an anti-tampering device, within the terms of this policy and procedures. If the disconnection between October 1 and May 14, the Company will contact the customer prior to full disconnection.

4.7 RECONNECTION PROCEDURE

No reconnection of service(s) shall occur unless full payment of the arrears or payment arrangements are made suitable to the Company including a reconnection fee. Reconnection terms may also include the payment of a security deposit.

For accounts that remain outstanding, where gas is the heat source, gas and electric services which had been disconnected for non-payment will be reconnected by September 30 and the electric service will be restricted with a load limiter.

A reconnection fee will be charged when service(s) are fully reconnected.

Gas and combined gas/electric service(s) will remain disconnected and a load limiter will not be installed under the following conditions:

(a) Where the Company has attempted reconnection and is not allowed or unable to gain access to the premises; or

(b) Where the property has been deemed vacant; or

(c) For safety reasons including threats to the safety or well-being of the Company, its employees or agents; or

(d) For technical reasons; e.g. A-base meters and the housing of certain meters are not compatible with load limiters.

4.8 The Company will attempt to notify all disconnected gas and combined gas/electric customers in writing or by phone, to advise if full payment or payment arrangements suitable to the Company are not made, electrical service may be load limited by the start of the next heating season.

Where contact occurs the Company must:

(a) advise that electric service will be limited over the heating season to 15 amps and the consequences of the limited service, and

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(b) advise that there is no requirement to maintain limited service at the end of the heating season and both gas and electric service may be fully disconnected, and

(c) attempt to determine the customer's ability to understand the consequences with respect to load limited service, and

(d) make a note on the Company record when the Company's representative believes that the customer has understood the consequences, and

(e) If a load limiter is installed, the Company will provide the customer with a bilingual card explaining the maximum capacity of the load limited service and how to reset the load limiter if the maximum capacity is exceeded. Information provided to the customer will include a contact phone number.

REPORTING REQUIREMENTS

4.9 LOAD LIMITED SERVICE

The Company shall maintain a record of load limited services which will be made available to the Board upon request.

4.10 DISCONNECTED COMBINED GAS/ELECTRIC SERVICE

The Company shall correspond with the Board on or about September 15th and 30th, October 15th and 30th, November 30th and December 31st. The correspondence shall be in the form of a report entitled "Disconnected Residential Service Report" and will include all residential customers who remain disconnected, indicating:

(a) Customer Name
(b) Customer Number
(c) Premise Number
(d) Address
(e) Employer Name
(f) Total number of occupants on the premises, including persons under the age of 18, and persons who are disabled or elderly
(g) Home and Work Phone Numbers
(h) Current Account Balance
(i) Referral to Social Service Agency
(j) Referral to Child and Family Services
(k) Owner/Tenant Code
(l) Consequences Explained and Understood
(m) Financial Difficulty
(n) Disconnection Date Gas
(o) Disconnection Date Electric

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(p) Reconnection Date Gas
(q) Reconnection Date Electric
(r) Pending Reconnection Date Gas
(s) Pending Reconnection Date Electric
(t) Pending Load Limited Date
(u) Vacant Date
(v) Intentional Avoidance Date
(w) Unavailable Date
(x) Alternate Heating and Type
(y) Safety Reasons
(z) Technical Reasons

4.11 Additionally, the Company shall record the following information which the Board may request at any time:

(a) payment arrangement details;

(b) efforts made by the Company to contact the customer (bill messages, letters, telephone calls, personal visits) and the results of such efforts;

(c) any evidence of customer either contacting, or being encouraged to contact an appropriate social agency;

(d) if known, details of any follow-up action being undertaken by a social agency;

(e) information indicating the presence of children, the elderly and the disabled;

(f) results of title search where done.

Where there are children 12 and under, the matter will be referred in writing to Child and Family Services by September 15 or as soon as the facts are known.

4.12 The Company shall correspond with the Board on a weekly basis from May 15 to December 31, by providing statistical data for disconnected gas and combined gas/electric services. The correspondence shall include:

(a) Total Disconnected To Date
(b) Total Reconnected To Date
(c) Current Week Disconnects
(d) Current Week Reconnects
(e) Remaining Disconnected
(f) Pending Reconnections
(g) Vacant
(h) Intentional Avoidance
(i) Remaining Disconnected
(j) Face-to-Face Completed

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4.13	Meetings can be held as needed with the Board and the Company's Credit and Recovery Services Manager or delegate. The purpose of these meetings would be to review specific accounts to ensure that customers' concerns (e.g. health, safety and financial interests) have been considered. The Board may conduct audits on these customers as they deem appropriate.
4.14	**The above Policies and Procedures come into effect on February 29, 2008.**

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a copy of all written documents, of any nature, including tariffs, staff training manuals and staff "procedures" manuals, that describe and explain the policies and procedures for when it is appropriate and/or inappropriate to negotiate deferred payment plans.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

The following is an excerpt from the Credit & Recovery Services training document that describes the policies and procedures for when it is appropriate and/or inappropriate to negotiate deferred payment plans. Please also see the response to GAC/MH I-50.

Payment Arrangement Guidelines

Establishing payment arrangements:

- **Always start with making payment arrangements on the full amount owing.** This will include all charges for natural gas, electric, loans and/or other charges.

- If the customer is unable to pay the full amount, use your discretion in making the payment arrangement. The objective is to get them out of arrears and/or to prevent them from getting further behind. You should consider working around the customer's paydays, child tax benefit, pension, etc.
- Consider how long the customer has resided at the property, if they're the owner or a tenant, their payment history, if they've submitted any NSF payments, etc.
- **Balance the customer's ability to pay with resolving the outstanding account balance over a reasonable length of time.**
- If a customer advises they are unable to pay due to financial difficulty they should be informed of the various aid agencies and bill payment assistance programs in Manitoba such as Employment and Income Assistance and Neighbors Helping Neighbors.
- There are many vulnerable persons living in our community. Credit & Recovery Services has a unique opportunity to identify some of these people and ensure that the appropriate community social agency is notified when a customer is, or could become vulnerable. If you identify a customer who you believe may be vulnerable, we will assess the situation and contact the necessary external Social Agency.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a copy of all written documents, of any nature, including tariffs, staff training manuals and staff "procedures" manuals, that describe and provide a detailed description of those circumstances under which a cash security deposit is required of: (a) a new customer; and (b) an existing customer.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

A new security deposit policy was approved in 2013. This policy cannot be fully implemented until billing system changes are made to automate the process. At this time, elements of the previous policy and the new policy are followed. The main change that has been implemented is the charging of security deposits on the new accounts of customers who have declared bankruptcy.

Please see the Attachment 1 to this response for the 2004 and 2013 residential security deposit policies.

Credit Guarantee
Adopted June 2004

Manitoba Hydro requires sufficient customer information to confirm the identity of customers and to assess their credit worthiness. For credit risk customers, additional information or a credit guarantee will be required. For customers unwilling or unable to provide sufficient information or a credit guarantee, Manitoba Hydro will require a deposit.

The deposit will be refunded when the customer establishes 12 consecutive months of good payment history. Interest will be paid on the refund of the deposit at a rate equal to the Corporation's average borrowing costs.

Residential Customers (other than Credit Risk)

The following complete information is required:

- Full name(s) of all adults responsible for utility bills, and
- Two previous addresses (if less than 12 months at current address), and
- Phone number(s)
- Alternate phone number, and
- Place of employment or other source of income for all adults responsible for utility bills

Residential Credit Risk Customers

The following complete information is required:

- Full name(s) of all adults responsible for utility bills, and
- Two previous addresses (if less than 12 months at current address), and
- Phone number(s)
- Alternate phone number, and
- Place of employment or other source of income for all adults responsible for utility bills

Plus:

- Pre-authorized Payment, or
- Photo Id, or
- Credit Guarantee letter (bank), or
- Credit Worthy Third Party Co-Signer.

In the event that this information is unavailable, a Monetary Guarantee Deposit will be assessed based on the following criteria:
Rental Home - $300
Apartment (tenant pays the heat) - $100
Apartment (landlord pays the heat) - $50

Manitoba Hydro's Residential Security Deposit Policy
Approved May 2013 (not implemented yet)

Residential Customers	
Security deposit to be charged to all new residential customers and assessed when a disconnected account is reconnected.	
Deposit Waived if:	• Enrolled on Pre-Authorized Payment Plan (PAPP) and remain on PAPP and in good standing for 1 year • Good credit history established at a previous Manitoba Hydro address within the past 2 years (see below *) • Credit Reference Letter provided from another utility where good credit history was established within the past 2 years • Customer is on Employment Income Assistance Direct Billing
Deposit Reimbursed if:	• Good payment history has been established for 1 year
Deposit Amount	• $300 House • $100 Apartment (customer billed for heating) • $50 Apartment (customer not billed for heating)
Deposit Interest	• Interest on the security deposit is calculated every month and applied to the account yearly on December 31, when the account is finalized or when the deposit is credited to the account.

The Corporation reserves the right to request or waive a deposit under special circumstances.

* Good credit history is defined as not having:

- Any two of the following having occurred at another utility in the last 2 years:
  - Disconnected for non-payment
  - Non-sufficient Funds
  - 60 day arrears
- Bad debt (paid or unpaid)
- Write off (paid or unpaid)
- Unpaid final bill
- Bankruptcy in past 7 years
- No history

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a copy of all written documents, of any nature, including tariffs, staff training manuals and staff "procedures" manuals, that describe and provide a detailed description of those circumstances under which it is appropriate and/or inappropriate to place residential customers on a levelized monthly (or budget) billing plan.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Please see Manitoba Hydro's response to GAC/MH-I-14.

Training includes educating staff on policies, procedures and instruction related to information provided in response to GAC/MH-I-14. The training is only meaningful to our staff working within Manitoba Hydro's customer information/billing system. This information would not be meaningful outside of the direct operational areas.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
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Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a copy of all written documents, of any nature, including tariffs, staff training manuals, and staff “procedures" manuals, that set forth the circumstances under which the Company will turn a residential account over to a third party collection agency for collection.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Manitoba Hydro attempts to resolve final bill accounts through customer contact and payment arrangements. Unpaid final bills over $20 with no payment arrangement are sent to a collection agency.

Manitoba Hydro will turn a residential account over to a third party collection agency if the final bill remains unpaid and we’re unable to transfer the outstanding balance to an active account or contact the customer. The final bill message advises the customer to pay their arrears or contact Manitoba Hydro by the due date of the bill or their account will be subject to further collection action. An autodial call is also made to the customer if there is an active home or cell phone number on their account. An attempt is also made to manually call other phone numbers on the account.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a copy of all reports, evaluations, memos, analyses or other written documents of any nature containing an articulation of performance indicators on which empirical data has been collected with respect to:

a) Debt prevention;

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Please refer to Manitoba Hydro's response to GAC/MH-I-17b and GAC/MH-I-21.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a copy of all reports, evaluations, memos, analyses or other written documents of any nature containing an articulation of performance indicators on which empirical data has been collected with respect to:

b) Debt management;

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Please see the attachment to this response for the 2013/14 Report on Uncollectible Accounts Receivable.

Please also refer to Manitoba Hydro's response to GAC/MH-I-21m.

2013/14
UNCOLLECTIBLE ACCOUNTS RECEIVABLE WRITE-OFF (ELECTRIC)

Accounts are deemed to be uncollectible after all attempts to collect have been exhausted. Details of the approved write-off are provided in the following table.

	2013/14	2012/13	2011/12
Write-Off	$2 609 011	$2 579 093	$3 054 226
Write-Off, after recoveries, as a % of previous year's General Consumers Revenue	0.155%	0.187%	0.223%
Number of Accounts Written Off	7 962	9 853	9 597

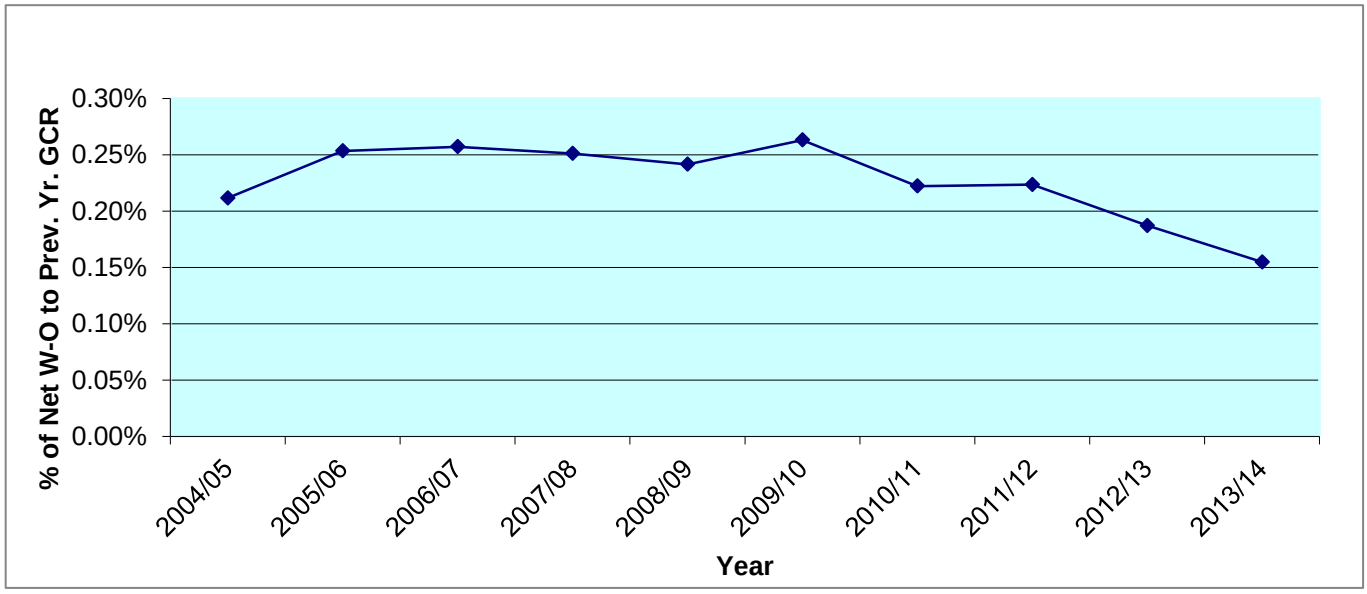
The approved write-off for 2013/14 of $2 609 011 represents an increase of $29 918 or 1.2% from 2012/13. The net write-off percentage of 0.155% of general consumers revenue is lower than the past five years' average experience for electricity accounts. The number of accounts written off this year has decreased by 1 891 (19.2%), while the average account value has increased by $66 (25.2%). Significant write-offs in the current year include a large bankruptcy in the agricultural sector (hog barn) totalling $160 000, net of Power Smart rebates. Collection agency recoveries in 2013/14 were $186 000 higher than the prior year.

The 7 962 accounts recommended for write-off are not receiving electrical service. These accounts have been outstanding for over 12 months and, where appropriate, have been assigned to an external collection agency. Collection activity will be reactivated if application for service is received.

BAD DEBT WRITE-OFF 2013/14
HISTORICAL WRITE-OFFS AND RECOVERIES

$(000's)

Fiscal Year	General Consumers Revenue (GCR)	Gross Write-Off	% of Gross Write-Off to Prev. Yr. GCR	Recovery of Prev. Yrs' Write-Off	Net Write-Off	% of Net Write-Off to Prev. Yr. GCR
2004/05	$ 938 954	$2 431	0.265 %	$489	$1 942	0.211 %
2005/06	983 654	2 778	0.296 %	399	2 379	0.253 %
2006/07	1 023 613	3 169	0.322 %	640	2 529	0.257 %
2007/08	1 074 581	3 319	0.324 %	749	2 570	0.251 %
2008/09	1 126 812	3 382	0.315 %	787	2 595	0.242 %
2009/10	1 144 891	3 412	0.303 %	448	2 964	0.263 %
2010/11	1 200 381	3 003	0.262 %	459	2 544	0.222 %
2011/12	1 192 797	3 054	0.254 %	372	2 682	0.223 %
2012/13	1 341 011	2 579	0.216 %	349	2 230	0.187 %
2013/14	1 405 301	2 609	0.195 %	535	2 074	0.155 %



BAD DEBT WRITE-OFF 2013/14
REASONS FOR WRITE-OFF

Reason	Number of Accounts			Gross Write-off		
	2013/14	2012/13	% Increase (Decrease) Prev. year	2013/14	2012/13	% Increase (Decrease) Prev. year
Unable to Collect	7 511	9 493	(20.9%)	$2 224 581	$2 150 720	3.4%
Bankruptcies	451	360	25.3%	384 430	428 373	(10.3%)
Total	7 962	9 853	(19.2%)	$2 609 011	$2 579 093	1.2%

NUMBER OF PERSONAL AND BUSINESS BANKRUPTCIES IN MANITOBA

Year Ending March 31	Personal	% Increase (Decrease)	Business	% Increase (Decrease)
2007	2 116	-	159	-
2008	2 002	(5.4%)	95	(40.3%)
2009	2 142	7.0%	79	(16.8%)
2010	2 355	9.9%	79	0.0%
2011	1 907	(19.0%)	57	(27.8%)
2012	1 413	(25.9%)	57	0.0%
2013	1 230	(13.0%)	39	(31.6%)

Source: Industry Canada

BAD DEBT WRITE-OFF 2013/14
BY CLASS OF SERVICE

Class of Service	Number of Accounts			Gross Write-Off		
	2013/14	2012/13	% Increase (Decrease) Prev. Year	2013/14	2012/13	% Increase (Decrease) Prev. Year
Residential	7 299	9 431	(22.6%)	$1 898 482	$2 298 541	(17.4%)
General Service	663	422	57.2%	710 529	280 552	153.3%
Total	7 962	9 853	(19.2%)	$2 609 011	$2 579 093	1.2%

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
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PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a copy of all reports, evaluations, memos, analyses or other written documents of any nature containing an articulation of performance indicators on which empirical data has been collected with respect to:

c) The treatment of vulnerable residential customers;

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Subject to any documentation which may have been previously reviewed in prior regulatory hearing pertaining to this matter, Manitoba Hydro does not have any reports, evaluations, memos, analyses or other written documents of any nature containing an articulation of performance indicators on which empirical data has been collected.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
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PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a copy of all reports, evaluations, memos, analyses or other written documents of any nature containing an articulation of performance indicators on which empirical data has been collected with respect to:

d) Customer satisfaction.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Manitoba Hydro monitors residential customer satisfaction with all aspects of its service through its Customer Satisfaction Tracking Study (CSTS). Please see Manitoba Hydro's response to COALITION/MH-I-6c for the latest CSTS results.

In 2014, an Affordable Energy Program (AEP) Process Review was completed which included an assessment of program participant satisfaction and an assessment of perceptions of the AEP from both participants and non-participants. A copy of the report is included as Attachment 1.

In 2011 the Lower Income Energy Efficiency Program (former name for the AEP) Customer Survey was conducted which included questions to determine participant satisfaction. A copy of the report is included as Attachment 2.

MANITOBA HYDRO

Affordable Energy Program

Process Evaluation

5/28/2014

Contents

Executive Summary

This report presents the results of the 2013/14 Affordable Energy Program (AEP) process evaluation and was produced by the internal DSM Process Evaluator of Manitoba Hydro's Power Smart Planning, Evaluation and Research Department. The program is formerly known as the Lower Income Energy Efficiency Program (LIEEP) and was first brought to market in 2007/08. The process evaluation is based on the findings of a series of in-depth interviews and telephone surveys. In-depth interviews were conducted with AEP administrators, internal partners, and external trade allies and covered a variety of program topics including goals and objectives, theory, structure, design, delivery, individual and departmental roles, and marketing. Two telephone surveys were conducted, one from a sample of 801 past participants who participated from April to December 2012 of which the response rate was 289 (36%). The other survey was with a random sample of 86 non-participants, as part of Manitoba Hydro's Customer Satisfaction Tracking Study.

Findings and Recommendations

The AEP relies on its internal staff, two delivery agents, and several frontline departments to implement the program and engage prospective participants. The marketing function is deployed internally based on the collaboration of program administrators with the internal Business Communications (Communications) department. Internal staff are responsible for verifying the eligibility of program applicants and arranging In-Home Energy Evaluations for eligible customers. AEP has employed an Energy Evaluation firm that subcontracts Energy Advisors (Advisors) who are certified to perform on-site energy audits. The Advisors recommend if the home is eligible for the program's energy conservation upgrades and complete the In-Home Energy Evaluations. The AEP has also employed two Neighbourhood Outreach Coordinators (Neighbourhood Coordinators) who perform door-to-door canvassing in lower income neighborhoods. According to the AEP's internal administrators and the Neighbourhood Coordinators that were interviewed, the program delivery process generally runs smoothly. The large majority of respondents to the participant survey (86%) were satisfied with the program overall. More than one half of the participants surveyed (54%) reported that, since participating in the program, they have noticed that their energy bills have either decreased a little or a lot. Eight out of ten respondents (84%) reported noticing a behavioral change in their energy use since completing the installations through the program. Three out of five respondents (60%) reported behavioral changes such as turning off appliances when not in use, closing doors and windows, and setting the heating thermostat lower (54%). This process evaluation identified opportunities to improve program design, marketing, and communications. The major survey findings and recommendations are provided below.

Program Manual Review

Finding	Recommendation
AEP-F1 The program does not have a comprehensive document that describes the objectives/goals, purpose, and overall process of how the program operates. It was reported that clear goal definition and clarity on the achievement of those goals is needed.	**AEP-R1** Create a program manual to track the progress, modifications and improvements of the program. Program goals should also be detailed within, including energy savings goals and completed home targets, to better direct strategic initiatives.

AEP-F2 With the recent implementation of the program database (prior to this, spreadsheets were used to track program activity), inputs from the application forms and energy evaluations are inputted inconsistently (i.e. missing or incorrect information).	**AEP-R2** Ensure that building square footage, year of build, number of stories and number of people in the home are inputted in to the database as provided on the application form, verify the data, and update the information as data is submitted by the Advisors. In cases where the building information is not provided in the application average home square footage per engineering estimates have been used. Follow-up calls should be made and/or the Advisor should inquire about this missing information at the initial inspection. These inputs are necessary for program evaluation.

Program Delivery Structure and Design

Finding	Recommendation
AEP-F3 Frontline staff, including Credit & Recovery (CR), District Office (DO), and Customer Service Power Smart (PS) representatives are not clear on when AEP should be suggested to a customer.	**AEP - R3** Provide step-by-step instructions for what to ask customers when they mention key "indicator" words or phrases.
AEP- F4 36% of respondents claimed that additional measures were provided through the program and installed in their homes opposed to what was documented.	**AEP-R4** On a yearly basis, based off the post-inspection reports, indicate any removal trends for specific measures that will need to be addressed by the AEP. Once LCNC measure installation has been documented during post-inspection, this should be forwarded to an AEP administrator for entry into the database. Consider requiring the Advisor to walk participants around the home after the installation of LCNC items to confirm the measures are in place.
AEP - F5 Slow completion of projects by Social Enterprise Contractors (SEC) due to high turnover within the organizations resulting in loss of skills and knowledge.	**AEP-R5** AEP should set strict deadlines for completion of work for SEC contractors to maintain high satisfaction of the program among participants and remedying any late projects quickly and efficiently. It is suggested that AEP use alternative methods to educate applicants on all accessible contractors available to program participants in cases where completion by SEC is causing delays in completing projects.

Program Outreach and Marketing

Finding	Recommendation
AEP- F6 One out of three respondents (33%) reported that they first heard about the program through bill inserts, 31% from a recommendation of a family/friend/coworker/neighbor, 19% from the newspaper, and 12% from television.	**AEP-R6** Consider increasing targeted marketing efforts in lower income neighborhoods via unconventional channels. Even though AEP has a presence, consider placing posters in community centers, aid locations, and local food markets to engage potential participants in another manner.
AEP - F7 According to survey results, participants are primarily motivated to take part in the program by the associated monetary benefit. One out of three participants (33%) was motivated by the desire "To save money." To install a "Low cost furnace" is the next most common reason for participating, as reported by one out of four participants (26%), also relating to perceived monetary benefits. As well, one out of four participants (23%) claim that their energy bills have decreased a lot.	**AEP-R7** The AEP is already promoting the "savings for years to come" message within their program materials and advertising. The Advisors also speak to the savings a customer could realize as they install the basic measures within the participant's home. Based on AEP's research on where to focus their marketing efforts, they determined that cost savings resulting from the basic measures was not a substantial motivator. Rather, customers are motivated more effectively when the focus was placed on the free insulation and $570 high efficient furnace. However, to further educate potential participants, AEP's online materials should be linked to the heating education page, as well as the typical space heating chart. This would demonstrate the saving associated with upgrading to a high efficient furnace.
AEP-F8 Over six out of ten (64%) respondents reported that they have recommended the program to others. Of these respondents, 72% recommended the program to a friend, 39% to a family member, 16% to a co-worker/classmate, and 13% to a neighbor.	**AEP-R8** To further promote the AEP, consider developing a formal process to encourage referrals.
AEP-F9 Participants who apply through a Neighbourhood Coordinator under the community approach must undergo the same application process as those who apply through the individual approach. However, it was reported that in many cases the Neighbourhood Coordinator only supplies the	**AEP-R9** To increase the number of completed homes within Neighbourhood Coordinator designated communities, provide each participant the list of qualifying contractors during the In-Home Energy Evaluation.

participant with the SEC therefore creating immense workload for the designated SEC's resulting in slow completion of work and inefficiencies.	
AEP-F10 The William Whyte Neighbourhood Coordinator believes that recruitment in the designated area is not sufficient. Safety concerns and limitations imposed on the canvassing of neighborhoods were identified.	**AEP-R10** Evaluate the possibility of expanding the designated William Whyte Neighbourhood Coordinator region to a larger area. In addition, explore the possibility of employing another individual as needed to canvass alongside the existing Neighbourhood Coordinator for specific neighbourhoods or homes for which safety concerns exist.
AEP-F11 The Brandon Neighbourhood Coordinator believes that recruitment in the area would be greater if the eligible income threshold for the program was increased. If initial screening from canvassing identifies that the customer is not eligible for AEP, the Neighbourhood Coordinator strongly promotes the Pay As You Save (PAYS) Power Smart program.	**AEP-R11** Evaluate training provided to the Brandon Neighbourhood Coordinator. Supply a list of key questions that the Neighbourhood Coordinator should ask to ensure they are appropriately determining AEP eligibility. To avoid quick default to the PAYS program, ensure the Neighbourhood Coordinator is aware that if the applicant falls slightly above the eligible income threshold, they still may be eligible to participate.
AEP - F12 District Office representatives require additional support in order to effectively promote the AEP. Two out of the nine representatives spoken to have basic knowledge of the program, yet no program-related education or training was reported to have taken place. Promotional materials at the District Offices are outdated and do not reflect the most recent program eligibility criteria. There is a lack of program advertising within the District Offices. With the increasing cost of postage, customers will likely switch to electronic bills. However, some will continue to visit the District Offices to communicate with frontline staff in-person.	**AEP-R12** It is recommended that on a regular basis (quarterly) the program administrators follow up with Communications to inquire if additional material is needed for the District Offices. This will ensure a consistent message is being communicated through all communication mediums to prospective participants and District Office representatives. In times of program change, Communications should be supplied with new promotional material immediately and information/presentations to give to the District Offices. Each District Office should be visited at a minimum once a year by the Communications department, to explain the program in detail based on the materials provided. This would provide a refresher to frontline employees and mitigate loss of knowledge due to employee turnover. In order to increase the likelihood of customers inquiring about the AEP when visiting the District Offices, consider ideas such as the following: • Large posters hung in the windows to

	attract outside interest • Display banners hung inside the District Offices • Have District Office representatives wear "Ask me about the Affordable Energy Program!" pins
AEP - F14 Due to the AEP having a three year Marketing plan, the Communications department is unaware of the yearly goals/objectives of the program and the success achieved by the program through their help with marketing the program.	**AEP-R14** During the annual communications meeting, present the current portion of the marketing plan and clearly outline AEP's objectives and goals for the upcoming year. Prior year targets, achievements, and recommendations for program improvements should be provided by means of a simplified quarterly report.
AEP-R15 - Additional Recommendations	To ensure the process is not deviating from AEP's benchmark dates (Appendix C) consider having program administrative staff report on timelines between key program processes to monitor any delays that may be occurring or developing. Communications to supply quarterly web trends regarding the AEP website to the program administrators to monitor website activity throughout the year and the impact of marketing initiatives.

Behavior Changes and Satisfaction

Finding	Recommendation
AEP-F16 Eight out of ten respondents (84%) reported noticing behavioral changes since participating in the program. The most significant changes were as follows: turn off appliances when not in use (60%), close windows and doors (59%), set their thermostat lower (54%), turn off the lights when out of the room (51%), and use less hot water to wash clothes (45%).	**AEP-R16** Continue to educate participants on energy efficient practices, as these offer long-term energy savings. Provide educational materials at the initial stages of participation and consider following up with additional energy saving tips.
AEP - F17 Overall satisfaction with the program was high (86%). Each component of the program had high satisfaction: In-Home Energy Evaluation (87%), insulation upgrade (95%), and furnace upgrade (95%). There were 41 respondents (14%) who indicated dissatisfaction with the overall program,	**AEP-R17** Continue to monitor the satisfaction levels among past participants who have installed furnace/insulation upgrades to evaluate the perceived value of the program. It is recommended that random surveys be administered at minimum once every three years

scoring a satisfaction level of 1-to-6 out of 10. One out of four indicated that there were insulation upgrade issues, one out of five indicated they "expected more" from the program, and one out of ten stated furnace upgrade issues. Three respondents felt irritated that the cost of the furnace decreased from the year they had participated in the program.	to monitor program effectiveness. Two surveys of participants should be undertaken; once immediately after the In-Home Energy Evaluation and again after the work has been completed, following full heating seasons. The first survey should be triggered via the program database once the LCNC measures have been installed, to gain feedback on how the participant heard about the program and their evaluation of the energy advisor. The second survey would verify the measures installed and examine the participant's satisfaction with the program, contractors and its impact on their energy bills and comfort.

Barriers to Participation

Finding	Recommendation
AEP-F18 The non-participant survey conducted was a component of Manitoba Hydro's Customer Satisfaction Tracking Study (CSTS), an on-going survey of Manitoba Hydro customers. This survey uncovered that a barrier to participation in the AEP is the perception that a new furnace or insulation upgrades are not needed. Moreover, many respondents believe that these are the only components of the AEP (25% response rate in January 2014 wave).	**AEP-R18** To help mitigate this barrier, consider highlighting messaging on the program's other benefits, such as the In-Home Energy Evaluation and LCNC energy saving measures to determine whether a furnace and/or insulation upgrade is needed. This will educate prospective participants on the purpose of the evaluations and how valuable they can be in assessing the need for energy efficient upgrades to realize savings in terms of dollars.

1.0 Program Description

1.1 Program Description and Background

Manitoba Hydro launched the AEP in 2007/08. The program was initially designed to offer assistance to lower income homeowners in Manitoba who are in need of energy efficient upgrades. Program administrators use an established network of Advisors who are subcontracted out by an Energy Evaluation firm to perform on-site energy audits and complete In-Home Energy Evaluations that target specific energy-saving upgrades. For 2013, the AEP had a goal of completing a total of 1,320 homes, 660 furnace upgrades, 660 insulation upgrades, and 15 boiler upgrades.

In addition to its own participant recruitment efforts, the AEP also works with the "Neighbours Helping Neighbours" Program, which is administered through the Salvation Army, an externally-funded organization designed to support people experiencing personal hardship or crisis, to reach prospective participants. Moreover, AEP introduced a Landlord/Tenant component in July 2013 which allows landlords who provide housing to lower income individuals the opportunity to increase the rented home's efficiency and provide the energy savings benefits to tenants.

The program typically targets older homes (built prior to 1999) with lower income customers. Energy efficient measures provided through the program include:

- Insulation of basement and/or crawlspaces, main walls, and attics/ceilings
- High efficiency natural gas furnaces
- High efficiency boilers

Low Cost No Cost (LCNC) measures:

- Low-flow standard showerhead/handheld showerhead
- Window sealing kit
- Weather stripping
- Compact fluorescent light bulbs (13/23 watt)
- Pipe wrap insulation
- Faucet aerators (kitchen/bath)
- Electric socket gaskets
- Safety Caps (plastic covers)
- Caulking
- Insulating spray foam

Materials, installation, and labor for qualifying insulation upgrades are free for qualifying customers, including home audits and one-on-one assistance. Natural gas furnaces are offered for $570 with a $9.50 monthly payment over 5 years (no interest charges applied). Moreover, a $3,000 incentive is offered for the installation of qualifying high efficiency boilers.

The monetary value of insulation upgrades depends on the qualifying home, with customers receiving upgrades valued at upwards of $16,000. The average insulation upgrade is $3,700. The average natural gas furnace replacement cost is approximately $3,600, with $3,030 covered by AEP and $570 from customer contributions. Manitoba Hydro's cost of offering the loan associated with the natural gas furnace replacement is approximately $60 for administration cost. To qualify, participants must meet the Low Income Cut Off (LICO) threshold set by Statistics Canada based on household income and size, plus a markup of 25% added by the AEP (referred to as LICO 125). This 25% markup allows more

customers to qualify for the program. AEP's LICO 125 income thresholds are as indicated below and updated concurrently with Statistics Canada:

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

The AEP initially targeted homeowners as participants, however in July 2013, tenants and landlords were added as qualifying participants. Rental properties with lower income tenants who meet AEP qualifications are eligible to participate provided that arrangements can be made to ensure the lower income tenants benefit from the energy savings.

1.2 Program Logic Model

The program logic model illustrates the causal links between the AEP's activities, outputs, and its short-, medium-, and long-term outcomes. The AEP logic model can be found in Appendix A.

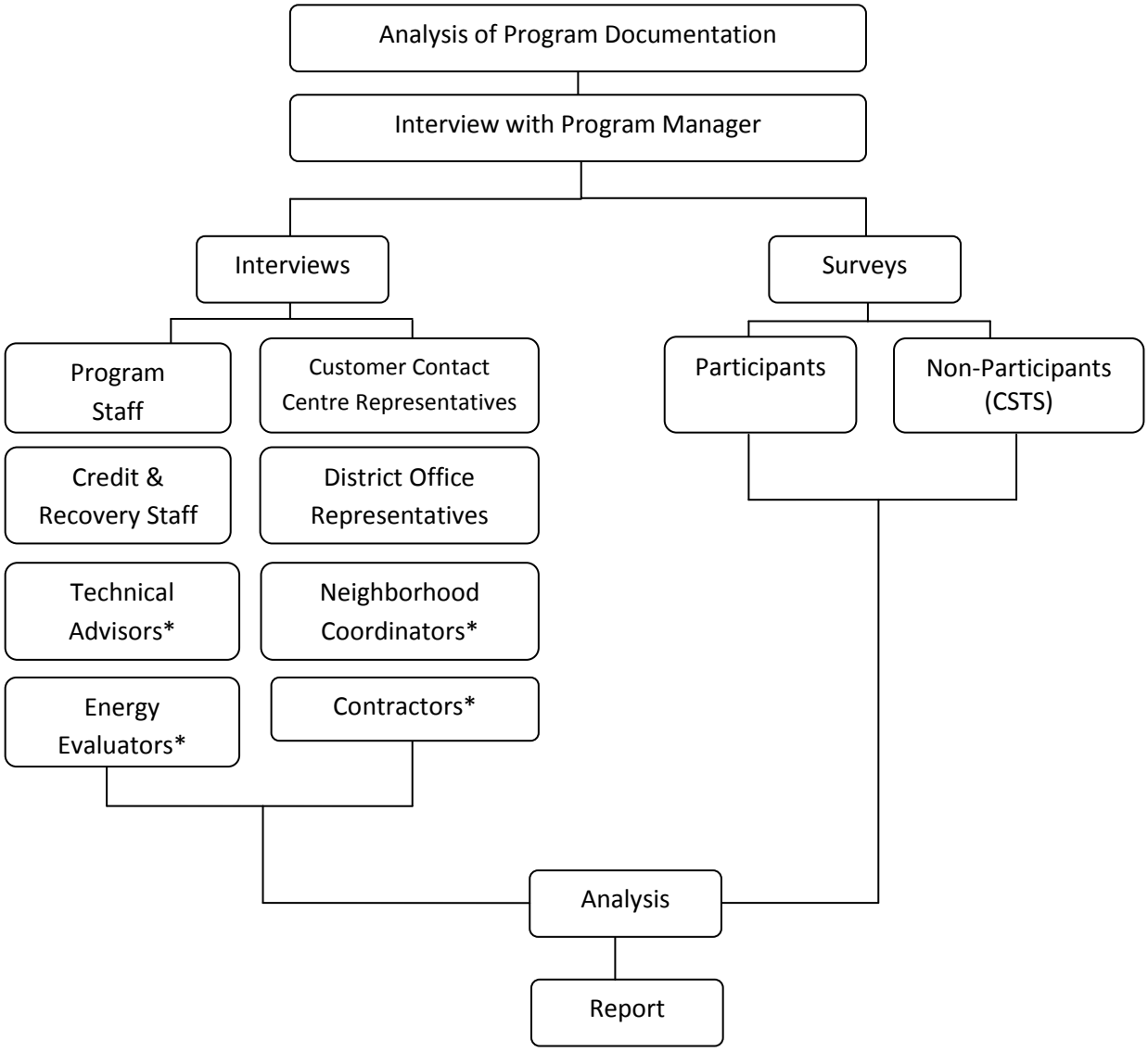
2.0 Process Evaluation Methodology

The AEP process evaluation encompassed in-depth interviews conducted with program staff and administrators, as well as surveys of existing customers, program partners, contractors, and non-participants. The program's goal is to facilitate the implementation of cost-effective energy saving technologies in residential lower income, customer-owned households and in tenanted housing through a Landlord/Tenant agreement. Similar process evaluations have been conducted in related Canadian jurisdictions[1]. The current evaluation replicates methodological components of these projects, allowing for interjurisdictional comparison.

[1] Rohit Vaidya, "Impact and Process Evaluation: Low Income Households Program 2010", NMR Group, INC Econoler, "Efficient Products - Retail Markdown Program, Impact and Process Evaluation 2011", Efficiency Nova Scotia Corporation

2.1 Methodology Model (Research Model)

The figure below illustrates the steps taken in the execution of the process evaluation and the research tools utilized therein.



*External to Manitoba Hydro; Neighbourhood Coordinators are funded by Manitoba Hydro

2.2 Methodology Description

The initial task undertaken in the process evaluation was the review and analysis of key program documentation. As well, a series of comprehensive interviews that covered a variety of AEP-related topics were conducted with a number of key internal and external parties involved in the program.

2.3 Participant Survey

A local market research firm was contracted to administer a telephone survey of past AEP participants and evaluate the program's implementation, successes, and shortcomings from the customer's perspective.

2.4 Sampling Error – Participant Survey

In early 2014, a survey of past AEP participants whose homes were completed between April and December 2012 was conducted. During this period, a total of 801 homes were completed through the program. Participants had either a furnace, insulation, both a furnace and insulation, or basic energy conservation measures installed.

The following table outlines the population, sample size, and associated sampling error at the 95% confidence level for the telephone survey of past participants from April to December 2012:

Sample Size and Sampling Error

	Population	Sample Size (n)	Sampling Error at 95% Confidence Interval
2012 Participants (April - December)	801	289	+/- 5%

A detailed description of the topics included in this survey can be found in the Process Evaluation Methodology & Approach, Participant Survey document located in Appendix B.

2.5 Non-Participant Survey

At the end of each quarter, Manitoba Hydro contracts a local market research firm to administer a telephone customer satisfaction survey of all Manitobans, called the CSTS. This survey covers questions related to customers' satisfaction with Manitoba Hydro's customer service, corporate citizenship, and corporate image.

Since July 2010, special topic questions related to the AEP have been included in the CSTS to determine awareness of the program, customers' likelihood of participating upon becoming aware of the program, and the various barriers to increasing participation in the program.

2.6 Sampling Error – Non-Participant Survey

In early January 2014, the CSTS survey with AEP special topic questions was conducted on 500 randomly selected Manitobans. Out of the 500 respondents, it was determined that 86 would qualify for the AEP. To qualify, participants must meet the LICO threshold set by Statistics Canada based on household income and size, plus a markup of 25% added by the AEP (referred to as LICO 125).

There was a skip error in the aided awareness question that was asked in the January 2014 CSTS survey, and so corrected versions of the awareness and advertising source questions were included in the March 2014 CSTS.

The following table shows the total customer population, the sample size of AEP-qualifying non-participants and the associated sampling error at the 95% confidence level for both the January and March 2014 telephone surveys of qualifying, non-participants.

Sample Size and Sampling Error

	Population	Sample Size (n)	Sampling Error at 95% Confidence Interval
January 2014 AEP-Qualifying Non-Participants	115,000	86	+/- 11%
March 2014 AEP-Qualifying Non-Participants	115,000	100	+/- 10%

A detailed description of the topics included in this survey can be found in the Process Evaluation Methodology & Approach, Nonparticipant Survey document located in Appendix C.

3.0 Program Review (Manual Content - Policy & Procedures)

The AEP keeps a number of key documents for internal use by program staff. These documents are essential tools that provide detailed information regarding program implementation and procedures. The table below lists the sources of information typically contained in a program manual and outlines which of these are contained in the AEP's key internal documents.

Program Manual Content	AEP Internal Documents
Program Description	✓
Program Justification	×
Program Objectives	×
Incentives	✓
Eligibility Criteria	✓
Program Partners and their roles	⊠ (based on application documents)
Program barriers	×
Total Savings Objectives (with details of gross savings and hypothesis for free-ridership and other effects)	✓ (planned savings figures)
Details about the savings calculations and type of products	✓ Provided in AEP's Evaluation Plan
Budget per year	✓
Cost-effectiveness test results	✓ Provided in AEP's Impact Evaluation
Marketing plan	✓
Marketing Materials (Creative & Letters)	✓
Evaluation Plan	✓ AEP's Evaluation Plan
Past Customer Surveys	✓
Logic model	✓
Program process flow chart	✓
Partner or participant process flow chart	⊠
Program Procedures	✓
Program forms	✓

✓	Information included in the program documents
⊠	Information partially included in the program documents
×	No information

3.1 Program Database

Program administrators are the primary users of the AEP database that is used for tracking and reporting purposes. The AEP database was implemented in fall 2013, replacing the Excel spreadsheets that were previously used. Converting to a database system has produced several benefits for the program including a more simplified recording process and the elimination of data entry errors. The database encompasses unique identifier application codes that are assigned to program participants, customer contact information, information regarding the status of prospective participants' applications, and various miscellaneous notes accumulated from conversations had between parties involved in the program. Energy efficient measures that have been installed in participants' homes are input into the database at each stage of the program until the application can be marked as

"completed." No issues have been reported since the implementation of the new database. Careful consideration should be made to ensure that all building information encompassed in the Advisor's initial evaluation report is input into the database. Moreover, any information updates made after the initial evaluation period should also be reflected in the database.

3.2 Program Delivery Structure and Design

The AEP is operated by staff from the Affordable Energy department. The program consists of two main components: Firstly, the In-Home Energy Evaluation conducted by a third-party contractor wherein prospective participants' homes are assessed and qualifying LCNC energy saving measures are provided. Secondly, for homes deemed eligible, the insulation and furnace/boiler upgrade is performed by participating AEP contractors. Customers are provided with the participating contractors and select their own contractor. In 2013/14, internal program administrators and staff comprised a Marketing Specialist, Marketing Assistant, seven Administrative Representatives, a First Nations Coordinator, two Neighbourhood Coordinators, a Community Representative, and a Supervisor. Support staff includes; Business Communications Department, Customer Service Representatives, Credit/Recovery Representatives, Energy Advisors, Technical Advisors and Contractors. Customers can participate in the AEP directly with Manitoba Hydro (individual approach) or through one of the community-based approaches. Wherein participation is through a Neighbourhood Coordinator, Community Organization or through the First Nations Coordinator who travels to the communities around the province. Internal program staff reviews all applications for eligibility, regardless of whether they have been received at a Manitoba Hydro office, through a Neighbourhood Coordinator, or designated Community Organizations.

There are several direct points of contact made available to prospective participants who would like to make program-related inquiries. For inquiries related to bill statements or payments, customers can phone the utility and speak with a customer service representative from the Customer Contact Centre or to address outstanding balance, the Credit Department. If a customer calls with a question or concern regarding a specific Power Smart program, they are directed to dedicated Power Smart Customer Service Representatives. For those customers who prefer to make bill payments or inquire about the utility's other services in-person, there are three District Offices within Winnipeg and 40 in rural Manitoba where frontline staff are available to assist. In addition, the program also has two dedicated Neighbourhood Coordinators who provide one-on-one assistance to prospective participants. All frontline staff will be discussed below with respect to their roles and responsibilities.

3.3 Individual Approach Rural & Urban Participants

Prospective participants are initially sent an eligibility application form and a letter summarizing all documents that must be submitted in a self-addressed postage paid envelope as part of the application. The application requires applicants' tax information and the signatures of all homeowners and inhabitants aged 18 or over. The program has a well-established process for communicating with applicants, providing applicants a direct 1-800 phone line for program-related inquiries. Moreover, a protocol is in place to follow-up with applicants whose applications are deemed incomplete. Appendix D outlines the Application Process with supporting documents.

Once the application has been received and approved, the program administrative representatives contact the customer immediately and schedule the In-Home Energy Evaluation. For rural customers, the Advisors may wait to schedule visits until there are multiple participants in the same area in order to minimize the number of trips required. The In-Home Energy Evaluation is conducted by an Advisor to recommend which energy efficiency upgrades the residence qualifies for. The program covers insulation

and furnace/boiler upgrades, both of which have eligibility constraints depending on the R-value of the existing insulation and the efficiency level of the current furnace/boiler. At the time of the In-Home Energy Evaluation, free energy saving LCNC items are installed or provided to the participant, and an energy evaluation report is completed and sent to Manitoba Hydro. Once the In-Home Energy Evaluation is complete, the Advisor provides the participant with a measure-specific information package (insulation/furnace/boiler) detailing the next steps in the process. For added convenience and assurance, furnace/boiler and insulation contractors completing the energy efficient retrofit perform the work for established rates of service. Participants are free to choose a contractor from a list of participating contractors that is provided by Manitoba Hydro. Many rural locations do not have dedicated contractors, in which case the participant must retrieve quotes from local contractors using the standardized form provided. In rural locations where dedicated contractors exist, the participant has a choice among contractors. At this time, the participant returns the information package with their contractor selection and the agreement form to Manitoba Hydro.

Selected contractors are contacted by program administrators and provided the energy evaluation report completed by the Advisor. The contractor then contacts the participant for the initial inspection of the proposed upgrades. Once the initial inspection is complete, the contractor submits diagrams, pictures, and measurements to the AEP's Technical Advisor who then compares the submission to the Advisor's report. If discrepancies exist, the Technical Advisor enters into a discussion with the contractor prior to giving approval for the proposed work to be completed. After the Technical Advisor reviews both work orders, approval is given to the contractor via e-mail signaling that the work can proceed.

Once the work has been completed and the participant is satisfied with the upgrades, the participant signs an authorization to pay form which is then submitted by the contractor to Manitoba Hydro. Approximately 20% of completed homes are flagged for a post-inspection, which is conducted by the Advisor to verify that the home has been completed according to Power Smart standards. In situations where work was not completed to Power Smart standards, the contractor is contacted to rectify the work before payment is made for the project. Assessment from the Advisor is needed once the contractor has completed the modifications.

3.4 Program Changes

During the in-depth interviews conducted with program administrators, a program design change had recently been implemented with paperwork to be finalized to include a Landlord/Tenant Agreement. This agreement allows landlords to participate in the AEP provided that the tenants meet the eligibility criteria and are the ones to benefit from the energy savings. As mentioned earlier, the program recently underwent a program name change from the Lower Income Energy Efficiency Program (LIEEP) to the AEP. The participant survey was conducted under the LIEEP name, and those participants were advised of the name change. The only additional program change was with respect to the elimination of the community-based income thresholds, which were previously lower than the urban area income thresholds. Now all applicants are assessed according to the same income eligibility criterion represented as the LICO thresholds used by Statistics Canada that are based on household income and size, with a markup of 25% applied by the AEP (referred to as LICO 125).

4.0 Program Responsibility and Communication

The program administrators are responsible for coordinating program activities and communications between all parties involved in the AEP. Program staff meet bi-weekly in order for program updates to be communicated to all members of the department on a regular basis. Program staff are aware of the

target set for the number of completed homes under the AEP, however would benefit from more information relating to how the programs goals are tied to its objectives and performance targets.

5.0 Marketing

The program administrators are responsible for supplying the Communications department with a marketing strategy and communications plan each year. Based on the projected plan and budgets which AEP supplies, decisions are made for the allocation of funds. During 2013, AEP and Communications launched a new marketing campaign that highlighted the change in the program's name. Communications in collaboration with AEP are responsible for the creative messaging behind the program's marketing and promotional materials. The communication mediums used to market the new AEP marketing campaign include newspaper advertisements, direct mail, outdoor signage, transit interior and exterior, website, brochures and 10-second television spots. Promotional pamphlets are to be distributed to customers at District Offices and website advertising occurs on an ongoing basis, both of which are managed by the Communications department. All internal program administrators report being very satisfied with the new campaign and have seen positive feedback with an observed increase in the number of telephone inquiries received to the newly implemented 1-800 phone line that directly connects prospective participants to program administrators.

The Promotions Section (Promotions) of the Communications department is responsible for the delivery and distribution of marketing materials to District Offices in the province and through various mediums that are aligned with the company's sponsorships. Findings from the in-depth interviews suggest that there is a disconnect and misunderstanding of roles between Promotions and District Office representatives. Only one out of fifteen District Office representatives are aware that they are responsible for requesting promotional materials through an online software system when stock needs to be replenished. It is recommended that Promotions assume responsibility for ensuring promotional materials are appropriately stocked at District Offices and AEP program administrators follow up on a quarterly basis to ensure regular monitoring of inventory is occurring. In the interviews, it was reported from the sample taken that, within the last two years, no training or presentations on the AEP have been provided to frontline employees. During the process evaluation , Credit received training in regards to the program. Only e-mail communications have been sent, many of which go unread. Further discussion of frontline employees is discussed in Section 6.0.

Formal protocol should be implemented to illustrate the general flow of information, lines of communication, and communication mediums that should be pursued. Currently, lines of communication appear to be based on the relationships one has formed over time with others in the organization; however, as transitional changes occur, these lines of communication may be lost if formal processes are not put in place.

There is currently a three year marketing plan in place however is not continuously updated. Moving forward it was reported that an annual plan will be created to monitor and track progress of marketing initiatives. It is suggested that all parties involved would benefit from a consistent message regarding the program's marketing plan, goals and objectives, and strategy. It is recommended that program statistics, such as calls and applications received, be communicated to the Communications department in order to give them a clear picture of AEP's progress in achieving its objectives on a quarterly basis.

In interviews with the program administrator, the most commonly mentioned barriers to participation were language barriers, skepticism of the program having hidden costs, the amount of paperwork

required, a negative connotation associated with the program name (which has been addressed with the new program name) and ineligibility according to income threshold levels.

5.1 AEP - Manitoba Hydro Website

Customers can consult AEP's website for a comprehensive source of program information including a summary of the program's components, eligible energy efficient measures, eligibility criteria, application process and forms, qualifying rebates and contact information.

Traffic to the AEP website increased during October 2013 with 3,146 visits up from 877 visits in September 2013. Likely this was a result of the AEP's marketing campaign to highlight the program's name change by sending out letters from the Vice-President of Customer Care & Energy Conservation to lower income neighbourhoods. The website page detailing how potential participants can qualify for the program received 11,157 visits and 2,021 visits were received to the eligibility application form (average view time of four minutes). Since the campaign to announce the program name change, the AEP related pages have received 50,338 views.

6.0 Role of Internal Program Parties

6.1 Neighbourhood Outreach Coordinators

The Neighbourhood Coordinators are responsible for recruiting eligible lower income customers by door-to-door canvassing. The North End Community Renewal Corporation (NECRC), and the Brandon Neighbourhood Renewal Corporation (BNRC) are the two organizations which AEP works in conjunction with by providing dedicated Neighbourhood Coordinators in each respective area. These two geographic areas that have dedicated Neighborhood Coordinators are the William Whyte area in Winnipeg and the downtown Brandon area, both having high populations of lower-income individuals.

The Neighbourhood Coordinators are responsible for promoting the program, recruiting participants, assisting with the application process, and responding to applicants' inquiries. The program administrator works with the Neighbourhood Coordinators to set goals for the number of participants to be recruited, approved, and completed through the program. At the time of the in-depth interview, the Neighbourhood Coordinator for the William Whyte neighborhood reported falling short of the current goal while the Brandon Neighbourhood Coordinator had recently entered the position and was confident the targets will be met.

As previously mentioned, the Neighbourhood Coordinators market the program primarily through door-to-door canvassing in their respective neighbourhoods. In addition, marketing and promotional materials are distributed to local service agencies such as schools, community centres, friendships centres, and community clubs. Advertisements are placed in local community newsletters and presentations are made at annual general meetings and community events within each Neighbourhood Coordinator designated area.

Both Neighbourhood Coordinators claimed that door-to-door canvassing is an overall useful method of promoting the program; however, several issues were identified. Canvassing in the William Whyte area is avoided on specific days during the month and times of day to ensure the safety of the Neighbourhood Coordinator as the neighbourhood is known for aggressive activity. Accessibility due to safety is a main reason not all houses are approached to participate in the program. Once a house has been identified as a safety hazard, a follow-up is not done.

The William Whyte Neighbourhood Coordinator personally interacts with prospective participants to a large extent, and truly believes that sitting down with individuals, either at their home or at the local NECRC office is a key driver in encouraging them to apply to the program. Currently, only a specific segment of the area's highest lower income population is being targeted by the program. It is recommended that the territory canvassed be widened to include the entire North End population. The William Whyte Neighbourhood Coordinator believes there is good awareness of the program due to presentations given at inner city community clubs and annual general meetings, as well as marketing and promotional materials placed in the community newsletter.

The William Whyte Neighbourhood Coordinator also reported that many individuals refused to listen about the program as they had negative feelings towards Manitoba Hydro. Common feedback provided during canvassing is that the upgrades will be more expensive than stated and that there are hidden "catches" in the terms and conditions.

Even though the William Whyte Neighbourhood Coordinator is confident in the progress of the efforts made to promote the program in the community, the number of completed homes does not correspond. During the in-depth interview, the William Whyte Neighbourhood Coordinator mentioned that the largest barrier to the completion of work lies with the selected contractor. SECs service this area, and the Neighbourhood Coordinator revealed that extensive effort is needed to communicate with them, arrange schedules, and educate and train their workforces. The SECs are non-profit organizations that provide training programs for individuals who face barriers to employment by helping them gain new skills. Due to the nature of the workforce, issues with SECs in the William Whyte area are mainly the result of high turnover and the need to continuously retrain new staff. In the Brandon area, these challenges do not exist as the selected contractors are able to maintain a stable workforce.

The William Whyte Neighbourhood Coordinator also noted a shortcoming related to the significant lead time that exists between the receiving the initial application and actually completing the work, which is primarily attributable to incomplete applications provided by customers as in many cases the applicants do not have all required documents readily available. Both Neighbourhood Coordinators believe they will be able to recruit a greater number of participants with the introduction of the Landlord/Tenant component. Interest is already growing and a list of landlords for the NCs to contact is currently being compiled.

6.2 Role of First Nations Community Coordinator

The First Nations Community Coordinator (FNCC), in collaboration with the Marketing Specialist, is responsible for delivering the AEP to First Nations Communities in Manitoba. The entire process is overseen by the FNCC from the initial point of contact with the community, to the final inspection which prompts payment to be made to the band for the upgrades. In order to qualify, the band's account and the individual's account with the utility should be in good standing or if the account is in arrears a payment plan will be put in place. There are a total of 63 First Nations communities in Manitoba, all of which have been contacted regarding the program. Thirty have been followed up with and are currently in process, and 8 communities have been completed thus far . The FNCC has met the 2013/14 target set for the number of homes completed and is working towards a goal of having all of the communities completed by 2016.

The FNCC works alone in the field and travels to various First Nations Communities to discuss the program. Regular follow-ups are conducted and the FNCC is in constant communication with internal staff.

6.3 Community Groups

Community groups are organizations within the community that currently provide housing to lower income individuals. AEP works in conjunction with several of these groups including Manitoba Housing, Kinew, and Kanata to implement the program in their housing facilities. Each community housing group is provided the AEP contractor list and may select whom they would like to grant the program's work. Past projects have been mainly contracted to SECs. The application process for many community groups is streamlined, eliminating the need to undergo income verification during the application process as many are non-profit housing groups who do income testing for their residents.

6.4 Credit & Recovery

The Credit department serves two purposes for the AEP. Firstly, it works with applicants in arrears to establish payment arrangements. There is one main contact within the Credit department who communicates with the AEP in this regard. During the initial screening process performed by program administrators, if it is not immediately clear if the customer should be cleared for participation, a brief customer profile is sent to Credit for verification of credit worthiness and approval. The Credit representative then undergoes an approval process including: current credit situation with Manitoba Hydro, tax sale status, and land title verification. In addition, customers in emergency furnace situations are likely to be approved. During the in-depth interview, it was mentioned that the most common reason for refusing customers to the AEP is because their home is in tax sale (customer fails to pay their property taxes, so the City proceeds with selling off their house). It is to be noted that customers are accepted into the program even if they are in arrears so long as a payment plan has been discussed and set up. The Credit representative and AEP administrators communicate primarily by email and there have been no issues reported to date.

Secondly, the Credit department completes outbound and receives inbound calls to recover payments on unpaid bills. Many of the calls are for accounts in arrears waiting to be settled. These frontline staff are in contact with an average of 30 customers in arrears daily and during these conversations, indicators that signal AEP eligibility may surface. It would be valuable to provide the Credit representative a list of key words and phrases mentioned by the customer that would be good indicators of a prospective AEP candidate. In addition, Credit representatives should have a series of questions to ask calling customers that would signal a prompt to discuss the AEP. At this time, either the customer can be transferred to an AEP representative through the direct AEP 1-800 phone line, or the customer's contact information can be sent to the AEP for follow-up.

The Credit department currently receives emailed memos regarding AEP updates. Unfortunately, due to the high volume of email correspondence, these memos are not always read by Credit representatives. It is recommended that the Credit department receive ongoing AEP presentations in order to remain informed and updated on the latest program news.

6.5 District Office Representatives

District Office representatives are frontline staff who communicate with customers on a daily basis regarding such things as general inquires, bill payments, and Power Smart Programs. Recently, Manitoba Hydro has amalgamated its District Offices, 3 in Winnipeg and 40 rural locations. Onsite visits to the urban District Office locations were made, and in-depth interviews were conducted with three rural locations. District Office representatives state that there is steady traffic entering the offices each day for billing, permits, and other services. It was reported that roughly one-to-three customers a week

specifically inquire about Power Smart programs, however, there was no mention of AEP specifically. When inquiries occur, customers are redirected to the Customer Contact Center.

All onsite visits to District Offices revealed a lack of AEP promotional materials made available to customers, which was also consistent with the feedback received from the rural locations. When the District Office representatives were asked to explain the AEP, unfortunately only two out of nine knew the basic details regarding the program and most of the representatives did not have any working knowledge of the program. All District Office representatives claimed that they had not received any training with respect to the program and that they only know what they have read on the website. It was mentioned that it's possible they received updates via email, however due to the high volume of emails received, they are not read in detail if at all. During onsite visits, it was noted that promotional materials were extremely limited and outdated, still reflecting the original program name (LIEEP) that was changed in late 2013. It is recommended that additional support be given to District Office representatives in the form of updated promotional materials, in-person presentations, and program orientation provided by program administrators.

6.6 Role of Energy Advisors

There is currently only one Advisor firm contracted by Manitoba Hydro that is responsible for conducting the AEP's In-Home Energy Evaluations. The Advisor firm has been with the program since its inception and subcontracts (third-party) the Advisors specifically for the AEP, reporting that 80%-90% of their business comes from the utility. Currently, there are roughly five-to-six Advisors dedicated to the AEP.

The energy evaluation is the first step in the program process after an applicant has been approved. The program administrative representatives contact the approved customer and schedule the appointment for the In-Home Energy Evaluation via cloud-based system which shows the Advisor's availability. Program staff book available time slots and Advisors are sent a notice that they have been booked for an evaluation. Participants are contacted by the Advisor within three days to set up an appointment for their energy evaluation. The Advisor claimed that this process works smoothly.

Due to the various locations of and distances between individual rural bookings, once Advisors are notified of a rural participant, the participant is placed "on deck" and a waiting list is formed. The Advisor noted that, on many occasions, they may wait until there are several participants in one location before booking the visits in order to limit the number of trips required.

During the visit, the Advisor recommends insulation and furnace upgrade opportunities and installs LCNC measures that are provided by the utility. The Advisor documents proposed upgrades (pictures, drawings and measurements), LCNC items are installed or left with the participant, and then the Advisor uploads the in-home review file on to a secure FTP file transfer site. The file is then accessed by program administrators and input into the program database.

The Advisor reported that it is not uncommon for AEP participants to already have several of the LCNC items received through other Power Smart programs installed in their home. Additional LCNC items are not given if the participant already has the items. It was reported that on occasion, LCNC measures are left behind for the participant to install. If the participant receives a post-review, the installation of LCNC measures are to be verified and updated in the database. Currently, discrepancies exist with respect to the items noted in the database and the verification of installed measures. (Table 8-4.2)

The energy evaluation serves as quality assurance for Manitoba Hydro as the report is reviewed by the Technical Advisors and compared later to the initial inspection done by the participating contractor prior to approving the work order. In cases where major discrepancies exist, the Technical Advisor contacts both parties to identify why the variance exists. As reported by the Technical Advisors, these discrepancies exist mainly because of the limitations imposed on the Advisor, (e.g. not having a ladder to access the attic) or inadequacies in the energy evaluation. Several contractors reported that the Advisors are not conducting drill tests to identify insulation ratings, thus causing discrepancies in the reported evaluation report.

When a project is flagged for post-inspection, the Advisor contacts the participant to review the work completed by the contractor and submits a post-verification report to Technical Advisor. The verification report also includes a section for LCNC measure observations. Due to high inconsistencies with reported LCNC measures installed and measures verified by participants (Table 8-3), it is recommended that this section of the verification report be enhanced by adding specific columns for LCNC items. In instances where deficiencies are present, the Technical Advisor contacts the contractor directly to go over the specifications. Once the contractor has completed the required improvements and modifications, the Advisor inspects the upgrades and reports if the upgrades meet specifications. It was reported that deficiencies were most present at the onset of the program and when new contractors are brought onboard. The Technical Advisors work with the contractors to rectify these deficiencies and they rarely resurface from that point on.

6.7 Role of Technical Advisors

There are currently four Technical Advisors associated with the program, specializing in HVAC and building envelope. Two of the advisors support the program full time with two additional advisors who provide additional oversight in situations where uncertainty surrounds the work performed. The collective credentials for the advisors consist of Professional Engineers, Certified Energy Manager, Certified Engineering Technician, Industrial Gas Fitter and a Journeyman Carpenter. For the AEP, Technical Advisors created all technical specifications of the program components and have provided training to those contractors that require the development of additional competencies. Initially, a meeting is scheduled with the contractor to run through requirements and expectations. Once a project is scheduled and as the work is completed, on-site visits may be conducted to provide guidance and ensure contractors are meeting the outlined Power Smart specifications.
The Technical Advisors reported that they are involved in the program when a specific customer file requires technical review or advice. The file is reviewed and recommendations are provided as needed. There are two points at which the Technical Advisor would be involved with a file:

1) Following the initial energy evaluation, after the contractor has made their initial assessment of the home. The Technical Advisor compares the evaluation report and the work order provided by the contractor to identify any discrepancies.
2) The Technical Advisor may also be contacted by program administrators when a question arises in regards to the Advisor's initial assessment of the home.

As well, the Technical Advisors oftentimes communicate with participants should they have any inquiries regarding the upgrades. The Technical Advisors noted that the performance expectations of the upgrades vary significantly according to the individual participant and the specific home being worked on.

The Technical Advisors have limited involvement in the selection of contractors until the final stages of the process. Once the program administrators have done the initial review of contractors, the Technical Advisors are then brought in for a technical assessment of contractor competencies.

When a participant undergoes a post-inspection, the Technical Advisors serve as a “post check” in reviewing photos and additional measurements/data taken during the post-inspection to evaluate if they correspond with the standards required under the AEP. If discrepancies exist, the Technical Advisors communicate directly with the contractor to correct them before the home undergoes a final evaluation.

The Technical Advisors conveyed that there are varying levels of commitment shown by Advisors. Oftentimes, only the minimum expectations are fulfilled given that the Advisors are employed under a predetermined contract.

In regards to community housing groups, the Technical Advisors stated that there are oftentimes issues in successfully completing the homes due to inefficiencies in the upgrades. These inefficiencies are largely a result of the constantly changing workforce of the SECs and have random post inspections to verify work completed. Once all specifications are met, payment for work completed is processed.

Additionally, for the Neighbourhood Coordinator segments, the Technical Advisors reported inefficiencies in dealing with the SECs as the majority of work completed had deficiencies and the length of time and amount of effort required to correct them is extensive. Technical Advisors reported that the cause of these deficiencies is likely due to high turnover in the SEC workforce, resulting in an ongoing loss of skills and competencies and the continual need for new training.

7.0 Relationship with Contractors

The AEP has three insulation and 13 furnace contractors who are selected by program administrators through an external request for proposal process. Once contractors have been shortlisted by program administrators, the program's Technical Advisors provide insight on each contractor's capabilities and evaluate if they possess the required competencies.

Once the participant selects a contractor, they receive a notification via email from the program administrator that includes a summary of participant information and a copy of the full Energy Evaluation Report that was submitted to Manitoba Hydro. The contractor begins preparing the forms that are required during the initial inspection and contacts the participant to schedule the initial visit. Once the initial inspection is complete, the forms are sent to Manitoba Hydro's Technical Advisors for review and approval to continue with the proposed upgrade. Once the work is complete, the contractor requests the signature of the participant indicating that the work has been done according to their satisfaction and warranty terms have been disclosed. The contractor then submits the "Authorization to Pay" request to Manitoba Hydro, and the Technical Advisors review and approve the completed work. At this time, if the project was flagged for post-inspection, the Technical Advisor would contact the Advisor for the post-review prior to authorizing the payment. All contractors reported that payments from Manitoba Hydro were timely and efficient. Once completed, all furnace installations are inspected by a Manitoba Hydro gas inspector to ensure the appliance was installed correctly and according to code.

All contractors reported that the process for receiving work is straightforward and efficient and that overall communication with the internal AEP department was very good. All contractors mentioned initial difficulties with the required AEP paperwork; however, these have lessened now that they are more comfortable with the forms and the overall paperwork process. Contractors claimed to have had positive interactions with program administrators, noting that they are easily accessible when questions surface.

When asked if they had received training for the AEP's qualifying upgrades, the contractors had variable responses. One contractor claimed that they attended initial meetings to go over specifications, and then roughly a year later, another meeting was held to "tighten up gaps." Meetings to review eligible upgrade specifications were reported as being productive, and when minor changes are made to the specifications, this information is disseminated to contractors via email or phone call. Another contractor stated that when they specifically did not have experience with a specific task or upgrade, they would perform the work on a "test area" and have the Technical Advisor assess, give feedback, and specify any adjustments to be made. A third contractor stated that no initial meetings took place, however, additional support was provided when discrepancies in work occurred. The contractors claimed that, when adjustments were required in order to meet specifications, the Technical Advisors' communication and feedback was clear and ultimately served as training instructions and guidance.

Business from the AEP represented anywhere from 10% to over 50% of individual contractors' overall business. Two out of the three insulation contractors stated that they had expected more work to result from the program, and all contractors reported having the capacity to handle a larger work load.

All contractors reported advertising the program during their regular course of business, stating that applications are on-hand when visiting non-participant homes. One contractor specifically noted that, while they advertise for their own firm, they also staple AEP information to their flyers when doing their own door-to-door canvassing. All contractors reported being satisfied with the program and

communications with related parties, however one contractor stated that more timely response to emails and acknowledgement of email receipt were areas that could be improved upon.

8.0 Participant Customer Perspectives

8.1 Survey Data and Sample Sizes

A survey of past participants was created in-house and fielded by a third-party research firm in late-January 2014. The 2014 survey included customers that participated in the program between April and December 2012. These participants were chosen because they have experienced at least one full heating season with the upgrades performed by the AEP. For several survey questions, comparisons are made to a survey conducted by the AEP in late-2011 of a random sample of past participants. This comparison can be used to uncover any significant changes in customer perspectives.

Sample Size and Sampling Error

	Population	Sample Size (n)	Sampling Error at 95% Confidence Interval
2011 (Past participants since inception)	643	251	+/- 10%
2012 Participants (April - December)	801	289	+/- 5%

8.2 Awareness, Motivations and Barriers

Survey results showed that one out of three respondents (33%) reported first hearing about the program through bill inserts. Bill inserts proved to be an even stronger awareness tool in rural communities with 58% of rural respondents having heard of the program through this method.

Source	**2014**	**2011**
Sample Size	*289*	*251*
Insert in MB Hydro bill	33%	34%
Recommendation from family/friend/coworker/neighbor	31%	21%
Newspaper[2]	19%	9%
TV	12%	6%
MB Hydro website	10%	7%
Bus bench	5%	2%
Letter or postcard/mail	4%	11%
Outdoor signage	4%	2%
Don't know	2%	8%

[2] Newspaper includes all newspaper advertising in Winnipeg Free Press (10.7%), Newspaper Ad "can't remember (which publication)" (2.4%), Metro (1.7%), other newspaper (1.4%), Winnipeg Sun (0.7%) and Community Newsletter (0.3%).

When asked about the reasoning behind their participation in the AEP, one out of three respondents (33%) reported that it was primarily to save money. Roughly one out of four respondents (26%) was motivated primarily by the low cost of the furnace, followed closely by 18% who reported that the free insulation was the main motivator. Moreover, of note was one out of four respondents (21%) who claimed that their the primary motivation to participate was to save energy, while one out of ten respondents claimed it was the desire to have a more comfortable home (12%).

Table 8-1: Reasons for Participating

	2014	**2011**
Sample Size	*289*	*251*
To save money	33%	-
Low cost furnace	26%	40%
To save energy	21%	3%
Free insulation	18%	27%
More comfortable home	12%	4%
Old furnace/replace furnace	10%	-
Insulation is needed	9%	-
Lower utility bills	8%	31%
Could not afford it	7%	2%
Free to apply	4%	-
Recommended by friend/ family/colleague/neighbour	3%	2%
Old house	2%	4%
Improve resale value	1%	-
Reasonable cost	1%	3%
Other	7%	4%

NOTE: Multiple responses allowed

Past participants were asked if, prior to their participation, they had any concerns about taking part in the program. Out of 289 respondents, 29% claimed to have had concerns prior to participating. The two most common concerns included not being eligible for the program and thinking the program would have a cost, both with 18 recorded responses each. The results pertaining to concerns participants had prior to participating are summarized below:

Table 8-2: Participant Concerns

	Participants
	2014
Sample Size	*289*
Had concerns about participating	29%
Sample Size	*81*
That I wouldn't be eligible	6%
That I'd have to pay something	6%
Wouldn't like what they gave me	3%
Work will be done properly/good contractor	1%
A lot of paperwork	1%
Didn't believe the insulation as free/ furnace low-priced	1%
Concern participation will affect eligibility for other assistance programs	1%
Evaluation result	0%
Other	6%
Don't know	6%

8.3 Breakdown of Measures Installed from Participant Survey

The following table summarizes the percentage of participants who had a specific energy conservation measure installed in their home, as documented by the Advisor during the In-Home Energy Evaluation. These documented measures were submitted to Manitoba Hydro for entry into the program database by the program administrator.

	2014	
	Sample	%
CFL (23 watt)	262	91%
Insulation	199	69%
Furnace	164	57%
Low flow faucet aerators (bathroom)	120	42%
Low flow faucet aerators (kitchen)	103	36%
CFL (13 watt)	97	34%
Handheld showerhead	86	30%
Caulking	84	29%
Standard showerhead	82	28%
Safety caps (plastic covers)	73	25%
Pipe wrap for water heater	52	18%
Electric socket gasket package	39	14%
Window sealing kit	27	9%
Bulbs (general)	12	4%
Weather stripping	11	4%
Faucet aerators (general)	9	3%
Showerhead (general)	8	3%
Boiler	5	2%
Carbon monoxide detector	5	2%
Insulating spray foam	1	0%
Other	26	9%

8.4 Verification of Measures Installed

Survey respondents were asked to verify the measures that were recorded in the program database as either installed or left for installation as per the reports submitted by the Advisor and/or contractor. Survey respondents verified that the majority of the measures that had been recorded as installed had indeed been installed. Questions concerning the location of insulation upgrades in the home were asked, however, have not yet been verified against the AEP database records.

Table 8-4.1: Verification of Installed Measures

Measures	2014				
	Sample Size	Yes	No	Removed	Don't know
CFL (23 watt)	262	70%	18%	2%	10%
Insulation - Attic	199	67%	-	1%	3%
Insulation - Side walls	199	32%	-	1%	6%
Insulation - Basement	199	52%	-	-	3%
Insulation - Crawlspace	199	24%	-	1%	12%
Furnace	164	97%	2%	-	1%
Low flow faucet aerators (bathroom)	120	71%	23%	3%	3%
Low flow faucet aerators (kitchen)	103	77%	18%	4%	1%
CFL (13 watt)	97	71%	20%	3%	6%
Handheld showerhead	86	86%	9%	5%	
Caulking	84	54%	43%		4%
Standard showerhead	82	87%	6%	5%	2%
Safety caps (plastic covers)	73	47%	37%	-	16%
Pipe wrap for water heater	52	81%	9.6%	2%	8%
Electric socket gasket package	39	54%	31%	-	15%
Window sealing kit	27	30%	44%	15%	11%
Weather stripping	11	73%	18%	-	9%
Boiler	5	80%	20%	-	-
Insulating spray foam	1	100%	-	-	-

NOTE: Responses regarding insulation state what participants had installed and were not verified with database inputs, as AEP does not record exact locations of installation.

Respondents were asked why they removed or chose not to install certain measures that, according to AEP records, were installed in the home. One respondent reported that they did not have a new boiler installed through the program and instead had another company do the installation. However, it is likely that this respondent was mistaken when responding to this question, as all boiler upgrades are installed through contractors and the participant did in fact receive a rebate.

Two out of three respondents whose furnace was "not installed" or "removed" stated that it was because they wanted to maintain their electric furnace and not switch to gas. A concern for safety was among the top reasons why Compact Fluorescent Light (CFL) bulbs were removed or not installed.

In reviewing the figures for the energy conservation measures that were recorded as either "removed" or "not installed," a total of 62 participants stated that either a basic energy conservation measure was not received, mentioned, or recommended even though the tracking database recorded that the participants received the items. Moreover, 27 respondents reported that either they did not know how

to install the basic energy measure(s) that were left behind, the measure(s) did not fit properly, or they required installation by a professional.

When Advisors fail to accurately track the installed measures or when measures are left for homeowners to install themselves, a discrepancy in the measures installed recorded in the program database compared to the actual measures installed may result. It is advised that additional care be taken in tracking the measures installed and/or left behind for customers. In addition, 26 respondents (9%) stated that "other" was installed even though no other measures were offered; thereby reflecting potential respondent confusion, misunderstanding or they no longer remember which measures were installed.

Based on the verification of installed measures, 36% of respondents claimed to have had additional measures installed in their homes that were not recorded in the program database. The additional measures installed are broken down in Table 8-4.2.

Table 8-4.2: Additional measures installed in Participant homes not recorded in Program Database

Additional Measures	**2014**
Sample Size	*289*
Additional Measures Installed*	17%
Bulbs (general)	4%
Showerhead (general)	3%
Faucet aerators (general)	3%
Carbon monoxide detector	2%
Other	9%
Additional Measures Installed **	27%
Standard showerhead	7%
Pipe wrap for water heater	6%
Handheld showerhead	5%
Electric socket gasket package	5%
Window sealing kit	4%
Low flow faucet aerators (kitchen)	4%
Caulking	4%
Safety caps (plastic covers)	3%
Furnace	1%
Low flow faucet aerators (bathroom)	2%
Weather stripping	3%
Insulating spray Foam	0%
None - 185 Participants	64%

*Additional measures installed by EA, recalled by participant in general terms which were not recorded in program database

**Specifically recalled and identified as LCNC item that was not recorded in program database

8.5 Experience with Installed Measures

The majority of participants (84%) accurately recalled having completed the AEP installations during the time period reported by the program administrators. The outliers could be due to the complexity of the question, or due to inaccurate recall.

Call record statistics suggest that 5% (40 participants) could not participate in the survey due to a language barrier and 1% (10 participants) could not participate due to being hearing impaired.

Table 8-5.1: Length of Time Since AEP Measures Were Installed

	2014
Sample size	*289*
1-6 months	7%
7-12 months	28%
13-18 months	43%
19-24 months	14%
More than 24 months	31%
Don't know	6%
Refused	3%

Over one half of participants (54%) reported that their energy bills have decreased since installing the energy conservation measure(s). Over one out of four (28%) participants reported that their energy bills stayed the same, among these respondents nearly one half (45%) claimed that the program fell short of their expectations.

Table 8-5.2: Satisfaction with Effect on Energy Bill

	2014
Sample size	*289*
Bills have decreased a lot	23%
Bills have decreased a little	31%
Bills have stayed the same	28%
Bills have increased a little	6%
Bills have increased a lot	4%

8.6 Participant Behavior Changes

Since participating in the program, four out of five (84%) participants have noticed a behavioral change related to how they use energy in their homes.

Table 8-6.1: Behavioral Change since Participating in the Program

	2014
Sample Size	*289*
Yes	84%
No	11%
Refused/Don't know	6%

Since participating in the program, three out of five participants now turn off appliances when not in use (60%) and close doors and windows regularly (59%). Similarly, over one half of participants set their thermostats lower (54%) and turn off the lights when they are out of the room (51%). Also, nearly one half of participants have started using less hot water to wash clothes (45%). Additional data can be found in Table 8-6.2:

Table 8-6.2: Specific Behavior Changes

	2014
Sample size	*289*
Turning off appliances when not in use	60%
Closing doors and windows	59%
Setting the heating thermostat lower	54%
Turning off the lights when you are out of the room	51%
Using less hot water to wash clothes	45%
Setting the water heater thermostat lower	33%
Using fans instead of air conditioner	30%
Hanging clothes to dry	29%
Leaving lights on as I have more energy efficient bulbs	17%
Setting the heating thermostat higher as it now costs less	16%
Using air conditioner more as I have better insulation	12%
Closing drapes/curtains	1%
Refused	1%
Other	4%
None/Don't know	16%

Almost two out of ten respondents had negative behavioral changes, believing that with the increased efficiency of their homes they could: leave lights on (17%), set the thermostat higher (16%), or use the air conditioner more (12%). One out of five respondents (20%) who reported that the program exceeded their expectations, now leave the lights on because they have more efficient bulbs.

Participants were also asked if they had taken any additional energy saving actions on their own. More than one half reported not taking any additional actions but for those who did, replacing doors and windows, installing energy efficient appliances, and weather stripping were the most frequently reported energy saving actions.

Table 8-6.3: Specific Actions Taken Outside of the Program

	Sample Size	*289*		**2014**
Doors & windows replaced	16%		LED lights	1%
Appliances (EE)	6%		Wall/side insulation	1%
Weather stripping - Doors	5%		Attic insulation	1%
Weather stripping - Windows	4%		Pipe wrap	1%
CFL Bulbs	3%		Lower watt bulbs	1%
Basement insulation	3%		Low flow toilet	1%
Heating system	2%		Furnace	1%
Water heating & usage	2%		Crawlspace insulation	0%
Air Sealing	2%		Insulation (general)	0%
Caulking	2%		Other	8%
New roof/Roof insulation	2%		Don't know/refused	2%
None	55%			

8.7 Satisfaction and Value

The survey respondents were asked several questions in regards to their satisfaction with specific aspects of the AEP. Overall satisfaction with the program was high, with over eight out of ten participants satisfied with each individual aspect of the program (Table 8-10).

Overall, of those participants who installed a furnace/boiler, or both a furnace/boiler and insulation, 96% and 97%, respectively, had a more positive view of the program. Comparatively, of those participants who had only insulation installed or the basic package (In-Home Energy Evaluation including LCNC items) installed, 93% and 84%, respectively, had a more positive view of the program. Moreover, a higher level of satisfaction with the program is strongly correlated to the 18-34 age group.

Table 8-7: Overall Satisfaction with AEP

Very Satisfied/Satisfied (7-10)	2014	2014 Mean
Sample size 289		
Overall with program	86%	8.41
Overall with communication from AEP staff	88%	8.7
Basic energy conservation measures installed	86%	8.58
Overall with quality of work completed	87%	8.56
Overall satisfaction with In-Home Energy Evaluation	87%	8.63

Satisfaction with the program overall and communication from program staff has decreased slightly since 2011, however it is not statistically significant, suggesting no major cause contributed to the decreased assessment.

Very Satisfied/Satisfied (7-10)	2014	2011
Sample size	*289*	*251*
Overall with program	86%	91%
Sample size	*289*	*57*
Overall communication from AEP staff	88%	91%

There were 41 respondents (14%) who indicated dissatisfaction with the overall program, rating a satisfaction level of 1-to-6 out of 10. One out of four indicated that there were insulation upgrade issues, one out of five indicated they "expected more" from the program, and one out of ten stated furnace upgrade issues. Three respondents indicated irritation that the cost of the furnace decreased from the year they had participated in the program.

8.7.1 In-Home Energy Evaluation

During the 2014 survey, participants reported an overall satisfaction of 87% with the In-Home Energy Evaluation compared to the overall satisfaction of 97% observed in the 2011 study.

Participants reported high satisfaction with the scheduling of the in-home evaluator (90%), time required to complete the In-Home Energy Evaluation (89%), and the professionalism of the In-Home Energy Advisor (90%). In comparison to the other elements of the In-Home Energy Evaluation, lower satisfaction was reported with the Energy Evaluation Report (78%).

Table 8-7-1: Satisfaction with In-Home Energy Evaluation

	2014	2014 Mean	2011	2011 Mean
Sample Size	*289*		*53*	
Overall satisfaction with In-Home Energy Evaluation	**87%**	**8.6**	**97%**	**7.1**
Scheduling of in-home evaluator	90%	8.8		
Professionalism of the in-home energy advisor	90%	9		
Time required to complete the in-home evaluation	89%	8.8		
Energy Evaluation Report	78%	8.7		

Additional Key Findings:

- In comparison to their male counterparts, female participants are more likely to be satisfied with both the scheduling of the In-Home Energy Evaluation and the professionalism of the evaluator.
- In comparison to their male counterparts, female participants are more satisfied with the time required to complete the In-Home Energy Evaluation and overall satisfaction with the AEP is higher.
- Participants who had a furnace/boiler or both a furnace/boiler and insulation installed had a higher satisfaction with the scheduling of the In-Home Energy Evaluation, the time required to complete it, and the professionalism of the Advisor than those participants who only had insulation or the basic package installed.
- Those participants who had installed both a furnace/boiler and insulation were much more satisfied with the Energy Evaluation Report than their counterparts.
- Participants with an annual household income ranging from $20,000 to <$40,000 are more likely to be satisfied with the scheduling of the In-Home Energy Evaluation and the professionalism of the EA than those participants whose annual household income is <$20,000 and $40,000 or higher.
- The more satisfied a customer is with the scheduling of the In-Home Energy Evaluation, the time required to complete it, the Energy Evaluation Report, and the overall In-Home Energy Evaluation, the more likely they will be to recommend the program to someone else.
- There is a strong correlation between respondents' age and their satisfaction with contractors' professionalism. Participants aged 55+ are much more satisfied than participants aged 18-to-34 and 34-to-54.

The twelve participants that expressed dissatisfaction (rating of 4 or less out of 10) with the In-Home Energy Evaluation provided the following reasoning:

- Lack of information and clearer explanations needed (layman's terms) (33%)
- Contractor's job not done right (25%)

8.7.2 Insulation Upgrade

In 2014, survey respondents reported high overall satisfaction (95%) with the program's insulation upgrade. This satisfaction level has remained high since the 2011 participant survey and is statistically significant. Satisfaction with the other aspects of the insulation upgrade including the scheduling of upgrade (93%), the time required to complete it (95%), and the contractor who did the upgrade (91%)

were high among survey respondents. Those participants with a university degree or higher are more satisfied with the overall insulation upgrade than their counterparts.

Table 8-7-2: Satisfaction with Insulation Upgrade

Top Box (7-10)	2014	2014 Mean	2011	2011 Mean
Sample Size	*183*		*168*	
Overall satisfaction with the insulation upgrade	**95%**	**9.08**	**92%**	**8.64**
Scheduling of insulation upgrade	93%	8.98		
Time required to complete	95%	9.05		
Contractor who did the upgrade	91%	9.01		

Additional Key Findings:

Overall Satisfaction

- Participants aged 18-to-34 and 55+, are more overall satisfied with the program than participants aged 35-to-54.
- Participants with at least a university degree are more overall satisfied with the program than their counterparts.
- A one-person household was much more satisfied with both the time required to complete the insulation upgrade and the professionalism of the contractor than a household with two, three-to-four (3-4), and five-to-twelve (5-12) people.
- When customers are more satisfied with the overall program, they are more satisfied with the scheduling and time required to complete the insulation upgrade, and their overall perception of the insulation upgrade.
- The participants who were more satisfied with the energy bill reductions realized upon completion of the upgrade, were also more satisfied with the time required to complete the insulation upgrade, the professionalism of their contractor, and the overall insulation upgrade in comparison to those participants who were not as satisfied with their bill reductions.
- When a participant's overall expectations of AEP were exceeded, they were more satisfied with the scheduling of the insulation upgrade and the professionalism of their contractor.
- When a participant's expectations of AEP were either met or exceeded, they were more satisfied with the time required to complete the insulation upgrade and the overall insulation upgrade.

Scheduling

- Those participants who have some post-secondary education or who are college graduates are more satisfied with the scheduling of the insulation upgrade than those participants with high school or less or are university graduates or higher.
- Participants whose annual household income ranges from $20,000 to <$40,000 are more satisfied with the scheduling for the insulation upgrade than those whose annual household income is <$20,000 and $40,000 or higher.
- Customers tend to be more satisfied with the scheduling of the insulation upgrade when they have also had a furnace/boiler and/or insulation installed in their home.

- The length of time that has passed since the insulation upgrade occurred affects the participant's reported satisfaction at the time of the survey. When participants are surveyed within 12 months or less of the insulation upgrade, they tend to report higher levels of satisfaction with the overall program than if the upgrade occurred over 12 months ago.

Contractor Professionalism

- Compared to their male counterparts, female participants are much more satisfied with the professionalism of their insulation contractor.

Only three participants reported dissatisfaction with the insulation upgrade during the 2014 survey. Concerns were either that the installation took too long, or that there was a lack of project status updates provided during the overall process.

8.7.3 Furnace Upgrade

High levels of satisfaction were reported for the overall furnace upgrade (95%), the scheduling of the furnace upgrade (99%), the time required to complete the upgrade (97%), and the contractor who performed the upgrade (90%). Participants aged 18-to-34 reported being more satisfied with the overall furnace upgrade than those participants aged 35-to-54 and 55+. In addition, participants whose annual household income is less than $20,000 are more satisfied with the overall furnace upgrade than those participants whose annual household income ranges from $20,000k to <$40,000k or $40,000 and higher.

Table 8-7-3: Satisfaction with the Furnace Upgrade

Top Box (7-10)	2014	2014 Mean	2011	2011 Mean
Sample Size	*153*		*98*	
Overall satisfaction with the furnace upgrade	**95%**	**9.2**	**99%**	**8.9**
Scheduling of the furnace upgrade	99%	9.3		
Time required to complete the furnace upgrade	97%	9.3		
Contractor who did the upgrade	90%	9.0		

Three out of four participants (76%) reported that the program met or exceeded their expectations. Of these participants, 88% reported a high satisfaction with the program's overall effect on their energy bills.

Additional Key Findings:

- The participants who reported being satisfied with the program overall were also satisfied with the scheduling and time required to complete the furnace upgrade and the professionalism of their contractor, compared to those who were not as satisfied with the program overall.
- The participants who reported that the program met or exceeded their expectations, rated the scheduling of the furnace upgrade, the contractor's professionalism and their overall satisfaction much higher than those participants who felt that the program fell short of meeting their expectations.

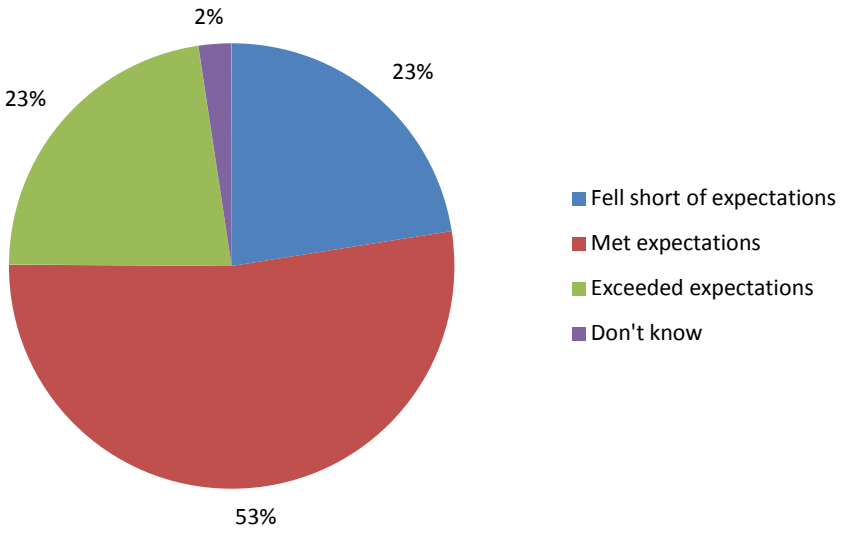
- The age of the participant has an effect on their satisfaction with the professionalism of their contractor. Participants aged 55+ are more satisfied with their contractor than those aged 18-to-34 and 34-to-54.

Only three participants reported dissatisfaction with the furnace upgrade. They expressed unhappiness with the energy efficient product itself, stating it does not heat the home. One of these respondents also stated that the furnace caused excessive moisture requiring an additional fan to be installed.

8.8 Participant Expectations

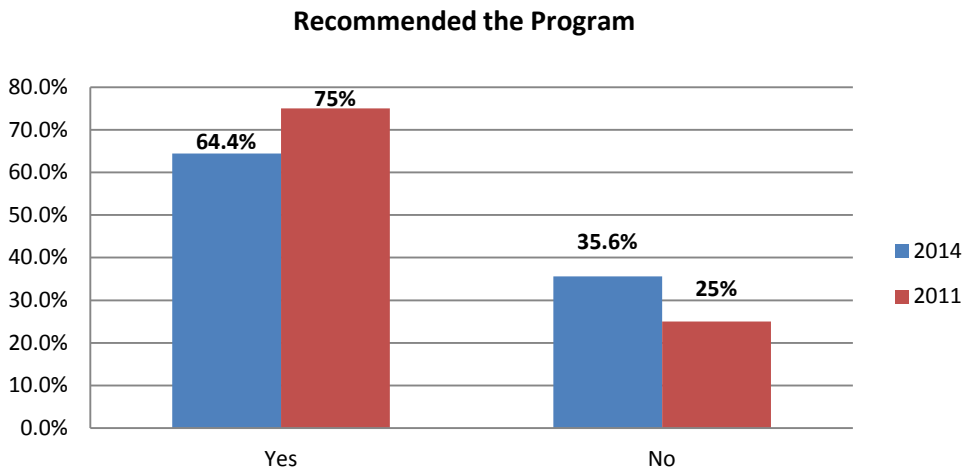
Among the participants who indicated that the program fell short of their expectations, 25% had the basic energy conservation measures (basic package which includes LCNC items) installed. Of the 23% of respondents that claimed that the program exceeded their expectations, three out of five had either a furnace/boiler or both furnace/boiler and insulation installed.

Program vs. Participant Expectations

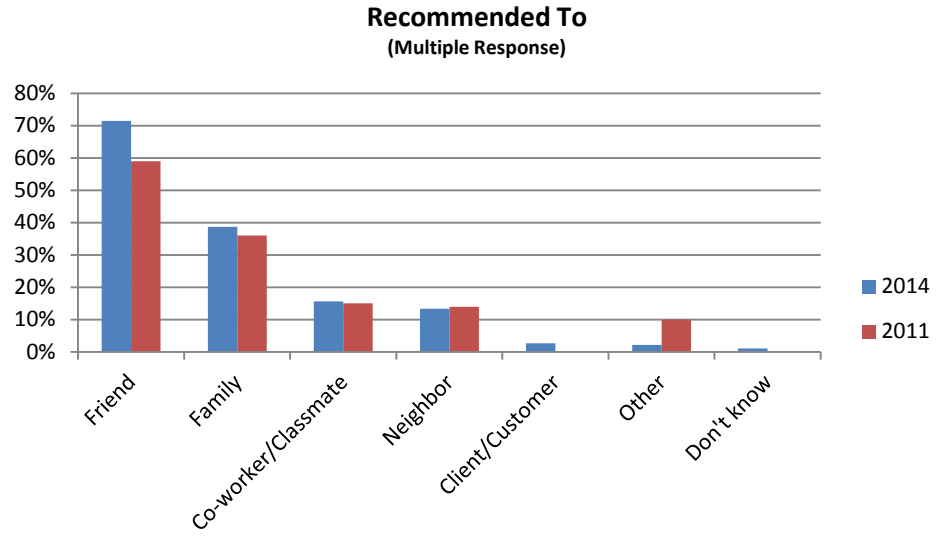


Although respondents reported high levels of overall satisfaction with the program, in general, the percentage of participants that went on to recommend the program was slightly lower in 2014 (75%) than in the 2011 survey (64%).

Women were more likely to suggest the program than men, while participants with a university education or higher were most likely to suggest the program. In addition, of the participants that reported not recommending the program in 2014, 52% received only the basic conservation measures.



Of the participants who stated they have recommended the program to others, seven out of ten reported they have recommended the program to friend, and four out of ten reported recommending the program to family.



Of the participants who stated they would not recommend the program, one out of four respondents believed that those they knew would not qualify for the program. Participants also reported that they did not divulge program information if no one asked or if it did not come up in conversation (18%).

Table 8-8.1: Reasons for Not Recommending AEP

Sample size	*103*
People I know are not qualified	25%
No one asked/Doesn't come up	18%
Not happy with program/Did not work for us/Saw no benefits	13%
Don't get out much, Don't know a lot of people	12%
Low income qualification	11%
People know about the program already	7%
It is none of my business what others do	2%
Other	7%
Don't know	10%
Refused	2%

Of those who reported recommending the program, one out of three spoke of how great the program was including the words "good deal" and/or "great program." In their recommendations, participants also discussed the following program elements and features:

Table 8-8-2: Recommendation Subject

Sample size	*186*
Great program/Good deal	34%
Just apply to see if qualified/Look in to it	29%
Efficient furnace/New furnace	22%
Save money/Lower bill	20%
For low income households	16%
Does not cost too much/ Affordable/Good payment scheme	16%
Upgrade Insulation	12%
Explained steps/Details	8%
Save energy/Be energy efficient	8%
Free/Don't have to pay for it	7%
They did a good job/ Professionally done	7%
For a comfortable home	3%
You can get a loan	1%
Other	4%
Don't know	3%

8.9 Recommendations for Improvement

Past participants were asked to provide recommendations for program improvement. Just under one out of five (19%) reported no program improvements were needed. The most frequent suggestion for improvement was to expand the program offering to include windows, doors, basements, roofs and dry walling (11%). The second most frequent recommendation was to improve the communication of Manitoba Hydro staff.

Table 8-9: Recommendations to Improve Program

	2014	2011
Sample size	*289*	*251*
Expand program to include other areas in the house (windows, doors, basements, fire pits, roof, drywall)	11%	6%
Improved MH customer service staff/Better communication	6%	8%
Relax guidelines/requirements	6%	-
More advertising	4%	2%
Quicker turnaround/Faster processing	4%	9%
Improved insulation contractors	3%	10%
Improved in-home energy evaluators	3%	-
Provide follow-up inspections	3%	-
Expand program to include related services (removing asbestos, vermiculite, taking chimney down)	2%	-
Expand program to include related materials (electric furnace, water heater, water tank)	2%	-
Improved furnace contractors	2%	4%
Help seniors more	2%	-
Explain contract limitations	1%	-
Less paperwork	1%	8%
A higher household income cutoff	1%	5%
Quantify monetary amount of savings	1%	-
Other	7%	-
None	19%	30%
Don't know	28%	-
Refused	4%	-

8.10 Demographics

At the time of the survey, to qualify for the program, the residence had to be occupied by the homeowner. The majority of the survey participants (45%) are aged 55 and older and almost two-fifths were aged 35-to-54. The split among female (54%) and male (46%) respondents was fairly equal.

Table 8-10.1: Age and Gender

Age	2014
Sample size	*289*
18-34	9%
35-54	42%
55+	45%
Refused	5%
Gender	2014
Sample Size	289
Female	54%
Male	46%

The program's qualifying income thresholds are based on the number of individuals occupying the home. More than one out of four respondents live alone and of those who have a household size of two people, 45% are over the age of 55.

Table 8-10.2: Household Size

Household Size	
Sample Size	*289*
1	26%
2	28%
3	14%
4	16%
5	9%
6	5%
7	2%
8	0%
9	0%
10	0%
More	0%
Refused	0%

*0% are 0.3% = one participant

More than one out of three participants had a high school education, while approximately one out of five (17%) had less than a high school education. Roughly one out of four participants (24%) had a university education or higher, while over 37% had either a college education or some post-secondary education completed.

Table 8-10.3: Education

Education	**2014**
Sample Size	*289*
Less than high school graduation	17%
High school graduate	19%
Some post secondary education	14%
College/ Community graduate	23%
University certificate or diploma	18%
University Masters/ PH.D or Professional Designation	6%
Refused	4%

Almost half of the participants (45%) surveyed had total annual household incomes between $20,000 to under $40,000. This aligns with the AEP's LICO125 definition of income eligibility. Those participants who reported higher incomes likely have more individuals living in the home or have recently seen an increase in income after participating in the program.

Table 8-10.4: Household Income

Income	**2014**
Sample size	289
Under $20,000	22%
$20,000 to under $40,000	45%
$40,000 to under $60,000	18%
$60,000 to under $80,000	5%
$80,000 to under $100,000	2%
over $100,000	0%
Don't know/Refused	9%

The majority of the 289 participants (56%) surveyed indicated that their ethnic/cultural background is Canadian. Approximately one out of ten participants (9%) mentioned that their ethnic background is Filipino. The remaining ethnic/cultural backgrounds are evenly distributed among the other ethnicities such as Ukrainian (6%), German (5%), Métis (3%) and Italian (1%).

Table 8-10.5: Primary Ethnicity of Household*

Ethnicity	2014
Sample Size	*289*
Canadian	56%
Filipino	9%
Other European**	6%
Ukrainian	6%
English/British	5%
German	5%
First Nations	3%
Métis	3%
East Indian	2%
Chinese	2%
Caucasian	2%
French	1%
Italian	1%
Polish	1%
African American	1%
Asian	1%
Japanese	1%
Korean	0.3%
Iranian or Afghan	0.3%
Other	6%
Refused	3%

*Multiple responses allowed for this question

**Other European includes: Swedish, Spanish, Scottish and Dutch

NOTE: 0% = 0.3% = one participant

The most frequently reported (82%) primary language spoken at home among survey respondents is English. The second most frequently reported (6%) primary language is Tagalog, while all other primary languages were significantly less common.

Table 8-10.6: Language Spoken at Home

Language	2014
Sample Size	*289*
English	82%
Tagalog	6%
Chinese	1%
Russian	1%
French	1%
Cantonese	1%
German	1%
Punjabi	1%
Urdu	1%
Italian	1%
Korean	0%
Portuguese	0.3%
Ukrainian	0.3%
Other	2%
Refused	2%

NOTE: 0% = 0.3% = one participant

9.0 Nonparticipant Customer Perspectives

9.1 Survey Data and Sample Sizes

The Manitoba Hydro CSTS is conducted on a quarterly basis via telephone through a third-party research firm. The most recent study took place in January 2014, but due to a skip error therein, a March 2014 wave was completed to correct the issue. Both surveys included 500 randomly selected Manitobans who were asked questions regarding customer satisfaction with Manitoba Hydro's customer service, corporate citizenship, and corporate image. Since AEP special topic questions have been included in the CSTS since July 2010, comparisons between July 2010 and January/March 2014 study results are made and can be used to uncover any significant changes in customer perspectives.

Sample Size and Sampling Error

Month of Participation	Population	Sample Size (n)	Sampling Error at 95% Confidence Interval
March 2014	115,000	100	+/- 10%
January 2014	115,000	86	+/- 11%
January 2013	105,000	71	+/- 12%
July 2012	105,000	80	+/- 11%
January 2012	105,000	81	+/- 11%
April 2011	105,000	76	+/- 11%
January 2011	105,000	95	+/- 10%
October 2010	105,000	83	+/- 11%
July 2010	105,000	91	+/- 11%

9.2 Awareness, Motivations and Barriers

As per survey results, overall awareness of AEP advertising is moderately high (62%). When the program name is not mentioned (unaided recall), approximately 10% of respondents recall the program name, while 18% of respondents recall program information. If key messages from the program's advertising are mentioned (aided recall), approximately one out of three respondents (34%) recall the program.

In late-2013, the program changed its name from LIEEP to AEP, which likely explains the decrease in aided recall.

Table 9-2.1: AEP Advertising Awareness

	Mar '14	Jan '13	Jul '12	Jan '12	Apr '11	Jan '11	Oct '10	Jul '10
Sample Size	*100*	*71*	*80*	*81*	*76*	*95*	*83*	*91*
Unaided Recall: Program Name	10%	1%	10%	3%	5%	3%	10%	7%
Unaided Recall: Program Details	18%	17%	37%	21%	24%	33%	22%	26%
Aided Recall	34%	58%	28%	53%	41%	36%	45%	34%
Overall Awareness	62%	76%	75%	77%	70%	72%	77%	67%

*NOTE: Figures may not add up due to rounding

When participants were asked where they recall reading, seeing or hearing an advertisement for AEP, the most influential advertisement for AEP was on television, with over one half (51%) of all respondents remembering these advertisements. Moreover, over one quarter of participants recall seeing bill inserts (29%) and newspaper ads (28%), thereby also making these media sources primary communication mediums.

Table 9-2.2: Advertisement Awareness

	Mar '14*
Sample Size	*100*
Television	51%
Bill Insert	29%
Paper	28%
Word of Mouth	17%
Radio	11%
Online	8%
Mail	4%
Brochure	2%
Bus/Bus Shelter	2%
Billboard	1%

*Data from Jan '14 CSTS has been omitted as only a portion of the respondents were asked this question.

Survey results show that there is a moderate interest to apply to the AEP (35%). Roughly one fifth of eligible respondents said that they would definitely apply to AEP now that they were made aware of the program. Over one out of three (39%) respondents said they may apply, while one out of four (26%) respondents said they would definitely not apply.

Table 9-2.3: Likelihood of Applying to AEP

	Jan '14*	Jan '13	Jul '12	Jan '12	Apr '11	Jan '11	Oct '10	Jul '10
Sample Size	*86*	*71*	*80*	*81*	*76*	*95*	*83*	*91*
Definitely Will Apply	21%	21%	16%	25%	22%	21%	19%	15%
Already Applied	14%	7%	13%	7%	3%	3%	9%	15%
May Apply	39%	49%	34%	38%	49%	43%	47%	44%
Definitely Not Apply	26%	20%	33%	24%	24%	32%	24%	19%
Do Not Know/Refused	1%	3%	4%	5%	2%	1%	1%	7%

*Data for this question was not collected in the March 2014 wave as it had already been successfully collected in the January 2014 wave.

All respondents who indicated that they would maybe apply, definitely not apply, or do not know/refused were then asked for the reasons why they would not apply. Of these respondents, one out of four (25%) claimed that they do not need a new furnace/boiler or insulation. Other responses included that they did not have enough time to apply (17%) or that they could not apply for the program because they rented their home (9%). In the past, one of the largest barriers to applying to the AEP was the program name, LIEEP, as many respondents believed that they did not fall within the qualifying low income thresholds. By changing the name and putting less emphasis on lower income, the percentage of respondents that now state that they would not apply to the program because they would not fall within the qualifying income thresholds has decreased from 21% in January 2013 to 2% in January 2014.

Table 9-2.4: Barriers to Applying to AEP

	Jan '14*	Jan '13	Jul '12	Jan '12	Apr '11	Jan '11	Oct '10	Jul '10
Sample Size	*56***	*51*	*57*	*55*	*57*	*63*	*59*	*64*
Do Not Need New Furnace or Insulation	25%	22%	18%	19%	19%	18%	13%	18%
Not Enough Time	17%	7%	13%	2%	2%	9%	4%	9%
Not a Home Owner – Rent	9%	-	3%	2%	2%	-	-	-
Not Eligible – Other	8%	3%	4%	11%	1%	6%	5%	4%
Savings Not Worth It	4%	-	3%	1%	8%	-	10%	4%
Have a New Home	3%	14%	7%	2%	-	2%	2%	2%
Can't Afford It	2%	16%	2%	6%	9%	5%	9%	4%
Not Eligible – Not Lower Income Household	2%	21%	8%	17%	29%	30%	29%	22%
Too Much Paperwork	1%	1%	6%	7%	-	4%	4%	-
Other	21%	12%	21%	18%	16%	6%	7%	22%

* Data for this question was not collected in the March 2014 wave as it had already been successfully collected in the January 2014 wave.

**The sample size for this question is significantly smaller than the overall results sample size and this question was only asked to those respondents who answered either "May Apply, Definitely Not Apply or Do Not Know/Refused" to the previous question.

Other comments (21%) include the following*:

- Don't Know If We Would Qualify (3%)
- Afraid of Outcome of the Inspection (3%)
- Use Electric Baseboards and Wood (3%)
- Cannot be in Arrears (3%)
- Moving Out (2%)
- Want More Information (2%)
- Use Electric Heat (2%)
- Require too Much Private Information (2%)
- Don't Believe in Natural Gas (1%)
- Not Available (1%)
- Live in a Home (1%)
- Outdoor Wood Stove (1%)
- Natural Gas is More Expensive than Hydro (1%)

* Figures do not add up to 21% due to rounding
NOTE: Other Comments categories change on per survey basis (open ended question)

9.3 Demographics

Of the 86 respondents, almost one half (43%) are aged 35-to-54, and approximately one out of four (28%) are aged 55 or older. The number of male and female respondents is fairly equally distributed, with 52% of respondents being male and 48% female.

Table 9-3.1: Age and Gender

Age	Jan 2014
Sample Size	*86*
18-34	24%
35-54	43%
55+	28%
Refused	5%

Gender	Jan 2014
Sample Size	*86*
Female	48%
Male	52%

In order to qualify for the AEP, the applicant must fall within an income threshold that is based on the number of individuals residing in the home. Almost one out of three respondents (31%) live in a four-person household and one out of five participants (20%) reside in a two-person household.

Table 9-3.2: Household Size

Household Size	Jan 2014
Sample Size	*86*
1	11%
2	20%
3	9%
4	31%
5	16%
6	12%
7	1%

The majority of respondents (29%) have a high school education and approximately one out of four (23%) is a college or trade school graduate. Close to one out of seven (15%) respondents have less than a high school education, while one out of nine (11%) have some post-secondary education.

Table 9-3.3: Education

Education	Jan 2014
Sample Size	*86*
Less than high school graduation	15%
High school graduate	29%
Some post secondary education	11%
College or trade school graduate	23%
University graduate (bachelor)	14%
University Masters/PhD or Professional Designation	6%
Refused	2%

Well over one half of respondents (59%) have a total annual household income between $20,000 and $40,000, which aligns with the AEP's LICO125 eligible income threshold. Respondents who have a higher annual income are likely to have a greater number of individuals living in the home.

Table 9-3.4: Household Income

Income	Jan 2014
Sample Size	*86*
Under $20,000	8%
$20,000 to under $30,000	28%
$30,000 to under $40,000	31%
$40,000 to under $60,000	25%
$60,000 to under $70,000	7%
$70,000 to under $80,000	1%

Of the 86 respondents, 57% said that the primary ethnic/cultural nature of their household is Canadian. Just over one out of ten respondents (12%) indicated that their household's primary ethnicity is Aboriginal.

Table 9-3.5: Primary Ethnicity of Household*

Ethnicity	Jan 2014
Sample Size	*86*
Canadian	57%
Aboriginal	12%
German	8%
East Indian	8%
Filipino	3%
American	3%
Ukrainian	2%
Other European*	5%
Other	6%
Refused	3%

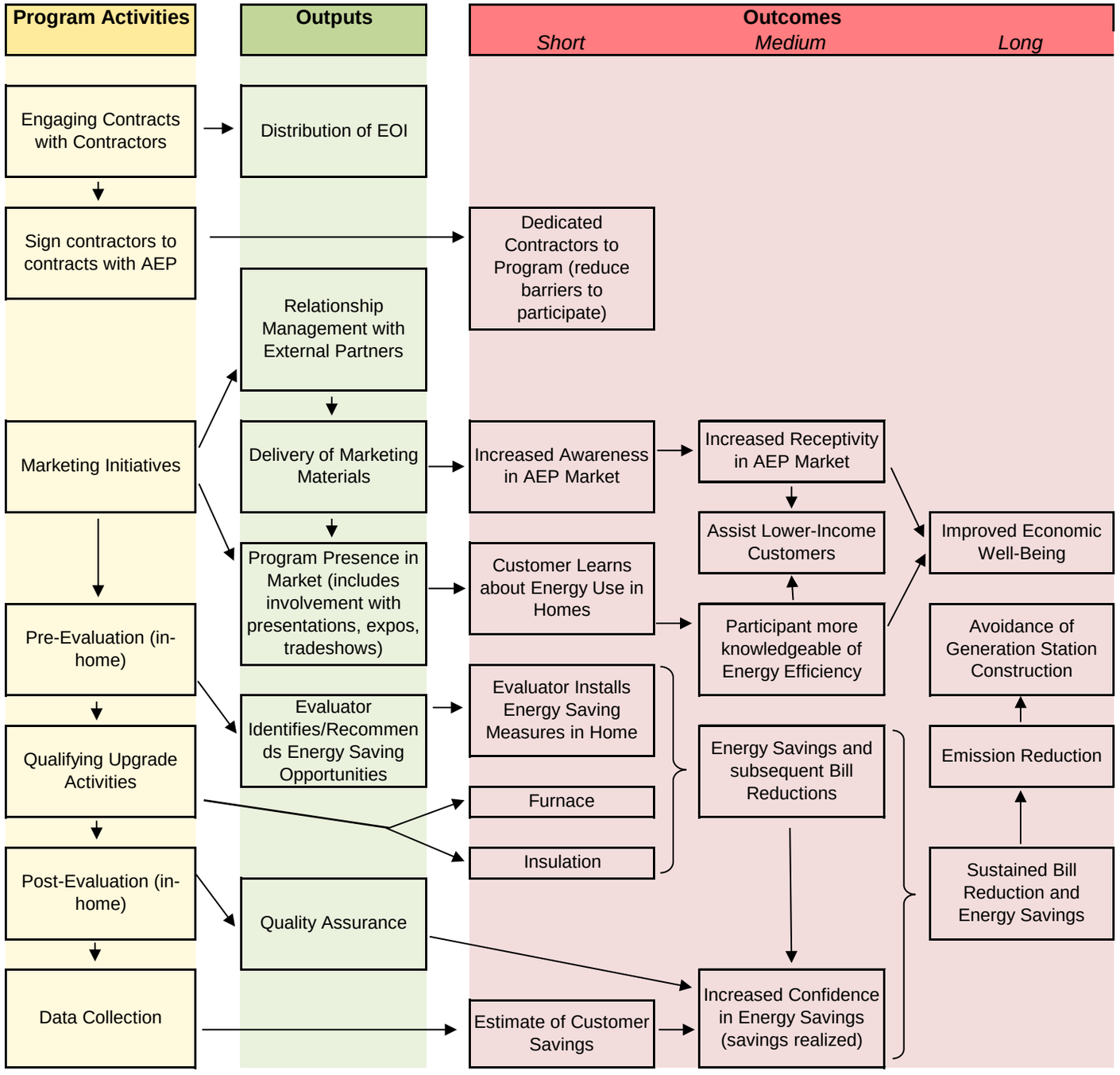
NOTE: Multiple responses were allowed for this question
*Other European includes: French, Scottish and English

For the majority of survey participants (89%), English is the primary language spoken at home. The second most common language spoken at home is German, as indicated by one out of twenty (5%) participants.

Table 9-3.6: Language Spoken in Home

Language	Jan 2014
Sample Size	*86*
English	89%
German	5%
Tagalog	2%
Punjabi	2%
Other	1%
Refused	1%

Appendix A - Logic Model


Program Activities
Outputs
Outcomes
Short
Medium
Long
Engaging Contracts with Contractors
Distribution of EOI
Sign contractors to contracts with AEP
Dedicated Contractors to Program (reduce barriers to participate)
Relationship Management with External Partners
Marketing Initiatives
Delivery of Marketing Materials
Increased Awareness in AEP Market
Increased Receptivity in AEP Market
Assist Lower-Income Customers
Improved Economic Well-Being
Program Presence in Market (includes involvement with presentations, expos, tradeshows)
Customer Learns about Energy Use in Homes
Participant more knowledgeable of Energy Efficiency
Avoidance of Generation Station Construction
Pre-Evaluation (in-home)
Evaluator Identifies/Recommends Energy Saving Opportunities
Evaluator Installs Energy Saving Measures in Home
Qualifying Upgrade Activities
Furnace
Energy Savings and subsequent Bill Reductions
Emission Reduction
Insulation
Post-Evaluation (in-home)
Quality Assurance
Sustained Bill Reduction and Energy Savings
Data Collection
Estimate of Customer Savings
Increased Confidence in Energy Savings (savings realized)

Appendix B - Survey Methodology

Manitoba Hydro

Lower Income Energy Efficiency Program

Participant Study

Methodology Report

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Methodology

Manitoba Hydro commissioned NRG Research Group (NRG) to conduct a survey with participants of their Lower Income Energy Efficiency Program.

Questionnaire Design

The questionnaire was designed by Manitoba Hydro staff and provided to NRG research prior to fielding. Screening questions were asked to ensure participants had participated in the program and currently lived in the house where energy efficient upgrades were installed as part of the program.

Respondents were asked to relate the source of their awareness of the program, their reasons for participating and concerns about qualifying. While NRG was provided with information in respect to the upgrades in each participants' home, these upgrades were confirmed in the course of the survey. Participants were also asked about their general satisfaction, and satisfaction with specific elements of the program relevant to the types of upgrades they had in their home.

Data Collection

NRG conducted 289 telephone interviews with residents of Manitoba who participated in the program. Interviewing was conducted from January 20th to February 9th, 2014. Interviewers identified themselves as calling from NRG and stated they were *"calling on behalf of Manitoba Hydro."* The average interview length was approximately 19 minutes.

Call Record Statistics

	Total	
		%
COMPLETED INTERVIEW	289	34%
NO ANSWER	71	8%
BUSY	5	1%
ANSWERING MACHINE	159	19%
BUSINESS NUMBER	6	1%
NOT IN SERVICE	68	8%
FAX/MODEM	1	0%
WRONG NUMBER	30	3%
HEARING IMPAIRED	10	1%
LANGUAGE BARRIER	40	5%
NOT AVAILABLE DURING SURVEY PERIOD	31	4%
SOFT REFUSAL	14	2%
HARD REFUSAL	36	4%
NEVER CALL AGAIN / ABUSIVE RESPONDENT	2	0%
PARTIAL REFUSED	26	3%
SCHEDULED CALLBACK	16	2%
PARTIAL CALLBACK	9	1%
REFUSED ON Q2 - WHETHER STILL LIVING ON LIEEP HOUSE	1	0%
RECALLED PROGRAM BUT REFUSE TO CONTINUE	5	1%
DID NOT RECALL PARTICIPATING IN PROGRAM	39	5%
Total	858	100%

Manitoba Hydro

Lower Income Energy Efficiency Program

Questionnaire

INTRO SCRIPT

Hi, my name is _____ and I am calling from "*MARKET RESEARCH FIRM"* on behalf of Manitoba Hydro. May I speak with [name of homeowner]?

No, not available.

Is there a more convenient time I can call back?

Yes. Record time on customer tracker excel spreadsheet.

Earlier in the year, Manitoba Hydro conducted an in-home energy evaluation of your home and then installed or gave you a variety of energy saving measures such as light bulbs, weather stripping or recommendation for insulation upgrades or furnace replacement. Do you recall participating in this program?

IF PARTICIPANT DOESN'T RECALL:
The program's name was the Manitoba Hydro's Lower Income Energy Efficiency Program recently the program has changed its name to the Affordable Energy Program. Energy saving measures would have been recommended to you and even installed in your household. Do you remember participating in this program?

IF RECALLED:
Recently the program has changed its name to the Affordable Energy Program, having gone through this program Manitoba Hydro values your opinions and any suggested improvements you can provide are valuable. Manitoba Hydro will review these comments for ways to improve upon the program, and to make it easier for more people to participate.

All answers will be kept confidential, under Manitoba Hydro's control, and will be handled in accordance with Manitoba's protection of privacy legislation.

The survey will take roughly 15 minutes to gather your feedback on this program. (BEGIN SURVEY)

No.

Can we schedule a more convenient time for you to conduct this survey?

No.
No problem. Thank you for your time.

Screening, Reasons for participation and Overall Satisfaction with program

1. How did you first learn about the Lower Income Energy Efficiency Program?
   (DO NOT READ. ACCEPT MULTIPLE)
   - ❑ Bus bench / transit shelter
   - ❑ Letter or postcard
   - ❑ Community resource centre. Which one? _____

- ❑ Newspaper ad. Which paper? _____
- ❑ Radio
- ❑ Presentation or event. Which one? _____
- ❑ Recommendation by family / friend / neighbor / co-worker (circle)
- ❑ Insert in Manitoba Hydro Bill
- ❑ Manitoba Hydro Website
- ❑ Community newsletter. Which one:_____
- ❑ Canvasser (door to door)
- ❑ Outdoor signs
- ❑ TV
- ❑ Phone call
- ❑ Other: _____

2. Do you still live in the house that participated in the Lower Income Energy Efficiency Program?

❑ YES (GO TO Q2)
❑ NO
❑ Don't know (ASK FOR PERSON WHO WOULD KNOW)
❑ REFUSED (THANK & TERMINATE)

(IF 1 = NO - READ: Please answer the survey questions based on the house that went through the program.)

3. What was the MAIN reason you chose to participate in the program? (ACCEPT ONE RESPONSE) (DO NOT READ)
   - ❑ To save money
   - ❑ Lower utility bills
   - ❑ Free insulation
   - ❑ Low cost furnace
   - ❑ Recommended by friend / family / colleague / neighbor
   - ❑ More comfortable home
   - ❑ Improve resale value
   - ❑ Free to apply, No cost for In-home energy evaluation
   - ❑ To save energy
   - ❑ To help the environment
   - ❑ Other: _____

4. Were there any other reasons? (DO NOT READ. ACCEPT MULTIPLE)
   (Same answers at Q2)

❑ No

5. Before participating what, if any, concerns did you have about taking part in the program? (DO NOT READ, ACCEPT ALL RESPONSES)

❑ That I wouldn't be eligible
❑ That I'd have to pay something
❑ Didn't believe the insulation was for free and/or furnace was low-priced
❑ Wouldn't like what they gave me
❑Concern that participation will affect eligibility for other assistance programs - social assistance, etc
❑ Other-_____
❑Don't know
❑Refused

6. As part of the Manitoba Hydro's Lower Income Energy Efficiency Program did you have;

❑ Only Insulation upgraded (1)
❑ Only Furnace upgraded (2)
❑ Both insulation and furnace upgraded (3 = 1 & 2)
❑ Boiler upgraded receiving rebate
❑ Boiler upgraded through Power Smart Residential Loan
❑ Basic energy saving measures

7. Thinking of your OVERALL satisfaction with the program, including any services or energy efficient products received and installed, how satisfied were you with the program on a scale of 1 to 10, with 1 being very dissatisfied and 10 being very satisfied?

1 2 3 4 5 6 7 8 9 10 Don't Know

- - SKIP TO Q8 IF 7 OR MORE - -

b) What was the MAIN reason you gave the Lower Income Energy Efficiency Program that overall rating? (DO NOT READ, PROBE FOR SPECIFIC REASONS, ACCEPT ONE RESPONSE - SAME LIST AS Q#7)

_____

8. Were there any ("other" if asked Q6.b)) reasons you were dissatisfied? (DO NOT READ, PROBE FOR SPECIFIC REASONS, ACCEPT MULTIPLE)

❑ The time between initial evaluation and upgrade installation took too long
❑ I expected more
❑ Insulation upgrade issues

- ❑ Furnace upgrade issues
- ❑ I don't like the ❑ light bulbs or ❑ aerators I received
- ❑ I did not like the evaluator who visited the home
- ❑ I did not like the contractor for the ❑ Insulation ❑ Furnace ❑ Boiler
- ❑ Other: Specify: _____

Now I am going to read a list of specific aspects of the Lower Income Energy Efficiency Program. For each one, please tell me on a scale of 1 to 10, with 1 being very dissatisfied and 10 being very satisfied, how satisfied you were with that specific aspect of the program.

9. Overall communication of Manitoba Hydro staff from the Lower Income Energy Efficiency Program:

1 2 3 4 5 6 7 8 9 10 Don't Know

10. a) The scheduling of the In-Home evaluation that involved an inspection and analysis of your home's energy use by an Energy Advisor

1 2 3 4 5 6 7 8 9 10 Don't Know

b) The time required to complete the In-Home evaluation

1 2 3 4 5 6 7 8 9 10 Don't Know

c) The professionalism of the In-home Energy Advisor

1 2 3 4 5 6 7 8 9 10 Don't Know

11. The Energy Evaluation Report

1 2 3 4 5 6 7 8 9 10 Don't Know

12. Overall satisfaction with the In-Home Energy Evaluation

1 2 3 4 5 6 7 8 9 10 Don't Know

13. (IF 4 OR UNDER for Q12 PROCEED) In your own words, what was the <u>MAIN</u> reason the energy evaluation was not done to your satisfaction?

_____

(IF Q6 = 1 or 3)
Now thinking specifically about the insulation upgrade that was done to your home and using the same scale of 1 to 10, how satisfied you were with:

14. a) The scheduling of the insulation upgrade

1 2 3 4 5 6 7 8 9 10 Don't Know

b) (IF 4 OR UNDER for Q14.a PROCEED) What was the MAIN reason you gave the scheduling of the insulation upgrade that rating? _____

c) The time required to complete the insulation upgrade

1 2 3 4 5 6 7 8 9 10 Don't Know

d) The contractor who did the insulation upgrade

1 2 3 4 5 6 7 8 9 10 Don't Know

15. The Overall satisfaction with the insulation upgrade

1 2 3 4 5 6 7 8 9 10 Don't Know

16. (IF 4 OR UNDER for Q15 PROCEED) In your own words, what was the MAIN reason the insulation upgrade was not done to your satisfaction?

_____

(IF Q6 =2 or 3)

Now thinking specifically about the furnace upgrade that was done to your home and using the same scale of 1 to 10, how satisfied you were with:

17. a) The scheduling of the furnace upgrade

1 2 3 4 5 6 7 8 9 10 Don't Know

b) The time required to complete the furnace upgrade

1 2 3 4 5 6 7 8 9 10 Don't Know

c) The contractor who did the furnace upgrade

1 2 3 4 5 6 7 8 9 10 Don't Know

18. The overall satisfaction with the furnace upgrade

1 2 3 4 5 6 7 8 9 10 Don't Know

19. (IF 4 OR UNDER for Q18 PROCEED) In your own words, what was the MAIN reason the furnace upgrade was not done to your satisfaction?

_____

Verification of Measures Installed

20. I'm going to read a list of measures that according to our records have been installed or have been left for you to install in your home by the program. For each one, can you please confirm that the energy saving measure is still installed, was not installed or was removed? (READ WHAT IS ON RECORD).
(1= YES, 2= NO, NOT INSTALLED, 3= REFUSED, 4= REMOVED (How many removed?), 5= DON'T KNOW)

1. Insulation
    a. Attic : ❑
    b. Side walls: ❑
    c. Basement: ❑
2. Pipe wrap for water heater
3. Standard showerhead
4. Handheld showerhead
5. Boiler
6. Furnace
7. Window sealing kit
8. Low flow faucet aerators kitchen
9. Low flow faucet aerators bathroom
10. Weather stripping
11. Incandescent lamp replacement with CFLs
12. Electric socket gasket package
13. Safety caps (plastic covers)
14. Any other:_____

21. Overall on a scale of 1 to 10, with 1 being very dissatisfied and 10 being very satisfied, how satisfied are you with the basic energy conservation measures that you have installed? (includes low flow showerhead, bath and kitchen aerators, pipe wrap, weather stripping)

1 2 3 4 5 6 7 8 9 10 Don't Know

22. Overall on a scale of 1 to 10, with 1 being very dissatisfied and 10 being very satisfied, how satisfied are you with the overall quality of work completed under this program?

1 2 3 4 5 6 7 8 9 10 Don't Know

IF Q20 = 2 (not installed) or 4 (removed) PROCEED WITH Q23

23. Why did you choose not to install or remove the ("energy efficiency measure" in Q20) in your home? (DO NOT READ)

❑ No time to install measure
❑ Hassle factor, interruption in daily routine
❑ Don't believe changes will result in lower energy bills
❑ Did not trust the energy professionals installing new measures
❑ Other: SPECIFY:_____

24. What, if any, other energy saving measures would you like to have had installed but were not included through the program? (ACCEPT MULTIPE,DO NOT READ)

❑ Dishwasher
❑ Washing machine
❑ Dryer
❑ Windows
❑ Doors
❑ None
❑ Other: SPECIFY:_____

25. Were there any other energy saving measures you installed on your own IN ADDITION to what was provided by the Lower Income Energy Efficiency Program? (RECORD ANY MENTIONED)

❑ Air sealing (Weather stripping): Location? _____
❑ Appliances (Energy Efficient)
❑ Doors & windows replaced
❑ Heating system
❑Water heating & usage
❑ None
❑Other : SPECIFY_____

26. Some participants have noted behavior changes after receiving the In-Home Energy Evaluation, what, if any, of the following changes have you noticed in your household? (LIST. ACCEPT ALL RESPONSES)

❑ Turning off the lights when you are out of the room
❑ Setting the water heater thermostat lower
❑ Setting the heating thermostat higher as it now costs less
❑ Hanging clothes to dry
❑ Leaving lights on as I have more energy efficient bulbs
❑ Using less hot water to wash clothes
❑ Using fans instead of air conditioner
❑ Closing doors & windows
❑ Setting the heating thermostat lower
❑ Using air condition more as I have better insulation
❑ Turning off appliances when not in use
❑ Other: SPECIFY _____
❑ Don't know
❑ Refused

Satisfaction with the effects the upgraded measures have had on their energy bills

27. How many months has it been since the Lower Income Energy Efficiency Program installed energy savings measures in your home?

_____ Months

❑ Don't know

❑Refused

28. On a scale of 1 to 10, with 1 being very dissatisfied and 10 being very satisfied, how satisfied are you with the impact on your energy bills from the energy saving measures provided by Lower Income Energy Efficiency Program?

1 2 3 4 5 6 7 8 9 10 Don't Know

29. Since the energy saving measures have been installed, would you say that your energy bills have [ROTATE ORDER_ remained the same, increased or decreased? (If increased or decreased) Would you say, a little or a lot?]

❑Don't know

❑ Refused

Value of the program to customers

30. Overall, would you say that the Lower Income Energy Efficiency Program ❑ fell short of your expectations, ❑ met your expectations or ❑ exceeded your expectations?

a) FOLLOW UP ON ANSWER ABOVE: Please explain:_____

_____

31. Have you recommended the Lower Income Energy Efficiency Program to anyone?

❑ No. Is there a reason why you haven't recommended this Program?

_____

_____

❑ Yes. Whom did you recommend the Program to? (OPEN ENDED - Check all that apply)

- ❑ Friend
- ❑ Family
- ❑ Co-worker
- ❑ Neighbor
- ❑ Other: _____

What did you tell them about the Program?

_____

32. Do you have any recommendations that you think would help improve the program? (OPEN ENDED)

_____

_____

(Do not prompt, but check answers that customer may provide, including:

- ❑ Less paperwork
- ❑ A higher household income cutoff
- ❑ Improved insulation contractors
- ❑ Improved furnace contractors
- ❑ Improved in-home energy evaluators
- ❑ Improved MH customer service staff
- ❑ More advertising
- ❑ Quantify monetary amount of savings

33. If you were looking for reliable information on ways to make improvements to your home and save money, where would you look or go? (OPEN ENDED - Check all that apply.)
    - ❑Community centre
    - ❑Arena
    - ❑Friendship centre
    - ❑Neighborhood events
    - ❑Library
    - ❑Radio
    - ❑TV
    - ❑ Transit
    - ❑Billboards
    - ❑Newspaper
    - ❑Hardware stores (Rona, Home Depot, etc)
    - ❑Contractors
    - ❑Government Agency. Which one? _____
    - ❑Bank. Which one? _____
    - ❑Internet
    - ❑Other: _____

Demographic Characteristics (ASK ALL RESPONDENTS)

These final questions are asked for statistical purposes only. The information collected is confidential. (IF PARTICIPANT REFUSES, PROCEED TO Q41)

34. Do you own or rent this home?
    - ❑ Own/buying (1)
    - ❑Rent/lease (2)
    - ❑ Other (describe)_____

35. Including yourself, how many people normally live in your household?
    Number of people:_____

36. In what year were you born? (ENTER COMPLETE YEAR) _____
    - ❑ Refused

37. What is your highest grade of schooling completed? (DO NOT READ)
    1. Less than high school graduation
    2. High school graduate
    3. Some post secondary education
    4. College/ Community graduate
    5. University certificate or diploma
    6. University Masters/ PH.D or Professional Designation (Engineer, Lawyer, Doctor, Nurse, Accountant, Dentist, Etc.)
    7. Refused

38. What is the ethnic/cultural nature of your household? (PROMPT IF NECESSARY WITH ex. Canadian, First Nation, German, Filipino)

❑ African American
❑ East Indian
❑ Filipino
❑ Metis
❑ Canadian
❑Chinese
❑First Nations
❑ Inuit
❑ Latin American
❑ Korean
❑ Japanese
❑ Iranian or Afghan
❑ Vietnamese
❑ Arab
❑ Other: _____

39. I'm going to read some broad income categories, please stop me when I reach the right category for your household. (READ LIST; SELECT ONE RESPONSE)

- ❑ Under $20,000
- ❑ $20,000 to $39,000
- ❑ $40,000 to $59,000
- ❑$60,000 to $79,000
- ❑ $80,000 to $100,000
- ❑ Over $100,000
- ❑ Don't know/ Refused

40. Primary language spoken at home:

❑English
❑ French
❑ Cree
❑Ojibway
❑Cantonese
❑ Chinese
❑German
❑ Korean
❑Punjabi
❑Portuguese
❑Tagalog (Filipino)
❑ Other: (Please Specify):_____

41. Do you speak any other languages on a regular basis?

❑None
❑ French
❑English
❑ Cree
❑Ojibway
❑Cantonese
❑ Chinese (Mandarin)
❑German
❑ Korean
❑Punjabi
❑Portuguese
❑Tagalog (Filipino)
❑ Other: (Please Specify):_____

42. Gender (INFER)

- ❑ Male
- ❑ Female

43. Thank you for the information, and your participation in the program.

    Based on your responses, it is possible you may be eligible for other Power Smart programs, may we use the information you provided for marketing purposes to tell you more about other energy saving opportunities?

    ❑ Yes, has your contact information changed? Add: _____
    ❑ No

Thank you again for taking the time to participate in this survey.

Appendix C - Nonparticipant Survey

SPECIAL TOPIC – AFFORDABLE ENERGY PROGRAM

Q.AEP1a Do you or do you not recall seeing or hearing any Manitoba Hydro advertising regarding ways to upgrade your home's energy efficiency and save on your energy bill?

Yes	1	Go To Q.AEP1b
No	2	Go To Q.AEP1c
None/Don't Know	8	Go To Q.AEP1c
Refused	9	Go To Q.AEP1c

Q.AEP1b. Being as specific as you can, what do you recall seeing or hearing in those ads? (MULTIPLE RESPONSE]

None	1	[EXCLUSIVE]
"Insulate your home for FREE"	2	Go To Q.AEP2
Get a "new natural gas furnace for $9.50 a month"	3	Go To Q.AEP2
"It's True"	4	Go To Q.AEP2
Affordable Energy Program	5	Go To Q.AEP2
Other Specify:_____	X	
DNK	8	[EXCLUSIVE]

Q.AEP1c. Do you or do you not recall seeing or hearing any Manitoba Hydro advertising with "It's True" that qualifying households can "Insulate your home for FREE" or get a "new natural gas furnace for $9.50 a month"?

Yes, heard	1	
No, not heard	2	Go To Q.AEP3
Don't Know	8	Go To Q.AEP3
Refused	9	Go To Q.AEP3

Q. AEP2. Where did you read, see or hear the advertising about this program ?

Did Not See Any
Newspaper
Billboard
Bus
Television
Bill Insert
Word of Mouth (Friend, Co Worker, etc)
Other Specify: _____

AEP3. **INTRO A** (for Respondents who responded to AEP1b.) As you are aware…..

INTRO B (for Respondents who responded to AEPc.) As previously described….

…Manitoba Hydro's Power Smart Affordable Energy Program has been advertising that qualifying residential customers can "Insulate your home for FREE" or get a "new natural gas furnace for $9.50 a month". The program helps qualifying residential customers by conducting home energy efficiency evaluations, and financing and upgrading furnaces or home insulation.

Now that you know about the program, how likely would you be to apply to it? ? Would you …Definitely Apply, Maybe Apply, Definitely NOT Apply or have you already applied or already participated?

Have already Applied	1	NEXT SECTION
Definitely Apply	2	NEXT SECTION
Maybe Apply	3	
Definitely NOT Apply	4	
Depends if Qualified	5	
DNK	8	
Refused	9	

Q.AEP3b. Why would you not apply? [DO NOT READ]

Not Eligible - Not a Lower Income Household	1	
Not Eligible - Not a Homeowner / Rent	2	
Not Eligible - Other (Specify)	3	
Not enough time to find out about program	5	
Do not want to deal with Manitoba Hydro / Crown Corporation	6	
Too much paperwork	7	
Too complicated	8	
Program asks for too much private information (ie. Income Tax Return)	9	
Savings (Energy, Dollars) Not Worth the Effort	10	
Live in a Home	21	
Don't Need New Furnace/Insulation	22	
Can't Afford It	23	
Moving Out	24	
Reason(s) (SPECIFY)	66	O
DNK	88	
Refused	99	

DEMOGRAPHIC QUESTIONS

III. Household Income

Q54. I'm going to read some broad income categories, when I get to the one that best describes your total family income, please stop me.

Under 20,000 1
20,000 to 29,000 2
30,000 to 39,000 3
40-59,000 4
60,000 to 69,000 5
70,000 to 79,000 6
80,000 to 100.000 7
Over 100,000 8

6 people $70k/ 7 people $70k

Dwelling Type & Ethnicity

[IF MEET AEP household size/income criteria]...	**Actual Cutoff**
IF Household (Q49) =1 and Income (Q54) ≤ 2	1 person $30k
IF Household (Q49) =2or3 and Income (Q54) ≤ 3	2 people $37k/ 3 people $45k
IF Household (Q49) =4or5 and Income (Q54) ≤ 4	4 people $55k/5 people $62k
IF Household (Q49) =6 and Income (Q54) ≤ 4	6 people $70k
IF Household (Q49) =7 and Income (Q54) ≤ 6	7+ people $78k
OTHERWISE	**Go To GENDER**

Q55. Which of the following best describes the home do you live in? [READ LIST]

Single Family Home 1	
Duplex/Triplex/Fourplex/Row House/Townhouse 2	
Apartment or Suite Style (including Condos).....3	Goto Gender IF Q48=1 [Not Eligible for AEP]
Cottage/Seasonal Home 4	Go to Gender [Not Eligible for AEP]
Mobile Home 5	
Other: _____ x	

Q56. What is the ethnic/cultural nature of your household? (PROMPT IF NECESSARY WITH ex. Canadian, First Nation, German, Filipino) [MAX OF 3 RESPONSES]

African American
East Indian
Filipino
Metis
Canadian
Chinese
First Nations
Inuit
Latin American
Korean
Japanese
Iranian or Afghan
Vietnamese
Arab
Other: _____

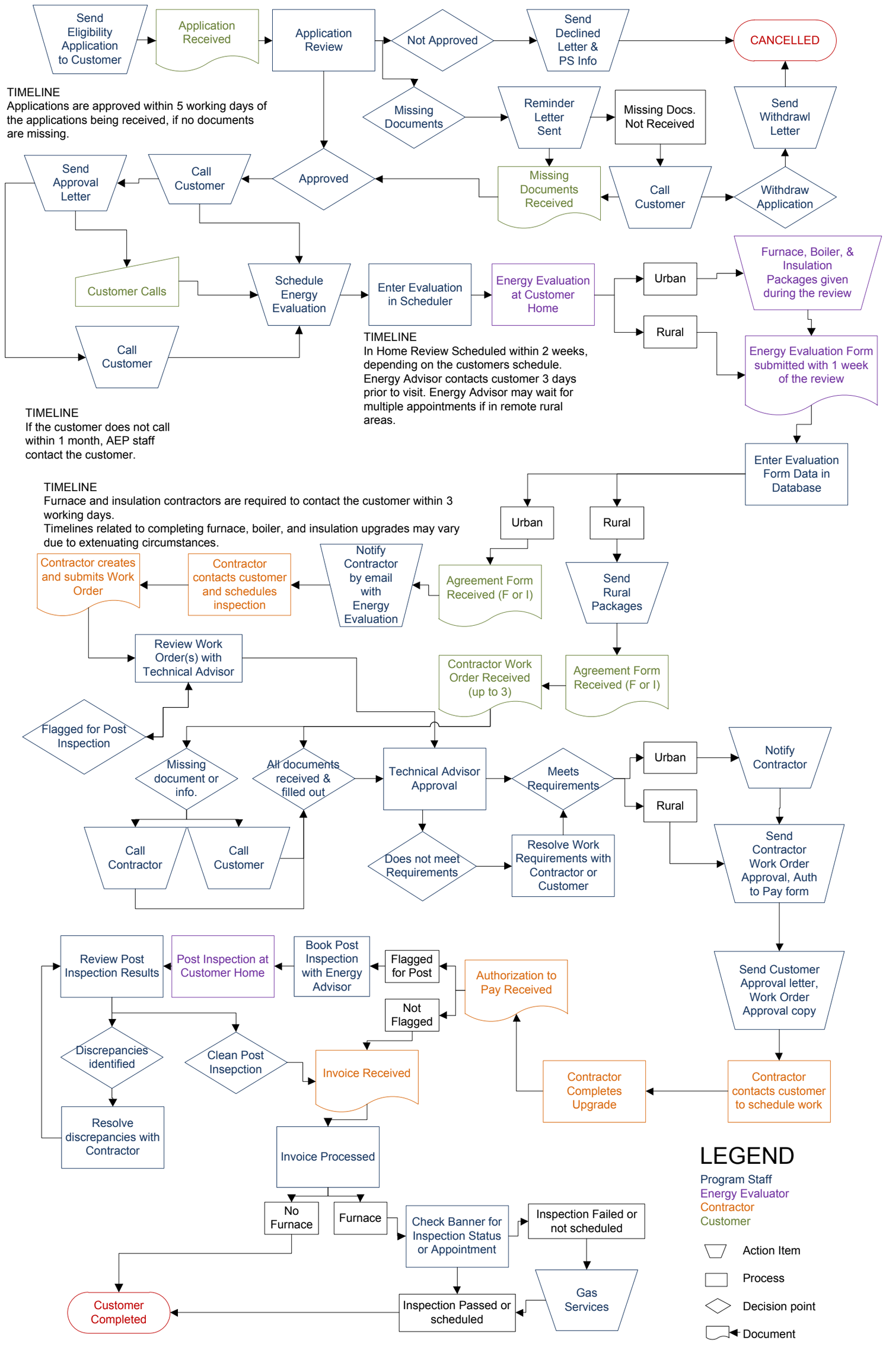
Q57. Primary language spoken at home [Only One]:

English
French
Cree
Ojibway
Cantonese
Chinese
German
Korean
Punjabi
Portuguese
Tagalog (Filipino)
Other: (Please Specify):_____

Appendix D - Flowchart

Affordable Energy Program

Individual Approach Flowchart | 2014



Appendix E - Application Process

Application Process

A. Eligibility Application Package
B. Eligibility Spreadsheet (in document)
C. City of Winnipeg- Property Details (in document)
D. City of Winnipeg- Taxation Department (in document)
E. Manitoba Local Government (in document)
F. Manitoba Online (in document)
G. Banner (in document)
H. Missing Information letter
I. 14 day letter
J. Approval Package
K. Prairie House (in document)
L. Decline letter
    1. Above threshold
    2. Direct Billing
    3. Previously Participated
    4. Immigration
    5. Built after 1999
    6. Not an owner
    7. Credit

A

PF1923(f) Rev 13 06

Application no.

LOWER INCOME ENERGY EFFICIENCY PROGRAM (LIEEP)
ELIGIBILITY APPLICATION

INSTRUCTION: Complete this Eligibility Application, and mail it and copies of income documentation to:
Manitoba Hydro – LIEEP
PO BOX 815 STN MAIN
Winnipeg MB R3C 2P4

Questions? Call us:
204-360-3643 in Winnipeg;
1-866-683-6742 outside of Winnipeg *(toll-free)*

OWNER INFORMATION ***(list ALL Owners who live in the Building)***

Owner name *(last name, first name, initials)*			
Owner service address	CITY/TOWN	PROVINCE	POSTAL CODE
Owner mailing address *(if different from above)*	CITY/TOWN	PROVINCE	POSTAL CODE
Home telephone no.	Work/cellular telephone no.	Email address	Manitoba Hydro account no.
Additional Owner name(s)			

ADDITIONAL OWNERS ***(list ALL additional Owners who do NOT live in the Building)***

Additional Owner name *(last name, first name, initials)*		Home telephone no.	Work/cellular telephone no.
Address	CITY/TOWN	PROVINCE	POSTAL CODE
Additional Owner name *(last name, first name, initials)*		Home telephone no.	Work/cellular telephone no.
Mailing address	CITY/TOWN	PROVINCE	POSTAL CODE

BUILDING INFORMATION

Type of residence
☐ Single detached ☐ Townhouse ☐ Duplex ☐ Triplex/Fourplex ☐ Side-by-side ☐ Mobile home on solid foundation ☐ Other *(specify)*:

Total home square footage sq. ft.	Year of construction	Primary heating source ☐ Electricity ☐ Natural gas ☐ Other *(specify)*:

HOUSEHOLD INFORMATION
Complete the following for ALL household members. ***(Include Owners who live in the Building)***

First Name	Last Name	Age	First Name	Last Name	Age

Are any of the household members listed above paying rent? ☐ Yes ☐ No	If Yes, what is your monthly rental income? $	If Yes, specify which household members are paying rent:

Attach the following for EACH household member.
- Income Tax Return **and a** "Notice of Assessment" for the most recent tax year.
- If employment is from seasonal or self-employment, also attach a "Statement of Business/Farming/Rental Activities".

If you do not have a copy of your income tax documents, contact **Canada Revenue Agency** at **1-800-959-8281** and they will send you a copy.

CREDIT INFORMATION

Other Loans and Obligations of Owners	Address of Lender	Amount Owing ($)	Monthly Payments ($)
1st mortgage			PIT
2nd mortgage			PIT
Others			
Title to building in the name of			

OWNER ACKNOWLEDGMENT ***(ALL Owners as listed above are required to sign)***

I, the Owner, have read and understood the Agreement and the Program Eligibility Criteria printed on the reverse of this Application. I agree and have complied with the listed terms and conditions.

Signed by (Owner)	yyyy mm dd	Print name
Signed by (Owner)	yyyy mm dd	Print name

☐ Check this box if the Owner does **NOT** wish to be contacted by Manitoba Hydro or its representatives regarding other energy-related programs, products, or services.

Personal information is being collected for Manitoba Hydro and its contractors and program partners to: (i) plan, develop, market, implement, deliver, track, and evaluate, energy-related programs; (ii) evaluate, administer, and report, applicant eligibility and participation, incentives, and savings, under programs; and (iii) review, cross-reference, and update customer accounts, to further Manitoba Hydro activities in respect of The Manitoba Hydro Act and/or its programs, products, and services. Other uses and disclosures may be to the Public Utilities Board and other regulators for reporting purposes, government entities and their advisors in relation to their programs, external auditors for auditing purposes, and Manitoba Hydro employees on a need-to-know basis. If you have any questions, contact the Program Coordinator at Manitoba Hydro, PO BOX 815 STN MAIN, WINNIPEG MB R3C 2P4 or telephone 1-888-624-9376.

How did you learn about this program? *(check all that apply)*
☐ Ad in mail box ☐ Insert in Manitoba Hydro bill ☐ Manitoba Hydro district office ☐ Manitoba Hydro website ☐ Community newsletter ☐ Community resource centre
☐ Canvasser *(door-to-door)* ☐ Friend/Neighbour/Relative ☐ Contractor ☐ Outdoor signs ☐ Newspaper ☐ TV ☐ Radio ☐ Phone call ☐ Other *(specify)*:

MANITOBA HYDRO USE ONLY

Application Verified and Approved by (Designated Manitoba Hydro Representative)	yyyy mm dd

A

Manitoba Hydro
POWER SMART

PO BOX 815 STN MAIN • WINNIPEG, MANITOBA • R3C 2P4

Telephone / N° de téléphone : (204) 360-3643 OR 1-866-683-6742

Dear Homeowner,

Thank you for your interest in the Lower Income Energy Efficiency Program.

Enclosed in this package is an application form and self-addressed envelope. Below is a checklist of items to return to Manitoba Hydro in the self-addressed envelope:

- ✓ Application form with all sections completed, including signatures from all homeowners. (See image A)
- ✓ **2012 Income Tax Return** for all household members aged 18 & over (*This is what you <u>send</u> to Revenue Canada when you file your Income Taxes (see image B))*
- ✓ **2012 Income Tax Notice of Assessment** for all household members aged 18 & over (*This is what you <u>receive</u> back from Revenue Canada once your Income Taxes have been filed. (See image C))*
- ✓ If you report **income or losses from rentals or self-employment**, please include **Statement(s) of Business/Farming/Rental Activities** in addition to your Income Tax Return and Notice of Assessment

If you do not have your income tax documents, please contact Canada Revenue Agency at 1-800-959-8281.

If you have any questions or concerns, please do not hesitate to contact a Program Representative directly at (204) 360-3643 in Winnipeg or outside of Winnipeg at 1-866-683-6742.

A

Thank you in advance for your cooperation.

Sincerely,

Program Representative

Lower Income Energy Efficiency Program

H

Manitoba Hydro
POWER SMART

P.O. Box 815 Station Main • Winnipeg, Manitoba • R3C 2P4

Telephone / N° de téléphone : (204) 360-3643 or 1-866-683-6742 • Fax / N° de télécopieur : 204-360-6112

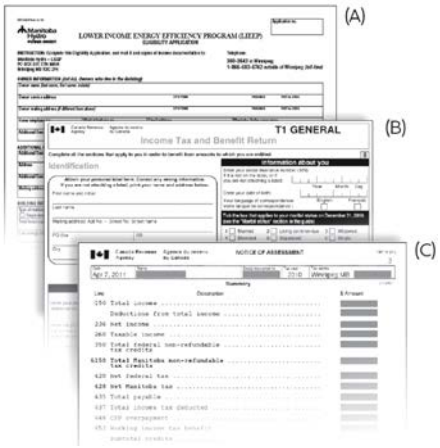
Author's E-mail LowerIncome@hydro.mb.ca

Date Application #

Customer info

Dear customer name,

Thank you for applying for the Lower Income Energy Efficiency Program. We received your application, but it was missing the following information:



- **Copy of your ____ Income Tax Return or Return Summary.** *This is what you <u>send</u> to Revenue Canada when you file your Income Taxes (see image B)*
- **Copies of the ____ Income Tax Returns or Return Summaries for _____.** *This is what you <u>send</u> to Revenue Canada when you file your Income Taxes (see image B)*
- **If any or all of your income is from Self-Employment and/or Rentals, we need a Statement of Income & Expenditure for each venture**
- **Copy of your _____ Income Tax Notice of Assessment.** *This is what you <u>receive</u> back from Revenue Canada once your Income Taxes have been filed. (See image C)*
- **Copies of the _____ Income Tax Notices of Assessment for _____.** *This is what you <u>receive</u> back from Revenue Canada once your Income Taxes have been filed(See image C)*
- **We need all homeowners to sign the application form. Please have the other homeowner sign the application form (attached).**
- **The Title Search conducted on your home shows that there is another/are other owner(s) not living in the home. Please complete and sign the enclosed Declaration of Income.**
- **The ____ Income Tax Return shows that _____ received income from Social Assistance. Please sign the attached release form giving Manitoba Hydro permission to speak to Employee Income Assistance regarding your case.**

H

Please send the above information by _____(date) to:

Manitoba Hydro – LIEEP

P.O. Box 815 Station Main

Winnipeg, MB R3C 2P4

If you need a copy of your tax information, please contact Canada Revenue Agency at 1-800-959-8281

Please call us at (204) 360-3643 in Winnipeg or outside of Winnipeg at 1-866-683-6742 if you have any questions or concerns.

We look forward to hearing from you,

Program Representative

Manitoba Hydro Lower Income Energy Efficiency Program

I

Manitoba Hydro
POWER SMART

Lower Income Energy Efficiency Program

PO BOX 815 STN MAIN • WINNIPEG, MANITOBA • R3C 2P4

Telephone / N° de téléphone : (204) 360 -3643 OR 1-866-683-6742

Date Application #:

CUSTOMER INFO

Dear CUSTOMER,

We received your Eligibility Application for the Lower Income Energy Efficiency Program however we required additional information in order to assess your eligibility.

A letter was sent on DATE LETTER WAS SENT asking that you provide us with the following:

- **Copy of your ____ Income Tax Return or Return Summary.** *This is what you <u>send</u> to Revenue Canada when you file your Income Taxes (see image B)*
- **Copies of the ____ Income Tax Returns or Return Summaries for _____.** *This is what you <u>send</u> to Revenue Canada when you file your Income Taxes (see image B)*
- **If any or all of your income is from Self-Employment and/or Rentals, we need a Statement of Income & Expenditure for each venture**
- **Copy of your _____ Income Tax Notice of Assessment.** *This is what you <u>receive</u> back from Revenue Canada once your Income Taxes have been filed. (See image C)*
- **Copies of the _____ Income Tax Notices of Assessment for _____.** *This is what you <u>receive</u> back from Revenue Canada once your Income Taxes have been filed(See image C)*
- **We need all homeowners to sign the application form. Please have the other homeowner sign the application form (attached).**
- **The Title Search conducted on your home shows that there is another/are other owner(s) not living in the home. Please complete and sign the enclosed Declaration of Income.**
- **The ____ Income Tax Return shows that _____ received income from Social Assistance. Please sign the attached release form giving Manitoba Hydro permission to speak to Employee Income Assistance regarding your case.**

I

To date we have not received a response.

Please contact a Program Representative at (204) 360-3643 in Winnipeg or outside of Winnipeg at 1-866-683-6742 to confirm you are still interested in participating in this program. If we do not hear from you **within 14 days from the date of this letter** we will assume you wish to withdraw your application and close your file

Thank you in advance for your cooperation.

Regards,

Program Representative

Lower Income Energy Efficiency Program

Manitoba Hydro

J

Manitoba Hydro
POWER SMART

P.O. Box 815 Station Main • Winnipeg, Manitoba • R3C 2P4

Telephone / N° de téléphone : (204) 360-3643 or 1-866-683-6742 • Fax / N° de télécopieur : 204-360-6112

Author's E-mail LowerIncome@hydro.mb.ca

Date Application #:

Dear Customer Name,

We are pleased to inform you that you are eligible for the Lower Income Energy Efficiency Program which may help you save energy and money. Enclosed is a In-Home Energy Efficiency Review consent form. **You do not need to complete the form on your own, the Energy Advisor will help you complete it during your in-home energy efficiency review.**

Based on the review, you may qualify for the following energy efficiency upgrades at NO COST:

- energy saving items such as compact fluorescent light bulbs and low-flow showerheads;
- qualifying attic, basement, and wall cavity insulation upgrades.
-

In addition you may be eligible for:

- a qualifying high efficiency natural gas furnace upgrade from a **standard** efficiency natural gas furnace with costs covered by an incentive and long-term financing;
-

The energy advisor will help you complete the enclosed form **- so don't worry about completing it now!**

Please take note that no work can be completed until it is approved by Manitoba Hydro. This will all be explained by the Energy Advisor during your in-home energy efficiency review.

Please contact a Program Representative at 360-3643 in Winnipeg (or outside of Winnipeg toll free at 1-866-683-6742) upon receipt of this letter to book your free in-home energy efficiency review. The review must take place within 2 months of the date on this letter

Daryl Heide

Program Representative

Manitoba Hydro Lower Income Energy Efficiency Program

L1

PO BOX 815 STN MAIN • WINNIPEG, MANITOBA • R3C 2P4

Telephone / N° de téléphone : (204) 360-3643 OR 1-866-683-6742

Application #:

CONFIDENTIAL Re: Energy Efficiency Program for Lower Income Homeowners

Date

Customer information

Dear customer:

Thank you for applying to participate in Manitoba Hydro's Energy Efficiency Program for Lower Income Homeowners. We have reviewed your application and income documents and have determined that your household income level is over the program established levels, as shown below:

- Your gross household income level for the year of Tax Year based on your TAX DOCUMENTS has been calculated at **$**
- Manitoba Hydro's Energy Efficiency Program for Lower Income Homeowners household income threshold for (# of people) in (location) is **$**

If you have any questions regarding these income calculations, please contact a Program Representative at the telephone numbers above.

We applaud your interest in saving energy in your home, and have included some information regarding other Manitoba Hydro Power Smart energy efficiency programs which you may wish to further pursue.

In addition to these brochures included, Manitoba Hydro has many more Power Smart Programs that may be of interest to you. If you have any questions or wish to further discuss your participation in these programs, please call 480-5900 in Winnipeg or 1-888-MBHYDRO (1-888-624-9376) toll free or visit our website at www.hydro.mb.ca for more information on Power Smart Programs.

L1

Thank you for your interest in Power Smart energy efficiency programs.

Sincerely yours,

Daryl Heide

Lower Income Energy Efficiency Program Representative

Manitoba Hydro

L2

PO BOX 815 STN MAIN • WINNIPEG, MANITOBA • R3C 2P4

Telephone / N° de téléphone : (204) 360-3643 OR 1-866-683-6742

Application #:

CONFIDENTIAL Re: Energy Efficiency Program for Lower Income Homeowners

DATE

CUSTOMER INFORMATION

Dear CUSTOMER NAME:

Thank you for applying to participate in Manitoba Hydro's Energy Efficiency Program for Lower Income Homeowners.

We have reviewed your application and income documents and have determined that you do not currently qualify for this program as Eligibility Term and Condition 6 d) requires that:

The Owner must at all times be an active Manitoba Hydro residential electricity and/or natural gas account holder(s) for the Building, and be solely responsible for paying for all charges on such account(s).

The purpose of the Lower Income Energy Efficiency Program is to help lower income homeowners save money on their energy bills; as such you must be solely responsible for funding your own energy bill. We see from your income submission that you are receiving Employment and Income Assistance (EIA) which should be covering your energy bills. If you have any questions or concerns regarding EIA utility payments, please contact your EIA case coordinator. If your EIA file closes in the future, we would encourage you to resubmit your application.

Manitoba Hydro has many other Power Smart energy efficiency programs which you may wish to further pursue. If you have any questions or wish to further discuss your participation in these programs, please call 480-5900 in Winnipeg or 1-888-MBHYDRO (1-888-624-9376) toll free or visit our website at www.hydro.mb.ca for more information on Power Smart Programs.

L2

Thank you for your interest in Power Smart energy efficiency programs.

Sincerely yours,

Program Representative

Lower Income Energy Efficiency Program Representative

Manitoba Hydro

L3

Manitoba Hydro
POWER SMART

PO BOX 815 STN MAIN • WINNIPEG, MANITOBA • R3C 2P4

Telephone / N° de téléphone : (204) 360-3643 OR 1-866-683-6742

DATE Application #:

CUSTOMER NAME & ADDRESS

Dear CUSTOMER NAME,

Thank you for your interest in the Power Smart Energy Efficiency Program for Lower Income Households.

Upon review of your application we have determined that both you and the property in question being (ADDRESS), have participated in and received upgrades to your home through this program.

A Pre-Retrofit evaluation was conducted on your home on (DATE OF PRE-REVIEW). (LIST UPGRADES) Upgrades were made subsequently made to your home and the Post-Retrofit evaluation was done on (DATE OF POST-REVIEW), as such your file is now closed.

Your second application to this program is declined.

There are a number of other Power Smart programs that may be of some interest to you, information on which can be obtained by contacting a Power Smart representative @ 480-5900 or by consulting the Manitoba Hydro website @ www.hydro.mb.ca

If you have any questions or concerns, please do not hesitate to contact a Program Representative at the number listed above.

Regards,

Daryl Heide

Program Representative

Energy Efficiency Program for Lower Income Homeowners

Manitoba Hydro

L4

PO BOX 815 STN MAIN • WINNIPEG, MANITOBA • R3C 2P4

Telephone / N° de téléphone : (204) 360-3643 OR 1-866-683-6742

DATE Application #:

CUSTOMER NAME & ADDRESS

Dear CUSTOMER NAME,

Thank you for your interest in the Power Smart Energy Efficiency Program for Lower Income Homeowners.

We have received your application and have noted that (CUSTOMER NAME(S)) have not yet filed Income Tax Returns with the Canada Revenue Agency for a **full** taxation year. **As Tax Return copies and the corresponding Notices of Assessment for a minimum six months are required to support an application we cannot accept you into the program at this time.**

We would encourage you to contact us after you have filed your **2012** Income Tax Returns and received back your **2012** Income Tax Notices of Assessment to see if you might qualify for this program.

Manitoba Hydro has many Power Smart Programs that may be of interest to you. If you have any questions or wish to further discuss your participation in these programs, please call 480-5900 in Winnipeg or 1-888-MBHYDRO (1-888-624-9376) toll free or visit our website at www.hydro.mb.ca for more information on Power Smart Programs.

Regards,

Daryl Heide

Program Representative

Energy Efficiency Program for Lower Income Homeowners

Manitoba Hydro

L5

Manitoba Hydro
POWER SMART

PO BOX 815 STN MAIN • WINNIPEG, MANITOBA • R3C 2P4

Telephone / N° de téléphone : (204) 360-3643 OR 1-866-683-6742

DATE Application #

CUSTOMER NAME & ADDRESS

Dear CUSTOMER NAME,

Thank you for your interest in the Power Smart Energy Efficiency Program for Lower Income Households.

We have reviewed your application and determined that you **do not** qualify for this program as Eligibility Term and Condition 7 b) requires that the ***Building must be built prior to 1999.***

You advised on your application and we have confirmed with the City of Winnipeg that your home was built in YEAR BUILT.

Manitoba Hydro has many more Power Smart Programs that may be of interest to you. If you have any questions or wish to further discuss your participation in these programs, please call 360-5900 in Winnipeg or 1-888-MBHYDRO (1-888-624-9376) toll free or visit our website at www.hydro.mb.ca for more information on Power Smart Programs.

Thank you for your interest in Power Smart energy efficiency programs.

Sincerely yours,

Program Representative

Lower Income Energy Efficiency Program Representative

Manitoba Hydro

L6

PO BOX 815 STN MAIN • WINNIPEG, MANITOBA • R3C 2P4

Telephone / N° de téléphone : (204) 360-3643 OR 1-866-683-6742

DATE Application #:

CUSTOMER NAME & ADDRESS

Dear CUSTOMER NAME,

Thank you very much for your interest in the Power Smart Energy Efficiency Program for Lower Income Households.

Upon review of your application, in addition to conducting a Search of Title on the property at (SERVICE ADDRESS), it has been determined that you do not qualify for this program as **you are not the homeowner** of the service address applied for, being (SERVICE ADDRESS) as required in the Eligibility Terms and Conditions. The Search of Title has confirmed that (HOMEOWNER NAME) is the titleholder.

We would encourage you to reapply should the title of this property be transferred to you at some future date.

If you have any questions or concerns, please do not hesitate to contact a Program Representative at the number listed above.

Regards,

Daryl Heide

Program Representative

Energy Efficiency Program for Lower Income Homeowners

Manitoba Hydro

L7

PO BOX 815 STN MAIN • WINNIPEG, MANITOBA • R3C 2P4

Telephone / N° de téléphone : (204) 360-3643 OR 1-866-683-6742

Application #:

CONFIDENTIAL Re: Energy Efficiency Program for Lower Income Homeowners

DATE

CUSTOMER NAME & ADDRESS

Dear CUSTOMER NAME,

Thank you for applying to participate in Manitoba Hydro's Energy Efficiency Program for Lower Income Homeowners.

As part of the Terms and Conditions of the Program, we require that the owner has a credit record acceptable to Manitoba Hydro in order to qualify for the program. We have reviewed your application and have determined that we are unable to proceed with your application at this time

Regards,

Program Representative

Lower Income Energy Efficiency Program

Manitoba Hydro

Appendix F - Interview Guides

Program Staff Interview Guide for Manitoba Hydro, 2013

Date:

Name:

Your comments are confidential. By the way, if I ask you about areas you don't know about, please feel free to tell me and we will move on. For transcription purposes, I will be taking notes throughout the interview. Do you have any questions before we start?

Initial Program Background:

I'd like to start by confirming a few things about your role with the program:

1. What percentage of time do you spend on the AEP?
2. Please describe your role within the AEP.
3. What, if any, are the responsibilities of the other program staff members?
4. Who are the individuals or groups you interact with as part of the program?
5. In general, have your interactions with these groups gone smoothly?
    a. Have the various players all been clear as to program goals, the roles and responsibilities of different organizations involved, is there need for coordination?
    b. What problems have arisen, if any, and how have they been resolved?
    c. Did you encounter any specific barriers to communication or collaboration with others involved in the program, such as turf issues or bureaucratic red tape?
    d. Are there any other overall issues with communication, or opportunities for improvement?
6. What are the 2013 energy savings goals for AEP?
7. What is the overall goal of the AEP?
8. We'll be going into a number of specific areas later in the interview, but from an overall perspective, what would you say are the success you were able to achieve in planning and implementing the program this year?
    a. Again, at the broadest level, what were the areas that were not so successful?
    b. To what do you trace the difficulties you encountered?
    How might they be addresses moving forwards?

Participation Procedures

9. Could you please describe the application procedure? (Rural, Urban, Community, Neighborhood)
10. Are there any overall issues or bottlenecks with the application process, or opportunities for improvement?
11. What is the procedure once an application is received?
12. Is there any information that we currently do not receive from participants that would be useful to the program?

Marketing & Verification:

13. Please explain the various marketing activities utilized by the program and each component. What do you think is particularly good about the program marketing? How could program marketing be improved?
14. Overall, how successful has each component of the program been so far? Why/Why not?
15. What do you think is particularly good about program delivery of the program? Each component? How could program delivery be improved?
16. In your opinion, what would you say are the programs largest barriers for participant participation?
17. Are there any safeguards to prevent free ridership? What are they?
18. Are there any areas within the province that you think aren't receiving the coverage needed to promote the program?

Review of Prior year Recommendations:

19. I am going to review some of the evaluation recommendations from 2011/2012. For each one, please indicate whether the recommendation was considered or adopted? And, if not, why not?
    a. The database to break down and track all technologies according to product life?
    b. Utilizing the home square footage data for calculation of furnace/boiler savings?
    c. Annual follow-up survey for participants to determine installation and persistence rates?

Strengths and Weaknesses/ Wrap-up

20. In regards to internal communication, is there any area where improved communication could contribute to higher success of the program?
21. What would you say are the programs greatest strengths? And what would you say are the programs greatest weaknesses? What could be done to address these weaknesses?
22. Based on your experience with the program thus far, what are the most important improvements that still need to be made to the program?
23. Are there any other program issues we have not discussed that you would like to mention?

Thank you

Program Staff Interview Guide for Manitoba Hydro, 2013 (First Nations Coordinator)

Date:

Name:

Your comments are confidential. By the way, if I ask you about areas you don't know about, please feel free to tell me and we will move on. For transcription purposes, I will be taking notes throughout the interview. Do you have any questions before we start?

Initial Program Background:

I'd like to start by confirming a few things about your role with the program:

1. What percentage of time do you spend on the AEP, specifically First Nations portion?
2. What are your responsibilities concerning the First Nations portion of the program?
3. What, if any, are the responsibilities of the other program staff members?
4. Are there any other program members that work on this portion of the program with you? (Who?)
5. In general, have your interactions with these groups gone smoothly?
    a. Have the various players all been clear as to program goals, the roles and responsibilities of different organizations involved, is there need for coordination?
    b. What problems have arisen, if any, and how have they been resolved?
    c. Did you encounter any specific barriers to communication or collaboration with others involved in the program, such as turf issues or bureaucratic red tape?
    d. Are there any other overall issues with communication, or opportunities for improvement?
6. What are the 2013 energy savings goals for AEP/ for the First Nations portion of the Program?
7. We'll be going into a number of specific areas later in the interview, but from an overall perspective, what would you say are the success you were able to achieve in planning and implementing the program this year in the First Nations communities?
    a. Again, at the broadest level, what were the areas that were not so successful?
    b. To what do you trace the difficulties you encountered?
    How might they be addresses moving forwards?

Participation Procedures

I understand the application process is a little different for the First Nations communities vs a urban home;

8. Could you please describe the application procedure?
9. Are there any overall issues or bottlenecks with the application process, or opportunities for improvement?
10. What is the procedure once an application is received?
11. Is there any information that we currently do not receive from participants that would be useful to the program?

Marketing & Verification:

12. Please explain the various marketing activities that you utilized for marketing the program to FN communities.
13. Overall, what do you think is particularly good about the program marketing? How could program marketing be improved?
14. Overall, how successful has this component of the program been so far? Why/Why not?
15. What do you think is particularly good about program delivery of the program? How could program delivery be improved?
16. In your opinion, what would you say are the programs largest barriers for participant participation?

17. Are there any safeguards to prevent free ridership? What are they?
18. Are there any areas within the province that you think aren't receiving the coverage needed to promote the program?

Strengths and Weaknesses/ Wrap-up

19. In regards to internal communication, is there any area where improved communication could contribute to higher success of the program?
20. What would you say are the programs greatest strengths? And what would you say are the programs greatest weaknesses? What could be done to address these weaknesses?
21. Based on your experience with the program thus far, what are the most important improvements that still need to be made to the program?
22. Are there any other program issues we have not discussed that you would like to mention?
23. We are planning on conducting interviews with (read list) are there any other individuals or groups we should speak to about the program?

Thank you

Interview guide - Outreach & Marketing

Date:

Name:

Organization:

(This interview should take about 30 minutes)

Your comments are confidential. I want you to know that if I ask you about areas you don't know about, please feel free to tell me and we will move on. For transcription purposes, I will be taking notes during this interview. Do you have any questions before we start?

Initial Program Background:

We'd like to start by confirming a few things about yourself and your role with the program:

1. In your current role, what are the overall functions, tasks, or services that you provide for Manitoba Hydro?
    a. Specifically for the Power Smart Programs?
    b. Specifically for the AEP?
2. What percentage of your time would you say you spend on the Power Smart programs?
3. Do you have any other staff or colleagues that work on the AEP?
    a. Who are they and what are their roles?
    b. What percentage of their time is spent on outreach & marketing?
4. Do you have any interactions with any of the program administrators?
    a. Who is that?
    b. What is the frequency and nature of your interactions with them?
5. What are your responsibilities to the Power Smart Programs?
    a. Specifically to the AEP?
6. Do you interact with anybody else for the work you do on the AEP?
    a. Who is that?
    b. What is the frequency and nature of your interactions with them?
7. In general, have your interactions gone smoothly?
8. Have all the players been clear in regards to program goals, the roles and responsibilities of different organizations, needs for coordination?
    a. Have any problems arisen? If any, how have they been resolved?
    b. Did you run into any specific barriers to communication or collaboration with others involved in the program? (turf issues or bureaucratic red tape?)
    c. Any overall issues with communication, or opportunities for improvement?
9. From an overall perspective, what would you say are the successes you were able to achieve in marketing and promoting the AEP program this year?
    a. Again, at the broadest level, what were the areas that were not so successful?
    b. To what do you trace your difficulties to? How could this be addressed moving forwards?

Program Outreach

10. Do you have any goals for the program?
    a. Are the resources allocated for outreach sufficient to meet your goals for the program?
11. What are the tools you use to market/promote AEP? (recruitment methods?)
12. In general, what is the level of awareness and knowledge of the AEP program in this community?
    a. Are these acceptable levels of awareness and knowledge?
        i. Why do you say that?

   b. What can or should be done to increase the awareness of the AEP program in this community?
   c. Do you think there are any other areas the program should be targeting?
13. What do you think are the primary motivators for participating in the program? What are the major barriers to their participation in the program?
14. Do you think that AEP is reaching out to all qualified low-income consumers in the area (community)? IF NO: how can it more effectively reach them?
    a. How easy or difficult would it be for you to increase the number of participants that you draw into the AEP program? IF EASY: by what percentage do you think you could increase the number of participants you draw in to the program?
15. Are there any identifiable customer groups that currently have very low participation in the program? Why?
    a. Have you seen any interest from renters or landlords regarding participation in the program? What have you told them? Do you have any opinions/suggestions on the new implementation which includes rentals in the program?
    b. In your experience, by how much are applicants ineligible for the program? (Above LICO)
16. What do you think is predominantly good about program outreach? How could program outreach be improved?

Strengths and Weaknesses/ Wrap-up

17. What would you say are the program's greatest strengths? And what would you say are the program's greatest weaknesses? What could be done to address these weaknesses?
18. Based on your experience with the program so far, what are the most important improvements that still need to be made to the program?
19. Are there any other program issues we have not discussed that you would like to mention?

Thank you

Interview guide - Affordable Energy Program Technical Advisor

Date:

Name:

Introduction:

(This interview should take about 12 minutes)

Your comments are confidential. I want you to know that if I ask you about areas you don't know about, please feel free to tell me and we will move on. For transcription purposes, I will be taking notes during this interview. Do you have any questions before we start?

1. Could you please give me an overview of your overall functions, tasks, or services that you provide for the AEP program?
2. What percentage of your time would you say you spend on AEP projects?
3. Do you have any other staff or colleagues that work on the AEP program?
    a. Who are they and what are their roles?
4. Can you describe how AEP work assignments come to you? (How are you notified?)
5. Parties you are in contact with?
    a. Could you please explain your communication with the In Home Energy Advisor?
    b. Have you ever had any interactions with program contractors? (be specific which contractor)
        i. Who is that?
        ii. How did the interactions go? Any feedback, comments?
6. What is the frequency and nature of your interactions with the AEP staff?
    a. Have your interactions gone smoothly?
    b. Have any problems arisen? If any, how have they been resolved?
    c. Did you run into any specific barriers to communication or collaboration with others involved in the program? (turf issues or bureaucratic red tape?)
7. Has there ever been any issue with the work completed (up to technical requirements, areas missed, etc) and how has this been rectified?

Program tracking & reporting

8. Please describe the tracking and reporting data you provide to AEP administrators, contractors and participants.
9. In general, how well do you think the program tracking and reporting process is working?
    a. Is all necessary data being captured?
10. Do you maintain data on the specific measures implemented at each home, along with measure specific costs and savings estimates? Is this data in hardcopy or computerized?

11. Are there any improvements you would like to see in the data tracking process that we have not already discussed? If yes, what are they?

12. Has the AEP staff been clear in regards to program goals, the roles and responsibilities of different parties involved?
    a. Any overall issues with communication, or opportunities for improvement?

Strengths and Weaknesses/ Wrap-up

13. What would you say are the program's greatest strengths? And what would you say are the program's greatest weaknesses? What could be done to address these weaknesses?
14. Based on your experience with the program so far, what are the most important improvements that still need to be made to the program?
15. Are there any other program issues we have not discussed that you would like to mention?

Thank you

Interview guide - Affordable Energy Program Contractors

Date: Name:

Organization:

(This interview should take about 12 minutes)

Your comments are confidential. I want you to know that if I ask you about areas you don't know about, please feel free to tell me and we will move on. For transcription purposes, I will be taking notes during this interview. Do you have any questions before we start?

1. Please describe (ORGANIZATION NAME) responsibilities for the AEP program?
2. What percentage of your time would you say you spend on AEP projects?
3. Do you have any other staff or colleagues that work on the AEP program?
    a. Who are they and what are their roles?
4. What was the procedure for being selected as one of the contractors for Manitoba Hydro?
5. What is the typical procedure for receiving a job through the program?
6. Is there a specific protocol that must be followed for installations?
    a. Who do you receive direction from initially & then later if there are questions regarding technical areas?
7. Do you have any knowledge of how AEP works eligibility/application process?
    a. Are you aware of what occurs prior to you receiving the request to complete a job?
8. Overall Satisfaction with the contracting of work through the AEP program?
        i. Scheduling of work
        ii. Time required to complete
        iii. The amount of visits required for homes
        iv. Your opinion on the homeowners experience with the program
    b. Are there any areas for improvement, or thoughts on how the process can be made more efficient?
9. Is the work completed reviewed/inspected by Manitoba Hydro?
10. Has there ever been any issue with the work completed (up to technical requirements, areas missed, etc) and how has this been rectified?
11. Have you ever had any interactions with other program contractors? (be specific which contractor)
    a. Who is that?
    b. How did the interactions go? Any feedback, comments?
    c. Have you ever had any communication with the In-Home Energy Advisor? Could you please explain your communication with them?
12. What is the frequency and nature of your interactions with the AEP staff?
    a. Most common method of interaction with AEP – email, phone, in-person?
    b. Do they respond promptly to your questions?
    c. Are they knowledgeable and able to answer any questions that you or the participant has?
13. Has the AEP staff been clear in regards to program goals, the roles and responsibilities of different parties involved?
    a. In regards to your company's interactions with the AEP staff, have your interactions gone smoothly?
    b. Have any problems arisen? If any, how have they been resolved?
    c. Are the problems resolved in a timely manner?
    d. Did you run into any specific barriers to communication or collaboration with others involved in the program? (turf issues or bureaucratic red tape?)
    e. Any overall issues with communication, or opportunities for improvement?
14. How have your interactions with clients gone?

a. Would you say the work being conducted is meeting their expectations of the program?

Strengths and Weaknesses/ Wrap-up

15. What would you say are the program's greatest strengths? And what would you say are the program's greatest weaknesses? What could be done to address these weaknesses?
    a. Are you aware of any emerging trends among the various customers?
16. Based on your experience with the program so far, what are the most important improvements that still need to be made to the program?
17. Are there any other program issues we have not discussed that you would like to mention?

Thank you

Interview guide - Credit & Recovery

Date:

Name:

District Office:

(This interview should take about 15 minutes)

Your comments are confidential. I want you to know that if I ask you about areas you don't know about, please feel free to tell me and we will move on. For transcription purposes, I will be taking notes during this interview. Do you have any questions before we start?

Program Background to disclose to District Office Employee:

Manitoba Hydro's Lower Income Energy Efficiency Program (LIEEP) targets energy efficient opportunities in the lower income market sector of Manitoba. Energy efficient measures targeted include:

- Insulation upgrades
- Replacement of standard efficient natural gas furnaces and boilers
- Compact fluorescent light bulbs,
- Low-flow showerheads,
- Pipe wrap insulation,
- Faucet aerators

All measures are provided free to the customers, including home audits and one-to-one assistance, except natural gas furnaces which are offered for $570 with a $9.50 monthly payment over 5 years (no interest charges applied) and boilers where a $3000 incentive is offered.

Customers are eligible for the program based on income thresholds set by Statistics Canada Low Income Cut Off (LICO) where LIEEP has increased the thresholds by an additional 25% (referred to as LICO 125). This increase allows more customers to qualify for the program.

I'd like to start by confirming a few things about yourself, your role in Credit & Recovery, as well as the overall Power Smart Programs:

1. In your current role, what are your overall functions, tasks, or services that you provide MH customers?
2. What is the primary reason for customers to call credit & recovery?
3. As part of your role, are you expected to have basic knowledge of the various Power Smart programs?
    i. Which ones?
4. Is there ever a time where you would suggest a Power Smart Program to a customer?
    a. Is it a part of your normal course of business?
5. Is there anything that specifically prompts you to discuss a Power Smart Program?
    a. How do you know which Power Smart Program to discuss with a customer?
    b. Specifically the Affordable Energy Program?
        i. Indicators:
6. Have you ever received training/ information on any of the Programs?
    a. Which ones?

   b. Did you find it helpful?
   c. Were you provided with anything to identify potential participants?
      i. If so, what exactly? (clues to look for, something on the bill?)
   d. Do you have access to the program information?
      i. Program information, brochures, etc?
7. Are you kept up to date with program changes, updates, etc., as well as are you notified when new programs are launched?
8. Is there anyone designated to speak to customers regarding Power Smart Programs?
   a. Who are they and what are their roles?
9. What percentage of their time is spent on Power Smart Program?

LIEEP Program Knowledge & Outreach

1. Have you heard about the Affordable Energy Program? (LIEEP)
   a. In your own words, could you describe the LIEEP program?
   b. Who is eligible for the program?
   c. Are you aware of the various income threshold levels for participants?
   d. If a customer is slightly above the income threshold do you tell them to apply anyways? (Are you aware that AEP works on a case to case basis and even if an applicant is slightly above the income threshold, they may qualify regardless?)
2. How many customers have you spoken to that have expressed interest in the AEP (LIEEP) within the last 3 months?
   a. If Yes: What do you tell them?
   b. If No: Is there any way you can identify eligible customers when they call/ come in to the office?
3. Do you know who to contact in the AEP department if you or a customer needs to speak with them?
   a. How were your interactions with the AEP contact?
4. Is there any way the program administrators could help you in catching the attention of more participants upon your initial contact with customers?

Strengths and Weaknesses/ Wrap-up

5. Based on what you know about the program, what would you say are the program's greatest strengths? And what would you say are the program's greatest weaknesses? What could be done to address these weaknesses?
6. Based on your experience with the program so far, what are the most important improvements that still need to be made to the program?
7. Are there any program issues that you would like to mention? (identify)
8. Do you have any recommendations on how we could better target the market for AEP?
9. Are there major/obvious differences between the urban and rural markets that AEP should consider when creating their marketing campaigns?

Thank you

Interview guide - Customer Contact Representatives

Date:

Name:

District Office:

(This interview should take about 15 minutes)

Your comments are confidential. I want you to know that if I ask you about areas you don't know about, please feel free to tell me and we will move on. For transcription purposes, I will be taking notes during this interview. Do you have any questions before we start?

Program Background to disclose to District Office Employee:

Manitoba Hydro's Lower Income Energy Efficiency Program (LIEEP) targets energy efficient opportunities in the lower income market sector of Manitoba. Energy efficient measures targeted include:

- Insulation upgrades
- Replacement of standard efficient natural gas furnaces and boilers
- Compact fluorescent light bulbs,
- Low-flow showerheads,
- Pipe wrap insulation,
- Faucet aerators

All measures are provided free to the customers, including home audits and one-to-one assistance, except natural gas furnaces which are offered for $570 with a $9.50 monthly payment over 5 years (no interest charges applied) and boilers where a $3000 incentive is offered.

Customers are eligible for the program based on income thresholds set by Statistics Canada Low Income Cut Off (LICO) where LIEEP has increased the thresholds by an additional 25% (referred to as LICO 125). This increase allows more customers to qualify for the program.

I'd like to start by confirming a few things about yourself, your role at the customer contact center & overall Power Smart Programs:

1. In your current role, what are your overall functions, tasks, or services that you provide MH customers?
    a. As part of your role, are you expected to have basic knowledge of the various Power Smart programs?
        i. Which ones?
2. Is there ever a time where you would suggest a Power Smart Program to a customer?
    a. Is it a part of your normal course of business?
3. Is there anything that specifically prompts you to discuss a Power Smart Program?
    a. How do you know which Power Smart Program to discuss with a customer?
    b. Specifically the Affordable Energy Program?
        i. Indicators:
4. Have you ever received training/ information on any of the Programs?
    a. Which ones?
    b. Did you find it helpful?

   c. Were you provided with anything to identify potential participants?
      i. If so, what exactly? (clues to look for, something on the bill?)
   d. Do you have access to the program information?
      i. Program information, brochures, etc?
5. Is there advertising (i.e. brochures, posters, ads, etc.) and applications in the office in regards to the Power Smart Programs?
6. Are you kept up to date with program changes, updates, etc., as well as are you notified when new programs are launched?
7. Is there anyone designated in your office to speak to customers regarding Power Smart Programs?
   a. Who are they and what are their roles?
8. What percentage of their time is spent on Power Smart Program?

LIEEP Program Knowledge & Outreach

1. Have you heard about the Affordable Energy Program? (LIEEP)
   a. In your own words, could you describe the LIEEP program?
   b. Who is eligible for the program?
   c. Are you aware of the various income threshold levels for participants?
   d. If a customer is slightly above the income threshold do you tell them to apply anyways? (Are you aware that AEP works on a case to case basis and even if an applicant is slightly above the income threshold, they may qualify regardless?)
2. How many customers have you spoken to that have expressed interest in the AEP (LIEEP) within the last 3 months?
   a. If Yes: What do you tell them?
   b. If No: Is there any way you can identify eligible customers when they call/ come in to the office?
3. Do you know who to contact in the AEP department if you or a customer needs to speak with them?
   a. How were your interactions with the AEP contact?
4. Is there any way the program administrators could help you in catching the attention of more participants upon your initial contact with customers?

Strengths and Weaknesses/ Wrap-up

5. Based on what you know about the program, what would you say are the program's greatest strengths? And what would you say are the program's greatest weaknesses? What could be done to address these weaknesses?
6. Based on your experience with the program so far, what are the most important improvements that still need to be made to the program?
7. Are there any program issues that you would like to mention? (identify)
8. Do you have any recommendations on how we could better target the market for AEP?
9. Are there major/obvious differences between the urban and rural markets that AEP should consider when creating their marketing campaigns?

Thank you

Interview guide - District Office Staff

Date/Name:

District Office:

(This interview should take about 20 minutes)

Your comments are confidential. I want you to know that if I ask you about areas you don't know about, please feel free to tell me and we will move on. For transcription purposes, I will be taking notes during this interview. Do you have any questions before we start?

I'd like to start by confirming a few things about yourself, your role at the district office & overall Power Smart Programs:

1. In your current role, what are your overall functions, tasks, or services that you provide MH customers?
2. Is there ever a time where you would suggest a Power Smart Program to a customer?
    a. Is it a part of your normal course of business?
3. Have you ever received training/ information on any of the Programs?
    a. Which ones?
    b. Did you find it helpful?
    c. Were you provided with anything to identify potential participants?
        i. If so, what exactly? (clues to look for, something on the bill?)
4. Is there anything that specifically prompts you to discuss a Power Smart Program?
5. Is there anyone designated in your office to speak to customers regarding Power Smart Programs?
    a. Who are they and what are their roles?
    b. What percentage of their time is spent on Power Smart Program?

Specific AEP Program Knowledge & Outreach

1. Have you heard about the Affordable Energy Program? (AEP)
    a. In your own words, could you describe the AEP program?
    b. Who is eligible for the program?
        i. How is eligibility determined?
    c. Have there been any recent changes to the program?
2. How many customers have you spoken to that have expressed interest in the AEP?
    a. If Yes: What do you tell them?
    b. If No: Is there any way you can identify eligible customers when they come in to the office?

If it is noticed District Rep is aware of the community threshold change in eligibility:

3. Have you noticed any changes in customer behaviors since the elimination of the Community Size thresholds?
    a. Have you encountered any feedback?

Strengths and Weaknesses/ Wrap-up

4. What would you say are the program's greatest strengths? And what would you say are the program's greatest weaknesses? What could be done to address these weaknesses?
5. Based on your experience with the program so far, what are the most important improvements that still need to be made to the program?
6. Are there any other program issues we have not discussed that you would like to mention?

Thank you.

Interview guide - Affordable Energy Program Energy Evaluators

Date: Name:

Organization:

(This interview should take about 20 minutes)

Your comments are confidential. I want you to know that if I ask you about areas you don't know about, please feel free to tell me and we will move on. For transcription purposes, I will be taking notes during this interview. Do you have any questions before we start?

1. Please describe (ORGANIZATION NAME) responsibilities for the AEP program?
2. What percentage of your time would you say you spend on AEP projects?
3. Do you have any other staff or colleagues that work on the AEP program?
    a. Who are they and what are their roles?
4. What was the procedure for being selected as one of the contractors for Manitoba Hydro?
5. What is the typical procedure for receiving a job through the program? (ie. How are you notified?)
    a. How long does scheduling take with a participant?
        i. How long is the energy evaluation on average?
        ii. Are you required to disclose additional energy saving measures the participant could implement outside of the scope of the program?
    b. Can you please take me through the process which occurs during an energy evaluation?

6. Is there a specific protocol that must be followed for LCNC installations?
    a. How many LCNC items on average get left behind for the participant to install themselves?
    b. On average, after inspecting the home - how many households do not qualify for the program?
    c. How are the LCNC items tracked which are either left behind or installed?
        i. Can this process be improved?
7. Do you have any knowledge of how AEP works eligibility/application process?
8. Is the work completed reviewed/inspected by Manitoba Hydro?
9. Has there ever been any issue with the work completed (up to technical requirements, areas missed, etc) and how has this been rectified?
10. Have you ever had any interactions with other program contractors? (be specific which contractor)
    a. Who is that?
    b. How did the interactions go? Any feedback, comments?
11. What is the frequency and nature of your interactions with the AEP staff?
    a. Most common method of interaction with AEP – email, phone, in-person?
    b. Do they respond promptly to your questions?
    c. Are they knowledgeable and able to answer any questions that you or the participant has?
12. Has the AEP staff been clear in regards to program goals, the roles and responsibilities of different parties involved?
    a. In regards to your company's interactions with the AEP staff, have your interactions gone smoothly?
    b. Have any problems arisen? If any, how have they been resolved?
    c. Are the problems resolved in a timely manner?
    d. Did you run into any specific barriers to communication or collaboration with others involved in the program? (turf issues or bureaucratic red tape?)
    e. Any overall issues with communication, or opportunities for improvement?
13. How have your interactions with the participants gone?
    a. Would you say the work being conducted is meeting their expectations of the program?
14. What would you say your opinion is on the homeowners experience with the program?

a. Are there any areas for improvement, or thoughts on how the process can be made more efficient?

Strengths and Weaknesses/ Wrap-up

15. What would you say are the program's greatest strengths? And what would you say are the program's greatest weaknesses? What could be done to address these weaknesses?
    a. Are you aware of any emerging trends among the various customers?
16. Based on your experience with the program so far, what are the most important improvements that still need to be made to the program?
17. Are there any other program issues we have not discussed that you would like to mention?

Thank you

Interview guide - Outreach - Neighborhood Coordinators

Date:

Name:

Organization:

Introduction:

(This interview should take about 30 minutes)

Your comments are confidential. I want you to know that if I ask you about areas you don't know about, please feel free to tell me and we will move on. For transcription purposes, I will be taking notes during this interview. Do you have any questions before we start?

Initial Program Background:

We'd like to start by confirming a few things about yourself and your role with the program:

1. In your current role, what are the overall functions, tasks, or services that you provide for the LIEEP program?
2. What percentage of your time would you say you spend on the LIEEP program?
3. Do you have any other staff or colleagues that work on the LIEEP program?
    a. Who are they and what are their roles?
    b. What percentage of their time is spent on outreach & marketing?
4. Do you have any interactions with any of the program contractors? (be specific which contractor)
    a. Who is that? What is the frequency and nature of your interactions with them?
    b. How many homes have been contracted to them?
    c. Overall Satisfaction from the contractor?
        i. Scheduling of work
        ii. Time required to complete
        iii. The contractors that did the work
        iv. Homeowners experience with the contractor?
5. Do you interact with anybody else for the work you do on the LIEEP program?
    a. Who is that?
    b. What is the frequency and nature of your interactions with them?
6. In general, have your interactions gone smoothly? Have all the players been clear in regards to program goals, the roles and responsibilities of different organizations, needs for coordination?
    a. Have any problems arisen? If any, how have they been resolved?
    b. Did you run into any specific barriers to communication or collaboration with others involved in the program? (turf issues or bureaucratic red tape?)
    c. Any overall issues with communication, or opportunities for improvement?
7. Before going in to a number of specific areas concerning the program, from an overall perspective, what would you say are the successes you were able to achieve in marketing and promoting the LIEEP program this year?
    a. Again, at the broadest level, what were the areas that were not so successful?
    b. To what do you trace your difficulties to? How could this be addressed moving forwards?

Program Outreach

8. Do you have any goals for the program?
    a. Are the resources allocated for outreach sufficient to meet your goals for the program?
    b. What are the tools you use to market LIEEP? (recruitment methods?)
9. In general, what is the level of awareness and knowledge of the LIEEP program in this community?
    a. Are these acceptable levels of awareness and knowledge?
        i. Why do you say that?
    b. What can or should be done to increase the awareness of the LIEEP program in this community?
    c. Do you think there are any other areas the program should be targeting?
10. What do you think are the primary motivators for participating in the program? What are the major barriers to their participation in the program?
11. Do you think that LIEEP is reaching out to all qualified low-income consumers in the area (community)? IF NO: how can it more effectively reach them?
    a. How easy or difficult would it be for you to increase the number of participants that you draw into the LIEEP program? IF EASY: by what percentage do you think you could increase the number of participants you draw in to the program?
12. Are there any identifiable customer groups that currently have very low participation in the program? Why?
    a. Have you seen any interest from renters or landlords regarding participation in the program? What have you told them? Do you have any opinions/suggestions on the new implementation which includes rentals in the program?
    b. In your experience, by how much are applicants ineligible for the program? (Above LICO)
13. What do you think is predominantly good about program outreach? How could program outreach be improved?

Strengths and Weaknesses/ Wrap-up

14. What would you say are the program's greatest strengths? And what would you say are the program's greatest weaknesses? What could be done to address these weaknesses?
15. Based on your experience with the program so far, what are the most important improvements that still need to be made to the program?
16. Are there any other program issues we have not discussed that you would like to mention?

Thank you

MANITOBA HYDRO
2011 LOWER INCOME ENERGY EFFICIENCY PROGRAM
CUSTOMER SURVEY

FINAL RESULTS

FEBRUARY 2012

Prepared by:
Affordable Energy Department
Customer Care & Energy Conservation
Manitoba Hydro

Manitoba Hydro
POWER SMART

EXECUTIVE SUMMARY

Background

During the months of September and October, 2011, the Affordable Energy Department undertook a survey of past participants in the Lower Income Energy Efficiency Program (LIEEP). The survey was designed to discover the participants' experiences throughout the Program and their perceptions of the LIEEP and Manitoba Hydro. The survey achieved a relatively modest survey response rate (39% of the participants completed the survey), despite repeated efforts to encourage customer participation and feedback.

Findings

One objective of the survey was to determine past participants' satisfaction with the overall program and to identify any areas for improvement. Results indicated that nearly all of the respondents were satisfied with the LIEEP. Through the use of open-ended questions and the rating of some additional program components such as the furnace upgrade, insulation upgrade, In Home Energy Evaluation and staff customer service level, insulation was identified to be the area with the most room for improvement. Contractors also came up as an as one of the most common reasons for giving the program a low rating. Some respondents even indicated that Manitoba Hydro should do inspections on contractors' work to verify it was done correctly.

This survey was also designed to help identify the best marketing channels to reach lower income customers. Inserts in Manitoba Hydro energy bills were indicated as the best way to reach lower income homeowners. Word of mouth advertising, recommendations by friends, family members and neighbours, was also one of the most common reasons participants took advantage of the LIEEP.

In order to utilize word of mouth advertising most effectively, questions were included in the survey that pertained to recommending the program. Also included was whether incentives would increase the level of at which participants recommended the program. A high percentage of respondents had recommended the program to at least one person. Many explained their own positive experiences to others, the steps of the program, and encouraged others to participate in this "Good Program". Of the respondents that did not recommend the program to others, the results show that this was often due to participants not being able to identify other lower income households even within their own friend circles.

The LIEEP name was identified prior to the survey as an area of interest and therefore questions concerning participants' perceptions of the Program name were included in this survey. Participants indicated a stronger preference for the more neutral name, "Income-Based Energy Efficiency Program." A number of respondents perceived the current name "lower income" to have a negative stigma attached to it. Some customers did like the fact that "lower income" made it easy to identify who the Program was targeted to.

Another survey objective was to learn where lower income individuals seek out information on money saving home improvements and which organizations they found to be the most trusted. Manitoba Hydro was given the highest trust rating over other groups such as Community

Resource Centres, Friendship Centres, and other Government Agencies. Also, Manitoba Hydro was named second most often in where lower income homeowners go to find home improvement information they trust.

Recommendation

The opinions shared in this survey by past Program participants have helped to provide a deeper understanding of LIEEP participants' experiences throughout the Program. Survey results have shown a clear need for improving participant's experiences with the insulation component of the program. Due to the technical nature of the work, it is important that contractors communicate better with the participants and provide an improved level of customer service. An additional study could be undertaken to dig deeper into participant's satisfaction with the insulation upgrade process and contractors.

Although "Income-Based Energy Efficiency Program" was indicated as a more attractive name for the Program, there was only a moderate majority. The LIEEP name should be further investigated to see if it consistently performs poorly and if there are better alternatives that could help attract a greater number of lower income participants to the Program.

Each survey respondent had at least one of the furnace or insulation upgrades completed during their participation in the LIEEP. It would be useful to gather information on the participants that were recommended a furnace, insulation and/or boiler upgrade but did not end up completing these upgrades. Also, the experiences and opinions of those that applied to the program but were not recommended any upgrades would be valuable as these participants still received the free In Home Energy Evaluation and low cost energy savings items.

While the survey did provide useful information that has helped identify areas for further examination, it was a general customer survey that touched on a variety of topics, without going into too much detail. It is recommended that the Affordable Energy Department research the creation of a formal customer satisfaction survey that can be administered on a regular basis to measure changes in participants' perceptions over time. Not only would an ongoing customer survey help to identify areas for improvement such as this current survey did, it would also assist in measuring whether changes to those improvement areas were well received by participants.

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1.0 STUDY BACKGROUND

As part of the Affordable Energy Department's ongoing efforts to assess how well the Lower Income Energy Efficiency Program (LIEEP) is serving its customers, the department undertook a survey of past participants. Objectives of the survey included measuring participants' satisfaction levels through each step of the Program and to assess for any areas that can be enhanced in the future. The survey was also designed to provide feedback on the effectiveness of current marketing initiatives and to gauge participants' experiences in the LIEEP and their willingness to recommend the Program to others.

The survey respondents are all past participants in the LIEEP and therefore each are identified as lower income as determined by Statistics Canada Low Income Cut-Off (LICO) thresholds. The LIEEP uses more inclusive thresholds that are 125% of the Statistics Canada LICO. Participants went through the private homeowner component of the overall Program and so every respondent in this survey is at least one of the owners of their residence.

Respondents to the survey had either their furnace or insulation (or both) upgraded by the LIEEP. Each respondent would have also received a free In Home Energy Evaluation and low cost energy saving items such as compact fluorescent light bulbs, low-flow showerheads, bathroom and kitchen aerators, hot water tank pipe wrap, caulking and more.

2.0 METHODOLOGY

The Lower Income Customer Survey was designed by staff in the Affordable Energy Department with input from the marketing research team in the Power Smart Planning, Evaluation and Research Department. It included seventeen closed an open-ended questions.

The questions pertained to topics such as satisfaction with the program and customer service levels. The survey also probed into the effectiveness of program marketing efforts with questions regarding how participants had heard of the LIEEP, what incented them to apply and also how they share information about the Program. The survey was also designed to seek out the sources of information participants seek out for trusted information on money saving upgrades to their home.

The customers were selected randomly from a database of past participants. Staff from Affordable Energy Department consulted with the Power Smart Planning, Evaluation and Research team to determine the number of survey participants required to draw statistically valid conclusions from the survey responses. The random sample of survey participants was then selected based on their expertise.

The survey was fielded as an over the phone survey. Students working within the Affordable Energy Department were available to field the phone survey in the evenings Monday through Friday between the hours of 4:00 – 8:00 pm. Students called the selected participants during the months of September and October, 2011.

Survey participants were encouraged to share their opinions and experiences during the phone survey and were assured that their information would remain confidential and anonymous. Calls were attempted at least four times on varying days and at different times to maximize the

customer response rate. Voicemails were also left with participants so that they could call back during more convenient times to complete the survey. LIEEP staff were also available to field the survey Monday through Friday during the hours of 7:30 - 4:00 pm if it was more convenient for the respondent.

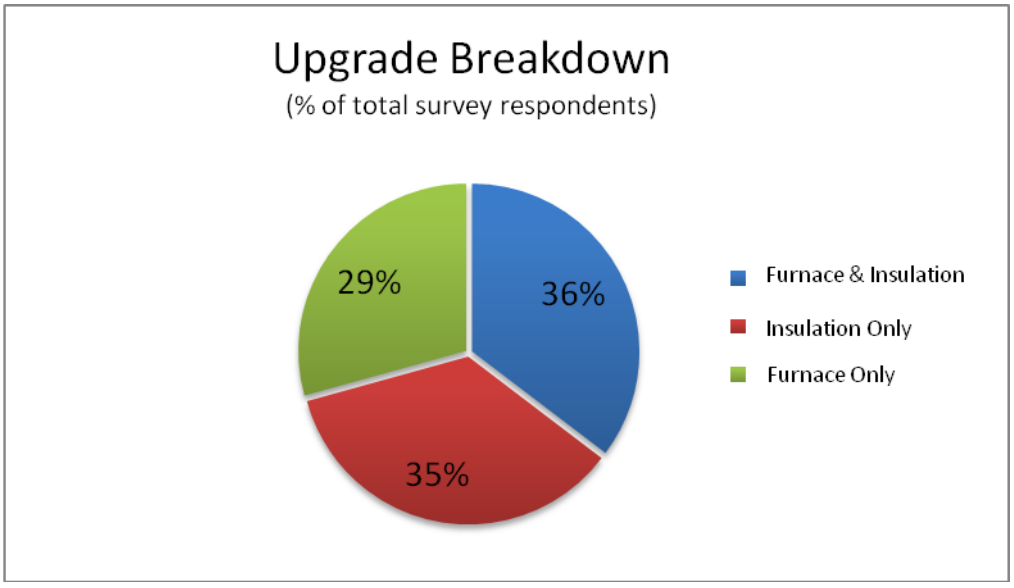
There were six hundred forty-three LIEEP past participants selected at random. The students made approximately 1200 calls and completed the survey with 251 people. The rate of participation in the survey was 39%.

3.0 STUDY FINDINGS

3.1 WORK COMPLETED (Q.1)

An integral part of the survey was measuring customer's satisfaction with the furnace and insulation upgrade components of the Lower Income Energy Efficiency Program. As a result, the survey was designed to only include participants that had at least one of a furnace or insulation upgrade.

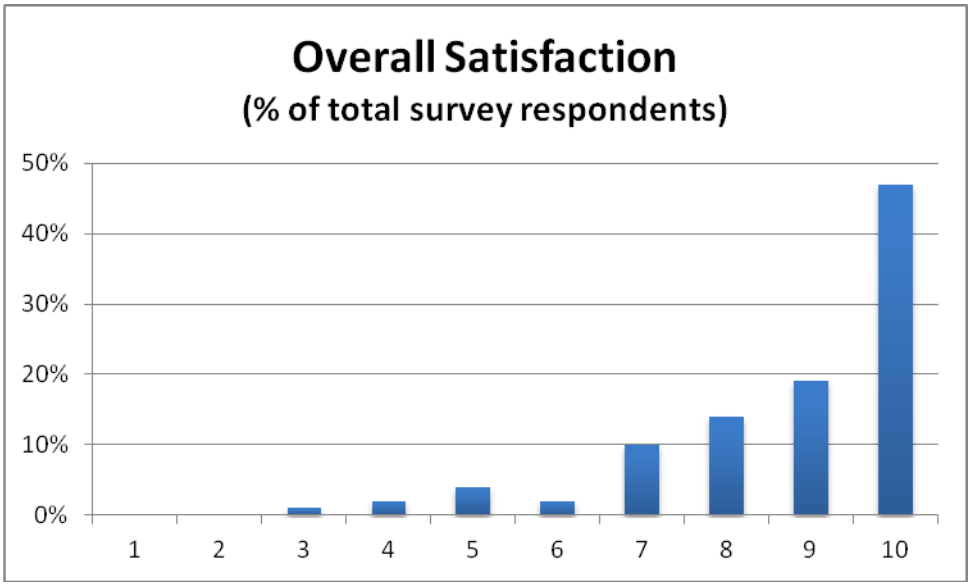
There were 29% of respondents who indicated that they had their furnace upgraded through the LIEEP and no insulation was upgraded. Thirty-five per cent of respondents received free insulation upgrades, but did not have their furnace upgraded. The remaining 36% of respondents received free insulation upgrades and had their furnace upgraded through the LIEEP.



3.2 CUSTOMER SATISFACTION

3.2.1 General Program Satisfaction (Q.2)

Respondents were asked to rate their overall satisfaction level with the Lower Income Energy Efficiency Program on a scale from 1 to 10 with 1 being very dissatisfied and 10 being very satisfied.



Satisfaction Level (Q.2a)

The average rating of the overall satisfaction level was 8.74 and the median was 9. Ninety per cent of respondents selected a score of 7 or higher. Those that selected a 7 or lower (23 respondents) were then asked follow up questions relating to why they gave the LIEEP that rating and what could have been done to improve the program. Those respondents were then asked to provide satisfaction ratings on individual components of the program to help assess which component(s) was the cause of the lower overall satisfaction rating.

Why the lower rating? (Q. 2b)

The most common reasons cited by the respondents who were asked this question were insulation upgrade issues (9 respondents), followed by Contractor issues (4), Furnace Issues (3) and Paperwork (3).

Improvement Opportunities (Q. 3)

Participants were then asked if they had any suggestions for improving the Program. Four respondents (17% of the 23 respondents), stated that they thought inspections should be undertaken by Manitoba Hydro to verify that the jobs were done to appropriate standards. Thirty- nine per cent cited Contractors as an area for improvement, with some of the comments

relating to the level of customer service and communication with the participants, and others relating to the timeliness in completing the job. Manitoba Hydro staff customer service was cited in three respondents' examples as an area for improvement. The level of paperwork came up twice and for three respondents that had insulation upgrades only, they expressed a desire for more options when insulation upgrades fell outside the scope of the Program.

Manitoba Hydro Staff Satisfaction (Q. 4)

Thirty-five per cent of these respondents rated their satisfaction with Manitoba Hydro staff at a 10 (very satisfied). Within the lower end of the scale there was one participant that selected a 1 (very dissatisfied), one that selected a 5 and three that selected a 6. The average rating was 8 out of 10.

In Home Energy Evaluation Satisfaction(Q. 5)

There were a range of satisfaction levels selected in regards to the In Home Energy Evaluation. Three customers selected a 2, one selected a 3, one selected a 4, and two selected a 5. The rest of these respondents selected a 7 or higher. The average rating for the In Home Energy Evaluation was a 7.10 out of 10.

Insulation Upgrade Satisfaction(Q. 6)

Three respondents rated their insulation upgrade satisfaction level at a one on the scale (very dissatisfied). There was an additional one participant that selected a 4, two that selected a 5, and another two that selected a six. The average rating was 6.31 out of 10.

Furnace Upgrade Satisfaction (Q. 7)

There were only two customers that rated their furnace upgrade satisfaction at a level five, and one at a level six. The rest selected don't know, or selected an 8 or above. The average rating was 8.42 satisfaction level.

3.3 MARKETING

3.3.1 How did they hear (Q.8)

The majority of respondents heard about the LIEEP through an insert in their Manitoba Hydro bill[1]. Recommendation from a friend, family member, co-worker or neighbor was the second most common response at 21% of the respondents.

Customer Response	Quantifier (%)
Insert in Manitoba Hydro bill	34%
Recommended by friend / family/ co-worker / neighbor	21%
Adv. / Letter in mailbox	11%
Newspaper	9%
Doesn't remember	8%
Internet / Manitoba Hydro website	7%
Television	6%
Advertisement (couldn't identify type or where)	2%
Radio	2%
Why wouldn't you participate?	2%
Bus bench / transit shelter	2%
Contractor	1%
Call to Manitoba Hydro	1%
Community Resource Centre	0%
Seniors Resource	0%
RRAP Program	0%

(Customers could reply more than one answer)

3.3.2 Why participate (Q.9)

The most commonly cited reason for participation in the LIEEP was for the furnace upgrade at 40% of respondents. Lower utility bills was another strong reason for participation at 31%, followed by insulation (27%). A number of people (10%) thought the Program was too good to not take advantage of the benefits.

Customer Response	Quantifier (%)
Furnace	40%
Lower utility bills	31%

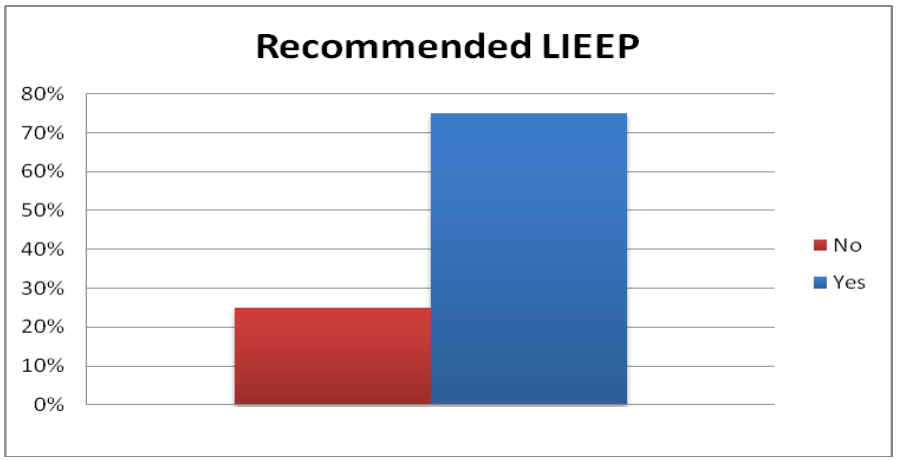
[1] In a month where a Lower Income Energy Efficiency Program bill insert is sent out, all bill paying customers in Manitoba, regardless of income or location in the Province would receive it.

Insulation	27%
Take Advantage of Program	10%
Need	5%
They Qualify	5%
Improved Home Comfort	4%
Old House	4%
Save energy	3%
Affordable	3%
Recommended by friend / family member / co-worker / neighbor	2%
Couldn't afford to do upgrades on own	2%
Trust Manitoba Hydro	1%
Good for the environment	1%
Other	4%

(Customers could reply more than one answer)

3.3.3 Recommendation (Q.10)

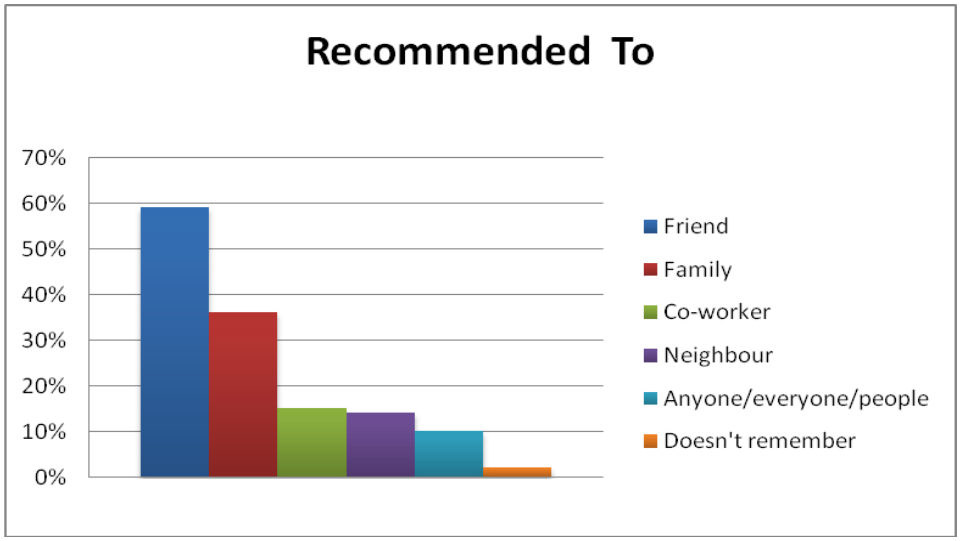
Participants were asked if they had recommended the LIEEP to anyone and 75% of respondents noted that they had recommended the Program.



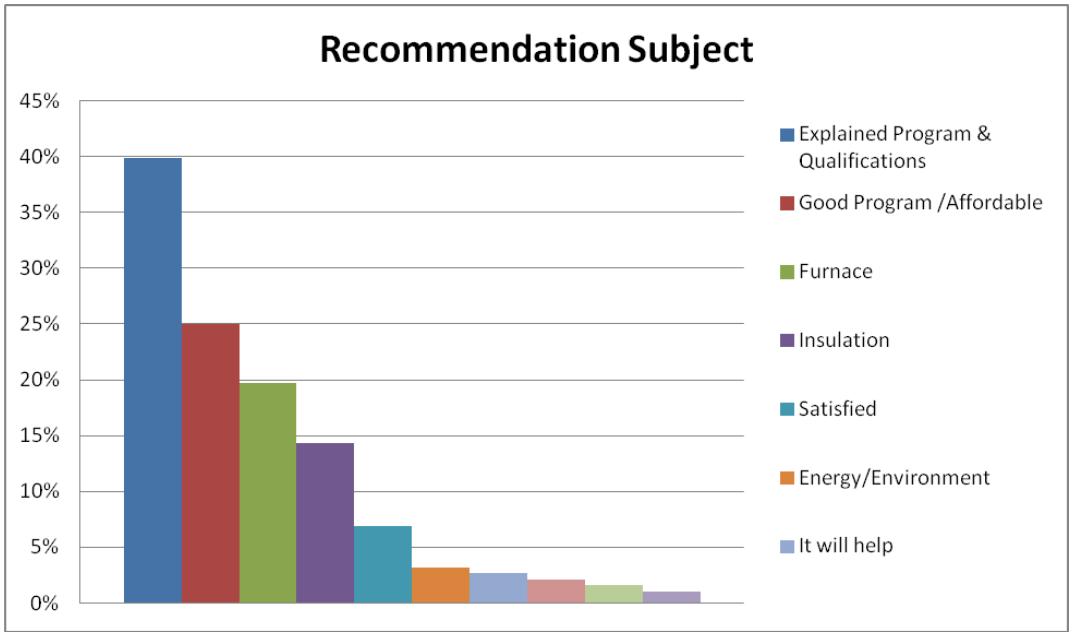
The respondents who stated they had not recommended the program to anyone (63 respondents) were asked the reason for not making a recommendation. Many of these respondents suggested that they did not know anyone with lower income, or that they were unaware of their friend's/family income levels. Respondents also commonly answered that they did not know anyone that needed to go through the Program with some even saying specifically that it was because they had a newer furnace or home.

Participants Recommended the LEEP to:(Q.10 c & d)

Respondents that answered yes (188 respondents) were asked who they recommended the Program to. The most common recommendations were to a friend (59%), family member (36%), co-worker (15%) and neighbour (14%). Ten per cent of the respondents stated that they would recommend the LIEEP to anyone, everyone or people in general.

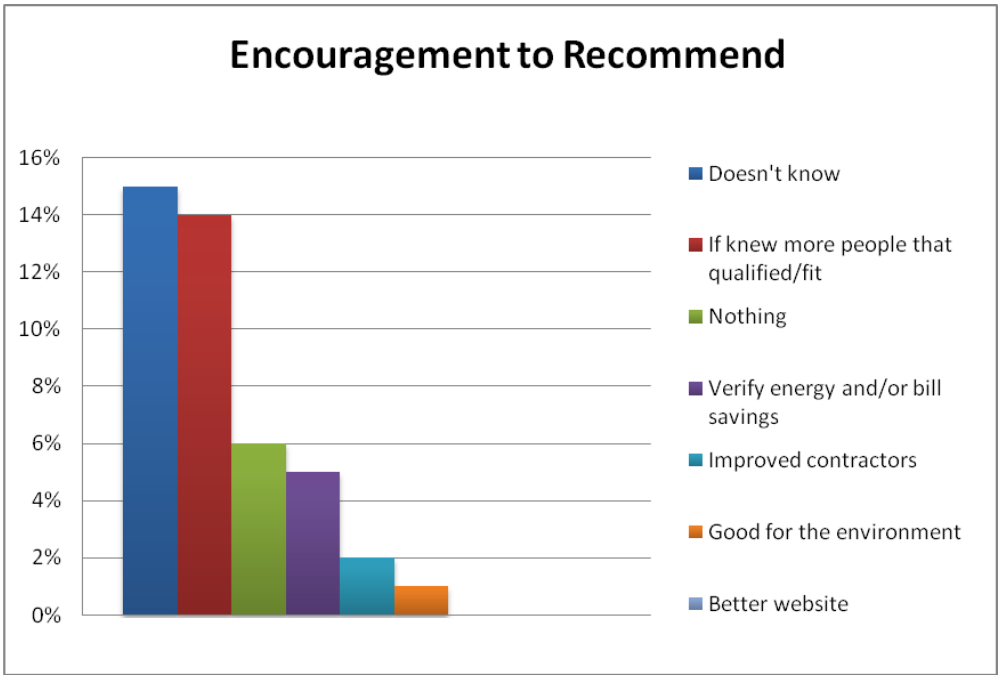


Of the 188 respondents that had recommended the LIEEP, 75 stated that they had explained the program to the person they recommended it to, which included at least one of the following: Program qualifications, Program steps, and personal experience. Forty-seven respondents shared their opinion that the LIEEP was a good program or that it was affordable. Thirty seven people recommended that the other homeowner take advantage of the furnace upgrade offered under the LIEEP and 27 mentioned the insulation upgrade. Thirteen respondents indicated that they had shared their own satisfaction with the LIEEP.



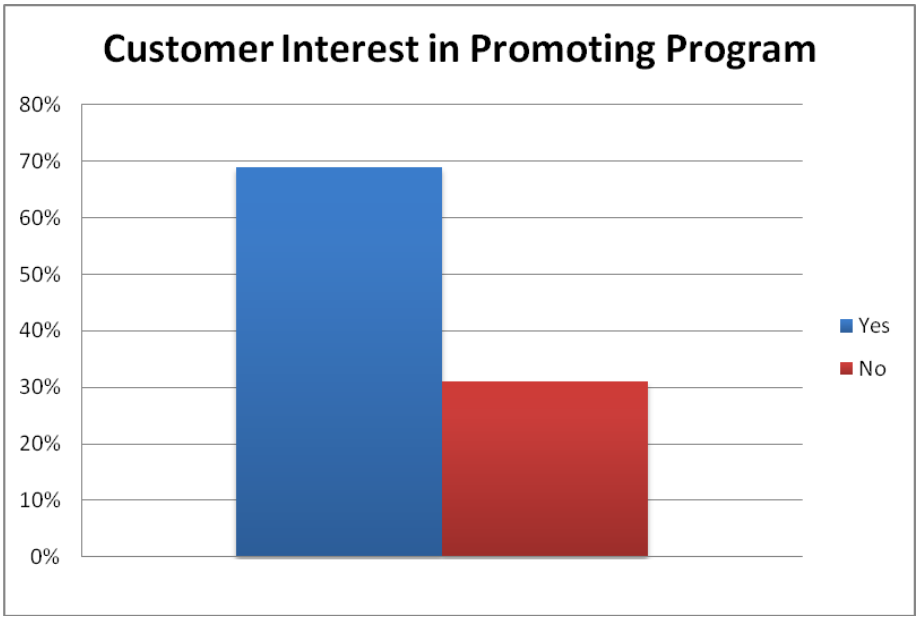
3.3.4 Incentive to Recommend (Q.11)

Participants were asked what would encourage them to recommend the Program to more people. There were 35 people that said they would make greater recommendations if they knew more people that qualified for the LIEEP. Another 10 people made comments that suggested they would like to first get a better understanding or representation of their actual bill and/or energy savings.



Brochures (Q.11 b)

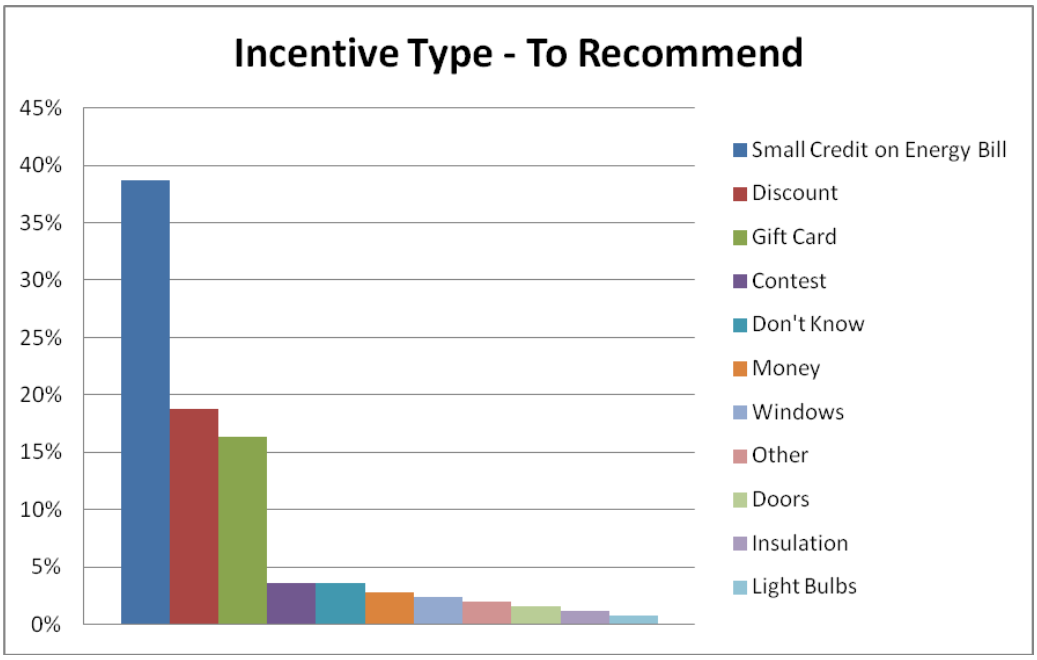
Respondents were next asked “if we sent you some brochures that talked about the Program, would you use them?” Sixty-nine percent of respondents indicated that they would use the brochures to promote the LIEEP.



Other options (Q.11 c &d)

Participants expressed a strong interest in recommending the program to a greater number of people if they were offered a small incentive. 191 respondents (76%) indicated they would recommend the Program if a small incentive was offered.

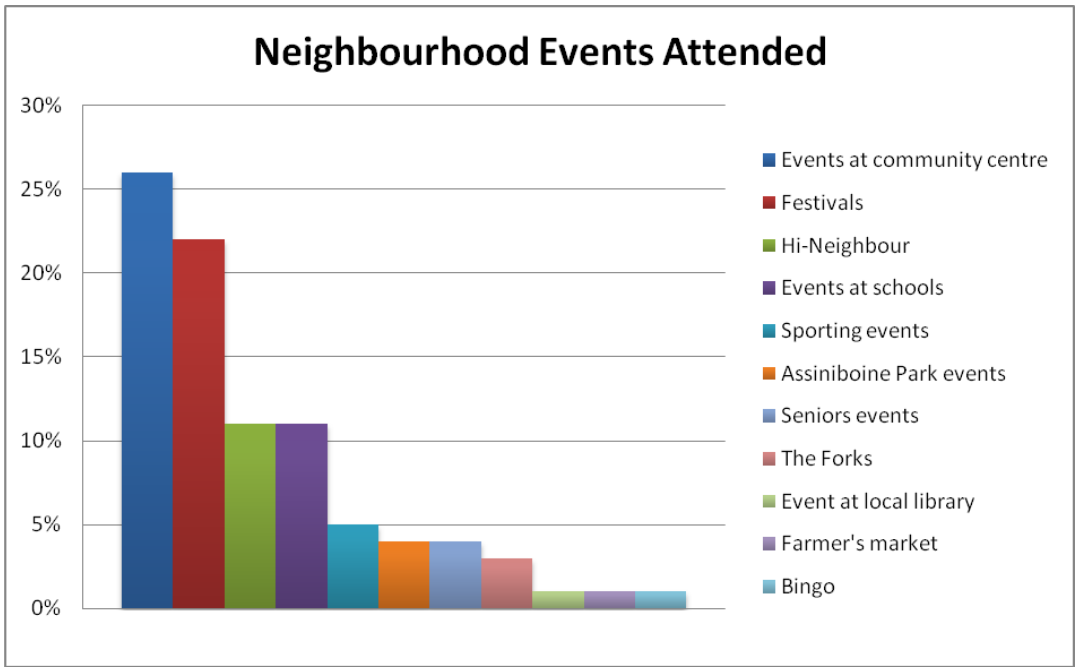
Respondents were then asked what type of small incentive would encourage them to recommend the LIEEP to a greater number of people. Nearly 40% of respondents indicated that a small credit on their energy bill would incent them to do so. This is closely followed by a discount (19%) and gift card (16%).



3.3.5 Neighbourhood Events (Q.15)

Respondents were asked if there were any specific neighbourhood events that they attend. Seventy per cent of respondents stated that they do attend these types of events. This strong representation reveals that neighbourhood events may be an effective channel of promotion for the LIEEP to lower income individuals.

Of the 76 respondents that stated they do attend a neighbourhood event, 26% indicated they attend events at their community centre. Festivals were named by 17 people, school events were stated by 8, and another 8 people mentioned the Hi-Neighbour festival specifically.



3.4 PROGRAM NAME

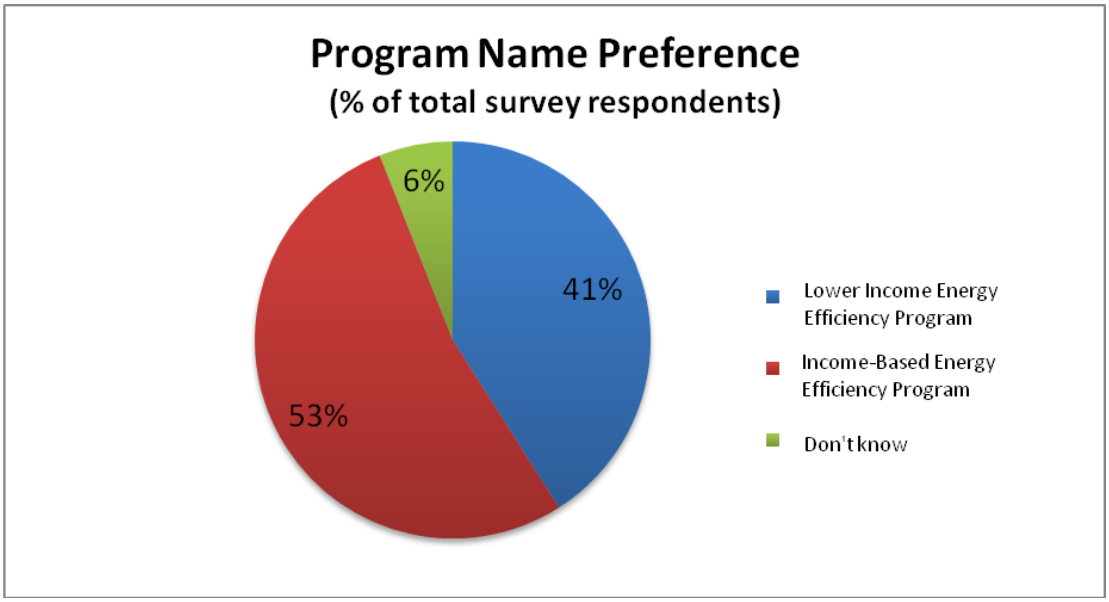
One objective of this survey was to discover participants' perceptions and feelings towards the Lower Income Energy Efficiency Program name.

3.4.1 Program Name Preference (Q.12)

Respondents were asked which of two program names would attract more people to the Program – the current name "Lower Income Energy Efficiency Program" or the alternative name "Income-Based Energy Efficiency Program."

Preference(Q.12 a)

Fifty-three percent of those surveyed picked the alternative name over the current Program name.



Why that name? (Q.12 b & c)

The reasons provided for selecting the Lower Income Energy Efficiency Program as the better choice for name were most commonly that it sounded better or is a better descriptor of the Program. Respondents pointed out that it made the qualifications more clear and that people would know right away that the Program was meant for those with lower income.

Customer Response	Quantifier (%)
Sounds better/better descriptor	14%
Know that it's for those with Lower Incomes	10%
More direct	5%
More clear for who it is for	4%

Know that it's for a specific group/category of people	3%
Appeals to people	3%
Catches attention	2%
No shame in having lower income	1%
Simple	1%

The most common reasons stated for selecting the Income-based Energy Efficiency Program as the better choice for name were that the current name has a negative connotation to it and that “Income-based” sounded more inclusive, positive and was a better descriptor.

Customer Response	Quantifier (%)
"Lower Income" has negative connotation/stigma	22%
Sounds better/better descriptor	13%
More inclusive	6%
"Income-Based" has positive connotation	2%
Neutral	0%

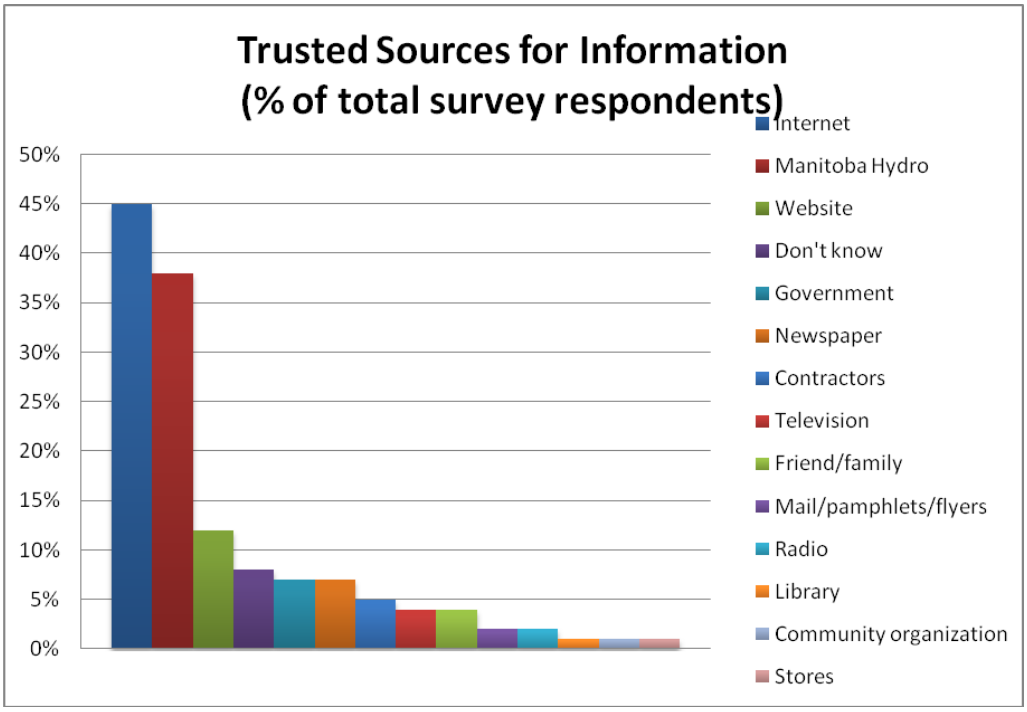
3.5 TRUST

Another objective of the survey was to determine where customers look to for trusted information on money saving home improvements.

3.5.1 Trusted Information Sources - Improvements (Q.13)

Respondents were asked, “If you were looking for information that you trust on ways to make improvements to your home to save you money, where would you look or go?” The most commonly cited source of trusted information was the internet at 45%, followed closely by Manitoba Hydro, then the Manitoba Hydro website.

Surprisingly, community organizations were quite low on the list of trusted information sources. This may not suggest that customers do not trust the organizations, but instead that they don’t think of community organizations as a source of information on home energy and money saving improvement opportunities.



3.5.2 Trusted Information Sources (Q.14)

Respondents were asked to rank the following four organizations/groups on a scale of 1 to 10 if they were looking for trusted information, with 1 being the least trusted and 10 being the most trusted.

Community Resource Centre (Q.14 a)

The average rating given to Community Resource Centres was 7.22 out of 10.

Friendship Centre (Q.14 b)

Friendship Centres were rated at a 6.48, the lowest out of the four options.

Government Agency (Q.14 c)

The average Government Agency score was 7.74 out of 10.

Manitoba Hydro (Q.14 d)

Manitoba Hydro's trust rating was the highest at an average of 9.02.

3.6 SUGGESTED CHANGES

The survey was designed to identify any areas for improvement in the LIEEP. Respondents were asked in an open-ended question, "If you could change something about the program, what would it be?"

3.6.1 Change something (Q.16)

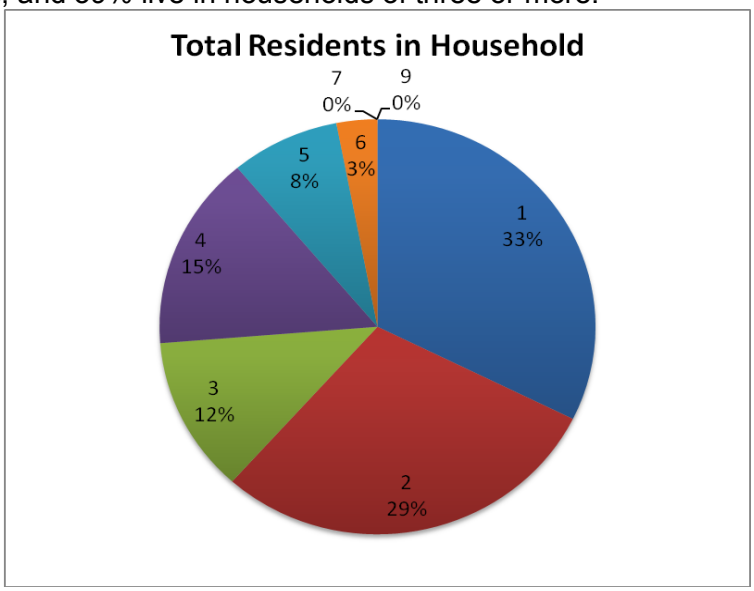
Thirty per cent of respondents indicated that they wouldn't change anything about the Program. Ten per cent suggested improving the insulation contractors. Nine per cent suggested that the time to go through the LIEEP could be reduced to make the process more efficient. Less paperwork was mentioned by 8% of respondents as well as improved communication. Only two per cent of the respondents indicated that more marketing/advertising efforts were required to promote the program, and only 4% suggested the furnace contractors could be improved.

Customer Response	Quantifier (%)
Wouldn't change anything	30%
Improved Insulation contractors	10%
Improved time/process/make program faster	9%
Less paperwork	8%
Improve communication/offer more information	8%
Include more/ more comprehensive	6%
Higher income cut-off	5%
Improved furnace contractors	4%
More advertising	2%

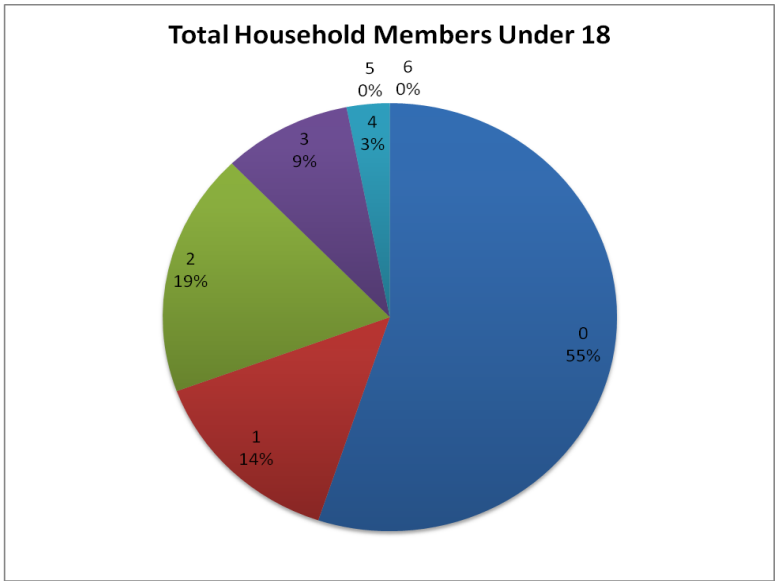
3.7 RESPONDENT DEMOGRAPHICS

All of the respondents to this survey fall within 125% of the Low Income Cut-Off (LICO). Eighty per cent are residents of Winnipeg, and 20% are disbursed throughout Manitoba in rural communities (mostly southern Manitoba). This disbursement of rural and city respondents is consistent with program participation levels. The average income of the respondents is $26,700.67.

Thirty-two per cent of the respondents (80) live in single-person households, 29% live in two person households, and 39% live in households of three or more.



Fifty-four per cent of the respondents (136 people) have no children under the age of 18 living in their household. Thirty-three per cent have one or two children under 18 in their home, and 13% had three or more children under 18.



APPENDIX A

Survey Questionnaire

THE CUSTOMER SURVEY
Survey of Past LIEEP Participants

INTRO SCRIPT

Hi, my name is _____ and I am calling from Manitoba Hydro. May I speak with [name of homeowner]?

i. *Yes (Proceed to Survey)*
ii. *No, not available –*
Is there a more convenient time I can call back?
Yes. Record time
iii. *No (End Survey)*

We are interviewing people who have participated in Manitoba Hydro's Lower Income Energy Efficiency Program within the last year.

Having gone through this program, your opinion and suggested improvements are valuable to us. We will review these comments to make possible changes to make it easier for more people to participate in the program.

All answers will be kept confidential, under Hydro's control, and will be handled in accordance with Manitoba's protection of privacy legislation. Also, to let you know that the call will be recorded for quality control purposes.

May I have about 10 - 15 minutes of your time to gather your feedback on this Program?

i. *No.*
No problem. Thank you for your time.
ii. *Yes.*
Thank you. I will start with the questions …

ENTER CUSTOMER APP #

ENTER TIME

ENTER YOUR INTIALS

SURVEY QUESTIONS

1. a) Has your home's insulation or furnace been upgraded as part of Manitoba Hydro's Lower Income Energy Efficiency Program?
   - ❑ Yes
   - ❑ No (Will terminate survey)

b) If yes, then what was upgraded:

- ❑ Insulation and Furnace
- ❑ Insulation only
- ❑ Furnace only

2. a) On a scale of 1 to 10, with 1 being very dissatisfied and 10 being very satisfied, how was your OVERALL satisfaction with the Lower Income Energy Efficiency Program?

1 2 3 4 5 6 7 8 9 10 Don't Know

- - SKIP TO Q8 IF 7 OR MORE - -

b) Why did you give the Lower Income Energy Efficiency Program that overall rating?

3. What could have been done to improve Program? (OPEN ENDED, USE BELOW TO CHECK OFF IF THEY ANSWER IN THESE CATEGORIES)

- ❑ Manitoba Hydro Staff
- ❑ In Home Energy Evaluation
- ❑ Insulation Upgrade
- ❑ Furnace Upgrade
- ❑ Other: _____

4. On a scale of 1 to 10, with 1 being very dissatisfied and 10 being very satisfied, how satisfied were you with the service you received from **Manitoba Hydro staff?**

1 2 3 4 5 6 7 8 9 10 Don't Know

5. On the same scale of 1 to 10, how satisfied were you with the **in-home energy evaluation** performed on your home?

1 2 3 4 5 6 7 8 9 10 Don't Know

IF RECORDED INSULATION UPGRADE IN Q1 – ASK NEXT QUESTION

6. On the same scale of 1 to 10, how satisfied were you with the **insulation upgrade** performed on your home? (Only ask if customer had insulation upgrade.)

1 2 3 4 5 6 7 8 9 10 Don't Know

IF RECORDED FURNACE UPGRADE IN Q1 – ASK NEXT QUESTION

7. On the same scale of 1 to 10, how satisfied were you with the **furnace upgrade** performed on your home? (Only ask if customer had furnace upgrade.)

1 2 3 4 5 6 7 8 9 10 Don't Know

8. How did you first hear about the Lower Income Energy Efficiency Program?

- ❑ Bus bench / transit shelter
- ❑ Letter or postcard
- ❑ Community resource centre. a) Which one? _____
- ❑ Newspaper adv. b) Which paper? _____
- ❑ Radio
- ❑ Presentation or event. c) Which one? _____
- ❑ Recommendation by family / friend / neighbor / co-worker (circle)
- ❑ Ad in Mailbox
- ❑ Insert in Manitoba Hydro Bill
- ❑ Manitoba Hydro Website
- ❑ Community newsletter
- ❑ Canvasser (door to door)
- ❑ Outdoor signs
- ❑ TV
- ❑ Phone call
- ❑ Other: _____

9. Why did you take advantage of this Program? (OPEN ENDED - Check all that apply)

- ❑ Lower Utility Bills
- ❑ Free Insulation
- ❑ Low cost furnace
- ❑ Recommended by friend / family / colleague / neighbor
- ❑ More comfortable home
- ❑ Other: _____

10. a) Have you recommended the Lower Income Energy Efficiency Program to anyone?

- ❑ Yes
- ❑ No

b) If No, then is there a reason why you haven't recommended this Program?

_____

_____

c) If Yes, then whom did you recommend the Program to? (OPEN ENDED - Check all that apply)

- ❑ Friend
- ❑ Family
- ❑ Co-worker
- ❑ Neighbour
- ❑ Other: _____

d) What did you tell them about the Program?

_____

11. a) What would encourage you to recommend the program to more people? (OPEN ENDED - Okay if they do not provide an answer – skip to part b))

_____

_____

b) How about if we sent you some brochures that talked about the program. Would you use them?

- ❑ Yes. If so, how many would you like? _____
- ❑ No

c) What if we could offer you a small incentive. Would you recommend the program to more people?

- ❑ Yes
- ❑ No

d) If Yes, what type of small incentive would encourage you to recommend the program to more people? (OPEN ENDED – PROBE WITH PROMPTS BELOW)

_____

(Probe: a contest, gift card – for where?, discount, small credit to energy bill, other?)

12. a) Which program name do you think would attract more people to apply to the program?

- ❑ ***Lower Income** Energy Efficiency Program*
- ❑ ***Income-Based** Energy Efficiency Program*
- ❑ ***Don't Know***

b) If Lower Income Energy Efficiency Program, then why did you choose this?

_____

c) If Income-Based Energy Efficiency Program, then why did you choose this?

_____

13. If you were looking for information that you trust on ways to make improvements to your home to save you money, where would you look or go? (OPEN ENDED - Check all that apply.)

- ❑ Community centre
- ❑ Arena
- ❑ Friendship centre
- ❑ Neighborhood events
- ❑ Library
- ❑ Radio
- ❑ TV
- ❑ Billboards
- ❑ Newspaper
- ❑ Retailers
- ❑ Contractors
- ❑ Government Agency a) Which one? _____
- ❑ Bank b) Which one? _____
- ❑ Internet
- ❑ Other: _____

14. If you were looking for trusted information, how would you rank the following, with 1 being least trusted and 10 being most trusted?

a) Community Resource Centre:

1 2 3 4 5 6 7 8 9 10 Don't Know

b) Friendship Centre:

1 2 3 4 5 6 7 8 9 10 Don't Know

c) Government Agency:

1 2 3 4 5 6 7 8 9 10 Don't Know

d) Manitoba Hydro:

1 2 3 4 5 6 7 8 9 10 Don't Know

15. a) Are there any neighbourhood events that you/your family attend?

- ❑ Yes
- ❑ No

b) If yes, which ones?

_____

_____

16. I would like to ask you one last wrap up question, which is: If you could change something about the program, what would it be? (OPEN ENDED)

_____

_____

(Do not prompt, but check answers that customer may provide, including: less paperwork, a higher household income cutoff, improved insulation contractors, improved furnace contractors, improved in-home energy evaluators, improved MH customer service staff, more advertising, etc.)

17. Thank you for the information – this has been very helpful. We may want to meet with you in person as part of a group of about ten customers that we will bring together to share ideas with about the Lower Income Energy Efficiency Program. Would we be able to contact you again in the near future to participate in such a group?

- ❑ Yes
- ❑ No

Thank you again for taking the time to participate in this survey.

ENTER DATE OF INHOME REVIEW

ENTER DATE OF INSULATION COMPLETION

ENTER DATE OF FURNACE COMPLETION

ENTER TIME

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a copy of all reports, evaluations, memos, analyses or other written documents of any nature containing an articulation of performance indicator targets to be met within the next year after publication of the performance targets, within the next two years after publication of the performance targets, or within the next three years after publication of the performance targets, with respect to:

a) Debt prevention;

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Manitoba Hydro does not set performance targets for debt prevention. Manitoba Hydro regularly compiles data for the purposes of monitoring debt prevention activities. These compilations vary in format from very detailed, customer specific reporting to broader summaries of activities. Many of these outputs are presented without context and without explanation, and therefore, would not be meaningful outside of the direct operational areas.

Many of these statistics are presented in response to GAC/MH-I-21.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

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Please provide a copy of all reports, evaluations, memos, analyses or other written documents of any nature containing an articulation of performance indicator targets to be met within the next year after publication of the performance targets, within the next two years after publication of the performance targets, or within the next three years after publication of the performance targets, with respect to:

b) Debt management;

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Manitoba Hydro does not set specific performance targets for debt management.

Please refer to Manitoba Hydro's response to GAC/MH-I-55b.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a copy of all reports, evaluations, memos, analyses or other written documents of any nature containing an articulation of performance indicator targets to be met within the next year after publication of the performance targets, within the next two years after publication of the performance targets, or within the next three years after publication of the performance targets, with respect to:

c) The treatment of vulnerable customers;

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Please see the response to GAC/MH-I-55c.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a copy of all reports, evaluations, memos, analyses or other written documents of any nature containing an articulation of performance indicator targets to be met within the next year after publication of the performance targets, within the next two years after publication of the performance targets, or within the next three years after publication of the performance targets, with respect to:

d) Customer satisfaction.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Manitoba Hydro's customer satisfaction performance indicator is a customer's satisfaction with Manitoba Hydro's *Overall Service*. The Corporate Strategic Plan sets forth the Manitoba Hydro corporate dashboard which includes the customer satisfaction measure and target. The target for customer satisfaction with *Overall Service* is >8.4.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a copy of all reports, evaluations, memos, analyses or other written documents of any nature containing any Company methodology, procedure or process designed to identify vulnerable residential customers, defining a "vulnerable" customer as one who by reason of age, health, disability or severe financial insecurity is unable to safeguard their personal welfare or the personal welfare of other members of their household.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Manitoba Hydro does not have any new or additional documentation related to this request which has not been already reviewed in prior regulatory hearings.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a copy of all reports, evaluations, memos, analyses or other written documents of any nature containing any Company methodology, procedure or process designed to systematically review, study or assess the records of vulnerable residential customers to determine patterns of payment or other behavior that will be used to determine appropriate customer service actions by the Company.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Manitoba Hydro does not have a copy of any reports, evaluations, memos, analyses or other written documents of any nature containing any Company methodology, procedure or process designed to systematically review, study or assess the records of vulnerable residential customers to determine patterns of payment or other behavior that will be used to determine appropriate customer service actions by the Company.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a copy of all reports, evaluations, memos, analyses or other written documents of any nature containing any Company methodology, procedure or process designed to systematically review, study or assess Company residential billing and/or payment records in an effort to:

a) Characterize patterns of nonpayment;
b) Identify the characteristics of nonpayers;
c) Identify predictors of nonpayment;
d) Identify strategies to reduce nonpayment;
e) Identify early indicators of nonpayment.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Please see Manitoba Hydro's response to GAC/MH-I-17b.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a copy of:

a) The results of any call center satisfaction transactional research survey (e.g., "point-of-contact" survey, "moment of truth" survey) performed within the immediately preceding 36 months.
b) A copy of the survey;
c) A description of the survey methodology, including but not limited to the sample size, how the targets are selected, and the like.
d) An explanation of how the Company uses the results of this survey to improve service to its customers.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Manitoba Hydro has not undertaken a call center satisfaction transactional survey within the last 36 months.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide each study benchmarking the Company's customer satisfaction, revenue collection, revenue protection, or other customer service activities against national, regional or size-based peer electric companies.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

The Canadian Electricity Association's (CEA) Public Attitude Survey is the primary source used to benchmark Manitoba Hydro's customer satisfaction performance with its overall service as well as with various service elements. See Manitoba Hydro's response to MMF/MH-I-5a for a discussion on Manitoba Hydro's ratings in customer service. The CEA results are collaborated by other, similar studies which are outlined in Manitoba Hydro's response to MMF/MH-I-5e.

Manitoba Hydro does not possess any benchmarking studies on revenue collection or revenue protection.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide an illustrative residential bill with a 30-day arrears generated to a residential customer:

a) In January;
b) In July;
c) In November.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Please see attached bill samples. These are examples of the 30 day Friendly Reminder bill message on all electric premises, apartments and combined gas/electric premises.

Manitoba Hydro does not retain bills dating back more than 6 months and is therefore unable to provide an example of a July bill.

In addition, the Social Services Insert (see below) is included with the bill and the following message if the customer has not received this information in the previous 12 months:

"Information on service disconnection, limited electric service, payment arrangements and financial assistance is enclosed."

Social Services Insert

Important notice

In February 2008, Manitoba Hydro's disconnection policy and procedures were amended under Public Utilities Board No. 14/08. Under this policy, collection activity is based on the total outstanding account balance.

If your account is past due and you do not have a payment arrangement, your natural gas and/or electric services could be disconnected or your electric service could be load limited* regardless of which product or service is in arrears.

To make payment arrangements, contact Manitoba Hydro at:

- **204-480-5901** (Winnipeg)
- **1-888-624-9376** (outside Winnipeg)
- **credit@hydro.mb.ca**

If you have already made payment arrangements, thank you and please disregard this notice.

Financial assistance may be available through Employment and Income Assistance:

- **204-948-4000** (Winnipeg)
- **1-866-626-4862** (outside Winnipeg)

Additional financial counseling and support may be available through Community Financial Counseling Services:

- **204-989-1900** (Winnipeg)
- **1-888-573-2383** (outside Winnipeg)

*A load limited electric service will provide enough energy to continue running your gas furnace motor. Disconnection and load limiting will be carried out in accordance with Manitoba Hydro Policy and Procedures, as approved by the Public Utilities Board of Manitoba.

Manitoba Hydro

PF401/f Rev 1401 CIIC 01-44-51

All Electric House

30 Day Arrears Bill Message

January & November

Manitoba Hydro

Customer name / Nom du client	CUSTOMER NAME
Account number / Nº de compte	**6111131 5111131**
Service location / Adresse de service	123 STREET NAME THOMPSON MB R1R 1R1
Date issued / Date d'émission	Nov 13 NOV 2014
Amount due / Montant à payer	**$ 423.89**
Due date / Date d'échéance	**Dec 01 DÉC 2014**
Cycle number / Nº de cycle	07

Customer service / 24 hour Trouble calls
Service à la clientèle / Dépannage 24 h sur 24

Winnipeg	204•480•5900
Outside Winnipeg / Extérieur de Winnipeg	1•888•MBHYDRO (1•888•624•9376)
Deaf access line / Ligne pour malentendants	204•360•6154
E•Mail address / Adresse électronique	customerservice@hydro.mb.ca

Sign up for MyBill and receive your bill and account information online.
www.hydro.mb.ca/mybill

Inscrivez•vous à MyBill et recevez en ligne votre facture et des données sur votre compte.
www.hydro.mb.ca/francais/mybill

Account summary / Sommaire du compte

Previous charges and credits / Frais et crédits antérieurs

Previous balance / Solde antérieur		$ 368.85
Payment / Paiement	Nov 03 NOV	100.00 CR
Balance forward / Solde reporté		$ 268.85

New charges / Nouveaux frais

Electricity / Électricité	(GST/TPS	$ 6.71)	$ 151.68
Other charges / Autres frais			3.36

Amount due / Montant à payer $ 423.89

Due date / Date d'échéance Dec 01 DÉC 2014

When purchasing household electronic devices look for ENERGY STAR® qualified products. They will use up to 50 per cent less electricity in standby mode.

À l'achat de dispositifs électroniques pour la maison, cherchez des produits homologués ENERGY STAR® qui utilisent jusqu'à 50 % moins d'énergie en mode de veille.

See important collection message on page 2.

Voir le message important sur le recouvrement à la page 2.

Manitoba Hydro

Mail Payment to / Envoyez le paiement par la poste à
PO BOX 7900 STN MAIN
WINNIPEG MB R3C 5R1

If mailing, please specify amount paid on return portion of bill and enclose with payment.
Si vous payez par la poste, veuillez inclure le talon de la facture sur lequel le montant payé est indiqué.

CUSTOMER NAME
123 STREET NAME
THOMPSON MB R1R 1R1

Account number/Nº de compte	**6111131 5111131**
Amount due/Montant à payer	**$ 423.89**
Due date /Date d'échéance	**Dec 01 DÉC 2014**

Payment enclosed/ Paiement ci•joint
$

☐ CH ☐ CA ☐ DR

00000000 06111131511111311 000000000000 0000042389 0000026885 7

Manitoba Hydro

Customer name / Nom du client: CUSTOMER NAME

Account number / N° de compte: 6111131 5111131

Service location / Adresse de service: 123 STREET NAME
THOMPSON MB R1R 1R1

Date issued / Date d'émission: Nov 13 NOV 2014

Special messages / Messages particuliers

u Our records indicate your account is past due. Please give this your prompt attention. If payment or payment arrangements have been made, kindly disregard this notice.

Nos dossiers indiquent que votre compte est en souffrance. Veuillez communiquer avec nous immédiatement. Si vous avez payé ou si vous avez déjà pris des dispositions pour le faire, veuillez ignorer cet avis.

Electricity • Residential / Électricité • Résidentiel

Meter number / N° de compteur	Service / Pour la période From / Du	To / Au	Days / Jours	Meter readings / Relevés du compteur Previous / Précédent	Present / Nouveau	Multiplier / Multiplicateur	kW.h / kWh	Reading type / Type de relevé
111111	Oct 14 OCT/14	Nov 10 NOV/14	27	5601	7321	1	1,720	Estimated Estimatif

Basic Charge / Redevance de base			$ 7.28
Energy Charge / Frais d'énergie	1,720.000 kW.h	x $0.07381	126.95
Subtotal / Total partiel			134.23
8.00% Prov Tax / Taxe prov.			10.74
5.00% GST / TPS			6.71

Electricity charges / Frais d'électricité **151.68**

Other charges / Autres frais

Late Payment Charge at 1.25% / Pénalité de retard à 1,25 % 3.36

Consumption history / Histoire de la consommation

Watch this space for consumption comparisons when readings are received. / Surveillez cet espace où figureront des données comparatives de votre consommation quand nous recevrons des relevés de votre compteur.

Electricity terminology / Terminologie de l'électricité

Balance remaining • This dollar amount reflects your original loan or other term billing less any instalments billed or additional payments on the balance as of the date on the bill; instalments billed but not yet paid are included in your Amount Due. The Balance remaining does not reflect payments made on Interest or future Interest calculations. If you are planning to make a partial or full payment for your loan or other term billing, please contact Manitoba Hydro for current information. / **Solde à payer** • Ce montant comprend le montant de votre prêt initial ou le montant de toute autre facturation à terme diverse moins tout versement facturé ou tout paiement additionnel appliqué au solde jusqu'à la date indiquée sur la facture. Les versements facturés encore impayés sont compris dans le Montant à payer. Le Solde à payer ne comprend pas les paiements appliqués aux intérêts ou aux intérêts à calculer dans l'avenir. Si vous prévoyez payer, en partie ou en entier, votre emprunt ou le montant de toute autre facturation à terme, veuillez communiquer avec Manitoba Hydro pour des renseignements mis à jour.

Basic charge • The fixed charge that pays part of the cost of providing service and does not depend on how much energy is used. It helps pay for such items as the maintenance of meters, the cost of meter reading, billing and record keeping. / **Redevance de base** • Frais fixes qui servent à payer une partie du coût de l'offre d'un service et qui ne dépend pas de la quantité d'énergie consommée. Ils servent à payer les coûts d'éléments tels que l'entretien des compteurs, le relevé des compteurs, la facturation et la tenue de dossiers.

Energy Charge • A breakdown of the costs of your electrical service calculated by multiplying the number of kilowatt•hours by a rate for that block of energy. If Manitoba Hydro provides different rates for different portions of your service, each rate calculation will appear on its own line. / **Frais d'énergie** • Répartition des coûts du service d'électricité calculés en multipliant le nombre de kilowattheures par le tarif correspondant à ce bloc d'énergie. Si Manitoba Hydro propose des tarifs différents pour des portions différentes du service qu'elle vous fournit, le calcul selon chaque tarif paraît sur une ligne séparée.

Manitoba Hydro

Customer name / Nom du client	CUSTOMER NAME
Account number / Nº de compte	**6111130 5111130**
Service location / Adresse de service	LOT 0 BLOCK 0 PLAN 0 PIPESTONE MB R1R 1R1
Date issued / Date d'émission	Jan 23 JAN 2015
Amount due / Montant à payer	**$ 688.59**
Due date / Date d'échéance	**Feb 10 FÉV 2015**
Cycle number / Nº de cycle	13

Customer service / 24 hour Trouble calls
Service à la clientèle / Dépannage 24 h sur 24

Winnipeg	204•480•5900
Outside Winnipeg / Extérieur de Winnipeg	1•888•MBHYDRO (1•888•624•9376)
Deaf access line / Ligne pour malentendants	204•360•6154
E•Mail address / Adresse électronique	customerservice@hydro.mb.ca

Sign up for MyBill and receive your bill and account information online.
www.hydro.mb.ca/mybill

Inscrivez•vous à MyBill et recevez en ligne votre facture et des données sur votre compte.
www.hydro.mb.ca/francais/mybill

Account summary / Sommaire du compte

Previous charges and credits / Frais et crédits antérieurs

Previous balance / Solde antérieur		$ 528.41
Payment / Paiement	Jan 19 JAN	500.00 CR
Balance forward / Solde reporté		$ 28.41

New charges / Nouveaux frais

Electricity / Électricité	(GST/TPS $ 19.01)	$ 429.67
Other charges / Autres frais		230.51

Amount due / Montant à payer $ 688.59

Due date / Date d'échéance Feb 10 FÉV 2015

The only way to guarantee that an electronic device is not drawing power is to unplug it.

La seule façon de garantir qu'un dispositif électronique n'utilise pas d'énergie est de le débrancher.

See important collection message on page 2.

Voir le message important sur le recouvrement à la page 2.

Manitoba Hydro

Mail Payment to / Envoyez le paiement par la poste à
PO BOX 7900 STN MAIN
WINNIPEG MB R3C 5R1

If mailing, please specify amount paid on return portion of bill and enclose with payment.
Si vous payez par la poste, veuillez inclure le talon de la facture sur lequel le montant payé est indiqué.

CUSTOMER NAME
PO BOX 123 STN MAIN
TOWN NAME MB R1R 1R1

Account number/Nº de compte	**6111130 5111130**
Amount due/Montant à payer	**$ 688.59**
Due date /Date d'échéance	**Feb 10 FÉV 2015**

Payment enclosed/ Paiement ci•joint
$

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Manitoba Hydro

Customer name / Nom du client: CUSTOMER NAME

Account number / N° de compte: 6111130 5111130

Service location / Adresse de service: LOT 0 BLOCK 0 PLAN 0
PIPESTONE MB R1R 1R1

Date issued / Date d'émission: Jan 23 JAN 2015

Special messages / Messages particuliers

u Our records indicate your account is past due. Please give this your prompt attention. If payment or payment arrangements have been made, kindly disregard this notice.

Nos dossiers indiquent que votre compte est en souffrance. Veuillez communiquer avec nous immédiatement. Si vous avez payé ou si vous avez déjà pris des dispositions pour le faire, veuillez ignorer cet avis.

Electricity • Residential / Électricité • Résidentiel

Meter number / N° de compteur	Service / Pour la période From / Du	To / Au	Days / Jours	Meter readings / Relevés du compteur Previous / Précédent	Present / Nouveau	Multiplier / Multiplicateur	kW.h / kWh	Reading type / Type de relevé
111111	Dec 17 DÉC/14	Jan 21 JAN/15	35	5371	5868	10	4,970	Actual Réel
222222	Jan 21 JAN/15	Jan 22 JAN/15	1	0	83	1	83	Estimated Estimatif

Basic Charge / Redevance de base			$ 7.28	
Energy Charge / Frais d'énergie	5,053.000 kW.h	x $0.07381	372.96	
Subtotal / Total partiel			380.24	
8.00% Prov Tax / Taxe prov.			30.42	
5.00% GST / TPS			19.01	
Electricity charges / Frais d'électricité				**429.67**

Other charges / Autres frais

NSF Cheque Fee / Frais • provision insuffisante	20.00
Late Payment Charge at 1.25% / Pénalité de retard à 1,25 %	2.95
Payment Reversal / Renversement paiement	207.56
Total other charges / Total • autres frais	**230.51**

Consumption history / Histoire de la consommation

Watch this space for consumption comparisons when readings are received. / Surveillez cet espace où figureront des données comparatives de votre consommation quand nous recevrons des relevés de votre compteur.

Electricity terminology / Terminologie de l'électricité

Reading type • This column indicates whether the meter reading for the time period was an actual (read by Manitoba Hydro or contract meter reader), customer or estimate (based on previous use and including such factors as the weather). / **Genre de relevé** • La colonne indique que le relevé du compteur pour la période a été réel, c'est•à•dire obtenu par Manitoba Hydro, un préposé aux compteurs contractuel ou le client ou s'il est estimatif (fondé sur la consommation antérieure et sur d'autres facteurs tels que les conditions météorologiques)."

Balance remaining • This dollar amount reflects your original loan or other term billing less any instalments billed or additional payments on the balance as of the date on the bill; instalments billed but not yet paid are included in your Amount Due. The Balance remaining does not reflect payments made on Interest or future Interest calculations. If you are planning to make a partial or full payment for your loan or other term billing, please contact Manitoba Hydro for current information. / **Solde à payer** • Ce montant comprend le montant de votre prêt initial ou le montant de toute autre facturation à terme diverse moins tout versement facturé ou tout paiement additionnel appliqué au solde jusqu'à la date indiquée sur la facture. Les versements facturés encore impayés sont compris dans le Montant à payer. Le Solde à payer ne comprend pas les paiements appliqués aux intérêts ou aux intérêts à calculer dans l'avenir. Si vous prévoyez payer, en partie ou en entier, votre emprunt ou le montant de toute autre facturation à terme, veuillez communiquer avec Manitoba Hydro pour des renseignements mis à jour.

All Electric Apartment

30 Day Arrears Bill Message

January & November

Manitoba Hydro

Customer name / Nom du client	CUSTOMER NAME
Account number / N° de compte	**6111132 5111132**
Service location / Adresse de service	123 STREET NAME APT 305 WINNIPEG MB R1R 1R1
Date issued / Date d'émission	Jan 19 JAN 2015
Amount due / Montant à payer	**$ 449.86**
Due date / Date d'échéance	**Feb 04 FÉV 2015**
Cycle number / N° de cycle	10

Customer service / 24 hour Trouble calls
Service à la clientèle / Dépannage 24 h sur 24

Winnipeg	204•480•5900
Outside Winnipeg / Extérieur de Winnipeg	1•888•MBHYDRO (1•888•624•9376)
Deaf access line / Ligne pour malentendants	204•360•6154
E•Mail address / Adresse électronique	customerservice@hydro.mb.ca

Sign up for MyBill and receive your bill and account information online.
www.hydro.mb.ca/mybill

Inscrivez•vous à MyBill et recevez en ligne votre facture et des données sur votre compte.
www.hydro.mb.ca/francais/mybill

Account summary / Sommaire du compte

Previous charges and credits / Frais et crédits antérieurs

Previous balance / Solde antérieur		$ 253.28
Payment / Paiement	Dec 22 DÉC	34.00 CR
Payment / Paiement	Jan 07 JAN	25.00 CR
Balance forward / Solde reporté		$ 194.28

New charges / Nouveaux frais

Electricity / Électricité	(GST/TPS	$ 11.89)	$ 253.15
Other charges / Autres frais			2.43

Amount due / Montant à payer $ 449.86

Due date / Date d'échéance Feb 04 FÉV 2015

The only way to guarantee that an electronic device is not drawing power is to unplug it.

La seule façon de garantir qu'un dispositif électronique n'utilise pas d'énergie est de le débrancher.

See important collection message on page 2.

Voir le message important sur le recouvrement à la page 2.

Manitoba Hydro

Mail Payment to / Envoyez le paiement par la poste à
PO BOX 7900 STN MAIN
WINNIPEG MB R3C 5R1

If mailing, please specify amount paid on return portion of bill and enclose with payment.
Si vous payez par la poste, veuillez inclure le talon de la facture sur lequel le montant payé est indiqué.

CUSTOMER NAME
123 STREET NAME APT 305
WINNIPEG MB R1R 1R1

Account number/N° de compte	**6111132 5111132**
Amount due/Montant à payer	**$ 449.86**
Due date /Date d'échéance	**Feb 04 FÉV 2015**

Payment enclosed/ Paiement ci•joint
$

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Manitoba Hydro

Customer name / Nom du client: CUSTOMER NAME

Account number / N° de compte: 6111132 5111132

Service location / Adresse de service: 123 STREET NAME APT 305
WINNIPEG MB R1R 1R1

Date issued / Date d'émission: Jan 19 JAN 2015

Special messages / Messages particuliers

u Our records indicate your account is past due. Please give this your prompt attention. If payment or payment arrangements have been made, kindly disregard this notice.

Nos dossiers indiquent que votre compte est en souffrance. Veuillez communiquer avec nous immédiatement. Si vous avez payé ou si vous avez déjà pris des dispositions pour le faire, veuillez ignorer cet avis.

u Your meter reading will be estimated next month. If you prefer to bill to a customer reading, please see "Instructions for reading your meter" and provide your reading in the 3 day period ending **Feb 15, 2015**.

Le relevé de votre compteur sera estimé le mois prochain. Si vous préférez une facture fondée sur un relevé soumis par le client, veuillez voir « Instructions pour la lecture de votre compteur » et transmettre votre relevé dans la période de 3 jours qui se termine le **15 FÉV 2015**.

Electricity • Residential / Électricité • Résidentiel

Meter number / N° de compteur	Service / Pour la période From / Du	To / Au	Days / Jours	Meter readings / Relevés du compteur Previous / Précédent	Present / Nouveau	Multiplier / Multiplicateur	kW.h / kWh	Reading type / Type de relevé
1111111	Dec 15 DÉC/14	Jan 14 JAN/15	30	35154	38263	1	3,109	Actual Réel

Basic Charge / Redevance de base			$ 7.28
Energy Charge / Frais d'énergie	3,109.000 kW.h	x $0.07381	229.48
Subtotal / Total partiel			236.76
0.50% City Tax / Taxe mun.			1.19
1.40% Prov Tax / Taxe prov.			3.31
5.00% GST / TPS			11.83
5.00% GST on City Tax / TPS sur taxe mun			0.06
Electricity charges / Frais d'électricité			**253.15**

Other charges / Autres frais

Late Payment Charge at 1.25% / Pénalité de retard à 1,25 %	2.43

Consumption history / Histoire de la consommation

	Meter Number / N° de compteur	Use this year/ Consommation (cette année)	Days in period/ Nbre de jours	Use per day this year/ Consommation / jour (cette année)	Use last year/ Consommation (an dernier)	Days in period/ Nbre de jours	Use per day last year/ Consommation / jour (an dernier)	Use for the last twelve months / Consommation (12 derniers mois)
Electricity kW.h / Électricité (kWh)	1111111	Dec • Jan 5,266	61	86.33	Dec • Jan 2,486	62	40.10	16,108

Electricity terminology / Terminologie de l'électricité

Reading type • This column indicates whether the meter reading for the time period was an actual (read by Manitoba Hydro or contract meter reader), customer or estimate (based on previous use and including such factors as the weather). / **Genre de relevé** • La colonne indique que le relevé du compteur pour la période a été réel, c'est•à•dire obtenu par Manitoba Hydro, un préposé aux compteurs contractuel ou le client ou s'il est estimatif (fondé sur la consommation antérieure et sur d'autres facteurs tels que les conditions météorologiques)."

Manitoba Hydro

Customer name / Nom du client	CUSTOMER NAME
Account number / N° de compte	**6111119 5111119**
Service location / Adresse de service	123 STREET NAME APT 305 WINNIPEG MB R1R 1R1
Date issued / Date d'émission	Nov 18 NOV 2014
Amount due / Montant à payer	**$ 84.33**
Due date / Date d'échéance	**Dec 04 DÉC 2014**
Cycle number / N° de cycle	10

Customer service / 24 hour Trouble calls
Service à la clientèle / Dépannage 24 h sur 24

Winnipeg	204•480•5900
Outside Winnipeg / Extérieur de Winnipeg	1•888•MBHYDRO (1•888•624•9376)
Deaf access line / Ligne pour malentendants	204•360•6154
E•Mail address / Adresse électronique	customerservice@hydro.mb.ca

Sign up for MyBill and receive your bill and account information online.
www.hydro.mb.ca/mybill

Inscrivez•vous à MyBill et recevez en ligne votre facture et des données sur votre compte.
www.hydro.mb.ca/francais/mybill

Account summary / Sommaire du compte

Previous charges and credits / Frais et crédits antérieurs

Previous balance / Solde antérieur		$ 44.13
Payment / Paiement	Nov 07 NOV	10.00 CR
Balance forward / Solde reporté		$ 34.13

New charges / Nouveaux frais

Electricity / Électricité	(GST/TPS $ 2.33)	$ 49.77
Other charges / Autres frais		0.43

Amount due / Montant à payer $ 84.33

Due date / Date d'échéance Dec 04 DÉC 2014

When purchasing household electronic devices look for ENERGY STAR® qualified products. They will use up to 50 per cent less electricity in standby mode.

À l'achat de dispositifs électroniques pour la maison, cherchez des produits homologués ENERGY STAR® qui utilisent jusqu'à 50 % moins d'énergie en mode de veille.

See important collection message on page 2.

Voir le message important sur le recouvrement à la page 2.

Manitoba Hydro

Mail Payment to / Envoyez le paiement par la poste à
PO BOX 7900 STN MAIN
WINNIPEG MB R3C 5R1

If mailing, please specify amount paid on return portion of bill and enclose with payment.
Si vous payez par la poste, veuillez inclure le talon de la facture sur lequel le montant payé est indiqué.

CUSTOMER NAME
123 STREET NAME APT 305
WINNIPEG MB R1R 1R1

Account number/N° de compte **6111119 5111119**

Amount due/Montant à payer **$ 84.33**

Due date /Date d'échéance **Dec 04 DÉC 2014**

Payment enclosed/ Paiement ci•joint **$**

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Manitoba Hydro

Customer name / Nom du client: CUSTOMER NAME

Account number / N° de compte: 6111119 5111119

Service location / Adresse de service: 123 STREET NAME APT 305
WINNIPEG MB R1R 1R1

Date issued / Date d'émission: Nov 18 NOV 2014

Special messages / Messages particuliers

u Our records indicate your account is past due. Please give this your prompt attention. If payment or payment arrangements have been made, kindly disregard this notice.

Nos dossiers indiquent que votre compte est en souffrance. Veuillez communiquer avec nous immédiatement. Si vous avez payé ou si vous avez déjà pris des dispositions pour le faire, veuillez ignorer cet avis.

u Your meter reading will be estimated next month. If you prefer to bill to a customer reading, please see "Instructions for reading your meter" and provide your reading in the 3 day period ending **Dec 15, 2014**.

Le relevé de votre compteur sera estimé le mois prochain. Si vous préférez une facture fondée sur un relevé soumis par le client, veuillez voir « Instructions pour la lecture de votre compteur » et transmettre votre relevé dans la période de 3 jours qui se termine le **15 DÉC 2014**.

u Effective November 1, 2014, Goods and Services Tax (GST) will be applied to the City of Winnipeg tax on your natural gas and electricity charges. This is in accordance with the Federal Excise Tax Act and Province of Manitoba legislation.

This tax is displayed as a separate line item on your enclosed Manitoba Hydro bill.

Conformément à la Loi sur la taxe d'accise du gouvernement fédéral et aux dispositions législatives du gouvernement du Manitoba, et ce à compter du 1er novembre 2014, la Taxe sur les produits et services (TPS) sera appliquée à la taxe de la Ville de Winnipeg sur vos frais d'électricité et de gaz naturel.

La facture de Manitoba Hydro ci•jointe indique cette taxe sur une ligne séparée.

Electricity • Residential / Électricité • Résidentiel

Meter number / N° de compteur	Service / Pour la période From / Du	To / Au	Days / Jours	Meter readings / Relevés du compteur Previous / Précédent	Present / Nouveau	Multiplier / Multiplicateur	kW.h / kWh	Reading type / Type de relevé
1111111	Oct 15 OCT/14	Nov 14 NOV/14	30	32465	32997	1	532	Actual Réel

Basic Charge / Redevance de base			$ 7.28
Energy Charge / Frais d'énergie	532.000 kW.h	x $0.07381	39.27
Subtotal / Total partiel			46.55
0.50% City Tax / Taxe mun.			0.24
1.40% Prov Tax / Taxe prov.			0.65
5.00% GST / TPS			2.32
5.00% GST on City Tax / TPS sur taxe mun			0.01

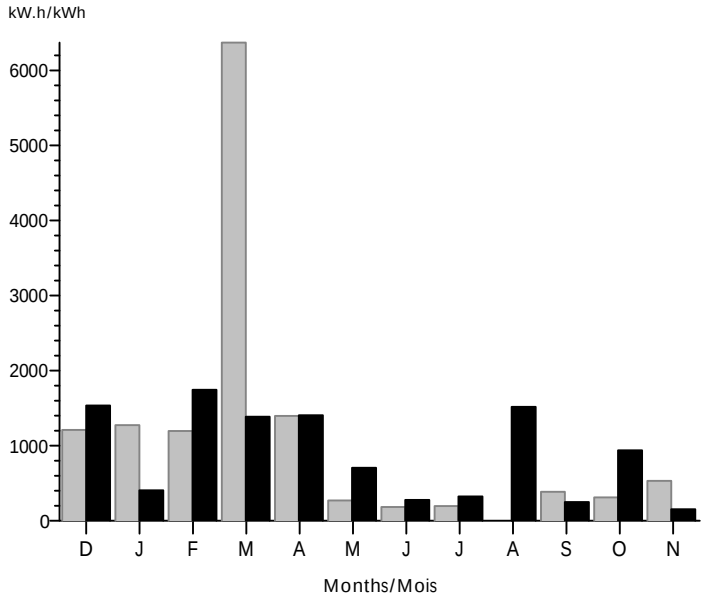
Electricity charges / Frais d'électricité **49.77**

Other charges / Autres frais

Late Payment Charge at 1.25% / Pénalité de retard à 1,25 % 0.43

Consumption history / Histoire de la consommation

Electricity / Électricité (Meter : 1111111)



kW.h Current year / kWh•année en cours
Estimated months / Estimation en
Dec, Jan, Feb, Apr, Jun, Oct / DÉC, JAN, FÉV, AVR, JUN, OCT

kW.h Previous year / kWh•année précédente
Estimated months / Estimation en
Dec, Feb, Mar, Apr, May, Jun, Jul, Oct / DÉC, FÉV, MAR, AVR, MAI, JUN, JUL, OCT

Electricity terminology / Terminologie de l'électricité

Balance remaining • This dollar amount reflects your original loan or other term billing less any instalments billed or additional payments on the balance as of the date on the bill; instalments billed but not yet paid are included in your Amount Due. The Balance remaining does not reflect payments made on Interest or future Interest calculations. If you are planning to make a partial or full payment for your loan or other term billing, please contact Manitoba Hydro for current information. / **Solde à payer** • Ce montant comprend le montant de votre prêt initial ou le montant de toute autre facturation à terme diverse moins tout versement facturé ou tout paiement additionnel appliqué au solde jusqu'à la date indiquée sur la facture. Les versements facturés encore impayés sont compris dans le Montant à payer. Le Solde à payer ne comprend pas les paiements appliqués aux intérêts ou aux intérêts à calculer dans l'avenir. Si vous prévoyez payer, en partie ou en entier, votre emprunt ou le montant de toute autre facturation à terme, veuillez communiquer avec Manitoba Hydro pour des renseignements mis à jour.

Basic charge • The fixed charge that pays part of the cost of providing service and does not depend on how much energy is used. It helps pay for such items as the maintenance of meters, the cost of meter reading, billing and record keeping. / **Redevance de base** • Frais fixes qui servent à payer une partie du coût de l'offre d'un service et qui ne dépend pas de la quantité d'énergie consommée. Ils servent à payer les coûts d'éléments tels que l'entretien des compteurs, le relevé des compteurs, la facturation et la tenue de dossiers.

Energy Charge • A breakdown of the costs of your electrical service calculated by multiplying the number of kilowatt•hours by a rate for that block of energy. If Manitoba Hydro provides different rates for different portions of your service, each rate calculation will appear on its own line. / **Frais d'énergie** • Répartition des coûts du service d'électricité calculés en multipliant le nombre de kilowattheures par le tarif correspondant à ce bloc d'énergie. Si Manitoba Hydro propose des tarifs différents pour des portions différentes du service qu'elle vous fournit, le calcul selon chaque tarif paraît sur une ligne séparée.

Multiplier – Each electricity meter records units of consumption. The multiplier is used to convert these units into the actual kW.h consumption used. / **Multiplicateur** • Chaque compteur d'électricité enregistre des unités de consommation. Le multiplicateur sert à convertir ces unités pour indiquer la consommation réelle en kWh.

Kilowatt (kW) • An amount of electrical power equivalent to 1,000 watts (W). / **Kilowatt (kW)** • Unité de mesure de la puissance électrique correspondant à 1 000 watts (W).

Kilowatt•hour (kW.h) • The unit by which electrical energy is measured. For example, 10•100 W light bulbs switched on for one hour would use one kilowatt•hour (1000 W for one hour). / **Kilowattheure (kWh)** • Unité de mesure de l'énergie électrique. Par exemple, dix ampoules de 100 watts chacune, allumées pendant une heure consomment un kWh (1 000 watts pendant une heure).

Combined Gas/Electric House

30 Day Arrears Bill Message

January & November

Manitoba Hydro

Customer name / Nom du client	CUSTOMER NAME
Account number / N° de compte	**6111118 5111118**
Service location / Adresse de service	123 STREET NAME WINNIPEG MB R1R 1R1
Date issued / Date d'émission	Jan 16 JAN 2015
Amount due / Montant à payer	**$ 1,389.42**
Due date / Date d'échéance	**Feb 03 FÉV 2015**
Cycle number / N° de cycle	09

Customer service / 24 hour Trouble calls
Service à la clientèle / Dépannage 24 h sur 24

Winnipeg	204•480•5900
Outside Winnipeg / Extérieur de Winnipeg	1•888•MBHYDRO (1•888•624•9376)
Deaf access line / Ligne pour malentendants	204•360•6154
E•Mail address / Adresse électronique	customerservice@hydro.mb.ca

Sign up for MyBill and receive your bill and account information online.
www.hydro.mb.ca/mybill

Inscrivez•vous à MyBill et recevez en ligne votre facture et des données sur votre compte.
www.hydro.mb.ca/francais/mybill

Account summary / Sommaire du compte

Previous charges and credits / Frais et crédits antérieurs

Previous balance / Solde antérieur		$ 1,456.01
Payment / Paiement	Dec 19 DÉC	836.47 CR
Balance forward / Solde reporté		$ 619.54

New charges / Nouveaux frais

Electricity / Électricité	(GST/TPS	$ 22.66)	$ 482.26
Natural gas / Gaz naturel	(GST/TPS	13.33)	279.88
Other charges / Autres frais			7.74

Amount due / Montant à payer $ 1,389.42

Due date / Date d'échéance Feb 03 FÉV 2015

The only way to guarantee that an electronic device is not drawing power is to unplug it.

La seule façon de garantir qu'un dispositif électronique n'utilise pas d'énergie est de le débrancher.

See important collection message on page 2.

Voir le message important sur le recouvrement à la page 2.

Manitoba Hydro

Mail Payment to / Envoyez le paiement par la poste à
PO BOX 7900 STN MAIN
WINNIPEG MB R3C 5R1

If mailing, please specify amount paid on return portion of bill and enclose with payment.
Si vous payez par la poste, veuillez inclure le talon de la facture sur lequel le montant payé est indiqué.

CUSTOMER NAME
123 STREET NAME
WINNIPEG MB R1R 1R1

Account number/N° de compte	**6111118 5111118**
Amount due/Montant à payer	**$ 1,389.42**
Due date /Date d'échéance	**Feb 03 FÉV 2015**

Payment enclosed/ Paiement ci•joint
$

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Customer name / Nom du client: CUSTOMER NAME

Account number / N° de compte: **6111118 5111118**

Service location / Adresse de service: 123 STREET NAME
WINNIPEG MB R1R 1R1

Date issued / Date d'émission: Jan 16 JAN 2015

Special messages / Messages particuliers

u Our records indicate your account is past due. Please give this your prompt attention. If payment or payment arrangements have been made, kindly disregard this notice.

Nos dossiers indiquent que votre compte est en souffrance. Veuillez communiquer avec nous immédiatement. Si vous avez payé ou si vous avez déjà pris des dispositions pour le faire, veuillez ignorer cet avis.

u Your meter reading will be estimated next month. If you prefer to bill to a customer reading, please see "Instructions for reading your meter" and provide your reading in the 3 day period ending **Feb 13, 2015**.

Le relevé de votre compteur sera estimé le mois prochain. Si vous préférez une facture fondée sur un relevé soumis par le client, veuillez voir « Instructions pour la lecture de votre compteur » et transmettre votre relevé dans la période de 3 jours qui se termine le **13 FÉV 2015**.

Electricity • Residential / Électricité • Résidentiel

Meter number / N° de compteur	Service / Pour la période From / Du	To / Au	Days / Jours	Meter readings / Relevés du compteur Previous / Précédent	Present / Nouveau	Multiplier / Multiplicateur	kW.h / kWh	Reading type / Type de relevé
111111	Dec 12 DÉC/14	Jan 14 JAN/15	33	19093	25105	1	6,012	Actual Réel

Basic Charge / Redevance de base			$ 7.28
Energy Charge / Frais d'énergie	6,012.000 kW.h	x $0.07381	443.75
Subtotal / Total partiel			451.03
0.50% City Tax / Taxe mun.			2.26
1.40% Prov Tax / Taxe prov.			6.31
5.00% GST / TPS			22.55
5.00% GST on City Tax / TPS sur taxe mun			0.11

Electricity charges / Frais d'électricité **482.26**

Natural gas • Residential / Gaz naturel • Résidentiel

Meter number / N° de compteur	Service / Pour la période From / Du	To / Au	Days / Jours	Meter readings / Relevés du compteur Previous / Précédent	Present / Nouveau	Usage / Consommation		Base pressure adj/Facteur de rajustement de la pression de base		Metric conversion factor/Facteur de conversion métrique		Cubic metres (m³) / Mètres cubes (m³)	Reading type / Type de relevé
222222	Dec 12 DÉC/14	Jan 14 JAN/15	33	2249	2542	293	x	0.98780	x	2.832784	=	819.879	Actual Réel

Basic Charge / Redevance de base					$ 14.00
Primary Gas (Centra) / Gaz d'inventaire (Centra)	92.0 %	x	819.879 m³	x $0.16650	125.59
Supplemental Gas / Gaz de réserve	8.0	x	819.879	x 0.16050	10.53
Transportation to Centra / Transport jusqu'à Centra	100.0	x	819.879	x 0.03950	32.39
Distribution to Customer / Distribution aux clients	100.0	x	819.879	x 0.10250	84.04
Subtotal / Total partiel					266.55
5.00% GST / TPS					13.33

Natural gas charges / Frais de gaz naturel **279.88**

Other charges / Autres frais

Late Payment Charge at 1.25% / Pénalité de retard à 1,25 %

Consumption history / Histoire de la consommation

	Meter Number / Nº de compteur	Use this year/ Consommation (cette année)	Days in period/ Nbre de jours	Use per day this year/ Consommation / jour (cette année)	Use last year/ Consommation (an dernier)	Days in period/ Nbre de jours	Use per day last year/ Consommation / jour (an dernier)	Use for the last twelve months / Consommation (12 derniers mois)
Electricity kW.h / Électricité (kWh)	111111	Dec • Jan 11,048	63	175.37	Dec • Jan 10,914	62	176.03	46,770
Natural gas m³ / Gas naturel (m³)	222222	Dec • Jan 1,404.707	63	22.30	Dec • Jan 1,429.893	62	23.06	3,906.323

Electricity and natural gas terminology / Terminologie de l'électricité et du gaz naturel

Reading type • This column indicates whether the meter reading for the time period was an actual (read by Manitoba Hydro or contract meter reader), customer or estimate (based on previous use and including such factors as the weather). / **Genre de relevé** • La colonne indique que le relevé du compteur pour la période a été réel, c'est•à•dire obtenu par Manitoba Hydro, un préposé aux compteurs contractuel ou le client ou s'il est estimatif (fondé sur la consommation antérieure et sur d'autres facteurs tels que les conditions météorologiques)."

Metric conversion factor – the number used to convert natural gas consumption from imperial units to metric measurement. / **Facteur de conversion métrique** • Nombre utilisé pour convertir en unités métriques la consommation de gaz naturel indiquée en unités impériales.

Base pressure adjustment – a factor applied to a meter reading to adjust the registered volume to correspond to standard measurement conditions. / **Rajustement de la pression de base** • Facteur appliqué à un relevé de compteur pour faire correspondre le volume de gaz enregistré à des conditions normales de mesure.

Cubic metre (m³) – the unit by which natural gas volume is measured. / **Mètre cube (m³)** • Unité de mesure du volume de gaz naturel.

Balance remaining • This dollar amount reflects your original loan or other term billing less any instalments billed or additional payments on the balance as of the date on the bill; instalments billed but not yet paid are included in your Amount Due. The Balance remaining does not reflect payments made on Interest or future Interest calculations. If you are planning to make a partial or full payment for your loan or other term billing, please contact Manitoba Hydro for current information. / **Solde à payer** • Ce montant comprend le montant de votre prêt initial ou le montant de toute autre facturation à terme diverse moins tout versement facturé ou tout paiement additionnel appliqué au solde jusqu'à la date indiquée sur la facture. Les versements facturés encore impayés sont compris dans le Montant à payer. Le Solde à payer ne comprend pas les paiements appliqués aux intérêts ou aux intérêts à calculer dans l'avenir. Si vous prévoyez payer, en partie ou en entier, votre emprunt ou le montant de toute autre facturation à terme, veuillez communiquer avec Manitoba Hydro pour des renseignements mis à jour.

Basic charge • The fixed charge that pays part of the cost of providing service and does not depend on how much energy is used. It helps pay for such items as the maintenance of meters, the cost of meter reading, billing and record keeping. / **Redevance de base** • Frais fixes qui servent à payer une partie du coût de l'offre d'un service et qui ne dépend pas de la quantité d'énergie consommée. Ils servent à payer les coûts d'éléments tels que l'entretien des compteurs, le relevé des compteurs, la facturation et la tenue de dossiers.

Energy Charge • A breakdown of the costs of your electrical service calculated by multiplying the number of kilowatt•hours by a rate for that block of energy. If Manitoba Hydro provides different rates for different portions of your service, each rate calculation will appear on its own line. / **Frais d'énergie** • Répartition des coûts du service d'électricité calculés en multipliant le nombre de kilowattheures par le tarif correspondant à ce bloc d'énergie. Si Manitoba Hydro propose des tarifs différents pour des portions différentes du service qu'elle vous fournit, le calcul selon chaque tarif paraît sur une ligne séparée.

Kilowatt (kW) • An amount of electrical power equivalent to 1,000 watts (W). / **Kilowatt (kW)** • Unité de mesure de la puissance électrique correspondant à 1 000 watts (W).

Kilowatt•hour (kW.h) • The unit by which electrical energy is measured. For example, 10•100 W light bulbs switched on for one hour would use one kilowatt•hour (1000 W for one hour). / **Kilowattheure (kWh)** • Unité de mesure de l'énergie électrique. Par exemple, dix ampoules de 100 watts chacune, allumées pendant une heure consomment un kWh (1 000 watts pendant une heure).

Multiplier – Each electricity meter records units of consumption. The multiplier is used to convert these units into the actual kW.h consumption used. / **Multiplicateur** • Chaque compteur d'électricité enregistre des unités de consommation. Le multiplicateur sert à convertir ces unités pour indiquer la consommation réelle en kWh.

Manitoba Hydro

Customer name / Nom du client	CUSTOMER NAME
Account number / Nº de compte	**6111117 5111117**
Service location / Adresse de service	123 STREET NAME WINNIPEG MB R1R 1R1
Date issued / Date d'émission	Nov 25 NOV 2014
Amount due / Montant à payer	**$ 2,278.54**
Due date / Date d'échéance	**Dec 11 DÉC 2014**
Cycle number / Nº de cycle	15

Customer service / 24 hour Trouble calls
Service à la clientèle / Dépannage 24 h sur 24

Winnipeg	204•480•5900
Outside Winnipeg / Extérieur de Winnipeg	1•888•MBHYDRO (1•888•624•9376)
Deaf access line / Ligne pour malentendants	204•360•6154
E•Mail address / Adresse électronique	customerservice@hydro.mb.ca

Sign up for MyBill and receive your bill and account information online.
www.hydro.mb.ca/mybill

Inscrivez•vous à MyBill et recevez en ligne votre facture et des données sur votre compte.
www.hydro.mb.ca/francais/mybill

Account summary / Sommaire du compte

Previous charges and credits / Frais et crédits antérieurs

Previous balance / Solde antérieur			$ 1,044.37
Balance forward / Solde reporté			$ 1,044.37

New charges / Nouveaux frais

Electricity / Électricité	(GST/TPS	$ 25.72)	$ 580.11
Natural gas / Gaz naturel	(GST/TPS	28.41)	641.00
Other charges / Autres frais			13.06

Amount due / Montant à payer $ 2,278.54

Due date / Date d'échéance Dec 11 DÉC 2014

When purchasing household electronic devices look for ENERGY STAR® qualified products. They will use up to 50 per cent less electricity in standby mode.

À l'achat de dispositifs électroniques pour la maison, cherchez des produits homologués ENERGY STAR® qui utilisent jusqu'à 50 % moins d'énergie en mode de veille.

See important collection message on page 2.

Voir le message important sur le recouvrement à la page 2.

Manitoba Hydro

Mail Payment to / Envoyez le paiement par la poste à
PO BOX 7900 STN MAIN
WINNIPEG MB R3C 5R1

If mailing, please specify amount paid on return portion of bill and enclose with payment.
Si vous payez par la poste, veuillez inclure le talon de la facture sur lequel le montant payé est indiqué.

CUSTOMER NAME
123 STREET NAME
WINNIPEG MB R1R 1R1

Account number/Nº de compte	**6111117 5111117**
Amount due/Montant à payer	**$ 2,278.54**
Due date /Date d'échéance	**Dec 11 DÉC 2014**

Payment enclosed/ Paiement ci•joint
$

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Manitoba Hydro

Customer name / Nom du client: CUSTOMER NAME

Account number / N° de compte: 6111117 5111117

Service location / Adresse de service: 123 STREET NAME
WINNIPEG MB R1R 1R1

Date issued / Date d'émission: Nov 25 NOV 2014

Special messages / Messages particuliers

u Our records indicate your account is past due. Please give this your prompt attention. If payment or payment arrangements have been made, kindly disregard this notice.

Nos dossiers indiquent que votre compte est en souffrance. Veuillez communiquer avec nous immédiatement. Si vous avez payé ou si vous avez déjà pris des dispositions pour le faire, veuillez ignorer cet avis.

u The Public Utilities Board has approved new natural gas rates. Please see the enclosed insert for details.

La Régie des services publics a approuvé de nouveaux tarifs du gaz naturel. Veuillez consulter l'encart ci•joint pour tous les détails.

u Effective November 1, 2014, Goods and Services Tax (GST) will be applied to the City of Winnipeg tax on your natural gas and electricity charges. This is in accordance with the Federal Excise Tax Act and Province of Manitoba legislation.

This tax is displayed as a separate line item on your enclosed Manitoba Hydro bill.

Conformément à la Loi sur la taxe d'accise du gouvernement fédéral et aux dispositions législatives du gouvernement du Manitoba, et ce à compter du 1er novembre 2014, la Taxe sur les produits et services (TPS) sera appliquée à la taxe de la Ville de Winnipeg sur vos frais d'électricité et de gaz naturel.

La facture de Manitoba Hydro ci•jointe indique cette taxe sur une ligne séparée.

Electricity • Residential over 200 amp / Électricité • Résidentiel • plus de 200 A

Meter number / N° de compteur	Service / Pour la période From / Du	To / Au	Days / Jours	Meter readings / Relevés du compteur Previous / Précédent	Present / Nouveau	Multiplier / Multiplicateur	kW.h / kWh	Reading type / Type de relevé
111111	Oct 22 OCT/14	Nov 21 NOV/14	30	5799	5964	40	6,600	Estimated Estimatif

Basic Charge / Redevance de base			$ 14.56
Energy Charge / Frais d'énergie	6,600.000 kW.h	x $0.07381	487.15
Subtotal / Total partiel			501.71
2.50% City Tax / Taxe mun.			12.55
8.00% Prov Tax / Taxe prov.			40.13
5.00% GST / TPS			25.09
5.00% GST on City Tax / TPS sur taxe mun			0.63

Electricity charges / Frais d'électricité **580.11**

Natural gas • Large Commercial / Gaz naturel • Commercial • grand

Meter number / N° de compteur	Service / Pour la période From / Du	To / Au	Days / Jours	Meter readings / Relevés du compteur Previous / Précédent	Present / Nouveau	Usage / Consommation	Base pressure adj/Facteur de rajustement de la pression de base	Metric conversion factor/Facteur de conversion métrique	Cubic metres (m³) / Mètres cubes (m³)	Reading type / Type de relevé
222222	Oct 22 OCT/14	Nov 21 NOV/14	30	53854	54538	684 x	0.98780 x	2.832784 =	1,913.985	Estimated Estimatif

Basic Charge / Redevance de base					$ 77.00
Primary Gas (Centra) / Gaz d'inventaire (Centra)	54.0 %	x	371.307 m³	x $0.15510	31.10
Primary Gas (Centra) / Gaz d'inventaire (Centra)	92.0	x	1,542.678	x 0.16650	236.31
Supplemental Gas / Gaz de réserve	46.0	x	371.307	x 0.16050	27.41
Supplemental Gas / Gaz de réserve	8.0	x	1,542.678	x 0.16050	19.81
Transportation to Centra / Transport jusqu'à Centra	100.0	x	371.307	x 0.03900	14.48
Transportation to Centra / Transport jusqu'à Centra	100.0	x	1,542.678	x 0.03840	59.24

Distribution to Customer / Distribution aux clients	100.0	x	371.307	x	0.04160	15.45
Distribution to Customer / Distribution aux clients	100.0	x	1,542.678	x	0.04980	76.83
Subtotal / Total partiel						557.63
5.00% City Tax Based on Non Heating Load / Taxe mun. fondée sur la charge de non•chauffage						10.35
8.00% Prov Tax / Taxe prov.						44.61
5.00% GST / TPS						27.88
5.00% GST on City Tax / TPS sur taxe mun						0.53

Natural gas charges / Frais de gaz naturel **641.00**

Other charges / Autres frais

Late Payment Charge at 1.25% / Pénalité de retard à 1,25 % 13.06

Consumption history / Histoire de la consommation

Watch this space for consumption comparisons when readings are received. / Surveillez cet espace où figureront des données comparatives de votre consommation quand nous recevrons des relevés de votre compteur.

Electricity and natural gas terminology / Terminologie de l'électricité et du gaz naturel

Balance remaining • This dollar amount reflects your original loan or other term billing less any instalments billed or additional payments on the balance as of the date on the bill; instalments billed but not yet paid are included in your Amount Due. The Balance remaining does not reflect payments made on Interest or future Interest calculations. If you are planning to make a partial or full payment for your loan or other term billing, please contact Manitoba Hydro for current information. / **Solde à payer** • Ce montant comprend le montant de votre prêt initial ou le montant de toute autre facturation à terme diverse moins tout versement facturé ou tout paiement additionnel appliqué au solde jusqu'à la date indiquée sur la facture. Les versements facturés encore impayés sont compris dans le Montant à payer. Le Solde à payer ne comprend pas les paiements appliqués aux intérêts ou aux intérêts à calculer dans l'avenir. Si vous prévoyez payer, en partie ou en entier, votre emprunt ou le montant de toute autre facturation à terme, veuillez communiquer avec Manitoba Hydro pour des renseignements mis à jour.

Basic charge • The fixed charge that pays part of the cost of providing service and does not depend on how much energy is used. It helps pay for such items as the maintenance of meters, the cost of meter reading, billing and record keeping. / **Redevance de base** • Frais fixes qui servent à payer une partie du coût de l'offre d'un service et qui ne dépend pas de la quantité d'énergie consommée. Ils servent à payer les coûts d'éléments tels que l'entretien des compteurs, le relevé des compteurs, la facturation et la tenue de dossiers.

Energy Charge • A breakdown of the costs of your electrical service calculated by multiplying the number of kilowatt•hours by a rate for that block of energy. If Manitoba Hydro provides different rates for different portions of your service, each rate calculation will appear on its own line. / **Frais d'énergie** • Répartition des coûts du service d'électricité calculés en multipliant le nombre de kilowattheures par le tarif correspondant à ce bloc d'énergie. Si Manitoba Hydro propose des tarifs différents pour des portions différentes du service qu'elle vous fournit, le calcul selon chaque tarif paraît sur une ligne séparée.

Multiplier – Each electricity meter records units of consumption. The multiplier is used to convert these units into the actual kW.h consumption used. / **Multiplicateur** • Chaque compteur d'électricité enregistre des unités de consommation. Le multiplicateur sert à convertir ces unités pour indiquer la consommation réelle en kWh.

Kilowatt (kW) • An amount of electrical power equivalent to 1,000 watts (W). / **Kilowatt (kW)** • Unité de mesure de la puissance électrique correspondant à 1 000 watts (W).

Kilowatt•hour (kW.h) • The unit by which electrical energy is measured. For example, 10•100 W light bulbs switched on for one hour would use one kilowatt•hour (1000 W for one hour). / **Kilowattheure (kWh)** • Unité de mesure de l'énergie électrique. Par exemple, dix ampoules de 100 watts chacune, allumées pendant une heure consomment un kWh (1 000 watts pendant une heure).

Primary gas • Natural gas received from Western Canada. It can be purchased on an unregulated basis from a natural gas marketer, or from Manitoba Hydro at rates regulated by the Public Utilities Board of Manitoba. The price that Manitoba Hydro pays for its Primary Gas supply is passed directly on to the customer without any markup. During normal weather, this represents approximately 95% of a customer's annual natural gas use. / **Gaz d'inventaire** • Gaz naturel provenant de l'Ouest canadien. Il peut être acheté sur une base non réglementée à un négociant en gaz naturel ou à Manitoba Hydro à un tarif réglementé par la Régie des services publics. Le prix payé par Manitoba Hydro à ses fournisseurs de gaz d'inventaire est celui que paient les clients, sans aucune majoration. Lorsque les conditions météorologiques sont normales, le gaz d'inventaire représente environ 95 % de la consommation annuelle de gaz des clients.

Supplemental gas • Natural gas that Manitoba Hydro purchases to ensure supply is available when demand is higher than normal. This usually represents approximately 5% of a customer's annual natural gas use, but does fluctuate during warmer or colder than normal years. / **Gaz de réserve** • Gaz naturel acheté par Manitoba Hydro pour veiller à ce que l'offre réponde à la demande lorsque cette dernière est supérieure à la normale. Le gaz de réserve représente habituellement environ 5 % de la consommation annuelle de gaz des clients, mais le pourcentage peut varier selon les conditions météorologiques (p. ex., année plus chaude ou froide que la normale).

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide an illustrative residential bill with a 90-day arrears generated to a residential customer:

a) In January;
b) In July;
c) In November.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Please see attached bill samples. These are examples of the 90 day Urgent Notice of Disconnection bill messages on all electric premises, apartments and combined gas/electric premises.

Manitoba Hydro does not retain bills dating back more than 6 months and is therefore unable to provide an example of a July bill.

Combined Gas/Electric House

90 Day Arrears Bill Message

January & November

Manitoba Hydro

Customer name / Nom du client	CUSTOMER NAME
Account number / Nº de compte	**6111114 5111114**
Service location / Adresse de service	123 STREET NAME WINNIPEG MB R1R 1R1
Date issued / Date d'émission	Jan 14 JAN 2015
Amount due / Montant à payer	**$ 2,198.30**
Due date / Date d'échéance	**Jan 30 JAN 2015**
Cycle number / Nº de cycle	07

Customer service / 24 hour Trouble calls
Service à la clientèle / Dépannage 24 h sur 24

Winnipeg	204•480•5900
Outside Winnipeg / Extérieur de Winnipeg	1•888•MBHYDRO (1•888•624•9376)
Deaf access line / Ligne pour malentendants	204•360•6154
E•Mail address / Adresse électronique	customerservice@hydro.mb.ca

Sign up for MyBill and receive your bill and account information online.
www.hydro.mb.ca/mybill

Inscrivez•vous à MyBill et recevez en ligne votre facture et des données sur votre compte.
www.hydro.mb.ca/francais/mybill

Account summary / Sommaire du compte

Previous charges and credits / Frais et crédits antérieurs

Previous balance / Solde antérieur		$ 2,123.27
Payment / Paiement	Jan 13 JAN	400.00 CR
Balance forward / Solde reporté		$ 1,723.27

New charges / Nouveaux frais

Electricity / Électricité	(GST/TPS	$ 12.84)	$ 289.80
Natural gas / Gaz naturel	(GST/TPS	8.08)	169.47
Other charges / Autres frais			15.76

Amount due / Montant à payer $ 2,198.30

Due date / Date d'échéance Jan 30 JAN 2015

The only way to guarantee that an electronic device is not drawing power is to unplug it.

La seule façon de garantir qu'un dispositif électronique n'utilise pas d'énergie est de le débrancher.

Your service is subject to disconnection. See important message on page 2.

Votre service est sujet au débranchement. Voir le message important à la page 2.

Manitoba Hydro

Mail Payment to / Envoyez le paiement par la poste à
PO BOX 7900 STN MAIN
WINNIPEG MB R3C 5R1

If mailing, please specify amount paid on return portion of bill and enclose with payment.
Si vous payez par la poste, veuillez inclure le talon de la facture sur lequel le montant payé est indiqué.

CUSTOMER NAME
123 STREET NAME
WINNIPEG MB R1R 1R1

Account number/Nº de compte	**6111114 5111114**
Amount due/Montant à payer	**$ 2,198.30**
Due date /Date d'échéance	**Jan 30 JAN 2015**

Payment enclosed/ Paiement ci•joint
$

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Manitoba Hydro

Customer name / Nom du client: CUSTOMER NAME

Account number / N° de compte: 6111114 5111114

Service location / Adresse de service: 123 STREET NAME
WINNIPEG MB R1R 1R1

Date issued / Date d'émission: Jan 14 JAN 2015

Special messages / Messages particuliers

u **URGENT NOTICE OF DISCONNECTION**

Your **account** is past due. This subjects your services to disconnection or load limiting without further notice.

To avoid disconnection or load limiting please arrange immediate payment of your account by calling the phone number on the front of your billing statement or pay in person at a Manitoba Hydro Office. If payment of the arrears has already been made, please advise Manitoba Hydro immediately. If payment arrangements have already been made kindly disregard this notice.

If your energy service(s) are limited or disconnected, full payment of the arrears balance plus a reconnect fee for each service may be required before service(s) are fully restored. A security deposit may also be required.

Manitoba Hydro is not responsible for any damages or losses that may occur as a result of energy services which are limited or disconnected for non•payment. Please ensure you protect people, animals and property that may be impacted.

Reconnection Fees will range from $50 to $65 plus GST.

AVIS URGENT DE DÉBRANCHEMENT

Votre **compte** est en souffrance. Vos services peuvent donc être débranchés ou la charge de votre service limitée sans aucun autre préavis.

Pour éviter le débranchement ou la limitation de charge, veuillez prendre des dispositions pour payer immédiatement votre compte en composant le numéro de téléphone indiqué sur le devant de votre facture ou payer en personne à un bureau de Manitoba Hydro. Si vous avez déjà payé l'arriéré, veuillez en informer Manitoba Hydro immédiatement. Si vous avez déjà pris des dispositions pour le faire, veuillez ignorer cet avis.

Si vos services énergétiques sont débranchés ou limités, vous pourriez avoir à payer l'arriéré en entier en plus des frais de rebranchement pour chaque service avant que vos services soient entièrement rétablis. En plus, vous aurez peut•être à payer un dépôt de sécurité.

Manitoba Hydro n'est pas responsable des dommages ou des pertes qui peuvent résulter du débranchement de vos services énergétiques ou de la limitation de charge pour défaut de paiement. Veuillez vous assurer de protéger les personnes, les animaux et les biens qui peuvent en subir les conséquences.

Les frais de rebranchement varient de 50 $ à 65 $, plus la TPS.

u Information on service disconnection, limited electric service, payment arrangements and financial assistance is enclosed.

Vous trouverez ci•joints des renseignements sur le débranchement du service, le service électrique limité, les modalités de paiement et l'aide financière offerte.

Electricity • Residential / Électricité • Résidentiel

Meter number / N° de compteur	Service / Pour la période From / Du	To / Au	Days / Jours	Meter readings / Relevés du compteur Previous / Précédent	Present / Nouveau	Multiplier / Multiplicateur	kW.h / kWh	Reading type / Type de relevé
111111	Dec 08 DÉC/14	Jan 12 JAN/15	35	39769	43066	1	3,297	Estimated Estimatif

Basic Charge / Redevance de base			$ 7.28
Energy Charge / Frais d'énergie	3,297.000 kW.h	x $0.07381	243.35
Subtotal / Total partiel			250.63
2.50% City Tax / Taxe mun.			6.28
8.00% Prov Tax / Taxe prov.			20.05
5.00% GST / TPS			12.53
5.00% GST on City Tax / TPS sur taxe mun			0.31

Electricity charges / Frais d'électricité **289.80**

Natural gas • Residential / Gaz naturel • Résidentiel

Meter number / Nº de compteur	Service / Pour la période From / Du	To / Au	Days / Jours	Meter readings / Relevés du compteur Previous / Précédent	Present / Nouveau	Usage / Consommation		Base pressure adj/Facteur de rajustement de la pression de base		Metric conversion factor/Facteur de conversion métrique		Cubic metres (m^3) / Mètres cubes (m^3)	Reading type / Type de relevé
222222	Dec 08 DÉC/14	Jan 12 JAN/15	35	3667	3838	171	x	0.98780	x	2.832784	=	478.497	Estimated Estimatif

Basic Charge / Redevance de base						$ 14.00
Primary Gas (Centra) / Gaz d'inventaire (Centra)	92.0 %	x	478.497	m^3	x $0.16650	73.30
Supplemental Gas / Gaz de réserve	8.0	x	478.497		x 0.16050	6.14
Transportation to Centra / Transport jusqu'à Centra	100.0	x	478.497		x 0.03950	18.90
Distribution to Customer / Distribution aux clients	100.0	x	478.497		x 0.10250	49.05
Subtotal / Total partiel						161.39
	5.00% GST / TPS					8.08
Natural gas charges / Frais de gaz naturel						**169.47**

Other charges / Autres frais

Electric Deposit Interest Applied / Intérêt appliqué pour dépôt • électricité	1.89 CR
Natural Gas Deposit Interest Appld / Intérêt appliqué pour dépôt – gaz naturel	3.82 CR
Late Payment Charge at 1.25% / Pénalité de retard à 1,25 %	21.47
Total other charges / Total • autres frais	**15.76**

Consumption history / Histoire de la consommation

Watch this space for consumption comparisons when readings are received. / Surveillez cet espace où figureront des données comparatives de votre consommation quand nous recevrons des relevés de votre compteur.

Electricity and natural gas terminology / Terminologie de l'électricité et du gaz naturel

Reading type • This column indicates whether the meter reading for the time period was an actual (read by Manitoba Hydro or contract meter reader), customer or estimate (based on previous use and including such factors as the weather). / **Genre de relevé** • La colonne indique que le relevé du compteur pour la période a été réel, c'est•à•dire obtenu par Manitoba Hydro, un préposé aux compteurs contractuel ou le client ou s'il est estimatif (fondé sur la consommation antérieure et sur d'autres facteurs tels que les conditions météorologiques)."

Metric conversion factor – the number used to convert natural gas consumption from imperial units to metric measurement. / **Facteur de conversion métrique** • Nombre utilisé pour convertir en unités métriques la consommation de gaz naturel indiquée en unités impériales.

Base pressure adjustment – a factor applied to a meter reading to adjust the registered volume to correspond to standard measurement conditions. / **Rajustement de la pression de base** • Facteur appliqué à un relevé de compteur pour faire correspondre le volume de gaz enregistré à des conditions normales de mesure.

Cubic metre (m^3) – the unit by which natural gas volume is measured. / **Mètre cube (m^3)** • Unité de mesure du volume de gaz naturel.

Balance remaining • This dollar amount reflects your original loan or other term billing less any instalments billed or additional payments on the balance as of the date on the bill; instalments billed but not yet paid are included in your Amount Due. The Balance remaining does not reflect payments made on Interest or future Interest calculations. If you are planning to make a partial or full payment for your loan or other term billing, please contact Manitoba Hydro for current information. / **Solde à payer** • Ce montant comprend le montant de votre prêt initial ou le montant de toute autre facturation à terme diverse moins tout versement facturé ou tout paiement additionnel appliqué au solde jusqu'à la date indiquée sur la facture. Les versements facturés encore impayés sont compris dans le Montant à payer. Le Solde à payer ne comprend pas les paiements appliqués aux intérêts ou aux intérêts à calculer dans l'avenir. Si vous prévoyez payer, en partie ou en entier, votre emprunt ou le montant de toute autre facturation à terme, veuillez communiquer avec Manitoba Hydro pour des renseignements mis à jour.

Basic charge • The fixed charge that pays part of the cost of providing service and does not depend on how much energy is used. It helps pay for such items as the maintenance of meters, the cost of meter reading, billing and record keeping. / **Redevance de base** • Frais fixes qui servent à payer une partie du coût de l'offre d'un service et qui ne dépend pas de la quantité d'énergie consommée. Ils servent à payer les coûts d'éléments tels que l'entretien des compteurs, le relevé des compteurs, la facturation et la tenue de dossiers.

Energy Charge • A breakdown of the costs of your electrical service calculated by multiplying the number of kilowatt•hours by a rate for that block of energy. If Manitoba Hydro provides different rates for different portions of your service, each rate calculation will appear on its own line. / **Frais d'énergie** • Répartition des coûts du service d'électricité calculés en multipliant le nombre de kilowattheures par le tarif correspondant à ce bloc d'énergie. Si Manitoba Hydro propose des tarifs différents pour des portions différentes du service qu'elle vous fournit, le calcul selon chaque tarif paraît sur une ligne séparée.

Manitoba Hydro

Customer name / Nom du client	CUSTOMER NAME
Account number / Nº de compte	**6111111 5111111**
Service location / Adresse de service	123 STREET NAME BRANDON MB R1R 1R1
Date issued / Date d'émission	Nov 28 NOV 2014
Amount due / Montant à payer	**$ 759.68**
Due date / Date d'échéance	**Dec 16 DÉC 2014**
Cycle number / Nº de cycle	18

Customer service / 24 hour Trouble calls
Service à la clientèle / Dépannage 24 h sur 24

Winnipeg	204•480•5900
Outside Winnipeg / Extérieur de Winnipeg	1•888•MBHYDRO (1•888•624•9376)
Primary Gas/Gaz d'inventaire: JUST ENERGY MANITOBA LP	866•587•8674
Deaf access line / Ligne pour malentendants	204•360•6154
E•Mail address / Adresse électronique	customerservice@hydro.mb.ca

Sign up for MyBill and receive your bill and account information online.
www.hydro.mb.ca/mybill

Inscrivez•vous à MyBill et recevez en ligne votre facture et des données sur votre compte.
www.hydro.mb.ca/francais/mybill

Account summary / Sommaire du compte

Previous charges and credits / Frais et crédits antérieurs

Previous balance / Solde antérieur		$ 530.57
Payment / Paiement	Nov 24 NOV	100.00 CR
Balance forward / Solde reporté		$ 430.57

New charges / Nouveaux frais

Electricity / Électricité	(GST/TPS	$ 4.57)	$ 103.46
Natural gas / Gaz naturel	(GST/TPS	10.35)	220.27
Other charges / Autres frais			5.38

Amount due / Montant à payer $ 759.68

Due date / Date d'échéance Dec 16 DÉC 2014

When purchasing household electronic devices look for ENERGY STAR® qualified products. They will use up to 50 per cent less electricity in standby mode.

À l'achat de dispositifs électroniques pour la maison, cherchez des produits homologués ENERGY STAR® qui utilisent jusqu'à 50 % moins d'énergie en mode de veille.

Your service is subject to disconnection. See important message on page 2.

Votre service est sujet au débranchement. Voir le message important à la page 2.

Manitoba Hydro

Mail Payment to / Envoyez le paiement par la poste à
PO BOX 7900 STN MAIN
WINNIPEG MB R3C 5R1

If mailing, please specify amount paid on return portion of bill and enclose with payment.
Si vous payez par la poste, veuillez inclure le talon de la facture sur lequel le montant payé est indiqué.

CUSTOMER NAME
123 STREET NAME
BRANDON MB R1R 1R1

Account number/Nº de compte **6111112 5111112**

Amount due/Montant à payer **$ 759.68**

Due date /Date d'échéance **Dec 16 DÉC 2014**

Payment enclosed/ Paiement ci•joint **$**

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Manitoba Hydro

Customer name Nom du client	CUSTOMER NAME
Account number **N° de compte**	**6111111 5111111**
Service location Adresse de service	123 STREET NAME BRANDON MB R1R 1R1
Date issued Date d'émission	Nov 28 NOV 2014

Special messages / Messages particuliers

u **URGENT NOTICE OF DISCONNECTION**

Your **account** is past due. This subjects your services to disconnection or load limiting without further notice.

To avoid disconnection or load limiting please arrange immediate payment of your account by calling the phone number on the front of your billing statement or pay in person at a Manitoba Hydro Office. If payment of the arrears has already been made, please advise Manitoba Hydro immediately. If payment arrangements have already been made kindly disregard this notice.

If your energy service(s) are limited or disconnected, full payment of the arrears balance plus a reconnect fee for each service may be required before service(s) are fully restored. A security deposit may also be required.

Manitoba Hydro is not responsible for any damages or losses that may occur as a result of energy services which are limited or disconnected for non•payment. Please ensure you protect people, animals and property that may be impacted.

Reconnection Fees will range from $50 to $65 plus GST.

AVIS URGENT DE DÉBRANCHEMENT

Votre **compte** est en souffrance. Vos services peuvent donc être débranchés ou la charge de votre service limitée sans aucun autre préavis.

Pour éviter le débranchement ou la limitation de charge, veuillez prendre des dispositions pour payer immédiatement votre compte en composant le numéro de téléphone indiqué sur le devant de votre facture ou payer en personne à un bureau de Manitoba Hydro. Si vous avez déjà payé l'arriéré, veuillez en informer Manitoba Hydro immédiatement. Si vous avez déjà pris des dispositions pour le faire, veuillez ignorer cet avis.

Si vos services énergétiques sont débranchés ou limités, vous pourriez avoir à payer l'arriéré en entier en plus des frais de rebranchement pour chaque service avant que vos services soient entièrement rétablis. En plus, vous aurez peut•être à payer un dépôt de sécurité.

Manitoba Hydro n'est pas responsable des dommages ou des pertes qui peuvent résulter du débranchement de vos services énergétiques ou de la limitation de charge pour défaut de paiement. Veuillez vous assurer de protéger les personnes, les animaux et les biens qui peuvent en subir les conséquences.

Les frais de rebranchement varient de 50 $ à 65 $, plus la TPS.

u Your Primary Gas is supplied by JUST ENERGY MANITOBA LP, 866•587•8674.

JUST ENERGY MANITOBA LP au 866•587•8674 est votre fournisseur de gaz d'inventaire.

u Your meter reading will be estimated next month. If you prefer to bill to a customer reading, please see "Instructions for reading your meter" and provide your reading in the 3 day period ending **Dec 27, 2014**.

Le relevé de votre compteur sera estimé le mois prochain. Si vous préférez une facture fondée sur un relevé soumis par le client, veuillez voir « Instructions pour la lecture de votre compteur » et transmettre votre relevé dans la période de 3 jours qui se termine le **27 DÉC 2014**.

u The Public Utilities Board has approved new natural gas rates. Please see the enclosed insert for details.

La Régie des services publics a approuvé de nouveaux tarifs du gaz naturel. Veuillez consulter l'encart ci•joint pour tous les détails.

Electricity • Residential / Électricité • Résidentiel

Meter number / Nº de compteur	Service / Pour la période From / Du	To / Au	Days / Jours	Meter readings / Relevés du compteur Previous / Précédent	Present / Nouveau	Multiplier / Multiplicateur	kW.h / kWh	Reading type / Type de relevé
1111111	Oct 27 OCT/14	Nov 25 NOV/14	29	80832	81974	1	1,142	Actual Réel

Basic Charge / Redevance de base			$ 7.28
Energy Charge / Frais d'énergie	1,142.000 kW.h	x $0.07381	84.29
Subtotal / Total partiel			91.57
8.00% Prov Tax / Taxe prov.			7.32
5.00% GST / TPS			4.57

Electricity charges / Frais d'électricité **103.46**

Natural gas • Residential / Gaz naturel • Résidentiel

Meter number / Nº de compteur	Service / Pour la période From / Du	To / Au	Days / Jours	Meter readings / Relevés du compteur Previous / Précédent	Present / Nouveau	Usage / Consommation		Base pressure adj/Facteur de rajustement de la pression de base		Metric conversion factor/Facteur de conversion métrique		Cubic metres (m³) / Mètres cubes (m³)	Reading type / Type de relevé
222222	Oct 27 OCT/14	Nov 25 NOV/14	29	6605	6824	219	x	0.97080	x	2.832784	=	602.264	Actual Réel

Basic Charge / Redevance de base						$ 14.00
Primary Gas (Just Energy MB LP) / Gaz d'inventaire (Just Energy MB LP)	54.0 %	x	67.241	m³	x $0.18200	6.61
Primary Gas (Just Energy MB LP) / Gaz d'inventaire (Just Energy MB LP)	92.0	x	535.023		x 0.18200	89.58
Supplemental Gas / Gaz de réserve	46.0	x	67.241		x 0.16050	4.96
Supplemental Gas / Gaz de réserve	8.0	x	535.023		x 0.16050	6.87
Transportation to Centra / Transport jusqu'à Centra	100.0	x	67.241		x 0.03980	2.68
Transportation to Centra / Transport jusqu'à Centra	100.0	x	535.023		x 0.03950	21.13
Distribution to Customer / Distribution aux clients	100.0	x	67.241		x 0.09430	6.34
Distribution to Customer / Distribution aux clients	100.0	x	535.023		x 0.10250	54.84
Subtotal / Total partiel						207.01
1.40% Prov Tax / Taxe prov.						2.91
5.00% GST / TPS						10.35

Natural gas charges / Frais de gaz naturel **220.27**

Other charges / Autres frais

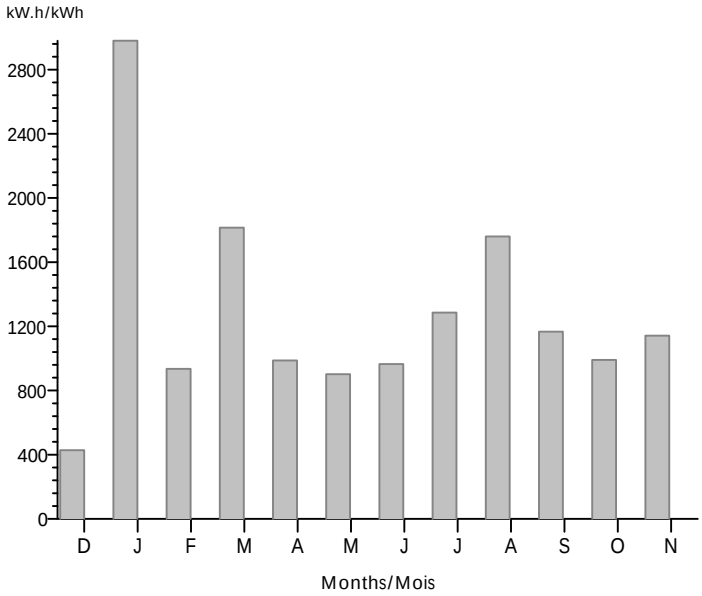
Late Payment Charge at 1.25% / Pénalité de retard à 1,25 %	5.38

Manitoba Hydro

Customer name Nom du client	CUSTOMER NAME
Account number **N° de compte**	**6111111 5111111**
Service location Adresse de service	123 STREET NAME BRANDON MB R1R 1R1
Date issued Date d'émission	Nov 28 NOV 2014

Consumption history / Histoire de la consommation

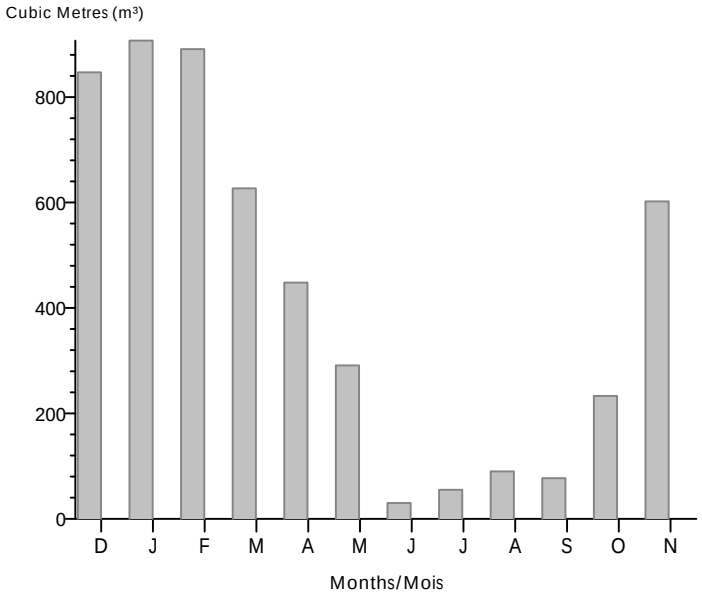
Electricity / Électricité (Meter : 1111111)



kW.h Current year / kWh•année en cours
Estimated months / Estimation en
Dec, Feb, Apr, Jun, Aug, Oct / DÉC, FÉV, AVR, JUN, AOÛ, OCT

kW.h Previous year / kWh•année précédente

Natural Gas / Gaz naturel (Meter : 222222)



Cubic metres current year / Métres cubes•année en cours
Estimated months / Estimation en
Dec, Feb, Apr, Jun, Aug, Oct / DÉC, FÉV, AVR, JUN, AOÛ, OCT

Cubic metres previous year / Métres cubes•année précédente

Electricity and natural gas terminology / Terminologie de l'électricité et du gaz naturel

Balance remaining • This dollar amount reflects your original loan or other term billing less any instalments billed or additional payments on the balance as of the date on the bill; instalments billed but not yet paid are included in your Amount Due. The Balance remaining does not reflect payments made on Interest or future Interest calculations. If you are planning to make a partial or full payment for your loan or other term billing, please contact Manitoba Hydro for current information. / **Solde à payer** • Ce montant comprend le montant de votre prêt initial ou le montant de toute autre facturation à terme diverse moins tout versement facturé ou tout paiement additionnel appliqué au solde jusqu'à la date indiquée sur la facture. Les versements facturés encore impayés sont compris dans le Montant à payer. Le Solde à payer ne comprend pas les paiements appliqués aux intérêts ou aux intérêts à calculer dans l'avenir. Si vous prévoyez payer, en partie ou en entier, votre emprunt ou le montant de toute autre facturation à terme, veuillez communiquer avec Manitoba Hydro pour des renseignements mis à jour.

Basic charge • The fixed charge that pays part of the cost of providing service and does not depend on how much energy is used. It helps pay for such items as the maintenance of meters, the cost of meter reading, billing and record keeping. / **Redevance de base** • Frais fixes qui servent à payer une partie du coût de l'offre d'un service et qui ne dépend pas de la quantité d'énergie consommée. Ils servent à payer les coûts d'éléments tels que l'entretien des compteurs, le relevé des compteurs, la facturation et la tenue de dossiers.

Energy Charge • A breakdown of the costs of your electrical service calculated by multiplying the number of kilowatt•hours by a rate for that block of energy. If Manitoba Hydro provides different rates for different portions of your service, each rate calculation will appear on its own line. / **Frais d'énergie** • Répartition des coûts du service d'électricité calculés en multipliant le nombre de kilowattheures par le tarif correspondant à ce bloc d'énergie. Si Manitoba Hydro propose des tarifs différents pour des portions différentes du service qu'elle vous fournit, le calcul selon chaque tarif paraît sur une ligne séparée.

All Electric Apartment

90 Day Arrears Bill Message

January & November

Manitoba Hydro

Customer name Nom du client	CUSTOMER NAME
Account number **Nº de compte**	**6111116 5111116**
Service location Adresse de service	123 STREET NAME APT 4 BRANDON MB R1R 1R1
Date issued Date d'émission	Jan 21 JAN 2015
Amount due **Montant à payer**	**$ 418.85**
Due date **Date d'échéance**	**Feb 06 FÉV 2015**
Cycle number Nº de cycle	12

Customer service / 24 hour Trouble calls
Service à la clientèle / Dépannage 24 h sur 24

Winnipeg	204•480•5900
Outside Winnipeg / Extérieur de Winnipeg	1•888•MBHYDRO (1•888•624•9376)
Deaf access line Ligne pour malentendants	204•360•6154
E•Mail address Adresse électronique	customerservice@hydro.mb.ca

Sign up for MyBill and receive your bill and account information online.
www.hydro.mb.ca/mybill

Inscrivez•vous à MyBill et recevez en ligne votre facture et des données sur votre compte.
www.hydro.mb.ca/francais/mybill

Account summary / Sommaire du compte

Previous charges and credits / Frais et crédits antérieurs

Previous balance / Solde antérieur			$ 297.44
Balance forward / Solde reporté			$ 297.44

New charges / Nouveaux frais

Electricity / Électricité	(GST/TPS	$ 5.53)	$ 117.69
Other charges / Autres frais			3.72

Amount due / Montant à payer **$ 418.85**

Due date / Date d'échéance **Feb 06 FÉV 2015**

The only way to guarantee that an electronic device is not drawing power is to unplug it.

La seule façon de garantir qu'un dispositif électronique n'utilise pas d'énergie est de le débrancher.

Your service is subject to disconnection. See important message on page 2.

Votre service est sujet au débranchement. Voir le message important à la page 2.

Manitoba Hydro

Mail Payment to / Envoyez le paiement par la poste à
PO BOX 7900 STN MAIN
WINNIPEG MB R3C 5R1

If mailing, please specify amount paid on return portion of bill and enclose with payment.
Si vous payez par la poste, veuillez inclure le talon de la facture sur lequel le montant payé est indiqué.

CUSTOMER NAME
123 STREET NAME APT 4
BRANDON MB R1R 1R1

Account number/Nº de compte	**6111116 5111116**
Amount due/Montant à payer	**$ 418.85**
Due date /Date d'échéance	**Feb 06 FÉV 2015**

Payment enclosed/ Paiement ci•joint
$

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Manitoba Hydro

Customer name / Nom du client: CUSTOMER NAME

Account number / N° de compte: 6111116 5111116

Service location / Adresse de service: 123 STREET NAME APT 4
BRANDON MB R1R 1R1

Date issued / Date d'émission: Jan 21 JAN 2015

Special messages / Messages particuliers

u **URGENT NOTICE OF DISCONNECTION**

Your **account** is past due. This subjects your services to disconnection without further notice.

To avoid disconnection please arrange immediate payment of your account by calling the phone number on the front of your billing statement or pay in person at a Manitoba Hydro Office. If payment of the arrears has already been made, please advise Manitoba Hydro immediately. If payment arrangements have already been made kindly disregard this notice.

If your energy service(s) are disconnected, full payment of the arrears balance plus a reconnect fee for each service may be required before service(s) are fully restored. A security deposit may also be required.

Manitoba Hydro is not responsible for any damages or losses that may occur as a result of energy services which are disconnected for non•payment. Please ensure you protect people, animals and property that may be impacted.

Reconnection Fees will range from $50 to $65 plus GST.

AVIS URGENT DE DÉBRANCHEMENT

Votre **compte** est en souffrance. Vos services peuvent donc être débranchés sans aucun autre préavis.

Pour éviter le débranchement, veuillez prendre des dispositions pour payer immédiatement votre compte en composant le numéro de téléphone indiqué sur le devant de votre facture ou payer en personne à un bureau de Manitoba Hydro. Si vous avez déjà payé l'arriéré, veuillez en informer Manitoba Hydro immédiatement. Si vous avez déjà pris des dispositions pour le faire, veuillez ignorer cet avis.

Si vos services énergétiques sont débranchés, vous pourriez avoir à payer l'arriéré en entier en plus des frais de rebranchement pour chaque service avant que vos services soient entièrement rétablis. En plus, vous aurez peut•être à payer un dépôt de sécurité.

Manitoba Hydro n'est pas responsable des dommages ou des pertes qui peuvent résulter du débranchement de vos services énergétiques pour défaut de paiement. Veuillez vous assurer de protéger les personnes, les animaux et les biens qui peuvent en subir les conséquences.

Les frais de rebranchement varient de 50 $ à 65 $, plus la TPS.

Electricity • Residential / Électricité • Résidentiel

Meter number / N° de compteur	Service / Pour la période From / Du	To / Au	Days / Jours	Meter readings / Relevés du compteur Previous / Précédent	Present / Nouveau	Multiplier / Multiplicateur	kW.h / kWh	Reading type / Type de relevé
111111	Dec 15 DÉC/14	Jan 19 JAN/15	35	4945	5085	10	1,400	Estimated Estimatif

Basic Charge / Redevance de base			$ 7.28
Energy Charge / Frais d'énergie	1,400.000 kW.h	x $0.07381	103.33
Subtotal / Total partiel			110.61
1.40% Prov Tax / Taxe prov.			1.55
5.00% GST / TPS			5.53

Electricity charges / Frais d'électricité **117.69**

Other charges / Autres frais

Late Payment Charge at 1.25% / Pénalité de retard à 1,25 % 3.72

Consumption history / Histoire de la consommation

Watch this space for consumption comparisons when readings are received. / Surveillez cet espace où figureront des données comparatives de votre consommation quand nous recevrons des relevés de votre compteur.

Manitoba Hydro

Customer name Nom du client	CUSTOMER NAME
Account number **Nº de compte**	**6111113 5111113**
Service location Adresse de service	123 STREET NAME APT 30 WINNIPEG MB R1R 1R1
Date issued Date d'émission	Nov 30 NOV 2014
Amount due **Montant à payer**	**$ 138.95**
Due date **Date d'échéance**	**Dec 16 DÉC 2014**
Cycle number Nº de cycle	19

Customer service / 24 hour Trouble calls
Service à la clientèle /
Dépannage 24 h sur 24

Winnipeg	204•480•5900
Outside Winnipeg / Extérieur de Winnipeg	1•888•MBHYDRO (1•888•624•9376)
Deaf access line Ligne pour malentendants	204•360•6154
E•Mail address Adresse électronique	customerservice@hydro.mb.ca

Sign up for MyBill and receive your bill and account information online.
www.hydro.mb.ca/mybill

Inscrivez•vous à MyBill et recevez en ligne votre facture et des données sur votre compte.
www.hydro.mb.ca/francais/mybill

Account summary / Sommaire du compte

Previous charges and credits / Frais et crédits antérieurs

Previous balance / Solde antérieur	$ 99.50
Balance forward / Solde reporté	$ 99.50

New charges / Nouveaux frais

Electricity / Électricité (GST/TPS $ 1.69)	$ 38.21
Other charges / Autres frais	1.24

Amount due / Montant à payer $ 138.95

Due date / Date d'échéance Dec 16 DÉC 2014

When purchasing household electronic devices look for ENERGY STAR® qualified products. They will use up to 50 per cent less electricity in standby mode.

À l'achat de dispositifs électroniques pour la maison, cherchez des produits homologués ENERGY STAR® qui utilisent jusqu'à 50 % moins d'énergie en mode de veille.

Your service is subject to disconnection. See important message on page 2.

Votre service est sujet au débranchement. Voir le message important à la page 2.

Manitoba Hydro

Mail Payment to / Envoyez le paiement par la poste à
PO BOX 7900 STN MAIN
WINNIPEG MB R3C 5R1

If mailing, please specify amount paid on return portion of bill and enclose with payment.
Si vous payez par la poste, veuillez inclure le talon de la facture sur lequel le montant payé est indiqué.

CUSTOMER NAME
123 STREET NAME APT 30
WINNIPEG MB R1R 1R1

Account number/Nº de compte	**6111113 5111113**
Amount due/Montant à payer	**$ 138.95**
Due date /Date d'échéance	**Dec 16 DÉC 2014**

Payment enclosed/
Paiement ci•joint
$

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Manitoba Hydro

Customer name Nom du client	CUSTOMER NAME
Account number **N° de compte**	**6111113 5111113**
Service location Adresse de service	123 STREET NAME APT 30 WINNIPEG MB R1R 1R1
Date issued Date d'émission	Nov 30 NOV 2014

Special messages / Messages particuliers

u **URGENT NOTICE OF DISCONNECTION**

Your **account** is past due. This subjects your services to disconnection without further notice.

To avoid disconnection please arrange immediate payment of your account by calling the phone number on the front of your billing statement or pay in person at a Manitoba Hydro Office. If payment of the arrears has already been made, please advise Manitoba Hydro immediately. If payment arrangements have already been made kindly disregard this notice.

If your energy service(s) are disconnected, full payment of the arrears balance plus a reconnect fee for each service may be required before service(s) are fully restored. A security deposit may also be required.

Manitoba Hydro is not responsible for any damages or losses that may occur as a result of energy services which are disconnected for non•payment. Please ensure you protect people, animals and property that may be impacted.

Reconnection Fees will range from $50 to $65 plus GST.

AVIS URGENT DE DÉBRANCHEMENT

Votre **compte** est en souffrance. Vos services peuvent donc être débranchés sans aucun autre préavis.

Pour éviter le débranchement, veuillez prendre des dispositions pour payer immédiatement votre compte en composant le numéro de téléphone indiqué sur le devant de votre facture ou payer en personne à un bureau de Manitoba Hydro. Si vous avez déjà payé l'arriéré, veuillez en informer Manitoba Hydro immédiatement. Si vous avez déjà pris des dispositions pour le faire, veuillez ignorer cet avis.

Si vos services énergétiques sont débranchés, vous pourriez avoir à payer l'arriéré en entier en plus des frais de rebranchement pour chaque service avant que vos services soient entièrement rétablis. En plus, vous aurez peut•être à payer un dépôt de sécurité.

Manitoba Hydro n'est pas responsable des dommages ou des pertes qui peuvent résulter du débranchement de vos services énergétiques pour défaut de paiement. Veuillez vous assurer de protéger les personnes, les animaux et les biens qui peuvent en subir les conséquences.

Les frais de rebranchement varient de 50 $ à 65 $, plus la TPS.

u Your meter reading will be estimated next month. If you prefer to bill to a customer reading, please see "Instructions for reading your meter" and provide your reading in the 3 day period ending **Dec 28, 2014**.

Le relevé de votre compteur sera estimé le mois prochain. Si vous préférez une facture fondée sur un relevé soumis par le client, veuillez voir « Instructions pour la lecture de votre compteur » et transmettre votre relevé dans la période de 3 jours qui se termine le **28 DÉC 2014**.

u Effective November 1, 2014, Goods and Services Tax (GST) will be applied to the City of Winnipeg tax on your natural gas and electricity charges. This is in accordance with the Federal Excise Tax Act and Province of Manitoba legislation.

This tax is displayed as a separate line item on your enclosed Manitoba Hydro bill.

Conformément à la Loi sur la taxe d'accise du gouvernement fédéral et aux dispositions législatives du gouvernement du Manitoba, et ce à compter du 1er novembre 2014, la Taxe sur les produits et services (TPS) sera appliquée à la taxe de la Ville de Winnipeg sur vos frais d'électricité et de gaz naturel.

La facture de Manitoba Hydro ci•jointe indique cette taxe sur une ligne séparée.

Electricity • Residential / Électricité • Résidentiel

Meter number / Nº de compteur	Service / Pour la période From / Du	To / Au	Days / Jours	Meter readings / Relevés du compteur Previous / Précédent	Present / Nouveau	Multiplier / Multiplicateur	kW.h / kWh	Reading type / Type de relevé
1111111	Oct 28 OCT/14	Nov 26 NOV/14	29	51404	51753	1	349	Actual Reel

Basic Charge / Redevance de base			$ 7.28
Energy Charge / Frais d'énergie	349.000 kW.h	x $0.07381	25.76
Subtotal / Total partiel			33.04
2.50% City Tax / Taxe mun.			0.84
8.00% Prov Tax / Taxe prov.			2.64
5.00% GST / TPS			1.65
5.00% GST on City Tax / TPS sur taxe mun			0.04

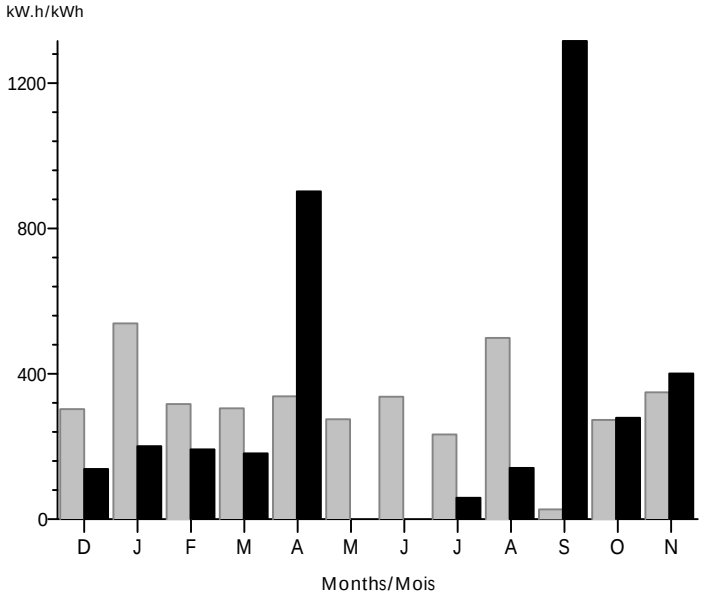
Electricity charges / Frais d'électricité **38.21**

Other charges / Autres frais

Late Payment Charge at 1.25% / Pénalité de retard à 1,25 % 1.24

Consumption history / Histoire de la consommation

Electricity / Électricité (Meter : 1111111)



kW.h Current year / kWh•année en cours
Estimated months / Estimation en
Dec, Feb, Apr, Jun, Aug, Oct / DÉC, FÉV, AVR, JUN, AOÛ, OCT

kW.h Previous year / kWh•année précédente
Estimated months / Estimation en
Dec, Jan, Feb, Mar, Jul, Aug, Oct / DÉC, JAN, FÉV, MAR, JUL, AOÛ, OCT

Electricity terminology / Terminologie de l'électricité

Balance remaining • This dollar amount reflects your original loan or other term billing less any instalments billed or additional payments on the balance as of the date on the bill; instalments billed but not yet paid are included in your Amount Due. The Balance remaining does not reflect payments made on Interest or future Interest calculations. If you are planning to make a partial or full payment for your loan or other term billing, please contact Manitoba Hydro for current information. / **Solde à payer** • Ce montant comprend le montant de votre prêt initial ou le montant de toute autre facturation à terme diverse moins tout versement facturé ou tout paiement additionnel appliqué au solde jusqu'à la date indiquée sur la facture. Les versements facturés encore impayés sont compris dans le Montant à payer. Le Solde à payer ne comprend pas les paiements appliqués aux intérêts ou aux intérêts à calculer dans l'avenir. Si vous prévoyez payer, en partie ou en entier, votre emprunt ou le montant de toute autre facturation à terme, veuillez communiquer avec Manitoba Hydro pour des renseignements mis à jour.

All Electric House

90 Day Arrears Bill Message

January & November

Manitoba Hydro

Customer name Nom du client	CUSTOMER NAME
Account number **N° de compte**	**6111133 5111133**
Service location Adresse de service	SW 00 00 0 E FRASERWOOD MB R1R 1R1
Date issued Date d'émission	Jan 20 JAN 2015
Amount due **Montant à payer**	**$ 1,151.40**
Due date **Date d'échéance**	**Feb 05 FÉV 2015**
Cycle number N° de cycle	11

Customer service / 24 hour Trouble calls
Service à la clientèle /
Dépannage 24 h sur 24

Winnipeg	204•480•5900
Outside Winnipeg / Extérieur de Winnipeg	1•888•MBHYDRO (1•888•624•9376)
Deaf access line Ligne pour malentendants	204•360•6154
E•Mail address Adresse électronique	customerservice@hydro.mb.ca

Sign up for MyBill and receive your bill and account information online.
www.hydro.mb.ca/mybill

Inscrivez•vous à MyBill et recevez en ligne votre facture et des données sur votre compte.
www.hydro.mb.ca/francais/mybill

Account summary / Sommaire du compte

Previous charges and credits / Frais et crédits antérieurs

Previous balance / Solde antérieur		$ 900.61
Payment / Paiement	Jan 15 JAN	200.00 CR
Balance forward / Solde reporté		$ 700.61

New charges / Nouveaux frais

Electricity / Électricité	(GST/TPS	$ 20.77)	$ 442.03
Other charges / Autres frais			8.76

Amount due / Montant à payer **$ 1,151.40**

Due date / Date d'échéance **Feb 05 FÉV 2015**

The only way to guarantee that an electronic device is not drawing power is to unplug it.

La seule façon de garantir qu'un dispositif électronique n'utilise pas d'énergie est de le débrancher.

See important collection message on page 2.

Voir le message important sur le recouvrement à la page 2.

Manitoba Hydro

Mail Payment to / Envoyez le paiement par la poste à
PO BOX 7900 STN MAIN
WINNIPEG MB R3C 5R1

If mailing, please specify amount paid on return portion of bill and enclose with payment.
Si vous payez par la poste, veuillez inclure le talon de la facture sur lequel le montant payé est indiqué.

CUSTOMER NAME
PO BOX 123 STN MAIN
TOWN NAME MB R1R 1R1

Account number/N° de compte	**6111133 5111133**
Amount due/Montant à payer	**$ 1,151.40**
Due date /Date d'échéance	**Feb 05 FÉV 2015**

Payment enclosed/
Paiement ci•joint
$

☐ CH ☐ CA ☐ DR

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Manitoba Hydro

Customer name / Nom du client: CUSTOMER NAME

Account number / N° de compte: **6111133 5111133**

Service location / Adresse de service: SW 00 00 0 E
FRASERWOOD MB R1R 1R1

Date issued / Date d'émission: Jan 20 JAN 2015

Special messages / Messages particuliers

u Your account remains outstanding despite previous requests for payment. Failure to pay the outstanding account balance can jeopardize your credit rating and subject your account to legal action. Please call the phone number on the front of your billing statement or pay in person at a Manitoba Hydro Office. If payment of the arrears has already been made, please notify Manitoba Hydro immediately. If payment arrangements have already been made kindly disregard this notice.

Votre compte demeure en souffrance malgré nos demandes de paiement répétées. Tout défaut de payer le montant en souffrance de votre compte peut menacer votre cote de crédit et se traduire par une action en justice. Veuillez composer le numéro de téléphone indiqué sur le devant de votre facture ou payer en personne à un bureau de Manitoba Hydro. Si vous avez déjà payé l'arriéré, veuillez en informer Manitoba Hydro immédiatement. Si vous avez déjà pris des dispositions pour le faire, veuillez ignorer cet avis.

Electricity • Residential / Électricité • Résidentiel

Meter number / N° de compteur	Service / Pour la période From / Du	To / Au	Days / Jours	Meter readings / Relevés du compteur Previous / Précédent	Present / Nouveau	Multiplier / Multiplicateur	kW.h / kWh	Reading type / Type de relevé
111111	Dec 16 DÉC/14	Jan 16 JAN/15	31	7969	8522	10	5,530	Customer Abonne

Basic Charge / Redevance de base			$ 7.28
Energy Charge / Frais d'énergie	5,530.000 kW.h	x $0.07381	408.17
Subtotal / Total partiel			415.45
1.40% Prov Tax / Taxe prov.			5.81
5.00% GST / TPS			20.77
Electricity charges / Frais d'électricité			**442.03**

Other charges / Autres frais

Late Payment Charge at 1.25% / Pénalité de retard à 1,25 %	8.76

Consumption history / Histoire de la consommation

	Meter Number / N° de compteur	Use this year / Consommation (cette année)	Days in period / Nbre de jours	Use per day this year / Consommation / jour (cette année)	Use last year / Consommation (an dernier)	Days in period / Nbre de jours	Use per day last year / Consommation / jour (an dernier)	Use for the last twelve months / Consommation (12 derniers mois)
Electricity kW.h / Électricité (kWh)	111111	Dec • Jan 10,140	59	171.86	Dec • Jan 7,410	59	125.59	42,270

Electricity terminology / Terminologie de l'électricité

Reading type • This column indicates whether the meter reading for the time period was an actual (read by Manitoba Hydro or contract meter reader), customer or estimate (based on previous use and including such factors as the weather). / **Genre de relevé** • La colonne indique que le relevé du compteur pour la période a été réel, c'est•à•dire obtenu par Manitoba Hydro, un préposé aux compteurs contractuel ou le client ou s'il est estimatif (fondé sur la consommation antérieure et sur d'autres facteurs tels que les conditions météorologiques)."

Customer name Nom du client	CUSTOMER NAME
Account number **Nº de compte**	**6111133 5111133**
Service location Adresse de service	SW 00 00 0 E FRASERWOOD MB R1R 1R1
Date issued Date d'émission	Jan 20, 2015

Self read meter / Lecture de compteur par le client

Phone numbers/ Numéros de téléphone :

Outside of Winnipeg/ Extérieur de Winnipeg 1•800•652•4490

Winnipeg 204•453•6712

Online entry: **www.hydro.mb.ca**

En ligne : **www.hydro.mb.ca/français**

Please read your meter in the 3 day period ending **Feb 16, 2015**. / Veuillez faire la lecture de votre compteur pendant la période de 3 jours se terminant le **16 FÉV 2015**.

Date this reading taken: / Date du présent relevé

May not be present on your meter/
Peut être absent sur votre compteur

Meter Number Nº de compteur	Last Reading Relevé précédent					
111111	**8522**					

Instructions for reading your meter / La lecture de votre compteur

1. Please use the dials above to draw the exact position of each dial hand on your meter.

   Veuillez utiliser les cadrans ci•dessus pour dessiner les aiguilles exactement comme elles apparaissent sur les cadrans du compteur.

2. From the position of the dial hands, record the meter reading in the boxes. If the dial hand is between two numbers, please record the lower number. If the dial hand is between 9 and 0, then 9 is the lower number.

   Selon la position des aiguilles sur les cadrans, indiquez les chiffres du relevé du compteur dans les boîtes prévues à cette fin. Si l'aiguille est entre deux chiffres, veuillez indiquer le chiffre le moins élevé. Si l'aiguille est entre le 9 et le 0, le 9 est le chiffre le moins élevé.

3. Phone our 24 hour reading service anytime and follow the prompts to provide your meter number and reading. Below are some of the prompts you will hear:

   a) To enter your Manitoba Hydro reading press 1.

   b) Using the keypad on the telephone, enter your meter number, including all zeroes and followed by the # key.
   Your meter number is **111111**.

   c) Enter your reading followed by the # key.

   Appelez le service de lecture des compteurs (24 heures sur 24) et suivez les messages guides afin d'indiquer votre numéro de compteur et votre relevé. Les messages guides suivants sont parmi ceux que vous entendrez :

   a) Pour nous faire part de votre relevé de Manitoba Hydro, appuyez sur le 1.

   b) À l'aide de votre téléphone à clavier, entrez le numéro de votre compteur de Manitoba Hydro, suivi du carré.
   Veuillez inclure tous les zéros. Votre numéro de compteur : **111111**.

   c) Veuillez composer votre relevé suivi du carré.

4. You can also provide your reading online by clicking on "Submit a Meter Reading" at www.hydro.mb.ca

   Vous pouvez aussi transmettre votre relevé en ligne sur www.hydro.mb.ca/français. Cliquez sur « Soumettre un relevé de compteur ».

You have a choice of receiving this self read page or a self read message on your bill. Please call the phone number shown on the front of your bill if you would like to receive the self read message only. / Les clients qui font eux•mêmes la lecture de leur(s) compteur(s) peuvent choisir de recevoir, à cette fin, cette feuille ou un message sur leur facture. Veuillez composer le numéro de téléphone indiqué au recto de votre facture si vous choisissez de recevoir le message seulement.

Your bill will be estimated if you are unable to read your meter in the 3 day period indicated above. / Votre facture sera estimée si vous ne pouvez pas faire la lecture de votre compteur pendant la période de 3 jours ci•haut mentionnée.

Any questions? Please call the phone number shown on the front of your bill.

Vous avez des questions? Veuillez composer le numéro de téléphone indiqué au recto de votre facture.

Manitoba Hydro

Customer name Nom du client	CUSTOMER NAME
Account number **Nº de compte**	**6111112 5111112**
Service location Adresse de service	123 STREET NAME MELITA MB R1R 1R1
Date issued Date d'émission	Nov 25 NOV 2014
Amount due **Montant à payer**	**$ 813.95**
Due date **Date d'échéance**	**Dec 11 DÉC 2014**
Cycle number Nº de cycle	15

Customer service / 24 hour Trouble calls
Service à la clientèle /
Dépannage 24 h sur 24

Winnipeg	204•480•5900
Outside Winnipeg / Extérieur de Winnipeg	1•888•MBHYDRO (1•888•624•9376)
Deaf access line Ligne pour malentendants	204•360•6154
E•Mail address Adresse électronique	customerservice@hydro.mb.ca

Sign up for MyBill and receive your bill and account information online.
www.hydro.mb.ca/mybill

Inscrivez•vous à MyBill et recevez en ligne votre facture et des données sur votre compte.
www.hydro.mb.ca/francais/mybill

Account summary / Sommaire du compte

Previous charges and credits / Frais et crédits antérieurs

Previous balance / Solde antérieur			$ 440.24
Balance forward / Solde reporté			$ 440.24

New charges / Nouveaux frais

Electricity / Électricité	(GST/TPS	$ 17.30)	$ 368.21
Other charges / Autres frais			5.50

Amount due / Montant à payer **$ 813.95**

Due date / Date d'échéance **Dec 11 DÉC 2014**

When purchasing household electronic devices look for ENERGY STAR® qualified products. They will use up to 50 per cent less electricity in standby mode.

À l'achat de dispositifs électroniques pour la maison, cherchez des produits homologués ENERGY STAR® qui utilisent jusqu'à 50 % moins d'énergie en mode de veille.

See important collection message on page 2.

Voir le message important sur le recouvrement à la page 2.

Manitoba Hydro

Mail Payment to / Envoyez le paiement par la poste à
PO BOX 7900 STN MAIN
WINNIPEG MB R3C 5R1

If mailing, please specify amount paid on return portion of bill and enclose with payment.
Si vous payez par la poste, veuillez inclure le talon de la facture sur lequel le montant payé est indiqué.

CUSTOMER NAME
PO BOX 123 STN MAIN
TOWN NAME MB R1R 1R1

Account number/Nº de compte	**6111112 5111112**
Amount due/Montant à payer	**$ 813.95**
Due date /Date d'échéance	**Dec 11 DÉC 2014**

Payment enclosed/
Paiement ci•joint
$

☐ CH ☐ CA ☐ DR

00000000 06111112511111125 000000000000 0000081395 0000044024 6

Manitoba Hydro

Customer name / Nom du client: CUSTOMER NAME

Account number / N° de compte: 6111112 5111112

Service location / Adresse de service: 123 STREET NAME
MELITA MB R1R 1R1

Date issued / Date d'émission: Nov 25 NOV 2014

Special messages / Messages particuliers

u Your account remains outstanding despite previous requests for payment. Failure to pay the outstanding account balance can jeopardize your credit rating and subject your account to legal action. Please call the phone number on the front of your billing statement or pay in person at a Manitoba Hydro Office. If payment of the arrears has already been made, please notify Manitoba Hydro immediately. If payment arrangements have already been made kindly disregard this notice.

Votre compte demeure en souffrance malgré nos demandes de paiement répétées. Tout défaut de payer le montant en souffrance de votre compte peut menacer votre cote de crédit et se traduire par une action en justice. Veuillez composer le numéro de téléphone indiqué sur le devant de votre facture ou payer en personne à un bureau de Manitoba Hydro. Si vous avez déjà payé l'arriéré, veuillez en informer Manitoba Hydro immédiatement. Si vous avez déjà pris des dispositions pour le faire, veuillez ignorer cet avis.

u Your meter reading will be estimated next month. If you prefer to bill to a customer reading, please see "Instructions for reading your meter" and provide your reading in the 3 day period ending **Dec 23, 2014**.

Le relevé de votre compteur sera estimé le mois prochain. Si vous préférez une facture fondée sur un relevé soumis par le client, veuillez voir « Instructions pour la lecture de votre compteur » et transmettre votre relevé dans la période de 3 jours qui se termine le **23 DÉC 2014**.

Electricity • Residential / Électricité • Résidentiel

Meter number / N° de compteur	Service / Pour la période From / Du	To / Au	Days / Jours	Meter readings / Relevés du compteur Previous / Précédent	Present / Nouveau	Multiplier / Multiplicateur	kW.h / kWh	Reading type / Type de relevé
111111	Oct 22 OCT/14	Nov 21 NOV/14	30	3623	4082	10	4,590	Actual Reel

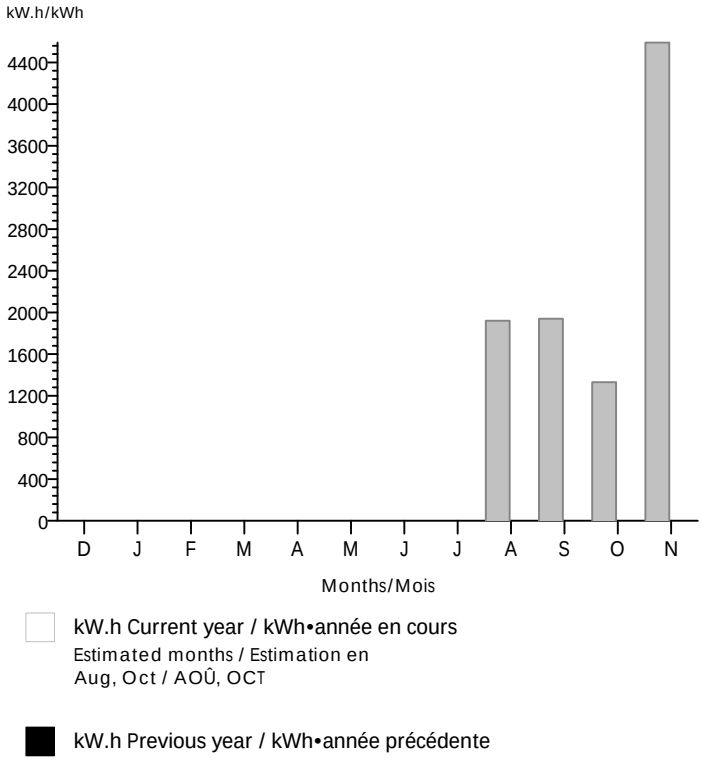
Basic Charge / Redevance de base			$ 7.28
Energy Charge / Frais d'énergie	4,590.000 kW.h	x $0.07381	338.79
Subtotal / Total partiel			346.07
1.40% Prov Tax / Taxe prov.			4.84
5.00% GST / TPS			17.30
Electricity charges / Frais d'électricité			**368.21**

Other charges / Autres frais

Late Payment Charge at 1.25% / Pénalité de retard à 1,25 %	5.50

Consumption history / Histoire de la consommation

Electricity / Électricité (Meter : 111111)



kW.h Current year / kWh•année en cours
Estimated months / Estimation en
Aug, Oct / AOÛ, OCT

kW.h Previous year / kWh•année précédente

Electricity terminology / Terminologie de l'électricité

Balance remaining • This dollar amount reflects your original loan or other term billing less any instalments billed or additional payments on the balance as of the date on the bill; instalments billed but not yet paid are included in your Amount Due. The Balance remaining does not reflect payments made on Interest or future Interest calculations. If you are planning to make a partial or full payment for your loan or other term billing, please contact Manitoba Hydro for current information. / **Solde à payer** • Ce montant comprend le montant de votre prêt initial ou le montant de toute autre facturation à terme diverse moins tout versement facturé ou tout paiement additionnel appliqué au solde jusqu'à la date indiquée sur la facture. Les versements facturés encore impayés sont compris dans le Montant à payer. Le Solde à payer ne comprend pas les paiements appliqués aux intérêts ou aux intérêts à calculer dans l'avenir. Si vous prévoyez payer, en partie ou en entier, votre emprunt ou le montant de toute autre facturation à terme, veuillez communiquer avec Manitoba Hydro pour des renseignements mis à jour.

Basic charge • The fixed charge that pays part of the cost of providing service and does not depend on how much energy is used. It helps pay for such items as the maintenance of meters, the cost of meter reading, billing and record keeping. / **Redevance de base** • Frais fixes qui servent à payer une partie du coût de l'offre d'un service et qui ne dépend pas de la quantité d'énergie consommée. Ils servent à payer les coûts d'éléments tels que l'entretien des compteurs, le relevé des compteurs, la facturation et la tenue de dossiers.

Energy Charge • A breakdown of the costs of your electrical service calculated by multiplying the number of kilowatt•hours by a rate for that block of energy. If Manitoba Hydro provides different rates for different portions of your service, each rate calculation will appear on its own line. / **Frais d'énergie** • Répartition des coûts du service d'électricité calculés en multipliant le nombre de kilowattheures par le tarif correspondant à ce bloc d'énergie. Si Manitoba Hydro propose des tarifs différents pour des portions différentes du service qu'elle vous fournit, le calcul selon chaque tarif paraît sur une ligne séparée.

Multiplier – Each electricity meter records units of consumption. The multiplier is used to convert these units into the actual kW.h consumption used. / **Multiplicateur** • Chaque compteur d'électricité enregistre des unités de consommation. Le multiplicateur sert à convertir ces unités pour indiquer la consommation réelle en kWh.

Kilowatt (kW) • An amount of electrical power equivalent to 1,000 watts (W). / **Kilowatt (kW)** • Unité de mesure de la puissance électrique correspondant à 1 000 watts (W).

Kilowatt•hour (kW.h) • The unit by which electrical energy is measured. For example, 10•100 W light bulbs switched on for one hour would use one kilowatt•hour (1000 W for one hour). / **Kilowattheure (kWh)** • Unité de mesure de l'énergie électrique. Par exemple, dix ampoules de 100 watts chacune, allumées pendant une heure consomment un kWh (1 000 watts pendant une heure).

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Payment troubles: Company response		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide an illustrative residential bill with no arrears generated to a residential customer:

a) In January;
b) In July;
c) In November.

RATIONALE FOR QUESTION:

The reasonableness of Company expenses and the activities underlying those expenses, including credit and collection expenses, is to be considered.

RESPONSE:

Please see attached bill samples. These are examples of all electric premises, apartments and combined gas/electric premises with no arrears messages.

Manitoba Hydro does not retain bills dating back more than 6 months and is therefore unable to provide an example of a July bill.

All Electric House

No Arrears Bill Message

January & November

Manitoba Hydro

Customer name / Nom du client	CUSTOMER NAME
Account number / Nº de compte	**6111122 5111122**
Service location / Adresse de service	123 STREET NAME THOMPSON MB R1R 1R1
Date issued / Date d'émission	Jan 27 JAN 2015
Amount due / Montant à payer	**$ 395.22**
Due date / Date d'échéance	**Feb 12 FÉV 2015**
Cycle number / Nº de cycle	16

Customer service / 24 hour Trouble calls
Service à la clientèle / Dépannage 24 h sur 24

Winnipeg	204•480•5900
Outside Winnipeg / Extérieur de Winnipeg	1•888•MBHYDRO (1•888•624•9376)
Deaf access line / Ligne pour malentendants	204•360•6154
E•Mail address / Adresse électronique	customerservice@hydro.mb.ca

Sign up for MyBill and receive your bill and account information online.
www.hydro.mb.ca/mybill

Inscrivez•vous à MyBill et recevez en ligne votre facture et des données sur votre compte.
www.hydro.mb.ca/francais/mybill

Account summary / Sommaire du compte

Previous charges and credits / Frais et crédits antérieurs

Previous balance / Solde antérieur		$ 411.98
Payment / Paiement	Jan 19 JAN	411.98 CR
Balance forward / Solde reporté		$ 0.00

New charges / Nouveaux frais

Electricity / Électricité	(GST/TPS $ 17.48)	$ 395.22

Amount due / Montant à payer $ 395.22

Due date / Date d'échéance Feb 12 FÉV 2015

The only way to guarantee that an electronic device is not drawing power is to unplug it.

La seule façon de garantir qu'un dispositif électronique n'utilise pas d'énergie est de le débrancher.

Manitoba Hydro

Mail Payment to / Envoyez le paiement par la poste à
PO BOX 7900 STN MAIN
WINNIPEG MB R3C 5R1

If mailing, please specify amount paid on return portion of bill and enclose with payment.
Si vous payez par la poste, veuillez inclure le talon de la facture sur lequel le montant payé est indiqué.

CUSTOMER NAME
123 STREET NAME
THOMPSON MB R1R 1R1

Account number/Nº de compte **6111122 5111122**
Amount due/Montant à payer **$ 395.22**
Due date /Date d'échéance **Feb 12 FÉV 2015**

Payment enclosed/ Paiement ci•joint **$**

☐ CH ☐ CA ☐ DR

00000000 0611112251111229 000000000000 0000039522 0000000000 5

Manitoba Hydro

Customer name / Nom du client: CUSTOMER NAME

Account number / N° de compte: 6111122 5111122

Service location / Adresse de service: 123 STREET NAME
THOMPSON MB R1R 1R1

Date issued / Date d'émission: Jan 27 JAN 2015

Electricity • Residential / Électricité • Résidentiel

Meter number / N° de compteur	Service / Pour la période From / Du	To / Au	Days / Jours	Meter readings / Relevés du compteur Previous / Précédent	Present / Nouveau	Multiplier / Multiplicateur	kW.h / kWh	Reading type / Type de relevé
111111	Dec 23 DÉC/14	Jan 23 JAN/15	31	55980	60620	1	4,640	Estimated Estimatif

Basic Charge / Redevance de base			$ 7.28
Energy Charge / Frais d'énergie	4,640.000 kW.h	x $0.07381	342.48
Subtotal / Total partiel			349.76
8.00% Prov Tax / Taxe prov.			27.98
5.00% GST / TPS			17.48
Electricity charges / Frais d'électricité			**395.22**

Consumption history / Histoire de la consommation

Watch this space for consumption comparisons when readings are received. / Surveillez cet espace où figureront des données comparatives de votre consommation quand nous recevrons des relevés de votre compteur.

Electricity terminology / Terminologie de l'électricité

Reading type • This column indicates whether the meter reading for the time period was an actual (read by Manitoba Hydro or contract meter reader), customer or estimate (based on previous use and including such factors as the weather). / **Genre de relevé** • La colonne indique que le relevé du compteur pour la période a été réel, c'est•à•dire obtenu par Manitoba Hydro, un préposé aux compteurs contractuel ou le client ou s'il est estimatif (fondé sur la consommation antérieure et sur d'autres facteurs tels que les conditions météorologiques)."

Balance remaining • This dollar amount reflects your original loan or other term billing less any instalments billed or additional payments on the balance as of the date on the bill; instalments billed but not yet paid are included in your Amount Due. The Balance remaining does not reflect payments made on Interest or future Interest calculations. If you are planning to make a partial or full payment for your loan or other term billing, please contact Manitoba Hydro for current information. / **Solde à payer** • Ce montant comprend le montant de votre prêt initial ou le montant de toute autre facturation à terme diverse moins tout versement facturé ou tout paiement additionnel appliqué au solde jusqu'à la date indiquée sur la facture. Les versements facturés encore impayés sont compris dans le Montant à payer. Le Solde à payer ne comprend pas les paiements appliqués aux intérêts ou aux intérêts à calculer dans l'avenir. Si vous prévoyez payer, en partie ou en entier, votre emprunt ou le montant de toute autre facturation à terme, veuillez communiquer avec Manitoba Hydro pour des renseignements mis à jour.

Basic charge • The fixed charge that pays part of the cost of providing service and does not depend on how much energy is used. It helps pay for such items as the maintenance of meters, the cost of meter reading, billing and record keeping. / **Redevance de base** • Frais fixes qui servent à payer une partie du coût de l'offre d'un service et qui ne dépend pas de la quantité d'énergie consommée. Ils servent à payer les coûts d'éléments tels que l'entretien des compteurs, le relevé des compteurs, la facturation et la tenue de dossiers.

Energy Charge • A breakdown of the costs of your electrical service calculated by multiplying the number of kilowatt•hours by a rate for that block of energy. If Manitoba Hydro provides different rates for different portions of your service, each rate calculation will appear on its own line. / **Frais d'énergie** • Répartition des coûts du service d'électricité calculés en multipliant le nombre de kilowattheures par le tarif correspondant à ce bloc d'énergie. Si Manitoba Hydro propose des tarifs différents pour des portions différentes du service qu'elle vous fournit, le calcul selon chaque tarif paraît sur une ligne séparée.

Kilowatt (kW) • An amount of electrical power equivalent to 1,000 watts (W). / **Kilowatt (kW)** • Unité de mesure de la puissance électrique correspondant à 1 000 watts (W).

Kilowatt•hour (kW.h) • The unit by which electrical energy is measured. For example, 10•100 W light bulbs switched on for one hour would use one kilowatt•hour (1000 W for one hour). / **Kilowattheure (kWh)** • Unité de mesure de l'énergie électrique. Par exemple, dix ampoules de 100 watts chacune, allumées pendant une heure consomment un kWh (1 000 watts pendant une heure).

Manitoba Hydro

Customer name Nom du client	CUSTOMER NAME
Account number **Nº de compte**	**6111123 5111123**
Service location Adresse de service	123 STREET NAME THOMPSON MB R1R 1R1
Date issued Date d'émission	Nov 26 NOV 2014
Amount due **Montant à payer**	**$ 293.14**
Due date **Date d'échéance**	**Dec 12 DÉC 2014**
Cycle number Nº de cycle	16

Customer service / 24 hour Trouble calls
Service à la clientèle / Dépannage 24 h sur 24

Winnipeg	204•480•5900
Outside Winnipeg / Extérieur de Winnipeg	1•888•MBHYDRO (1•888•624•9376)
Deaf access line Ligne pour malentendants	204•360•6154
E•Mail address Adresse électronique	customerservice@hydro.mb.ca

Sign up for MyBill and receive your bill and account information online.
www.hydro.mb.ca/mybill

Inscrivez•vous à MyBill et recevez en ligne votre facture et des données sur votre compte.
www.hydro.mb.ca/francais/mybill

Account summary / Sommaire du compte

Previous charges and credits / Frais et crédits antérieurs

Previous balance / Solde antérieur		$ 203.97
Payment / Paiement	Nov 12 NOV	203.97 CR
Balance forward / Solde reporté		$ 0.00

New charges / Nouveaux frais

Electricity / Électricité	(GST/TPS	$ 12.97)	$ 293.14

Amount due / Montant à payer **$ 293.14**

Due date / Date d'échéance **Dec 12 DÉC 2014**

When purchasing household electronic devices look for ENERGY STAR® qualified products. They will use up to 50 per cent less electricity in standby mode.

À l'achat de dispositifs électroniques pour la maison, cherchez des produits homologués ENERGY STAR® qui utilisent jusqu'à 50 % moins d'énergie en mode de veille.

Manitoba Hydro

Mail Payment to / Envoyez le paiement par la poste à
PO BOX 7900 STN MAIN
WINNIPEG MB R3C 5R1

If mailing, please specify amount paid on return portion of bill and enclose with payment.
Si vous payez par la poste, veuillez inclure le talon de la facture sur lequel le montant payé est indiqué.

CUSTOMER NAME
123 STREET NAME
THOMPSON MB R1R 1R1

Account number/Nº de compte **6111123 5111123**

Amount due/Montant à payer **$ 293.14**

Due date /Date d'échéance **Dec 12 DÉC 2014**

Payment enclosed/ Paiement ci•joint **$**

☐ CH ☐ CA ☐ DR

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Manitoba Hydro

Customer name / Nom du client: CUSTOMER NAME

Account number / N° de compte: 6111123 5111123

Service location / Adresse de service: 123 STREET NAME
THOMPSON MB R1R 1R1

Date issued / Date d'émission: Nov 26 NOV 2014

Electricity • Residential / Électricité • Résidentiel

Meter number / N° de compteur	Service / Pour la période From / Du	To / Au	Days / Jours	Meter readings / Relevés du compteur Previous / Précédent	Present / Nouveau	Multiplier / Multiplicateur	kW.h / kWh	Reading type / Type de relevé
111111	Oct 24 OCT/14	Nov 24 NOV/14	31	47723	51139	1	3,416	Estimated Estimatif

Basic Charge / Redevance de base			$ 7.28
Energy Charge / Frais d'énergie	3,416.000 kW.h	x $0.07381	252.14
Subtotal / Total partiel			259.42
8.00% Prov Tax / Taxe prov.			20.75
5.00% GST / TPS			12.97
Electricity charges / Frais d'électricité			**293.14**

Consumption history / Histoire de la consommation

Watch this space for consumption comparisons when readings are received. / Surveillez cet espace où figureront des données comparatives de votre consommation quand nous recevrons des relevés de votre compteur.

Electricity terminology / Terminologie de l'électricité

Balance remaining • This dollar amount reflects your original loan or other term billing less any instalments billed or additional payments on the balance as of the date on the bill; instalments billed but not yet paid are included in your Amount Due. The Balance remaining does not reflect payments made on Interest or future Interest calculations. If you are planning to make a partial or full payment for your loan or other term billing, please contact Manitoba Hydro for current information. / **Solde à payer** • Ce montant comprend le montant de votre prêt initial ou le montant de toute autre facturation à terme diverse moins tout versement facturé ou tout paiement additionnel appliqué au solde jusqu'à la date indiquée sur la facture. Les versements facturés encore impayés sont compris dans le Montant à payer. Le Solde à payer ne comprend pas les paiements appliqués aux intérêts ou aux intérêts à calculer dans l'avenir. Si vous prévoyez payer, en partie ou en entier, votre emprunt ou le montant de toute autre facturation à terme, veuillez communiquer avec Manitoba Hydro pour des renseignements mis à jour.

Basic charge • The fixed charge that pays part of the cost of providing service and does not depend on how much energy is used. It helps pay for such items as the maintenance of meters, the cost of meter reading, billing and record keeping. / **Redevance de base** • Frais fixes qui servent à payer une partie du coût de l'offre d'un service et qui ne dépend pas de la quantité d'énergie consommée. Ils servent à payer les coûts d'éléments tels que l'entretien des compteurs, le relevé des compteurs, la facturation et la tenue de dossiers.

Energy Charge • A breakdown of the costs of your electrical service calculated by multiplying the number of kilowatt•hours by a rate for that block of energy. If Manitoba Hydro provides different rates for different portions of your service, each rate calculation will appear on its own line. / **Frais d'énergie** • Répartition des coûts du service d'électricité calculés en multipliant le nombre de kilowattheures par le tarif correspondant à ce bloc d'énergie. Si Manitoba Hydro propose des tarifs différents pour des portions différentes du service qu'elle vous fournit, le calcul selon chaque tarif paraît sur une ligne séparée.

Multiplier – Each electricity meter records units of consumption. The multiplier is used to convert these units into the actual kW.h consumption used. / **Multiplicateur** • Chaque compteur d'électricité enregistre des unités de consommation. Le multiplicateur sert à convertir ces unités pour indiquer la consommation réelle en kWh.

Kilowatt (kW) • An amount of electrical power equivalent to 1,000 watts (W). / **Kilowatt (kW)** • Unité de mesure de la puissance électrique correspondant à 1 000 watts (W).

Kilowatt•hour (kW.h) • The unit by which electrical energy is measured. For example, 10•100 W light bulbs switched on for one hour would use one kilowatt•hour (1000 W for one hour). / **Kilowattheure (kWh)** • Unité de mesure de l'énergie électrique. Par exemple, dix ampoules de 100 watts chacune, allumées pendant une heure consomment un kWh (1 000 watts pendant une heure).

All Electric Apartment

No Arrears Bill Message

January & November

Manitoba Hydro

Customer name / Nom du client	CUSTOMER NAME
Account number / Nº de compte	**6111124 5111124**
Service location / Adresse de service	123 STREET NAME APT 303 WINNIPEG MB R1R 1R1
Date issued / Date d'émission	Jan 30 JAN 2015
Amount due / Montant à payer	**$ 23.52**
Due date / Date d'échéance	**Feb 17 FÉV 2015**
Cycle number / Nº de cycle	19

Customer service / 24 hour Trouble calls
Service à la clientèle / Dépannage 24 h sur 24

Winnipeg	204•480•5900
Outside Winnipeg / Extérieur de Winnipeg	1•888•MBHYDRO (1•888•624•9376)
Deaf access line / Ligne pour malentendants	204•360•6154
E•Mail address / Adresse électronique	customerservice@hydro.mb.ca

Learn about our programs and services, visit us at www.hydro.mb.ca

Renseignez•vous sur nos programmes et services. Visitez www.hydro.mb.ca/francais

Account summary / Sommaire du compte

Previous charges and credits / Frais et crédits antérieurs

Previous balance / Solde antérieur		$ 26.00
Payment / Paiement	Jan 06 JAN	26.00 CR
Balance forward / Solde reporté		$ 0.00

New charges / Nouveaux frais

Electricity / Électricité	(GST/TPS $ 1.04)	$ 23.52

Amount due / Montant à payer $ 23.52

Due date / Date d'échéance Feb 17 FÉV 2015

The only way to guarantee that an electronic device is not drawing power is to unplug it.

La seule façon de garantir qu'un dispositif électronique n'utilise pas d'énergie est de le débrancher.

Manitoba Hydro

Mail Payment to / Envoyez le paiement par la poste à
PO BOX 7900 STN MAIN
WINNIPEG MB R3C 5R1

If mailing, please specify amount paid on return portion of bill and enclose with payment.
Si vous payez par la poste, veuillez inclure le talon de la facture sur lequel le montant payé est indiqué.

CUSTOMER NAME
123 STREET NAME APT 303
WINNIPEG MB R1R 1R1

Account number/Nº de compte	**6111124 5111124**
Amount due/Montant à payer	**$ 23.52**
Due date /Date d'échéance	**Feb 17 FÉV 2015**

Payment enclosed/ Paiement ci•joint
$

☐ CH ☐ CA ☐ DR

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Manitoba Hydro

Customer name / Nom du client: CUSTOMER NAME

Account number / N° de compte: 6111124 5111124

Service location / Adresse de service: 123 STREET NAME APT 303
WINNIPEG MB R1R 1R1

Date issued / Date d'émission: Jan 30 JAN 2015

Special messages / Messages particuliers

u Your meter reading will be estimated next month. If you prefer to bill to a customer reading, please see "Instructions for reading your meter" and provide your reading in the 3 day period ending **Feb 28, 2015**.

Le relevé de votre compteur sera estimé le mois prochain. Si vous préférez une facture fondée sur un relevé soumis par le client, veuillez voir « Instructions pour la lecture de votre compteur » et transmettre votre relevé dans la période de 3 jours qui se termine le **28 FÉV 2015**.

Electricity • Residential / Électricité • Résidentiel

Meter number / N° de compteur	Service / Pour la période From / Du	To / Au	Days / Jours	Meter readings / Relevés du compteur Previous / Précédent	Present / Nouveau	Multiplier / Multiplicateur	kW.h / kWh	Reading type / Type de relevé
1111111	Dec 30 DÉC/14	Jan 28 JAN/15	29	76703	76880	1	177	Actual Réel

Basic Charge / Redevance de base			$ 7.28
Energy Charge / Frais d'énergie	177.000 kW.h	x $0.07381	13.06
Subtotal / Total partiel			20.34
2.50% City Tax / Taxe mun.			0.52
8.00% Prov Tax / Taxe prov.			1.62
5.00% GST / TPS			1.01
5.00% GST on City Tax / TPS sur taxe mun			0.03
Electricity charges / Frais d'électricité			**23.52**

Consumption history / Histoire de la consommation

	Meter Number / N° de compteur	Use this year / Consommation (cette année)	Days in period / Nbre de jours	Use per day this year / Consommation / jour (cette année)	Use last year / Consommation (an dernier)	Days in period / Nbre de jours	Use per day last year / Consommation / jour (an dernier)	Use for the last twelve months / Consommation (12 derniers mois)
Electricity kW.h / Électricité (kWh)	1111111	Dec • Jan 383	63	6.08	Dec • Jan 366	62	5.90	2,062

Electricity terminology / Terminologie de l'électricité

Reading type • This column indicates whether the meter reading for the time period was an actual (read by Manitoba Hydro or contract meter reader), customer or estimate (based on previous use and including such factors as the weather). / **Genre de relevé** • La colonne indique que le relevé du compteur pour la période a été réel, c'est•à•dire obtenu par Manitoba Hydro, un préposé aux compteurs contractuel ou le client ou s'il est estimatif (fondé sur la consommation antérieure et sur d'autres facteurs tels que les conditions météorologiques)."

Balance remaining • This dollar amount reflects your original loan or other term billing less any instalments billed or additional payments on the balance as of the date on the bill; instalments billed but not yet paid are included in your Amount Due. The Balance remaining does not reflect payments made on Interest or future Interest calculations. If you are planning to make a partial or full payment for your loan or other term billing, please contact Manitoba Hydro for current information. / **Solde à payer** • Ce montant comprend le montant de votre prêt initial ou le montant de toute autre facturation à terme diverse moins tout versement facturé ou tout paiement additionnel appliqué au solde jusqu'à la date indiquée sur la facture. Les versements facturés encore impayés sont compris dans le Montant à payer. Le Solde à payer ne comprend pas les paiements appliqués aux intérêts ou aux intérêts à calculer dans l'avenir. Si vous prévoyez payer, en partie ou en entier, votre emprunt ou le montant de toute autre facturation à terme, veuillez communiquer avec Manitoba Hydro pour des renseignements mis à jour.

Basic charge • The fixed charge that pays part of the cost of providing service and does not depend on how much energy is used. It helps pay for such items as the maintenance of meters, the cost of meter reading, billing and record keeping. / **Redevance de base** • Frais fixes qui servent à payer une partie du coût de l'offre d'un service et qui ne dépend pas de la quantité d'énergie consommée. Ils servent à payer les coûts d'éléments tels que l'entretien des compteurs, le relevé des compteurs, la facturation et la tenue de dossiers.

Manitoba Hydro

Customer name Nom du client	CUSTOMER NAME
Account number **N° de compte**	**6111121 5111121**
Service location Adresse de service	123 STREET NAME APT 303 WINNIPEG MB R1R 1R1
Date issued Date d'émission	Nov 30 NOV 2014
Amount due **Montant à payer**	**$ 25.24**
Due date **Date d'échéance**	**Dec 16 DÉC 2014**
Cycle number N° de cycle	19

Customer service / 24 hour Trouble calls
Service à la clientèle / Dépannage 24 h sur 24

Winnipeg	204•480•5900
Outside Winnipeg / Extérieur de Winnipeg	1•888•MBHYDRO (1•888•624•9376)
Deaf access line Ligne pour malentendants	204•360•6154
E•Mail address Adresse électronique	customerservice@hydro.mb.ca

Learn about our programs and services, visit us at www.hydro.mb.ca

Renseignez•vous sur nos programmes et services. Visitez www.hydro.mb.ca/francais

Account summary / Sommaire du compte

Previous charges and credits / Frais et crédits antérieurs

Previous balance / Solde antérieur		$ 23.67
Payment / Paiement	Nov 04 NOV	23.67 CR
Balance forward / Solde reporté		$ 0.00

New charges / Nouveaux frais

Electricity / Électricité	(GST/TPS	$ 1.12)	$ 25.24

Amount due / Montant à payer $ 25.24

Due date / Date d'échéance Dec 16 DÉC 2014

When purchasing household electronic devices look for ENERGY STAR® qualified products. They will use up to 50 per cent less electricity in standby mode.

À l'achat de dispositifs électroniques pour la maison, cherchez des produits homologués ENERGY STAR® qui utilisent jusqu'à 50 % moins d'énergie en mode de veille.

Manitoba Hydro

Mail Payment to / Envoyez le paiement par la poste à
PO BOX 7900 STN MAIN
WINNIPEG MB R3C 5R1

If mailing, please specify amount paid on return portion of bill and enclose with payment.
Si vous payez par la poste, veuillez inclure le talon de la facture sur lequel le montant payé est indiqué.

CUSTOMER NAME
123 STREET NAME APT 303
WINNIPEG MB R1R 1R1

Account number/N° de compte **6111121 5111121**	Payment enclosed/ Paiement ci•joint **$**
Amount due/Montant à payer **$ 25.24**	☐ CH ☐ CA ☐ DR
Due date /Date d'échéance **Dec 16 DÉC 2014**	

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Manitoba Hydro

Customer name / Nom du client: CUSTOMER NAME

Account number / N° de compte: 6111121 5111121

Service location / Adresse de service: 123 STREET NAME APT 303
WINNIPEG MB R1R 1R1

Date issued / Date d'émission: Nov 30 NOV 2014

Special messages / Messages particuliers

u Your meter reading will be estimated next month. If you prefer to bill to a customer reading, please see "Instructions for reading your meter" and provide your reading in the 3 day period ending **Dec 28, 2014**.

Le relevé de votre compteur sera estimé le mois prochain. Si vous préférez une facture fondée sur un relevé soumis par le client, veuillez voir « Instructions pour la lecture de votre compteur » et transmettre votre relevé dans la période de 3 jours qui se termine le **28 DÉC 2014**.

u Effective November 1, 2014, Goods and Services Tax (GST) will be applied to the City of Winnipeg tax on your natural gas and electricity charges. This is in accordance with the Federal Excise Tax Act and Province of Manitoba legislation.

This tax is displayed as a separate line item on your enclosed Manitoba Hydro bill.

Conformément à la Loi sur la taxe d'accise du gouvernement fédéral et aux dispositions législatives du gouvernement du Manitoba, et ce à compter du 1er novembre 2014, la Taxe sur les produits et services (TPS) sera appliquée à la taxe de la Ville de Winnipeg sur vos frais d'électricité et de gaz naturel.

La facture de Manitoba Hydro ci•jointe indique cette taxe sur une ligne séparée.

Electricity • Residential / Électricité • Résidentiel

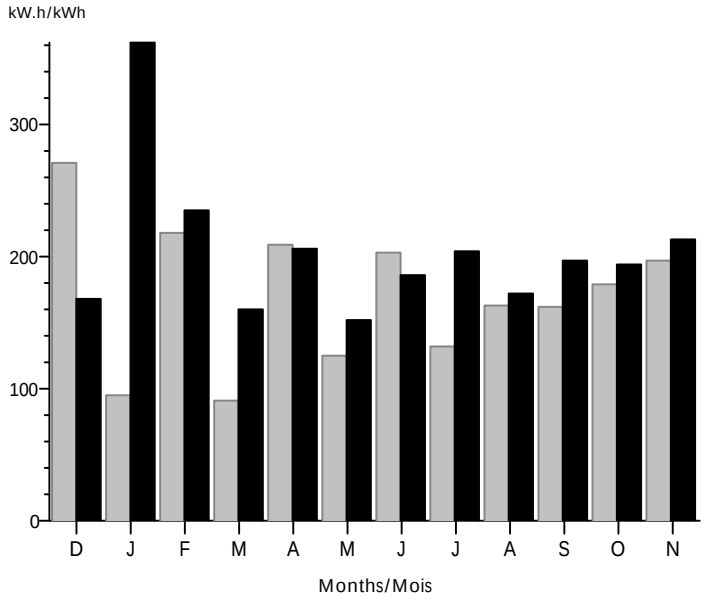
Meter number / N° de compteur	Service / Pour la période From / Du	To / Au	Days / Jours	Meter readings / Relevés du compteur Previous / Précédent	Present / Nouveau	Multiplier / Multiplicateur	kW.h / kWh	Reading type / Type de relevé
1111111	Oct 28 OCT/14	Nov 26 NOV/14	29	76300	76497	1	197	Actual Réel

Basic Charge / Redevance de base			$ 7.28
Energy Charge / Frais d'énergie	197.000 kW.h	x $0.07381	14.54
Subtotal / Total partiel			21.82
2.50% City Tax / Taxe mun.			0.56
8.00% Prov Tax / Taxe prov.			1.74
5.00% GST / TPS			1.09
5.00% GST on City Tax / TPS sur taxe mun			0.03

Electricity charges / Frais d'électricité **25.24**

Consumption history / Histoire de la consommation

Electricity / Électricité (Meter : 1111111)



kW.h Current year / kWh•année en cours
Estimated months / Estimation en
Dec, Feb, Apr, Jun, Aug, Oct / DÉC, FÉV, AVR, JUN, AOÛ, OCT

kW.h Previous year / kWh•année précédente
Estimated months / Estimation en
Dec, Feb, Apr, Jun, Aug, Oct / DÉC, FÉV, AVR, JUN, AOÛ, OCT

Electricity terminology / Terminologie de l'électricité

Balance remaining • This dollar amount reflects your original loan or other term billing less any instalments billed or additional payments on the balance as of the date on the bill; instalments billed but not yet paid are included in your Amount Due. The Balance remaining does not reflect payments made on Interest or future Interest calculations. If you are planning to make a partial or full payment for your loan or other term billing, please contact Manitoba Hydro for current information. / **Solde à payer** • Ce montant comprend le montant de votre prêt initial ou le montant de toute autre facturation à terme diverse moins tout versement facturé ou tout paiement additionnel appliqué au solde jusqu'à la date indiquée sur la facture. Les versements facturés encore impayés sont compris dans le Montant à payer. Le Solde à payer ne comprend pas les paiements appliqués aux intérêts ou aux intérêts à calculer dans l'avenir. Si vous prévoyez payer, en partie ou en entier, votre emprunt ou le montant de toute autre facturation à terme, veuillez communiquer avec Manitoba Hydro pour des renseignements mis à jour.

Basic charge • The fixed charge that pays part of the cost of providing service and does not depend on how much energy is used. It helps pay for such items as the maintenance of meters, the cost of meter reading, billing and record keeping. / **Redevance de base** • Frais fixes qui servent à payer une partie du coût de l'offre d'un service et qui ne dépend pas de la quantité d'énergie consommée. Ils servent à payer les coûts d'éléments tels que l'entretien des compteurs, le relevé des compteurs, la facturation et la tenue de dossiers.

Energy Charge • A breakdown of the costs of your electrical service calculated by multiplying the number of kilowatt•hours by a rate for that block of energy. If Manitoba Hydro provides different rates for different portions of your service, each rate calculation will appear on its own line. / **Frais d'énergie** • Répartition des coûts du service d'électricité calculés en multipliant le nombre de kilowattheures par le tarif correspondant à ce bloc d'énergie. Si Manitoba Hydro propose des tarifs différents pour des portions différentes du service qu'elle vous fournit, le calcul selon chaque tarif paraît sur une ligne séparée.

Multiplier – Each electricity meter records units of consumption. The multiplier is used to convert these units into the actual kW.h consumption used. / **Multiplicateur** • Chaque compteur d'électricité enregistre des unités de consommation. Le multiplicateur sert à convertir ces unités pour indiquer la consommation réelle en kWh.

Kilowatt (kW) • An amount of electrical power equivalent to 1,000 watts (W). / **Kilowatt (kW)** • Unité de mesure de la puissance électrique correspondant à 1 000 watts (W).

Kilowatt•hour (kW.h) • The unit by which electrical energy is measured. For example, 10•100 W light bulbs switched on for one hour would use one kilowatt•hour (1000 W for one hour). / **Kilowattheure (kWh)** • Unité de mesure de l'énergie électrique. Par exemple, dix ampoules de 100 watts chacune, allumées pendant une heure consomment un kWh (1 000 watts pendant une heure).

Combined Gas/Electric House

No Arrears Bill Message

January & November

Manitoba Hydro

Customer name / Nom du client	CUSTOMER NAME
Account number / N° de compte	**6111125 5111125**
Service location / Adresse de service	123 STREET NAME WINNIPEG MB R1R 1R1
Date issued / Date d'émission	Jan 21 JAN 2015
Amount due / Montant à payer	**$ 254.49**
Due date / Date d'échéance	**Feb 06 FÉV 2015**
Cycle number / N° de cycle	12

Customer service / 24 hour Trouble calls
Service à la clientèle / Dépannage 24 h sur 24

Winnipeg	204•480•5900
Outside Winnipeg / Extérieur de Winnipeg	1•888•MBHYDRO (1•888•624•9376)
Deaf access line / Ligne pour malentendants	204•360•6154
E•Mail address / Adresse électronique	customerservice@hydro.mb.ca

Sign up for MyBill and receive your bill and account information online.
www.hydro.mb.ca/mybill

Inscrivez•vous à MyBill et recevez en ligne votre facture et des données sur votre compte.
www.hydro.mb.ca/francais/mybill

Account summary / Sommaire du compte

Previous charges and credits / Frais et crédits antérieurs

Previous balance / Solde antérieur		$ 206.26
Payment / Paiement	Dec 23 DÉC	206.26 CR
Balance forward / Solde reporté		$ 0.00

New charges / Nouveaux frais

Electricity / Électricité	(GST/TPS	$ 5.79)	$ 130.72
Natural gas / Gaz naturel	(GST/TPS	5.66)	118.77
Other charges / Autres frais			5.00

Amount due / Montant à payer $ 254.49

Due date / Date d'échéance Feb 06 FÉV 2015

The only way to guarantee that an electronic device is not drawing power is to unplug it.

La seule façon de garantir qu'un dispositif électronique n'utilise pas d'énergie est de le débrancher.

Manitoba Hydro

Mail Payment to / Envoyez le paiement par la poste à
PO BOX 7900 STN MAIN
WINNIPEG MB R3C 5R1

If mailing, please specify amount paid on return portion of bill and enclose with payment.
Si vous payez par la poste, veuillez inclure le talon de la facture sur lequel le montant payé est indiqué.

CUSTOMER NAME
123 STREET NAME
WINNIPEG MB R1R 1R1

Account number/N° de compte	**6111125 5111125**
Amount due/Montant à payer	**$ 254.49**
Due date /Date d'échéance	**Feb 06 FÉV 2015**

Payment enclosed/ Paiement ci•joint
$

☐ CH ☐ CA ☐ DR

00000000 0611112551111253 000000000000 0000025449 0000000000 6

Manitoba Hydro

Customer name / Nom du client: CUSTOMER NAME

Account number / N° de compte: **6111125 5111125**

Service location / Adresse de service: 123 STREET NAME
WINNIPEG MB R1R 11R1

Date issued / Date d'émission: Jan 21 JAN 2015

Special messages / Messages particuliers

u Your meter reading will be estimated next month. If you prefer to bill to a customer reading, please see "Instructions for reading your meter" and provide your reading in the 3 day period ending **Feb 18, 2015**.

Le relevé de votre compteur sera estimé le mois prochain. Si vous préférez une facture fondée sur un relevé soumis par le client, veuillez voir « Instructions pour la lecture de votre compteur » et transmettre votre relevé dans la période de 3 jours qui se termine le **18 FÉV 2015**.

Electricity • Residential / Électricité • Résidentiel

Meter number / N° de compteur	Service / Pour la période From / Du	To / Au	Days / Jours	Meter readings / Relevés du compteur Previous / Précédent	Present / Nouveau	Multiplier / Multiplicateur	kW.h / kWh	Reading type / Type de relevé
1111111	Dec 17 DÉC/14	Jan 20 JAN/15	34	82519	83952	1	1,433	Actual Réel

Basic Charge / Redevance de base		$ 7.28
Energy Charge / Frais d'énergie	1,433.000 kW.h x $0.07381	105.77
Subtotal / Total partiel		113.05
2.50% City Tax / Taxe mun.		2.84
8.00% Prov Tax / Taxe prov.		9.04
5.00% GST / TPS		5.65
5.00% GST on City Tax / TPS sur taxe mun		0.14

Electricity charges / Frais d'électricité **130.72**

Natural gas • Residential / Gaz naturel • Résidentiel

Meter number / N° de compteur	Service / Pour la période From / Du	To / Au	Days / Jours	Meter readings / Relevés du compteur Previous / Précédent	Present / Nouveau	Usage / Consommation		Base pressure adj/Facteur de rajustement de la pression de base		Metric conversion factor/Facteur de conversion métrique		Cubic metres (m³) / Mètres cubes (m³)	Reading type / Type de relevé
222222	Dec 17 DÉC/14	Jan 20 JAN/15	34	3205	3320	115	x	0.98780	x	2.832784	=	321.796	Actual Réel

Basic Charge / Redevance de base					$ 14.00
Primary Gas (Centra) / Gaz d'inventaire (Centra)	92.0 %	x	321.796	m³ x $0.16650	49.29
Supplemental Gas / Gaz de réserve	8.0	x	321.796	x 0.16050	4.13
Transportation to Centra / Transport jusqu'à Centra	100.0	x	321.796	x 0.03950	12.71
Distribution to Customer / Distribution aux clients	100.0	x	321.796	x 0.10250	32.98
Subtotal / Total partiel					113.11
5.00% GST / TPS					5.66

Natural gas charges / Frais de gaz naturel **118.77**

Other charges / Autres frais

Helping Neighbours Pledge / Engagement • Voisins qui s'entraident 5.00

Consumption history / Histoire de la consommation

	Meter Number / Nº de compteur	Use this year/ Consommation (cette année)	Days in period/ Nbre de jours	Use per day this year/ Consommation / jour (cette année)	Use last year/ Consommation (an dernier)	Days in period/ Nbre de jours	Use per day last year/ Consommation / jour (an dernier)	Use for the last twelve months / Consommation (12 derniers mois)
Electricity kW.h / Électricité (kWh)	1111111	Dec • Jan 2,619	63	41.57	Dec • Jan 2,636	63	41.84	14,460
Natural gas m³ / Gas naturel (m³)	222222	Dec • Jan 559.645	63	8.88	Dec • Jan 884.237	63	14.04	1,250.808

Electricity and natural gas terminology / Terminologie de l'électricité et du gaz naturel

Reading type • This column indicates whether the meter reading for the time period was an actual (read by Manitoba Hydro or contract meter reader), customer or estimate (based on previous use and including such factors as the weather). / **Genre de relevé** • La colonne indique que le relevé du compteur pour la période a été réel, c'est•à•dire obtenu par Manitoba Hydro, un préposé aux compteurs contractuel ou le client ou s'il est estimatif (fondé sur la consommation antérieure et sur d'autres facteurs tels que les conditions météorologiques)."

Metric conversion factor – the number used to convert natural gas consumption from imperial units to metric measurement. / **Facteur de conversion métrique** • Nombre utilisé pour convertir en unités métriques la consommation de gaz naturel indiquée en unités impériales.

Base pressure adjustment – a factor applied to a meter reading to adjust the registered volume to correspond to standard measurement conditions. / **Rajustement de la pression de base** • Facteur appliqué à un relevé de compteur pour faire correspondre le volume de gaz enregistré à des conditions normales de mesure.

Cubic metre (m³) – the unit by which natural gas volume is measured. / **Mètre cube (m³)** • Unité de mesure du volume de gaz naturel.

Balance remaining • This dollar amount reflects your original loan or other term billing less any instalments billed or additional payments on the balance as of the date on the bill; instalments billed but not yet paid are included in your Amount Due. The Balance remaining does not reflect payments made on Interest or future Interest calculations. If you are planning to make a partial or full payment for your loan or other term billing, please contact Manitoba Hydro for current information. / **Solde à payer** • Ce montant comprend le montant de votre prêt initial ou le montant de toute autre facturation à terme diverse moins tout versement facturé ou tout paiement additionnel appliqué au solde jusqu'à la date indiquée sur la facture. Les versements facturés encore impayés sont compris dans le Montant à payer. Le Solde à payer ne comprend pas les paiements appliqués aux intérêts ou aux intérêts à calculer dans l'avenir. Si vous prévoyez payer, en partie ou en entier, votre emprunt ou le montant de toute autre facturation à terme, veuillez communiquer avec Manitoba Hydro pour des renseignements mis à jour.

Basic charge • The fixed charge that pays part of the cost of providing service and does not depend on how much energy is used. It helps pay for such items as the maintenance of meters, the cost of meter reading, billing and record keeping. / **Redevance de base** • Frais fixes qui servent à payer une partie du coût de l'offre d'un service et qui ne dépend pas de la quantité d'énergie consommée. Ils servent à payer les coûts d'éléments tels que l'entretien des compteurs, le relevé des compteurs, la facturation et la tenue de dossiers.

Energy Charge • A breakdown of the costs of your electrical service calculated by multiplying the number of kilowatt•hours by a rate for that block of energy. If Manitoba Hydro provides different rates for different portions of your service, each rate calculation will appear on its own line. / **Frais d'énergie** • Répartition des coûts du service d'électricité calculés en multipliant le nombre de kilowattheures par le tarif correspondant à ce bloc d'énergie. Si Manitoba Hydro propose des tarifs différents pour des portions différentes du service qu'elle vous fournit, le calcul selon chaque tarif paraît sur une ligne séparée.

Kilowatt (kW) • An amount of electrical power equivalent to 1,000 watts (W). / **Kilowatt (kW)** • Unité de mesure de la puissance électrique correspondant à 1 000 watts (W).

Kilowatt•hour (kW.h) • The unit by which electrical energy is measured. For example, 10•100 W light bulbs switched on for one hour would use one kilowatt•hour (1000 W for one hour). / **Kilowattheure (kWh)** • Unité de mesure de l'énergie électrique. Par exemple, dix ampoules de 100 watts chacune, allumées pendant une heure consomment un kWh (1 000 watts pendant une heure).

Multiplier – Each electricity meter records units of consumption. The multiplier is used to convert these units into the actual kW.h consumption used. / **Multiplicateur** • Chaque compteur d'électricité enregistre des unités de consommation. Le multiplicateur sert à convertir ces unités pour indiquer la consommation réelle en kWh.

Primary gas • Natural gas received from Western Canada. It can be purchased on an unregulated basis from a natural gas marketer, or from Manitoba Hydro at rates regulated by the Public Utilities Board of Manitoba. The price that Manitoba Hydro pays for its Primary Gas supply is passed directly on to the customer without any markup. During normal weather, this represents approximately 95% of a customer's annual natural gas use. / **Gaz d'inventaire** • Gaz naturel provenant de l'Ouest canadien. Il peut être acheté sur une base non réglementée à un négociant en gaz naturel ou à Manitoba Hydro à un tarif réglementé par la Régie des services publics. Le prix payé par Manitoba Hydro à ses fournisseurs de gaz d'inventaire est celui que paient les clients, sans aucune majoration. Lorsque les conditions météorologiques sont normales, le gaz d'inventaire représente environ 95 % de la consommation annuelle de gaz des clients.

Manitoba Hydro

Customer name / Nom du client	CUSTOMER NAME
Account number / Nº de compte	**6111126 5111126**
Service location / Adresse de service	123 STREET NAME WINNIPEG MB R1R 1R1
Date issued / Date d'émission	Nov 20 NOV 2014
Amount due / Montant à payer	**$ 170.92**
Due date / Date d'échéance	**Dec 08 DÉC 2014**
Cycle number / Nº de cycle	12

Customer service / 24 hour Trouble calls
Service à la clientèle / Dépannage 24 h sur 24

Winnipeg	204•480•5900
Outside Winnipeg / Extérieur de Winnipeg	1•888•MBHYDRO (1•888•624•9376)
Deaf access line / Ligne pour malentendants	204•360•6154
E•Mail address / Adresse électronique	customerservice@hydro.mb.ca

Sign up for MyBill and receive your bill and account information online.
www.hydro.mb.ca/mybill

Inscrivez•vous à MyBill et recevez en ligne votre facture et des données sur votre compte.
www.hydro.mb.ca/francais/mybill

Account summary / Sommaire du compte

Previous charges and credits / Frais et crédits antérieurs

Previous balance / Solde antérieur			$ 126.18
Payment / Paiement	Oct 23 OCT		126.18 CR
Balance forward / Solde reporté			$ 0.00

New charges / Nouveaux frais

Electricity / Électricité	(GST/TPS	$ 5.00)	$ 112.96
Natural gas / Gaz naturel	(GST/TPS	2.51)	52.96
Other charges / Autres frais			5.00

Amount due / Montant à payer $ 170.92

Due date / Date d'échéance Dec 08 DÉC 2014

When purchasing household electronic devices look for ENERGY STAR® qualified products. They will use up to 50 per cent less electricity in standby mode.

À l'achat de dispositifs électroniques pour la maison, cherchez des produits homologués ENERGY STAR® qui utilisent jusqu'à 50 % moins d'énergie en mode de veille.

Manitoba Hydro

Mail Payment to / Envoyez le paiement par la poste à
PO BOX 7900 STN MAIN
WINNIPEG MB R3C 5R1

If mailing, please specify amount paid on return portion of bill and enclose with payment.
Si vous payez par la poste, veuillez inclure le talon de la facture sur lequel le montant payé est indiqué.

CUSTOMER NAME
123 STREET NAME
WINNIPEG MB 1R1 1R1

Account number/Nº de compte **6111126 5111126**

Amount due/Montant à payer **$ 170.92**

Due date /Date d'échéance **Dec 08 DÉC 2014**

Payment enclosed/ Paiement ci•joint **$**

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Manitoba Hydro

Customer name / Nom du client: CUSTOMER NAME

Account number / N° de compte: 6111126 5111126

Service location / Adresse de service: 123 STREET NAME
WINNIPEG MB R1R 1R1

Date issued / Date d'émission: Nov 20 NOV 2014

Special messages / Messages particuliers

u Your meter reading will be estimated next month. If you prefer to bill to a customer reading, please see "Instructions for reading your meter" and provide your reading in the 3 day period ending **Dec 18, 2014**.

Le relevé de votre compteur sera estimé le mois prochain. Si vous préférez une facture fondée sur un relevé soumis par le client, veuillez voir « Instructions pour la lecture de votre compteur » et transmettre votre relevé dans la période de 3 jours qui se termine le **18 DÉC 2014**.

u The Public Utilities Board has approved new natural gas rates. Please see the enclosed insert for details.

La Régie des services publics a approuvé de nouveaux tarifs du gaz naturel. Veuillez consulter l'encart ci•joint pour tous les détails.

u Effective November 1, 2014, Goods and Services Tax (GST) will be applied to the City of Winnipeg tax on your natural gas and electricity charges. This is in accordance with the Federal Excise Tax Act and Province of Manitoba legislation.

This tax is displayed as a separate line item on your enclosed Manitoba Hydro bill.

Conformément à la Loi sur la taxe d'accise du gouvernement fédéral et aux dispositions législatives du gouvernement du Manitoba, et ce à compter du 1er novembre 2014, la Taxe sur les produits et services (TPS) sera appliquée à la taxe de la Ville de Winnipeg sur vos frais d'électricité et de gaz naturel.

La facture de Manitoba Hydro ci•jointe indique cette taxe sur une ligne séparée.

Electricity • Residential / Électricité • Résidentiel

Meter number / N° de compteur	Service / Pour la période From / Du	To / Au	Days / Jours	Meter readings / Relevés du compteur Previous / Précédent	Present / Nouveau	Multiplier / Multiplicateur	kW.h / kWh	Reading type / Type de relevé
1111111	Oct 17 OCT/14	Nov 18 NOV/14	32	80108	81333	1	1,225	Actual Réel

Basic Charge / Redevance de base			$ 7.28
Energy Charge / Frais d'énergie	1,225.000 kW.h	x $0.07381	90.42
Subtotal / Total partiel			97.70
2.50% City Tax / Taxe mun.			2.45
8.00% Prov Tax / Taxe prov.			7.81
5.00% GST / TPS			4.88
5.00% GST on City Tax / TPS sur taxe mun			0.12

Electricity charges / Frais d'électricité **112.96**

Natural gas • Residential / Gaz naturel • Résidentiel

Meter number / N° de compteur	Service / Pour la période From / Du	To / Au	Days / Jours	Meter readings / Relevés du compteur Previous / Précédent	Present / Nouveau	Usage / Consommation		Base pressure adj/Facteur de rajustement de la pression de base		Metric conversion factor/Facteur de conversion métrique		Cubic metres (m³) / Mètres cubes (m³)	Reading type / Type de relevé
222222	Oct 17 OCT/14	Nov 18 NOV/14	32	3077	3120	43	x	0.98780	x	2.832784	=	120.323	Actual Réel

Basic Charge / Redevance de base					$ 14.00
Primary Gas (Centra) / Gaz d'inventaire (Centra)	54.0 %	x	36.213 m³	x $0.15510	3.03
Primary Gas (Centra) / Gaz d'inventaire (Centra)	92.0	x	84.110	x 0.16650	12.88
Supplemental Gas / Gaz de réserve	46.0	x	36.213	x 0.16050	2.67
Supplemental Gas / Gaz de réserve	8.0	x	84.110	x 0.16050	1.08
Transportation to Centra / Transport jusqu'à Centra	100.0	x	36.213	x 0.03980	1.44

Transportation to Centra / Transport jusqu'à Centra	100.0	x	84.110	x	0.03950	3.32	
Distribution to Customer / Distribution aux clients	100.0	x	36.213	x	0.09430	3.41	
Distribution to Customer / Distribution aux clients	100.0	x	84.110	x	0.10250	8.62	
Subtotal / Total partiel						50.45	
	5.00% GST / TPS					2.51	

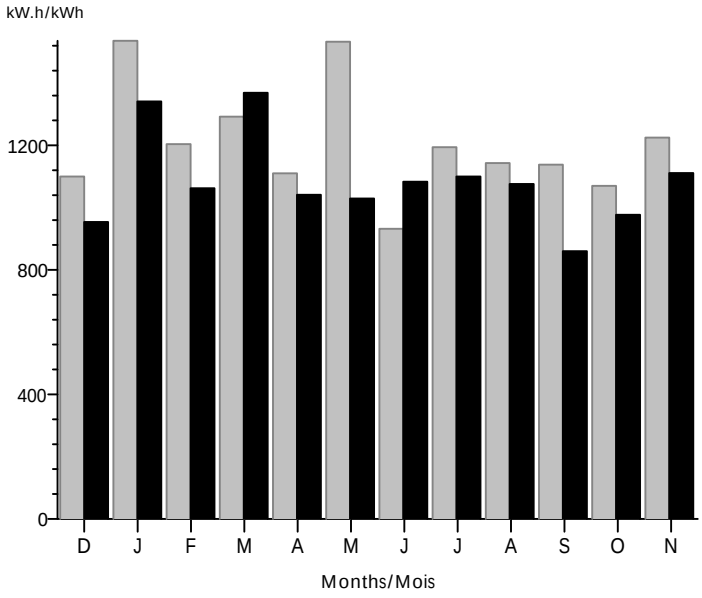
Natural gas charges / Frais de gaz naturel **52.96**

Other charges / Autres frais

Helping Neighbours Pledge / Engagement • Voisins qui s'entraident 5.00

Consumption history / Histoire de la consommation

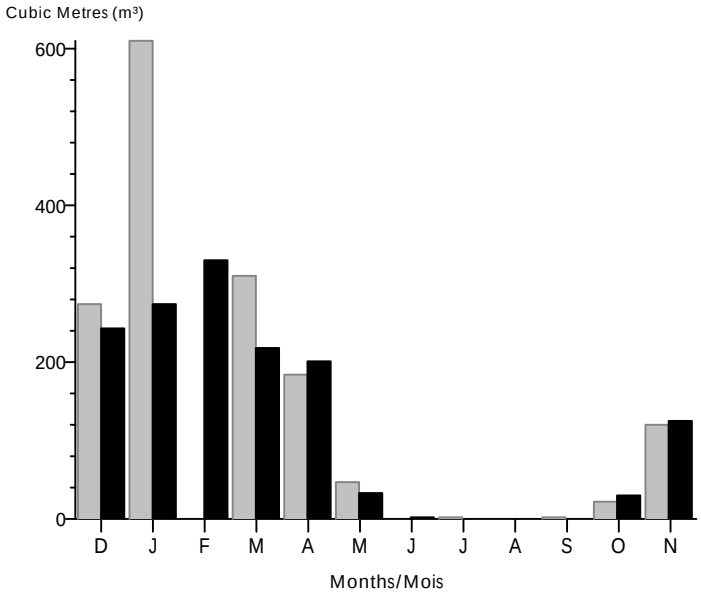
Electricity / Électricité (Meter : 1111111)



kW.h Current year / kWh•année en cours
Estimated months / Estimation en
Dec, Feb, Apr, Jun, Aug, Oct / DÉC, FÉV, AVR, JUN, AOÛ, OCT

kW.h Previous year / kWh•année précédente
Estimated months / Estimation en
Dec, Feb, Apr, Jun, Aug, Oct / DÉC, FÉV, AVR, JUN, AOÛ, OCT

Natural Gas / Gaz naturel (Meter : 222222)



Cubic metres current year / Métres cubes•année en cours
Estimated months / Estimation en
Dec, Apr, Jun, Aug, Oct / DÉC, AVR, JUN, AOÛ, OCT

Cubic metres previous year / Métres cubes•année précédente
Estimated months / Estimation en
Dec, Feb, Apr, Jun, Oct / DÉC, FÉV, AVR, JUN, OCT

Electricity and natural gas terminology / Terminologie de l'électricité et du gaz naturel

Balance remaining • This dollar amount reflects your original loan or other term billing less any instalments billed or additional payments on the balance as of the date on the bill; instalments billed but not yet paid are included in your Amount Due. The Balance remaining does not reflect payments made on Interest or future Interest calculations. If you are planning to make a partial or full payment for your loan or other term billing, please contact Manitoba Hydro for current information. / **Solde à payer** • Ce montant comprend le montant de votre prêt initial ou le montant de toute autre facturation à terme diverse moins tout versement facturé ou tout paiement additionnel appliqué au solde jusqu'à la date indiquée sur la facture. Les versements facturés encore impayés sont compris dans le Montant à payer. Le Solde à payer ne comprend pas les paiements appliqués aux intérêts ou aux intérêts à calculer dans l'avenir. Si vous prévoyez payer, en partie ou en entier, votre emprunt ou le montant de toute autre facturation à terme, veuillez communiquer avec Manitoba Hydro pour des renseignements mis à jour.

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Energy Charge • A breakdown of the costs of your electrical service calculated by multiplying the number of kilowatt•hours by a rate for that block of energy. If Manitoba Hydro provides different rates for different portions of your service, each rate calculation will appear on its own line. / **Frais d'énergie** • Répartition des coûts du service d'électricité calculés en multipliant le nombre de kilowattheures par le tarif correspondant à ce bloc d'énergie. Si Manitoba Hydro propose des tarifs différents pour des portions différentes du service qu'elle vous fournit, le calcul selon chaque tarif paraît sur une ligne séparée.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Rates and revenues		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

For each month for the most recent twelve months available, disaggregated by heating and non-heating residential accounts, please provide the average bill for residential accounts provided in sufficient detail (including all input variables) to permit replication.

RATIONALE FOR QUESTION:

The impacts of rates on bills and revenues is to be considered

RESPONSE:

The table on the following page provides bill calculations based on the monthly average use (actual and weather adjusted actual) for residential heating and non-heating accounts. These calculations have been based on the interim approved May 1, 2014 rates and the proposed April 1, 2015 and April 1, 2016 rates as provided in the following table:

	Interim 2014 Rates	Prop. 2015 Rates	Prop. 2016 Rates
Basic Charge	$7.28	$7.57	$7.87
Energy Charge	$0.07381	$0.07672	$0.07975

	Residential Heating			
	Actual	Revenue at:		
2014	Avg Use	2014 Rates	2015 Rates	2016 Rates
Jan	4,129	$312.04	$324.35	$337.16
Feb	3,850	291.45	302.94	314.91
Mar	3,438	261.04	271.33	282.05
Apr	2,754	210.55	218.86	227.50
May	1,935	150.10	156.02	162.19
Jun	1,212	96.74	100.55	104.53
Jul	1,031	83.38	86.67	90.09
Aug	1,086	87.44	90.89	94.48
Sep	1,000	81.09	84.29	87.62
Oct	1,309	103.90	108.00	112.26
Nov	2,087	161.32	167.68	174.31
Dec	3,070	233.88	243.10	252.70
Total	**26,901**	**$2,072.92**	**$2,154.68**	**$2,239.79**

	Residential Heating (Weather Adjusted)			
	Weather Adj.	Revenue at:		
2014	Avg Use	2014 Rates	2015 Rates	2016 Rates
Jan	3,692	$279.79	$290.82	$302.31
Feb	3,481	264.21	274.63	285.48
Mar	3,080	234.61	243.87	253.50
Apr	2,216	170.84	177.58	184.60
May	1,779	138.59	144.05	149.75
Jun	1,259	100.21	104.16	108.28
Jul	1,050	84.78	88.13	91.61
Aug	1,089	87.66	91.12	94.72
Sep	960	78.14	81.22	84.43
Oct	1,362	107.81	112.06	116.49
Nov	2,151	166.05	172.59	179.41
Dec	2,939	224.21	233.05	242.26
Total	**25,058**	**$1,936.89**	**$2,013.29**	**$2,092.82**

	Residential Non-Heating			
	Actual	Revenue at:		
2014	Avg Use	2014 Rates	2015 Rates	2016 Rates
Jan	1,301	$103.31	$107.38	$111.62
Feb	1,209	96.52	100.32	104.29
Mar	1,102	88.62	92.12	95.75
Apr	975	79.24	82.37	85.63
May	949	77.33	80.38	83.55
Jun	775	64.48	67.03	69.68
Jul	831	68.62	71.32	74.14
Aug	974	79.17	82.30	85.55
Sep	751	62.71	65.19	67.76
Oct	761	63.45	65.95	68.56
Nov	874	71.79	74.62	77.57
Dec	1,047	84.56	87.90	91.37
Total	**11,549**	**$939.79**	**$976.88**	**$1,015.47**

	Residential Non-Heating (Weather Adjusted)			
	Weather Adj.	Revenue at:		
2014	Avg Use	2014 Rates	2015 Rates	2016 Rates
Jan	1,215	$96.96	$100.78	$104.77
Feb	1,136	91.13	94.72	98.47
Mar	1,031	83.38	86.67	90.09
Apr	878	72.09	74.93	77.89
May	827	68.32	71.02	73.82
Jun	746	62.34	64.80	67.36
Jul	882	72.38	75.24	78.21
Aug	965	78.51	81.60	84.83
Sep	784	65.15	67.72	70.39
Oct	746	62.34	64.80	67.36
Nov	886	72.68	75.54	78.53
Dec	1,023	82.79	86.05	89.45
Total	**11,119**	**$908.05**	**$943.89**	**$981.18**

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Rates and revenues		
Issue:	Reasonableness of rates, bills and collections for low-income customers.		

PREAMBLE TO IR (IF ANY):

QUESTION:

Provide the same bill information using the Company's proposed rates rather than the Company's existing rates.

RATIONALE FOR QUESTION:

The impacts of rates on bills and revenues is to be considered

RESPONSE:

Please see Manitoba Hydro's response to GAC/MH-I-65a.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Bill impact mitigation		
Issue:	Customer-sited alternative energy resources		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please file the space and water heating cost comparisons for different fuels at https://www.hydro.mb.ca/your_home/heating_and_cooling/home_heating_comparisons.pdf.

RATIONALE FOR QUESTION:

Explore the potential for available alternative energy resources to contribute to energy cost mitigation for low-income and other customers.

RESPONSE:

Please see the attachment to this response.

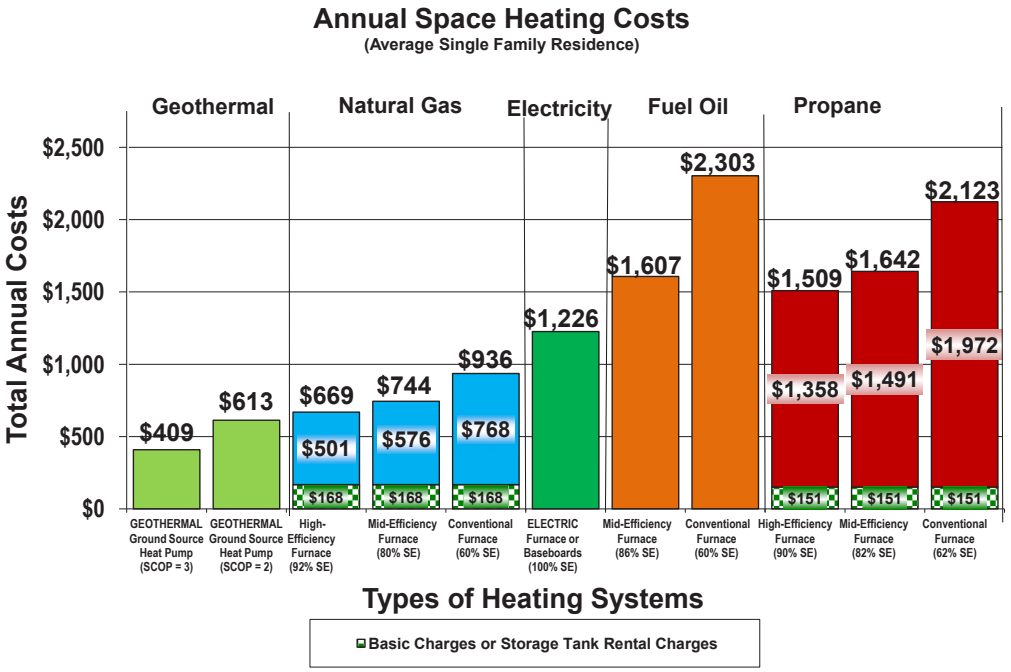
Typical space & water heating costs

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

1

Wondering about your energy options for heating?

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



Energy rates

Natural gas:
$0.2871/cubic metre

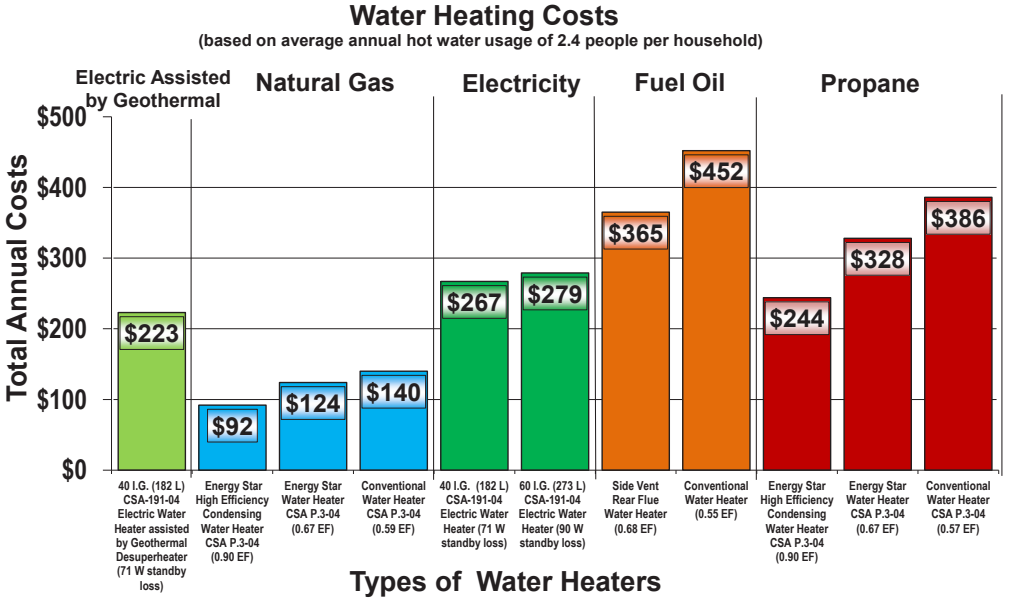
Electricity:
$0.07381/kilowatt-hour

Fuel oil:
$**0.89**/litre

Propane:
$0.522/litre

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

Annual propane tank rental: **$151**



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Typical space & water heating costs

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

2

Weigh your options

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

Annual cost estimates

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

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

Key points if you are thinking of converting

Is it economically feasible?

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

Conventional furnaces no longer manufactured

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

High efficiency furnaces are now required by law

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

Size of existing electrical service

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

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

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

Other gas appliances

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

Flue Gas Venting

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

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

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

Reduced chimney ventilation

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

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

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

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

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

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

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Typical space & water heating costs

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

3

Carbon monoxide safety

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

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

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

What is the payback?

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

Determine the potential savings

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

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

Determine the costs of the new system

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

Factor in the cost of financing, if necessary.

Determine the payback

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

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

Explanation of technical information in the charts

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

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

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

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

ENERGY RATES — in effect February 1, 2015

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

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Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Bill impact mitigation		
Issue:	Customer-sited alternative energy resources		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please supplement the chart with additional columns showing costs of wood pellet, solar thermal-electric hybrid, and air source heat pump-electric hybrid space and water heating.

RATIONALE FOR QUESTION:

Explore the potential for available alternative energy resources to contribute to energy cost mitigation for low-income and other customers.

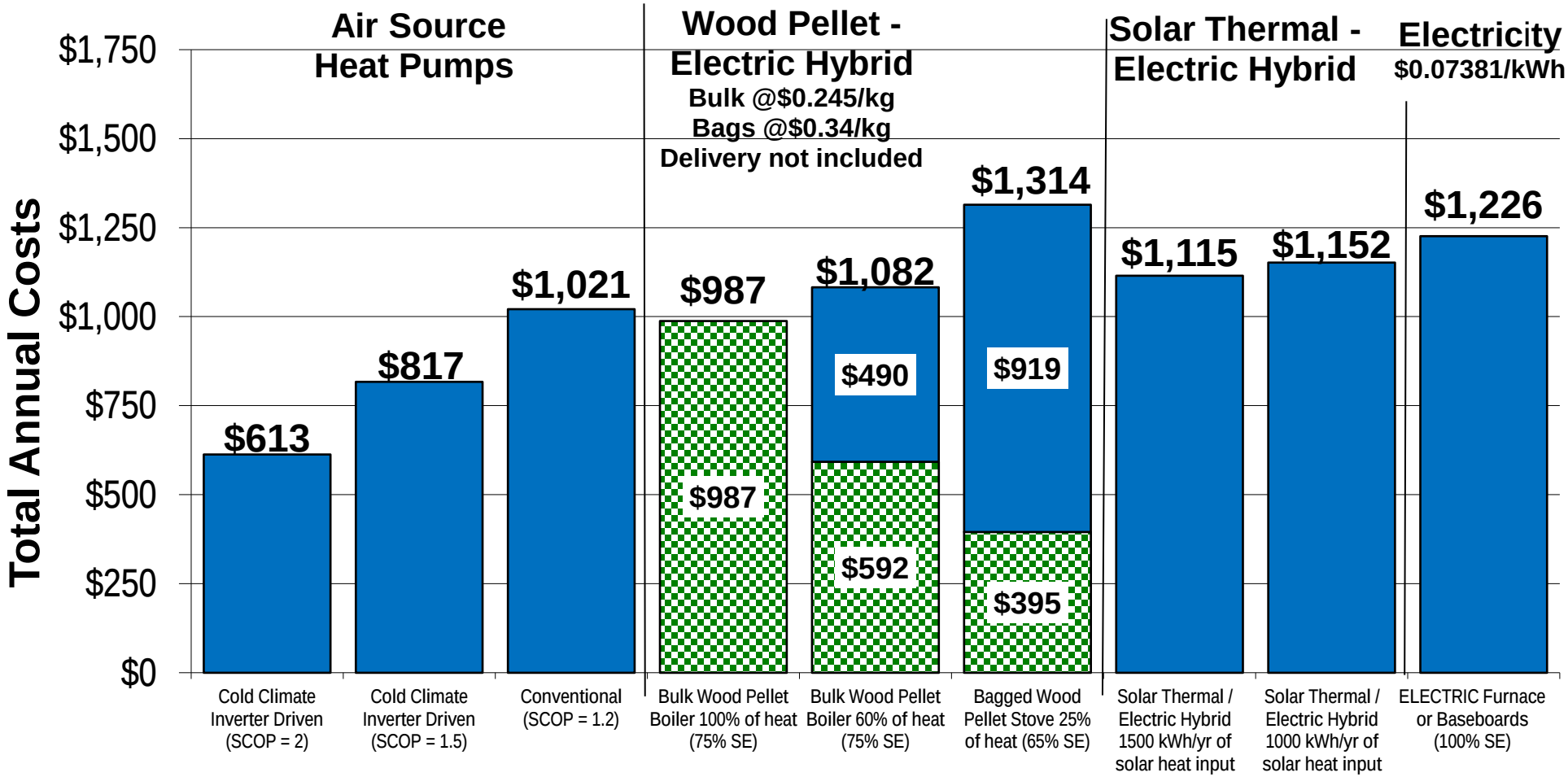
RESPONSE:

Please see the attachment to this response and refer to Manitoba Hydro's response to GAC/MH-I-66e for the assumptions supporting the estimates of annual energy costs presented.

The charts presented reflect estimates of annual energy costs only; capital, maintenance and other associated costs are not reflected in the estimates.

Annual Space Heating Costs

(Average Single Family Residence)



Types of Heating Systems

Wood Pellets Electricity

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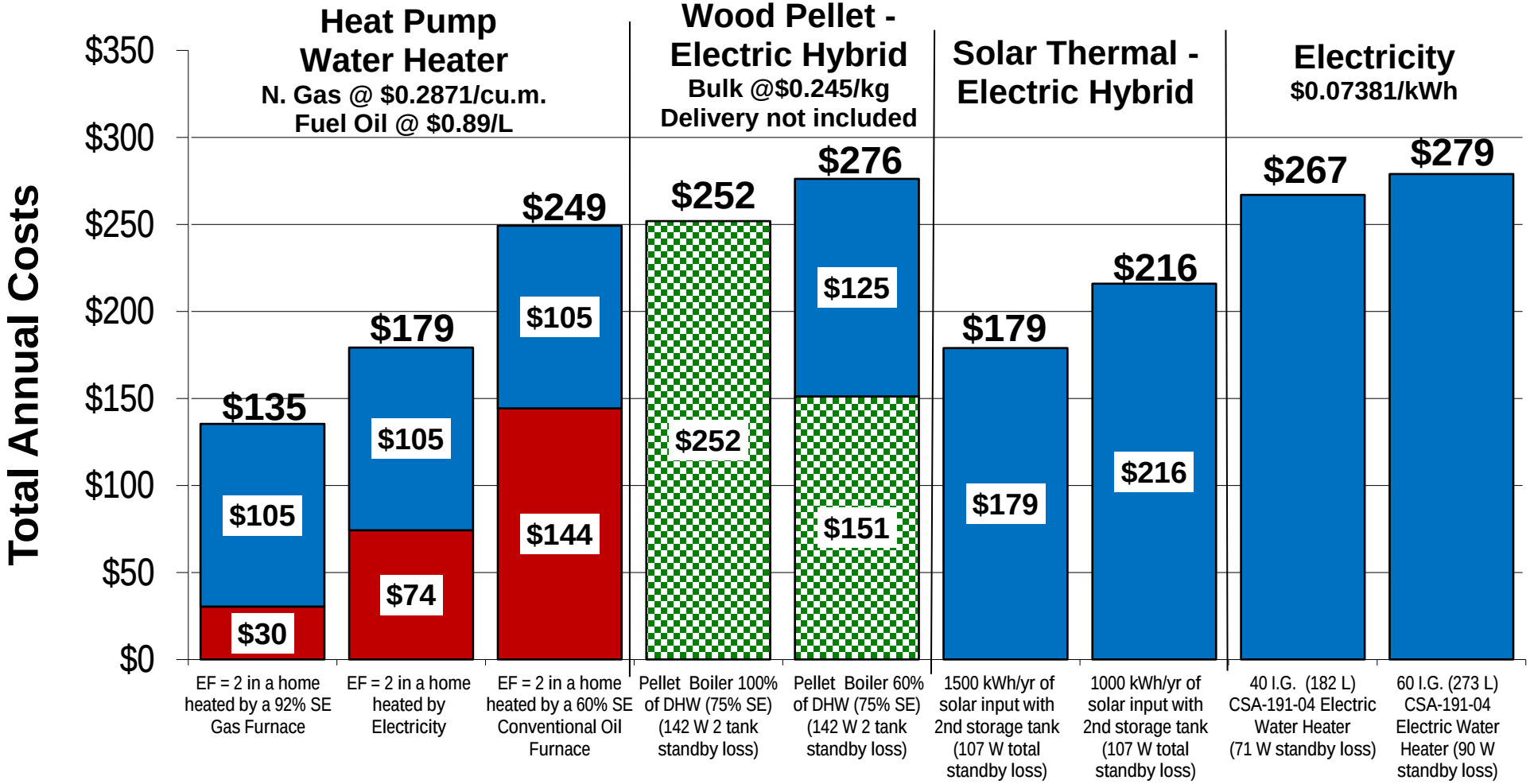
Water Heating Costs

(based on average annual usage of 2.4 people)



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Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Bill impact mitigation		
Issue:	Customer-sited alternative energy resources		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please indicate or estimate the number and percentage of residential customers in total as well as those falling under LICO125

i. who live in gas-available regions and heat with a high-efficiency natural gas furnace.
ii. who live in gas-available regions and heat with a mid- or lower-efficiency natural gas furnace.
iii. who live in gas-available regions and heat with electricity
iv. who live in gas-available regions and heat with another fuel (by fuel type)
v. who live in gas-unavailable regions and heat with electricity
vi. who live in gas-unavailable regions and heat with another fuel (by fuel type)

RATIONALE FOR QUESTION:

Explore the potential for available alternative energy resources to contribute to energy cost mitigation for low-income and other customers.

RESPONSE:

Manitoba Hydro's information on heating fuel source, including the efficiency of the heating system, for homes in different regions of the province and for different income levels is derived through Manitoba Hydro's Residential End Use Model based upon the 2009 Residential Energy Use Survey. This information is supplemented with additional information which is available (e.g. permit data indicating natural gas furnace replacements).

The survey provides a representative sample of its customers and the overall market characteristics, including income, of Manitoba Hydro's market is extrapolated from the survey data. Manitoba Hydro does not have actual income levels associated with its customers and as income levels will have changed since the 2009 Residential Survey was undertaken, current income levels are not available.

Based on Manitoba Hydro's best available information, the following table provides an estimate of the number and percentage of residential customers residing in gas available areas, based on income levels and by heating fuel source.

Heating Fuel Source in Natural Gas Available Regions – 2014				
Heating Fuel	**Residential Customers**	**Percentage**	**LICO125 Customers**	**Percentage**
Natural Gas – High Efficiency	129 234	39.8%	28 655	34.2%
Natural Gas –Mid Efficiency	66 221	20.4%	17 961	21.4%
Natural Gas –Std Efficiency	36,802	11.3%	10 211	12.3%
Natural Gas - Boiler	9 044	2.8%	1 726	2.1%
Electricity	75 096	23.1%	23 510	28.1%
Other	8 592	2.6%	1 594	1.9%

The following table provides an estimate of the number and percentage of residential customers residing in regions where natural gas is unavailable based on income levels and by heating fuel source.

Heating Fuel Source in Natural Gas Unavailable Regions – 2014				
Heating Fuel	**Residential Customers**	**Percentage**	**LICO125 Customers**	**Percentage**
Electricity	71 737	91.5%	26 589	88.4%
Other	6 622	8.5%	1 525	5.1%

Please note:

- "Other" includes customers heating with fuel oil, wood or propane heating sources and unheated structures such as individually metered garages, dwellings under construction, etc.

- Individually metered apartment suites are excluded from this analysis.

- LICO125 is defined as any household with a total household income that is equal to or less than 125% of the more inclusive LICO income/occupancy guidelines for the City of Winnipeg. This is to be consistent with the eligibility requirements under Manitoba Hydro's Affordable Energy Program.

The data obtained from Manitoba Hydro's 2014 Residential Energy Use Survey is currently being complied with the final analysis expected to be completed in the fall of 2015.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Bill impact mitigation		
Issue:	Customer-sited alternative energy resources		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide supplemental comments on cost trends for the above alternatives.

RATIONALE FOR QUESTION:

Explore the potential for available alternative energy resources to contribute to energy cost mitigation for low-income and other customers.

RESPONSE:

Please see the information below for cost trends related to energy. Information related to capital, maintenance and other associated costs are discussed in Manitoba Hydro's response to GAC/MH-I-66e.

Wood Pellets:
Manitoba Hydro is currently aware of two Manitoba based wood pellet producers supplying the Manitoba market. Representatives from both these companies were contacted regarding pricing and their opinions on cost trends. The following information was provided:

- Bulk wood pellets sell for a minimum of $245 per tonne ($0.245/kg) not including delivery.
- Bagged wood pellets sell for between $5 and $6.25 per 40 pound bag ($0.27 - $0.34/kg).
- The majority of wood pellet sales in Manitoba are of the bagged form.

- The energy content of one producer's product is 8 500 Btu's per pound (18,750/kg). The other producer did not provide energy content as they have not undertaken formal tests.
- A new pellet plant is being built in Atikokan, Ontario (560 km East of Winnipeg) to supply wood pellets to Ontario Power Generation for biomass power generation. In the future this new wood pellet plant could become a retail competitor to the two Manitoban producers.
- Both Manitoban suppliers were uncertain of future cost trends for wood pellets. Neither supplier projects production costs or retail prices decreasing in the next five years.

Heat Pumps:

The energy costs associated with Air Source Heat Pumps and Hot Water Heat Pumps will change with electricity prices as the compressor systems are electric and both are supplemented by electric heating.

Solar Thermal:

The energy costs associated with Solar will change depending upon the level of supplemental heating supplied by other fuel sources.

Section:	Tab 6, Section 6.2	**Page No.:**	
Topic:	Residential low-income needs and responses		
Subtopic:	Bill impact mitigation		
Issue:	Customer-sited alternative energy resources		

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide supplemental comments on the technical feasibility and comparative capital costs for the above alternatives.

RATIONALE FOR QUESTION:

Explore the potential for available alternative energy resources to contribute to energy cost mitigation for low-income and other customers.

RESPONSE:

Technical feasibility, comparative capital and other cost considerations for the alternative heating systems denoted in GAC/MH-1-66 (b) are presented as follows:

1. Wood Pellets
2. Solar Thermal
3. Air Source Heat Pumps

1. Wood Pellets:

Two wood pellet technologies were presented in Manitoba Hydro's response to GAC/MH-I-66b, wood pellet boiler systems and wood pellet stoves.

Bulk Wood Pellet Boiler Systems

Wood pellet boilers with automatic auger pellet feed systems, ash handling (self cleaning) systems and a large water storage tank for thermal storage of energy start at approximately $10 000, with the installed cost estimated to be in the range of $15 000 to $20 000. To use the wood pellet boiler system for domestic water heating, in addition to space heating, would require the addition of a heat exchanger, domestic hot water storage tank and pump at an additional cost of $2 000 to $3 000.

Most of the combination space and water heating boiler systems are not sold locally, but are available from some regions of the United States and Europe. Imported combination wood pellet boilers systems would not have the required Canadian certifications for use in Manitoba.

The space and water heating charts provided in GAC/MH-I-66b show two bars; one where 100% of all space and water heating needs of the household are provided and a second where only 60% of the needs are provided with the balance made up with electric heating. The United States Environmental Protection Agency lists the steady state efficiency of wood pellet boilers to be 78%. For the annual cost comparisons used in GAC/MH-I-66b a seasonal efficiency (SE) of 75% was used. The SE of 75% is an optimistic expectation as SE's could be somewhat lower than this. "A Guide to Wood Heating" as published by CMHC lists the seasonal efficiency of Wood Pellet Stoves ranging from 55 – 80%.

At current bulk wood pellet prices the cost per equivalent kWh is $0.06 which is marginally lower than the current residential electric rate of $0.07381/kWh. At present, the fuel cost savings are too low to justify the high capital cost investment required, along with the inconvenience of transporting, storing and handling the wood pellets and ash residue.

Wood Pellet Stoves

Wood pellet stoves, commonly sold in Manitoba as a supplementary heating system with manual fed bagged pellets and manual ash cleaning, can be installed for a cost of $4 000 to $5 000. Warm ash vacuums can be used to aid in ash clean up at a cost of $400.

On the chart provided in response to GAC/MH-I-66b it was assumed that the wood pellet stove would provide 25% of the home heating requirements and 75% would be provided by electric heat. The SE of wood pellet stoves is expected to be lower than a wood pellet boiler system with thermal storage, therefore a SE of 65% was assumed for the purposes of the charts provided in response to GAC/MH-I-66b. At current bagged wood pellet prices and a SE of 65% the cost per equivalent kWh is $0.083, which is higher than the current electric rate.

Other Considerations Regarding Wood Pellet Systems

- Wood pellet fuel is bulkier than fuel oil [one gallon (7.2 lbs) of fuel oil = about 17 lbs of pellets].
- Bagged wood pellets must be delivered to the home frequently and the wood stove loaded daily if an automatic bulk feed system is not present. Storage space or hopper bins are required for fuel storage in a dry covered place.
- To maintain efficiency, the heat exchangers for wood pellet boilers and stoves must be cleaned every one to two weeks during the heating season.
- Ash bins must be manually emptied frequently, unless automated, and the ash disposed of. Wood ash consists of naturally occurring minerals; the ash can be spread on lawns/gardens.
- Automated systems for feeding, cleaning and ash management still require some manual intervention, increasing the capital and maintenance costs of the system.
- Home insurance rates increase when burning solid fuels.

2. Solar Thermal:

Solar thermal systems today are primarily used for domestic water heating purposes and are not typically used for supplemental space heating. Solar thermal domestic water heating systems have better economics than solar thermal space heating systems because water heating is a steadier year round load coupled with the fact that there are more sunlight hours in the summer which results in the capture of more heat that can go towards heating the required load. All solar thermal systems in Manitoba require glycol to be used as a heat transfer fluid to provide freeze and boil protection which necessitates the cost and complexity of using heat exchangers, pumps, auxiliary storage tanks and controllers.

Solar Thermal Domestic Water Heating

A typical solar thermal domestic water heating system costs $6 000 to $8 000 to supply and install. Based on Manitoba Hydro energy monitoring results of four recently installed solar thermal domestic water heating systems, a typical homeowner could expect to reduce their electric water heating costs by 1 000 to 1 500 kWh/year which is reflected in the bar chart provided in response to GAC/MH-I-66b. The balance of domestic water heating energy that is required is provided by electricity. The monitoring results showed that energy savings is very dependent on occupant water usage patterns.

Solar Thermal Space Heating

Solar Thermal – Electric hybrid space heating systems are not common due to their poor economics. For the purposes of answering GAC/MH-I-66b Manitoba Hydro has assumed that the same 1 000 to 1 500 kWh of supplementary heating energy can be provided by a solar thermal heating system of a slightly larger size than the previous solar thermal domestic water heating system. A larger system would be required to supply the same amount of heat over a seven month period when there are less solar hours as compared to a twelve month water heating load. The cost of this larger solar thermal heating system would be approximately $8 000 to $10 000.

Other Consideration Regarding Solar Thermal

- Additional maintenance costs of pumps, heat exchangers and controls.
- The glycol anti-freeze in the system needs to be changed every three to five years at a cost of $200 to $300. Failure to change the glycol regularly can result in a loss of freeze protection and corrosion inhibition. Loss of freeze and corrosion inhibition protection can directly result in frozen and damaged solar panels and damage to pump seals and pipes.

3. Air Source Heat Pumps

Air Source Heat Pumps can be used in both space and water heating applications.

Air Source Heat Pumps for Space Heating

Air source heat pumps (ASHP) have been around for many years. Manitoba Hydro recently monitored one conventional ASHP and is currently monitoring the

performance of two cold climate air source heat pumps (CCASHP). Manitoba Hydro plans to monitor more CCASHPs in the coming year.

The conventional ASHP monitored by Manitoba Hydro performed at a seasonal coefficient of performance (SCOP) of 1.2, which has been noted in the response to GAC/MH-I-66b. Conventional ASHPs typically shut down and do not operate at temperatures below -10 C. Conventional ASHPs can be installed for a cost of $4 000 to $5 000.

Cold climate air source heat pumps are built exclusively in the Pacific Rim by companies such as Mitsubishi, Fujitsu, Daikin. Cold climate air source heat pumps all utilize “inverter-driven” variable speed compressors. “Inverter-driven” air source heat pumps will shut off at lower outdoor temperatures when there is not enough heat to be captured and their coefficient of performance (COP) drops below 1.1. Typical cut out temperatures of “inverter driven” ASHPs are between -10 C to -30 C. Auxiliary (back-up electric heating systems) need to be retained in retrofit applications and installed in new homes to provide heating when the CCASHP does not have sufficient capacity to heat the home and for times when the CCASHP shuts off on low temperature cut-out. The whole home central CCASHP can be installed for a cost of $13 000 to $17 000.

Cold climate air source heat pumps have had favorable test results in other areas of the world that are somewhat milder than Manitoba. A theoretical maximum SCOP of 2.3 was calculated using manufacturer’s instantaneous laboratory test data (based on Winnipeg climate bin temperatures). The theoretical maximum SCOP calculation does not include reductions due to defrost cycles, maintenance, breakdowns, field design, installation, and home owner operation. An SCOP of 1.5 to 2 in a well designed, installed, and maintained system should be technically possible. Field performance and energy monitoring of several systems would be required to confirm actual real world performance. The heating chart provided in response to GAC/MH-I-66b includes CCASHPs performing at SCOPs of 1.5 and 2 for comparison purposes.

Other Considerations Regarding Air Source Heat Pumps for Space Heating

- The long term reliability of CCASHPs in Manitoba's climate is still unknown.
- There are currently not many CCASHPs installed in Manitoba that are used as the primary heating source that could be potentially monitored by Manitoba Hydro. Unlike geothermal heat pump systems where the heat pump (compressor) unit is protected indoors, the ASHP is located outdoors. The ASHP is exposed to very harsh operating conditions, such as drifting snow, ice and sub -35 C temperatures. It is unknown if these harsh operating conditions could adversely affect an ASHP's reliability and life expectancy. The electronic controls on ASHPs are more complex than geothermal heat pumps and some of the controls are housed outdoors and exposed to extreme temperature ranges. Highly trained service technicians with specialized knowledge will be required if and when service is needed.
- Cold climate air source heat pumps energy savings will be reduced and could be negated by the inadvertent electric load growth caused by the measure. Summer load growth occurs when electric heat customers without air conditioning install them for heating purposes and also use the units for cooling. Winter load growth occurs when customers heating with natural gas install the units for cooling purposes and then subsequently use them for heating also.

Air Source Heat Pump Water Heaters

Heat pump water heaters (HPWH) are essentially an air source heat pump mounted on top of an electric storage tank type water heater. The heat pump circulates refrigerant in a loop to remove heat from the room it is in and transfers that heat along with the heat of compression to heat water inside of the tank. Electric resistance elements in the tank make up the balance of the heating requirements. As the HPHW draws energy from the indoor air during the heating season this heat must be made up by the home's heating system.

Where the heating system uses a less expensive energy source such as natural gas or a geothermal heat pump the replacement heat is less expensive than the electricity consumed to operate the HPWH compressor providing a cost savings to the customer. When the space heating system's energy source is more expensive than electricity, such as propane or fuel oil, there is a cost premium to using a HPWH. For comparison purposes the bar chart provided in response to GAC/MH-I-66b accounts for the cost of the replacement space heat for three different heating systems.

Heat pump water heaters available today are rated with Energy Factors (EF) of up to 2.5, meaning they deliver 2.5 times as much heat to the water as they consume in electricity. The EF rating also assumes that the electric resistance heating elements never operate. In reality the actual performance may be lower than the rated EF depending on water usage patterns in the home and how often the electric resistance elements operate. The bar chart provided in response to GAC/MH-I-66b assumes a more realistic EF rating of 2.0. To date there have been very few field monitoring studies undertaken representing circumstances similar to Manitoba upon which to base performance assumptions. The installed cost of a HPWH is $3 000 to $4 000.

Other Considerations Regarding Air Source Heat Pump Water Heaters

- Higher hot water loads could require the backup electric resistance heating elements to operate more frequently, which would negatively impact water heating efficiency and cost savings.
- Heat pump water heaters cannot provide stored water at 60 deg C without the use of their electric heating elements, which would be detrimental to their efficiency ratings. The National Plumbing Code of Canada requires a 60 C setpoint to minimize the risks of legionella bacteria growth in electric storage water heaters. Heat pump water heaters have a factory setpoint of 49 deg C. This could become a significant health issue and barrier to their use in Canada.
- If the HPWH is installed in a small isolated room, the cold air exhaust generated by the heat pump could create very cool conditions in the room which will also affect the performance of the water heater and room comfort.
- In some instances the localized cooling effect could potentially be distributed throughout the home to reduce summer cooling costs and yield additional savings. In higher performance homes where more internal heat gains are available and in regions where the heating seasons are shorter, the benefits of HPWHs may increase.