

REFERENCE:

AMC/MH I-1, COALITION/MH I-130a-e, Page 2 of 3

PREAMBLE TO IR (IF ANY):

AMC/MH I-1 indicates average electricity residential usage for each First Nation, but we would also like to know about the dispersion within that average.

COALITION/MH I-130a-e provides data regarding the breakdown of consumption for province-wide residential customers, in the categories of a) all residential, b) electric heating, c) non-electric heating, d) electric heating (winter) and e) non-electric heating (winter).

QUESTION:

Please provide data similar to that provided in COALITION/MH I-130a-e, but for on-reserve First Nations residential customers only. In doing so, please break down the “over 4,000 kWh/month” bin into a) 4000-5000 kWh/month, b) 5000-6000 kWh/month, and c) over 6000 kWh/month bins.

RATIONALE FOR QUESTION:**RESPONSE:**

The following tables contain the data for First Nations residential customers similar to the data provided in Coalition/MH I-130a-e. The data only contains customers who received a bill in all 12 months.

As was noted in the response to Coalition/MH I-129b, First Nation customers who have provided a treaty or status number are not billed tax. For this reason, the distinction between “All Electric” and “Standard” or “Electric Heat Billed” and “Non Electric Heat Billed” for these customers is not validated as frequently as it would be for a customer for

whom this distinction resulted in differential tax treatment. Therefore, the any distinctions based on this specific attribute should be interpreted with caution.

On-Reserve First Nations Residential Customers(both those with and without electric heat - For Full 12 Months)

Strata	Bills in Each Strata				Billed Consumption In Each Strata			
	# Bills		% Of Bills		Consumption (GWh)		% of Consumption	
kWh/month	In Strata	Cumul.	In Strata	Cumul.	In Strata	Cumul.	In Strata	Cumul.
Up To 250	4,449	4,449	3%	3%	1	1	0%	0%
>250 - 500	5,499	9,948	3%	6%	2	3	0%	1%
>500 - 750	7,871	17,818	5%	11%	5	8	1%	2%
>750 - 1,000	9,851	27,669	6%	17%	9	16	2%	4%
>1,000 - 1,250	11,098	38,768	7%	23%	13	29	3%	7%
>1,250 - 1,500	11,509	50,276	7%	30%	16	45	4%	10%
>1,500 - 1,750	11,677	61,953	7%	37%	19	64	4%	15%
>1,750 - 2,000	10,758	72,711	6%	44%	20	84	5%	19%
>2,000 - 3,000	36,926	109,637	22%	66%	91	175	21%	41%
>3,000 - 4,000	26,051	135,689	16%	82%	90	266	21%	62%
>4,000 - 5,000	15,578	151,267	9%	91%	69	335	16%	78%
>5,000 - 6,000	7,647	158,915	5%	96%	42	377	10%	87%
>6,000	7,039	165,954	4%	100%	55	431	13%	100%

On-Reserve First Nations Residential Electric Heating Customers (For Full 12 Months)

Strata	Bills in Each Strata				Billed Consumption In Each Strata			
	# Bills		% Of Bills		Consumption (GWh)		% of Consumption	
	In Strata	Cumul.	In Strata	Cumul.	In Strata	Cumul.	In Strata	Cumul.
kWh/month								
Up To 250	3,663	3,663	3%	3%	0	0	0%	0%
>250 - 500	4,673	8,335	3%	6%	2	2	0%	1%
>500 - 750	6,624	14,959	5%	11%	4	6	1%	2%
>750 - 1,000	8,284	23,243	6%	16%	7	14	2%	4%
>1,000 - 1,250	9,385	32,628	7%	23%	11	24	3%	7%
>1,250 - 1,500	9,697	42,325	7%	30%	13	38	4%	10%
>1,500 - 1,750	9,892	52,217	7%	37%	16	54	4%	15%
>1,750 - 2,000	9,090	61,307	6%	43%	17	71	5%	19%
>2,000 - 3,000	31,404	92,710	22%	66%	78	149	21%	40%
>3,000 - 4,000	22,288	114,998	16%	82%	77	226	21%	61%
>4,000 - 5,000	13,327	128,325	9%	91%	59	285	16%	77%
>5,000 - 6,000	6,578	134,904	5%	96%	36	321	10%	87%
>6,000	6,107	141,011	4%	100%	47	368	13%	100%

On-Reserve First Nations Residential Non-Electric Heating Customers (For Full 12 Months)

Strata	Bills in Each Strata				Billed Consumption In Each Strata			
	# Bills		% Of Bills		Consumption (GWh)		% of Consumption	
	In Strata	Cumul.	In Strata	Cumul.	In Strata	Cumul.	In Strata	Cumul.
kWh/month								
Up To 250	786	786	3%	3%	0	0	0%	0%
>250 - 500	826	1,612	3%	6%	0	0	1%	1%
>500 - 750	1,247	2,859	5%	11%	1	1	1%	2%
>750 - 1,000	1,567	4,426	6%	18%	1	3	2%	4%
>1,000 - 1,250	1,713	6,140	7%	25%	2	5	3%	7%
>1,250 - 1,500	1,812	7,952	7%	32%	2	7	4%	11%
>1,500 - 1,750	1,785	9,737	7%	39%	3	10	5%	16%
>1,750 - 2,000	1,668	11,405	7%	46%	3	13	5%	21%
>2,000 - 3,000	5,522	16,927	22%	68%	14	27	22%	43%
>3,000 - 4,000	3,764	20,691	15%	83%	13	40	21%	63%
>4,000 - 5,000	2,251	22,942	9%	92%	10	50	16%	79%
>5,000 - 6,000	1,069	24,011	4%	96%	6	56	9%	89%
>6,000	932	24,943	4%	100%	7	63	11%	100%

On-Reserve First Nations Residential Electric Heating Customers(Four Winter Months December to March)

Strata	Bills in Each Strata				Billed Consumption In Each Strata			
	# Bills		% Of Bills		Consumption (GWh)		% of Consumption	
kWh/month	In Strata	Cumul.	In Strata	Cumul.	In Strata	Cumul.	In Strata	Cumul.
Up To 250	498	498	1%	1%	0	0	0%	0%
>250 - 500	335	833	1%	2%	0	0	0%	0%
>500 - 750	339	1,172	1%	3%	0	0	0%	0%
>750 - 1,000	429	1,601	1%	3%	0	1	0%	0%
>1,000 - 1,250	547	2,148	1%	5%	1	1	0%	1%
>1,250 - 1,500	755	2,903	2%	6%	1	2	1%	1%
>1,500 - 1,750	922	3,825	2%	8%	2	4	1%	2%
>1,750 - 2,000	1,238	5,063	3%	11%	2	6	1%	3%
>2,000 - 3,000	8,920	13,983	19%	30%	23	29	12%	16%
>3,000 - 4,000	12,346	26,330	27%	57%	43	72	23%	39%
>4,000 - 5,000	9,686	36,016	21%	77%	43	116	23%	63%
>5,000 - 6,000	5,413	41,429	12%	89%	29	145	16%	79%
>6,000	5,140	46,569	11%	100%	39	184	21%	100%

On-Reserve First Nations Residential Non-Electric Heating Customers(Four Winter Months
December to March)

Strata	Bills in Each Strata				Billed Consumption In Each Strata			
	# Bills		% Of Bills		Consumption (GWh)		% of Consumption	
	In Strata	Cumul.	In Strata	Cumul.	In Strata	Cumul.	In Strata	Cumul.
kWh/month								
Up To 250	133	133	2%	2%	0	0	0%	0%
>250 - 500	76	209	1%	3%	0	0	0%	0%
>500 - 750	102	311	1%	4%	0	0	0%	0%
>750 - 1,000	97	408	1%	5%	0	0	0%	1%
>1,000 - 1,250	124	532	1%	6%	0	0	0%	1%
>1,250 - 1,500	176	708	2%	9%	0	1	1%	2%
>1,500 - 1,750	205	913	2%	11%	0	1	1%	3%
>1,750 - 2,000	214	1,127	3%	14%	0	1	1%	4%
>2,000 - 3,000	1,560	2,687	19%	32%	4	5	13%	17%
>3,000 - 4,000	2,184	4,871	26%	59%	8	13	24%	41%
>4,000 - 5,000	1,695	6,566	20%	79%	8	21	24%	65%
>5,000 - 6,000	904	7,470	11%	90%	5	25	16%	80%
>6,000	813	8,283	10%	100%	6	32	20%	100%

REFERENCE:

AMC/MH I-2, Page 2 of 3

PREAMBLE TO IR (IF ANY):

The number and average consumption of active general service customers on First Nation Reserves is provided.

The data provided demonstrates that the average number of general service customers in First Nations reserves is about 37, but the number goes as high as 126. More than a dozen communities have 50 or more general service customers.

QUESTION:

- a) Please confirm that the second column ("2016/17 Avg Usage") is presented on an annual basis, and the third column ("2016/17 Avg Monthly Bill") on a monthly basis.
- b) Please complete the following table, for each First Nation in the province, for 2016 (or the most recent data available):

Name of First Nation	Number of residential electric customers	Number of general service customers	% of total customers that are general service customers	Number of general service customers that are:						
				Industrial	Commercial	Health Facilities	Offices	Band Owned Housing	Recreational	Other

RATIONALE FOR QUESTION:

To better understand the composition of the general service customers in First Nations communities.

RESPONSE:

- a) Confirmed.
- b) The following is the table by First Nation Communities broken down by sector. Band owned housing would be considered a residential account and therefore do not classify under General Service customers.

Name Of First Nation	Number of residential electric customers	Number of general service customers	% General Service	Number of general service customers that are:				
				Industrial	Commercial	Health Facilities	Offices	Recreational
Barren Lands First Nation	138	43	23.8%	1	36	3	2	1
Berens River First Nation	313	59	15.9%	2	47	0	8	2
Birdtail Sioux Nation	119	18	13.1%	2	13	1	2	0
Bloodvein First Nation	196	37	15.9%	3	28	0	4	2
Brokenhead Ojibway First Nation	184	38	17.1%	2	29	1	4	2
Buffalo Point First Nation	182	28	13.3%	1	24	0	0	3
Bunibonibee (Oxford House) First Nation	418	55	11.6%	1	47	4	1	2
Canupawpka Dakota First Nation	109	18	14.2%	0	12	0	4	2
Chemanwawin Cree Nation	320	32	9.1%	1	24	1	5	1
Dakota Plains First Nation	34	9	20.9%	0	7	0	2	0
Dakota Tipi First Nation	52	8	13.3%	0	5	0	2	1
Dauphin River First Nation	71	16	18.4%	3	12	0	1	0
Ebb And Flow First Nation	405	27	6.3%	2	17	0	6	2
Fisher River First Nation	478	50	9.5%	0	40	1	5	4
Fox Lake First Nation	71	31	30.4%	1	26	1	1	2
Gamblers First Nation	34	5	12.8%	1	2	0	1	1
Garden Hill First Nation	532	48	8.3%	3	37	2	4	2
Gods Lake First Nation	300	58	16.2%	3	50	1	3	1
Hollow Water First Nation	185	28	13.1%	1	20	0	4	3
Keeseekoowenin First Nation	160	20	11.1%	1	13	1	3	2
Kinonjeoshtegon First Nation	87	13	13.0%	0	10	0	3	0
Lake Manitoba First Nation	249	22	8.1%	0	16	0	3	3
Lake St Martin First Nation	3	7	70.0%	0	6	0	1	0
Little Black River First Nation	199	26	11.6%	4	20	0	1	1
Little Grand Rapids First Nation	267	57	17.6%	1	45	1	10	0
Little Saskatchewan First Nation	72	12	14.3%	0	10	0	1	1
Long Plains First Nation	356	32	8.2%	2	17	0	8	5
Manto Sipi Cree Nation	127	37	22.6%	1	29	1	5	1

Name Of First Nation	Number of residential electric customers	Number of general service customers	% General Service	Number of general service customers that are:				
				Industrial	Commercial	Health Facilities	Offices	Recreational
Marcel Colomb First Nation	15	6	28.6%	0	6	0	0	0
Mathias Colomb First Nation	394	45	10.3%	2	35	1	6	1
Misipawistik (Grand Rapids) First Nation	245	32	11.6%	1	29	0	2	0
Mosakahiken Cree Nation	261	24	8.4%	1	18	0	5	0
Nischawayaksihk Cree Nation	509	85	14.3%	2	61	4	12	6
Northlands Dene First Nation	150	54	26.5%	2	41	3	5	3
Norway House Cree Nation	1206	126	9.5%	6	98	1	20	1
O-Chi-Chak-Ko-Sipi First Nation	126	18	12.5%	0	13	0	4	1
O-PIPON-NA-PIWIN	218	38	14.8%	3	26	2	5	2
Opaskwayak (OCN) Cree Nation	736	89	10.8%	5	71	1	7	5
Paungassi First Nation	124	32	20.5%	0	28	0	3	1
Peguis First Nation	836	98	10.5%	2	76	2	8	10
Pimicikamak Cree Nation	938	84	8.2%	5	68	2	9	0
Pinaymootang (Fairford) First Nation	349	33	8.6%	1	25	0	5	2
Pine Creek First Nation	215	17	7.3%	0	14	0	2	1
Poplar River First Nation	221	38	14.7%	0	29	1	6	2
Red Sucker Lake First Nation	203	33	14.0%	1	28	1	3	0
Rolling River First Nation	139	22	13.7%	2	13	1	4	2
Roseau River First Nation	202	28	12.2%	0	19	1	5	3
Sagkeeng First Nation	651	64	9.0%	0	48	3	10	3
Sandy Bay First Nation	552	35	6.0%	1	23	0	9	2
Sapotaweyak Cree Nation	251	25	9.1%	1	16	3	3	2
Sayisi Dene First Nation	119	38	24.2%	1	31	2	3	1
Shamattawa First Nation	183	39	17.6%	0	32	2	5	0
Sioux Valley First Nation	361	36	9.1%	3	25	3	3	2
Skownan First Nation	128	17	11.7%	1	13	0	2	1
St Theresa Point First Nation	604	84	12.2%	2	78	2	1	1
Swan Lake First Nation	148	38	20.4%	7	20	1	5	5
Tataskweyak (Split Lake) First Nation	401	64	13.8%	2	47	7	5	3

Name Of First Nation	Number of residential electric customers	Number of general service customers	% General Service	Number of general service customers that are:				
				Industrial	Commercial	Health Facilities	Offices	Recreational
Tootinaowaziibeeng (Valley River) First Nation	108	15	12.2%	2	10	0	2	1
War Lake First Nation	36	9	20.0%	0	5	0	4	0
Wasagamack First Nation	272	43	13.7%	0	39	1	2	1
Waywayseecappo First Nation	436	26	5.6%	3	19	0	3	1
Wuskwi Sipihk First Nation	30	10	25.0%	0	6	1	2	1
York Factory First Nation	130	24	15.6%	0	19	3	1	1

REFERENCE:

MKO/MH I-3a-b, Pages 2-3 of 6

PREAMBLE TO IR (IF ANY):

The data provided by Manitoba Hydro distinguish between “residential accounts” and “First Nation residential accounts” in First Nations communities.

QUESTION:

- a) Please clarify on what basis Manitoba Hydro distinguishes residential and general service accounts as “First Nation” residential and general service accounts (e.g., based on Indian Status).
- b) Please clarify the use that Manitoba Hydro makes of that distinction (e.g., exemption from sales tax).

RATIONALE FOR QUESTION:**RESPONSE:**

- a) Manitoba Hydro distinguishes residential and general service accounts as First Nation by the collection of a treaty or status number, which is recorded on the account. In the case of general service accounts, it is either a status number or a Band number that is used to distinguish the account as First Nations.
- b) Manitoba Hydro uses the distinction to ensure that taxes are appropriately applied to the account. Customers with a treaty or status number and whose premise is located on reserve land receive sales tax exemptions.

REFERENCE:

MKO/MH I-3a-b, Pages 2-3 of 6

PREAMBLE TO IR (IF ANY):

The data provided by Manitoba Hydro distinguish between “residential accounts” and “First Nation residential accounts” in First Nations communities.

QUESTION:

- c) Would there be any technical impediments to using Indian Status as a criterion for certain affordability programs? If so, please explain in detail.

RATIONALE FOR QUESTION:**RESPONSE:**

Manitoba Hydro interprets technical impediments to be related to billing system capabilities in identifying Indian Status. Manitoba Hydro’s billing system currently has this capability and as such, Manitoba Hydro is not aware of a technical impediment to using Indian Status as one possible criterion for affordability programs. Manitoba Hydro notes, however, that general access to other necessary program criteria, such as household income, is an impediment to be considered.

REFERENCE:

COALITION/MH I-129b-e, Page 2 of 3

PREAMBLE TO IR (IF ANY):

The cited document states that “A residential customer with a treaty number living on reserve land would be provincial tax exempt”.

QUESTION:

- a) Please explain what is meant by the term “residential customer with a treaty number”.
- b) Is the tax treatment referred to in the document the same as the tax treatment available to persons with Indian Status under the *Indian Act*, or does it have some other basis?

RATIONALE FOR QUESTION:**RESPONSE:**

- a) The term “residential customer with a treaty number” refers to a residential customer who has supplied Manitoba Hydro with their treaty or status number in order to obtain a tax exemption.
- b) The tax treatment referred to in the document is the same tax treatment available to persons with Indian Status under the *Indian Act*.

REFERENCE:

AMC/MH I-3

AMC/MH I-38

AMC/MH I-39

PUB/MH I-126a-Attachment 1, Page 2 of 2

PREAMBLE TO IR (IF ANY):

The table indicates that, on a cumulative basis, 5,358 customers have participated in First Nations Power Smart Program and that, of them, 3,051 customers have retrofitted with insulation.

AMC/MH I-1 indicated a total of 17,158 residential accounts on First Nation Reserves, and AMC/MH I-2 indicated a total of 2,303 general service accounts on First Nation Reserves.

However, AMC/MH I-39b, Table 1, indicates that only 8% of sampled First Nation on-reserve households are aware of the Home Insulation Program. Nonetheless, at PUB/MH I-126a-Attachment 1, page 21 of 21, it is stated that zero Indigenous homes benefitted from the Home Insulation Program in 2016/17.

QUESTION:

- a) Do the 5,358 customers that have participated in First Nations Power Smart Program include only residential customers, or also general service customers?
- b) If the 5,358 customers that have participated in First Nations Power Smart Program include only residential customers, is it correct to conclude that $5,358 / 17,158 = 31.3\%$ of all First Nations on reserve residential customers have participated in the First Nations Power Smart Program, and that 13.4% of them have had insulation retrofits?
- c) If the 5,358 customers that have participated in First Nations Power Smart Program also include only general service customers, is it correct to conclude that $5,358 / (17,158 + 2,303) = 27.6\%$ of all First Nations customers have participated in the First Nations Power Smart Program, and that 11.8% of them have had insulation retrofits?

- d) If these figures are correct, how can one explain the very low proportion of households that are aware of the home insulation program?
- e) PUB/MH I-126a-Attachment 1, page 21 of 21, states that no Indigenous homes were retrofitted through the Home Insulation Program in 2016/17. How many on-reserve homes were retrofitted in prior years? Please break down the answer by year.
- f) Are on-reserve residential customers eligible for the Home Insulation Program? Are on-reserve general service customers eligible for the Home Insulation Program? If these customers are eligible for home insulation improvements through some other program, what program is it, and how do its eligibility requirements and benefits differ from the Home Insulation Program?
- g) Please confirm that the First Nations Power Smart Program is the same program as the Indigenous Power Smart Program. If it is not, please outline the differences between the two programs.

RATIONALE FOR QUESTION:**RESPONSE:**

- a) The 5,358 customers that have participated in the Indigenous (First Nation) Power Smart Program include only residential customers.
- b) The 17,158 figure presented in AMC/MH I-1 represents the total number of services, which will include dwellings, seasonal services, flat rate services, and multiple services on First Nation Reserves. The number of First Nation dwellings is 16,344, which is the target market for the Indigenous Power Smart Program, as listed in the attachment to PUB/MH I-126a-. Based upon the number of dwellings it can be concluded that $5,358 / 16,344 = 32.8\%$ of all First Nation on-reserve residential homes have participated in the Indigenous Power Smart Program. Further, as listed in the attachment to PUB/MH I-126a, 3,051 on-reserve residential homes have received insulation retrofits, which represents 18.7% of homes.
- c) The 5,358 customers that have participated in the Indigenous (First Nation) Power Smart Program does not include general service customers.

- d) The Indigenous Power Smart program is separate from the Home Insulation Program (“HIP”). HIP is marketed broadly to all residential customers across Manitoba. Although customers residing in Indigenous communities were and continue to be eligible for HIP, Manitoba Hydro recognized that awareness and participation were low and in 2008 introduced the Indigenous Power Smart program in order to increase participation and correspondingly the energy efficiency of homes in First Nation communities. Through the Indigenous Power Smart program, the Power Smart Indigenous Energy Advisor works directly with the community’s Band Housing Manager who identifies which homes require insulation upgrades. The Indigenous Power Smart program is more beneficial to First Nation Communities because the homes receive free insulation upgrades, with the entire material and installation cost being covered, as opposed to a rebate on material costs as offered by HIP.
- e) The chart below shows the number of on-reserve homes retrofitted with insulation under the Home Insulation Program.

	2006	2007	2008	2009	2010	2011
Swan Lake	0	0	19	0	0	0
Opaskwayak	2	0	0	0	0	0
Sagkeeng	0	16	0	0	0	11
Skownan	1	0	0	0	0	0

- f) On-reserve residential customers are eligible for the HIP, however, as noted above it is more beneficial for these households to receive free insulation upgrades under the Indigenous Power Smart Program.

General Service Customers, on-reserve or off-reserve, are not eligible for the Home Insulation Program. However, they are eligible for the Power Smart Commercial Building Envelope Program (“CBEP”), which provides financial incentives (rebates) for increasing insulation levels in roofs and walls during time of renovation. CBEP differs in that financial incentives are available for customers with non-residential buildings, as well as multi-unit residential buildings with general service common areas.

- g) The First Nations Power Smart Program is the same program as the Indigenous Power Smart Program. The program name was changed to coincide with the renaming of Aboriginal Affairs and Northern Development Canada to Indigenous Northern Affairs Canada.

REFERENCE:

PUB/MH I-124, Page 1 of 5 to Page 5 of 5

PREAMBLE TO IR (IF ANY):

The document lays out data from 1999 to 2017 regarding the Satisfaction with Reliability of Electricity, Satisfaction with the Price of Electricity, and 2014 data on Perceptions on Investing in Electric Infrastructure.

QUESTION:

Please provide figures similar to those in PUB/MH I-124, but only showing responses of customers who are resident on First Nations reserves.

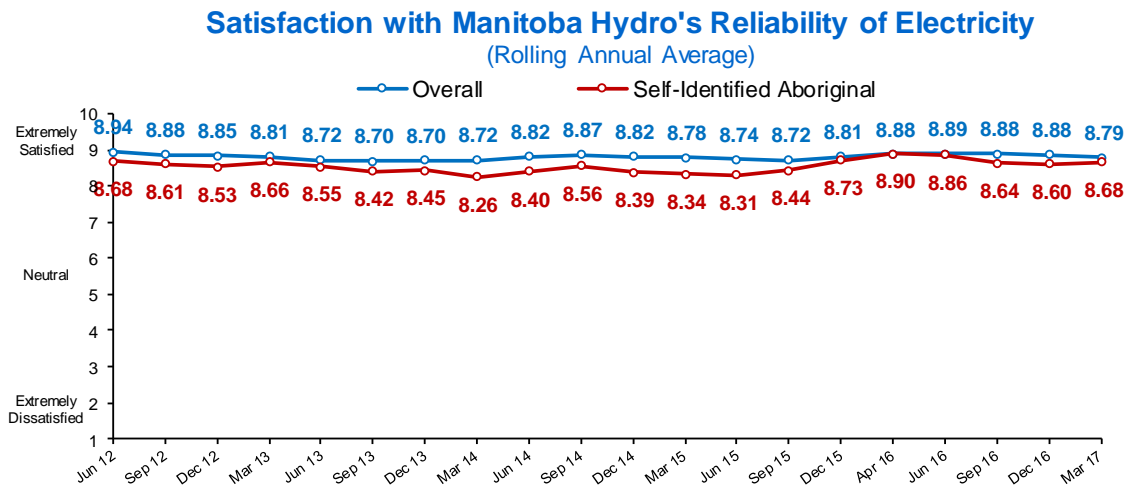
RATIONALE FOR QUESTION:

RESPONSE:

The Customer Satisfaction Tracking Study (“CSTS”) and the “Our Turn to Invest” research included a demographic question asking respondents if they “would describe yourself as an Aboriginal person, that is to say a person of First Nations, Metis, or Inuit ancestry” with yes and no response options. Customers were not asked to identify if they resided on a First Nation Reserve and therefore, this data is not available. As such, the figures referenced above are provided for respondents who have self-identified as an Aboriginal person.

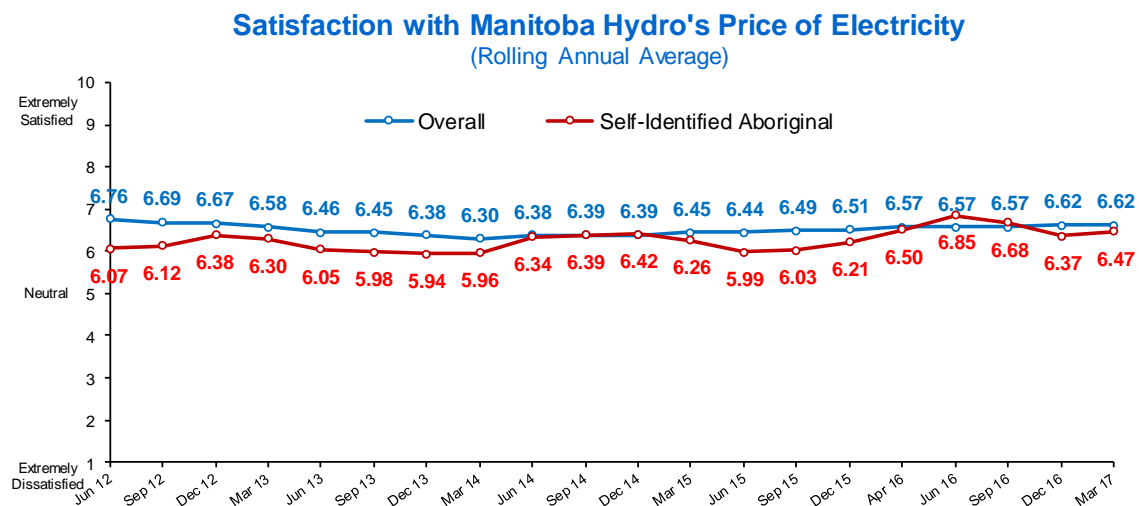
Respondents who self-identified as Aboriginal reported high satisfaction levels with the Reliability of Electricity with 90% typically reporting a score of 7 or higher on a 1-10 scale during the 2016/17 fiscal year. At the end of the 2016/17 fiscal year, Aboriginal respondents reported an annual satisfaction score with Manitoba Hydro’s Reliability of Electricity of 8.68 which is statistically similar to the score reported by respondents overall as shown in Figure 1 below.

Figure 1. Satisfaction with Reliability of Electricity (CSTS Survey)



Of the respondents who self-identified as Aboriginal during the 2016/17 fiscal year, 49% reported a score of 7 or higher on a 1-10 scale for satisfaction with Manitoba Hydro's Price of Electricity. At the end of the 2016/17 fiscal year, self-identified Aboriginal respondents reported an annual satisfaction score with Manitoba Hydro's Price of Electricity of 6.47 as shown in Figure 2 below.

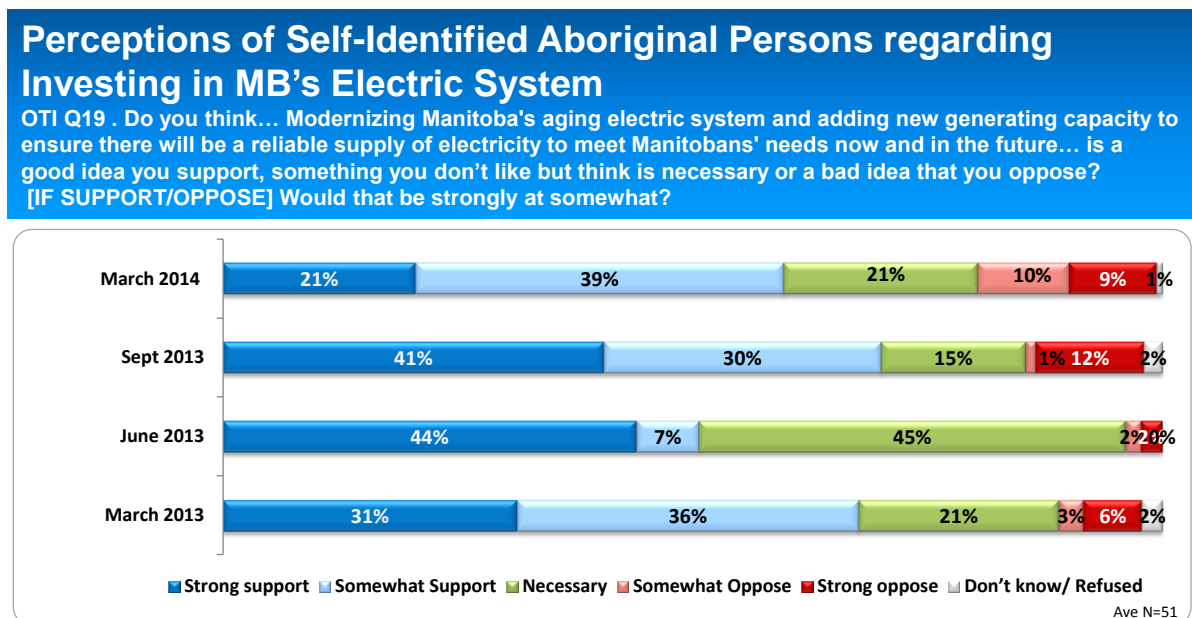
Figure 2. Satisfaction with Price of Electricity (CSTS Survey)



In 2013/14, Manitoba Hydro conducted research regarding Manitoban's perceptions of the need to reinvest in Manitoba's electric infrastructure. Key findings from the March 2014 survey research for self-identified Aboriginal respondents are illustrated in the Figures below.

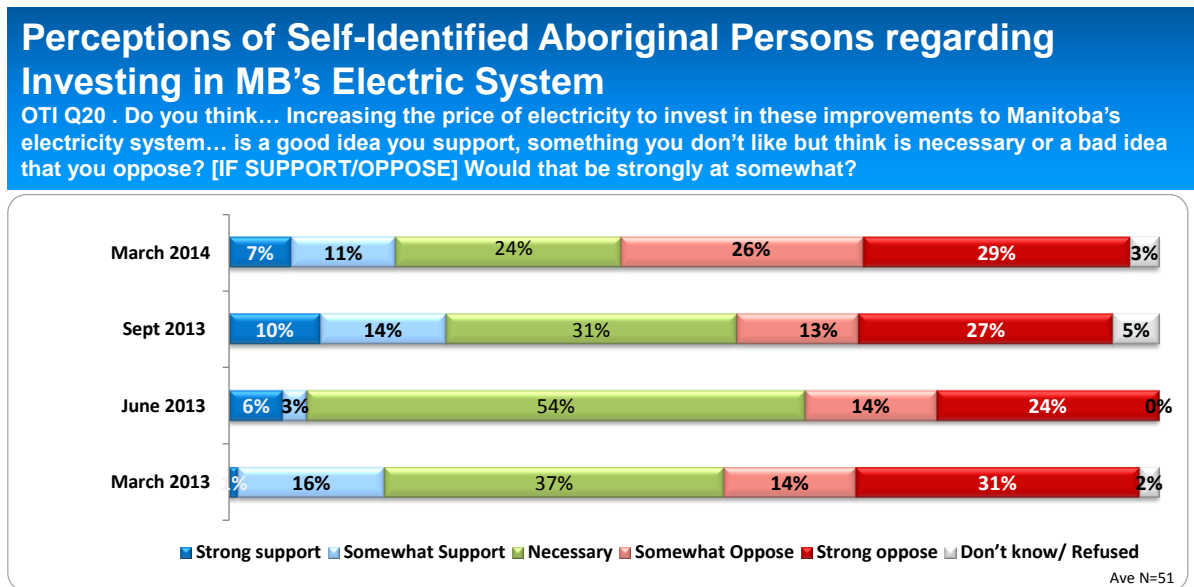
Overall, most respondents (81%) who self-identified as Aboriginal supported modernizing Manitoba's aging electric system and adding new generating capacity to ensure there will be a reliable supply of electricity to meet Manitobans' needs now and in the future. Please see Figure 3 below.

Figure 3. Perceptions of Self-Identified Aboriginal Persons on Investing in Electric Infrastructure (2014 Survey)



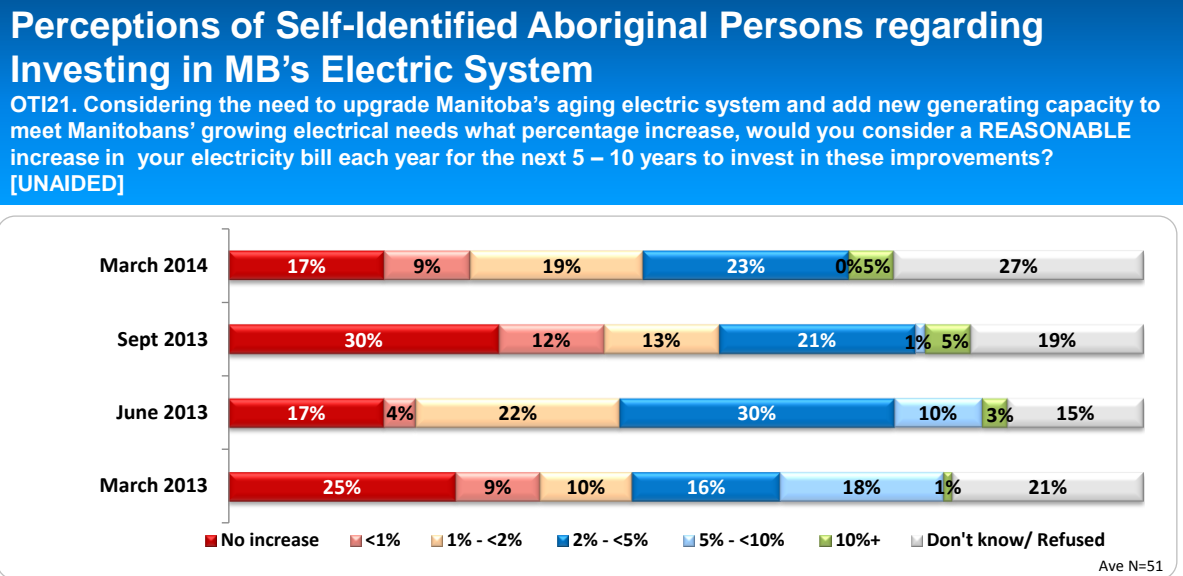
Over all four waves of research, approximately half of respondents who self-identified as Aboriginal supported or reluctantly supported increasing the price of electricity to invest in improvements to Manitoba's electricity system, with a decline in support observed in 2014 as indicated in Figure 4 below.

Figure 4. Perceptions of Self-Identified Aboriginal Persons on Investing in Electric Infrastructure (2014 Survey)



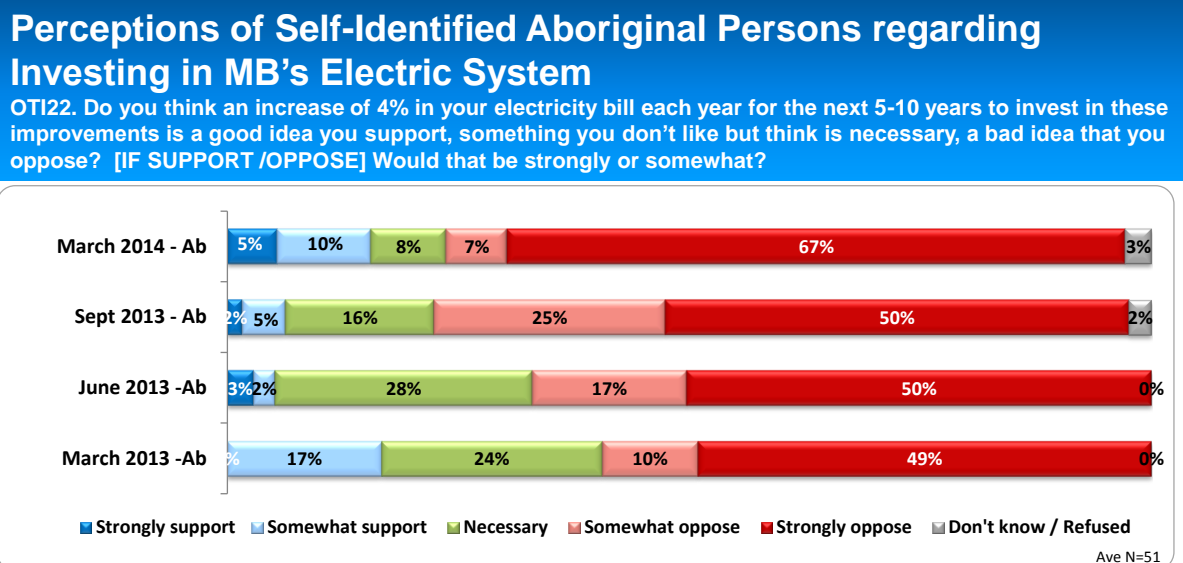
Over half of the respondents (56%) who self-identified as Aboriginal thought that some level of annual increase in their electricity bill for the next 5-10 years would be reasonable to upgrade Manitoba's aging electric system and add new generation capacity to meet Manitoban's growing electrical needs. Please see Figure 5 below.

Figure 5. Perceptions of Self-Identified Aboriginal Persons on Investing in Electric Infrastructure (2014 Survey)



Over all four waves of research, a third of self-identified Aboriginal respondents (30%) indicated they supported or reluctantly supported an increase of 4% in their electricity bill each year for the next 5-10 years to invest in these improvements to Manitoba's electricity system, with a decline in support observed in 2014. 69% of self-identified Aboriginal respondents opposed such a rate increase. Please see Figure 6 below.

Figure 6. Perceptions of Self-Identified Aboriginal Persons on Investing in Electric Infrastructure (2014 Survey)



REFERENCE:

PUB/MH I-126a, Page 14 of 21

PREAMBLE TO IR (IF ANY):

The AEP Annual Report appears to use the terms “Commercial Geothermal Program” and “Community Geothermal Program” interchangeably (e.g. at page 13 of 21).

The AEP Annual Report states that, under the Indigenous Power Smart Program, “the Insulation Channel provides basement, wall, and attic insulation upgrades for qualifying homes” (p. 13 of 21). It also states “Along with free basic energy savings measures and free insulation, the Indigenous Power Smart Program provides the funding of labour to complete installations which creates employment for members of the community.”

QUESTION:

- a) Please clarify if “insulation upgrades” means that insulation was simply provided, or that it was actually installed in peoples’ homes by the Power Smart Program.
- b) Please clarify if the “Commercial Geothermal Program” and “Community Geothermal Program” are identical, and if they are exclusively available to Indigenous communities (page 13 of 21). If they are different, please describe their differences in eligibility and benefits.
- c) At page 21 of 21, the number of Indigenous homes that participated in the “Commercial Geothermal Program” in 2016/17 is listed as zero. Why were there no participants? How many homes participated in previous years?
- d) Please describe any differences between the “Commercial Geothermal Program” and the Commercial “Community Geothermal Program” described on page 13 of 21, and the Residential “Community Geothermal Program” described on page 8 of 21. Please detail any differences in eligibility and benefits.

RATIONALE FOR QUESTION:

RESPONSE:

- a) "Insulation upgrades" means that funding was provided by the Indigenous Power Smart Program for both the insulation materials and local band labor to install the insulation materials in First Nation homes.
- b) The information provided about the Community Geothermal Program on page 13 of 21 of the 2016/17 AEP Annual Report was inadvertently included in a section speaking to a different program; the Commercial Geothermal Program. The two programs are different and should have been presented separately under the titles Community Geothermal Program and Commercial Geothermal Program. For a description on the program differences, see the response to part d) below.
- c) The Commercial Geothermal Program is for commercial businesses, not residential homes; as a result, there was no participation in Indigenous homes under this program. Since the launch of the Commercial Geothermal Program in 2007, two buildings on First Nation communities have participated through the program.
- d) The Commercial Geothermal Program and the Community Geothermal Program are two different programs available to customers under the Power Smart suite of programs. The Commercial Geothermal program is an incentive program that is available to any business in Manitoba, Indigenous and non-Indigenous, to assist in converting their existing electric heating system to a geothermal heat pump system.

The Community Geothermal Program is also an incentive program for converting existing electric heating systems in residential dwellings to geothermal heat pump systems. The program is presently only offered to Indigenous communities and uses a community approach, which allows for bulk purchasing of the heat pump boxes and coordination of the installations. A key component of the Community Geothermal Program is also local job creation whereby, working in partnership with the First Nation community, local band members are trained to install the systems and provide ongoing maintenance.

REFERENCE:

PUB/MH I-126a, Page 3 of 21 to Page 21 of 21

PREAMBLE TO IR (IF ANY):

The attachment discusses the Affordable Energy Program (“AEP”) and its availability to ratepayers in the province. Under the heading “Residential”, the AEP is stated to be available through four approaches: Individual, Community, Indigenous, and Multi-Unit Residential Building (“MURB”) (Page 4 of 21).

Under “Residential”, the following programs are listed: Financing Programs, Home Insulation Program, Community Energy Plan Initiative, HRV Control Program, LED Lighting Program, Refrigerator Retirement Program, New Homes Program, Smart Thermostats, Appliance Rebate Program, Solar Energy Program, Water & Energy Saver Program (pp. 7-10 of 21).

Under the heading “Commercial”, two programs are listed: the Power Smart Shops Program, and the Commercial Geothermal Program. The description of the Power Smart Shops Program refers to several activities which have taken place within First Nations reserves (Page 12 of 21).

There are then a number of activities listed under “Indigenous” (Page 13 of 21), including the Indigenous Power Smart Program, as well as a number of programs under the heading “Power Smart for Business”.

Under the heading “Indigenous”, the following programs are listed: Indigenous Power Smart Program, Solar Energy Program, Power Smart Shops Program, New Homes Program, Refrigerator Retirement Program, and Power Smart for Business.

QUESTION:

- a) Please confirm that AEP programming is available to Indigenous ratepayers under each of the Residential, Commercial, and Indigenous streams. If not, please explain why not.

- b) These programs are listed under “Residential” but not under “Indigenous”: Financing Programs, Home Insulation Program, Community Energy Plan Initiative, HRV Control Program, LED Lighting Program, Smart Thermostats, Appliance Rebate Program, and the Water & Energy Saver Program. Please confirm whether these programs are indeed not available to on-reserve households, and, for each program that is not available to on-reserve households, please explain why.
- c) For any of the programs listed in (b), for which there is an alternative program provided to on-reserve households, please detail any differences in how a household qualifies for the program, and any differences in the assistance that the program offers.
- d) For the following programs listed under “Indigenous”: Indigenous Power Smart Program, Solar Energy Program, Power Smart Shops Program, New Homes Program, Refrigerator Retirement Program – please detail any differences in the conditions for eligibility for the program from the program of the same name under “Residential”, and please also detail any differences in the incentive or service from the program of the same name under “Residential”.
- e) Please detail which of the programs listed under “Residential” are available to General Service customers on reserve.
- f) Please detail which of the programs listed under “Commercial” are available to General Service customers on reserve.
- g) Please detail which of the programs listed under “Indigenous” are available to General Service customers on reserve.
- h) At Page 16 of 20, the document states that the New In Homes program “often works with Indigenous Communities to encourage the construction of energy efficient homes.” How many homes have received incentives under this program for the years 2010/11, 2011/12, 2012/13, 2013/14, 2014/15, and 2015/16? What is the dollar amount of incentives given through this program?
- i) Please detail the minimum requirements of the New Homes program as applied to on-reserve housing, and the assistance that is available through this program.
- j) At Page 19 of 21, under “Other Initiatives”, the report outlines an initiative which “focuses on a more in-depth building envelope retrofit than currently covered under existing Power Smart programs.” Please detail the ways in which the new initiative would be more in-depth than existing Power Smart programs.

RATIONALE FOR QUESTION:

RESPONSE:

- a) AEP programming is available to Indigenous ratepayers under the residential and the Indigenous streams. The AEP program is not available under the commercial stream as it is a residential program intended for lower income homeowners and tenants rather than commercial businesses.
- b) All of the initiatives listed under Residential are available to on-reserve households with the exception of the Community Energy Plan Initiative (“CEP”). The CEP is a pilot initiative with two communities in Manitoba whereby a local Energy Advocate helps to promote a culture of conservation among the residential and commercial customers and encourages increased participation in existing Power Smart Programs. No new energy savings programs exist under the initiative. Manitoba Hydro has been in discussions with two Tribal Councils with the objective to offer a similar type of initiative to support the Indigenous communities they represent.
- c) Of the Residential programs discussed in part b), three have alternative options that are eligible for Indigenous Communities only; the Home Insulation Program, the LED Lighting Program and the Water & Energy Saver Program. The table below highlights the differences.

Program	Residential Offering	Indigenous Power Smart Program
Home Insulation	Only homes that were built prior to 1999 are eligible.	Community based, focusing on homes with opportunities for insulation improvements as identified by the community’s Housing Manager.
	Attic: 3.0 cents per R added per square footage of space insulated. Wall cavity: 4.0 cents per R added per square footage of	Qualifying insulation upgrades are offered free of charge utilizing local labour from the Indigenous Community.

Program	Residential Offering	Indigenous Power Smart Program
	space insulated. Crawl space: 6.0 cents per R added per square footage of space insulated.	
LED Lighting	No difference in qualifying households.	No difference in qualifying households.
	From 30% - 50% off ENERGY STAR LED light bulbs at participating retailers for one month in each of the spring and fall.	Four free LED light bulbs are installed directly in homes utilizing local labour from the Indigenous Community.
Water & Energy Saver	No difference in qualifying households.	No difference in qualifying households.
	A free kit is mailed to the customer upon request or installed directly in the home through a targeted campaign using Manitoba Hydro's third party contractor.	Free kit is installed directly in homes utilizing local labour from the Indigenous Community.

- d) The Solar Energy Program, Power Smart Shops Program, New Homes Program, and Refrigerator Retirement Program do not have any differences in terms of eligibility nor incentive levels when compared to the residential overall offering. Note that the Indigenous Power Smart Program is only available in Indigenous Communities.
- e) None of the programs listed under "Residential", with the exception of the Solar Energy Program Pilot, are available to General Service customers on reserve.
- f) All of the programs listed under "Commercial" are available to General Service customers on reserve.

- g) Of the programs listed under “Indigenous”, the Power Smart Shops and Solar Energy Programs are available to General Service customers on reserve. As described on pages 17-19 of 21 of the attachment to PUB/MH I-126a, Power Smart for Business offers a suite of programs, which provide incentives to General Service customers on reserve for numerous energy efficiency upgrades such as lighting, insulation, refrigeration, kitchen appliances and geothermal heating systems.
- h) Please see the attachment to AMC/MH II-9f for participation in the New Homes Program. The total incentives paid to the Indigenous participants in 2010/11 and 2011/12 are \$9,077 and \$17,738, respectively.
- i) Power Smart for New Homes offers a choice in the approach to meet program minimum requirements. The Prescriptive Path offers a uniform set of 10 building and technology upgrades consistent with an overall energy performance at least 20 per cent better than minimum building code requirements. Each home built with these 10 upgrades will be eligible for a \$1,200 rebate. These upgrades include:
- Increased attic insulation: R58 effective
 - Increased exterior above grade wall insulation: R17 effective
 - Increased basement insulation and floor header (rim joist) insulation: R18 effective
 - Basement slab edge thermal break: R5 effective
 - Tested air tightness of less than 1.5 air changes per hour
 - Triple glazed, low-e, argon fill windows, with low conductivity frame and spacer
 - High efficiency heat recovery ventilation (“HRV”) with SRE 65 per cent or better
 - Advanced HRV controls
 - LED lighting throughout (minimum of 25 sockets)
 - Reduced Thermal Bridging

The Performance Path is for customized, energy efficient homes designed with technical expertise and energy modeling. This path allows the builder to select their own approach to design and construction and incorporate any energy-saving technologies as desired. The Performance Path provides a scaled base incentive plus a rebate for the costs of energy modeling. Homes must achieve a rating of at least 20 per cent more efficient than the minimum local building code requirements, as measured by Natural

Resources Canada's EnerGuide Rating System. Incentives between \$1,500 and \$12,000 are available.

- j) Existing Power Smart building envelope programming has focused on adding insulation to under-insulated areas of a home. For the overall residential market, a homeowner can complete the work or a contractor may be hired to complete the work. The Indigenous Program works with the community's Band Housing Coordinator by hiring local community members to install the insulation.

With the comprehensive insulation retrofit proposal that was highlighted in the AEP Annual Report, in partnership with OPCN and assistance from MKO, Manitoba Hydro is seeking to investigate whether a more detailed approach to an insulation retrofit that utilized building science awareness and attention to specific envelope system components (thermal bridging, airtightness and overall quality installation) would have an even greater impact on energy reduction. Due to the increased technical requirements of a comprehensive insulation retrofit, a higher level of training would be required.

REFERENCE:

PUB/MH I-126a, Page 21 of 21

PREAMBLE TO IR (IF ANY):

The table presented on the last page of the AEP Annual Report requires a number of clarifications.

QUESTION:

- a) The introductory paragraph to the table states that it outlines participation by all-electric customers in residential and commercial Power Smart Programs, but the “Indigenous” column refers only to “homes”. Are General Service customers in Indigenous communities included in these statistics? If not, are they covered by the Indigenous or First Nations Power Smart Program? Please explain.
- b) The first line of the table shows that more than 90% of Affordable Energy Program participation is in Indigenous Homes. Is it correct to infer that less than 10% of AEP activities take place outside of First Nations, despite the fact that “The AEP is designed to assist lower income homeowners and renters across the Province” (p. 3 of 21)?
- c) Please explain why the line for Home Insulation Program shows 0 participation from Indigenous Homes, when the report indicates (at page 14 of 21) that “In 2016/17 a total of 1,845 homes in Indigenous communities were completed of which 609 received insulation upgrades.”
- d) Please explain why HRV Control, New Homes Program, Smart Thermostat Pilot, Smart Thermostat Rebate, Solar Energy Program and Commercial Geothermal shows 0 participation from Indigenous Homes.
- e) Please explain why Water and Energy Saver Program indicates “not applicable” for Indigenous Homes.
- f) For the chart at page 21 of 21 labelled “Participation in Power Smart Programs (all electric) – FY 2016/17”, please provide the same data for FY 2010/11, FY 2011/12, FY 2012/13, FY 2013/14, FY 2014/15, and FY 2015/16.

RATIONALE FOR QUESTION:

RESPONSE:

- a) General Service customers in Indigenous communities are included in the programs listed under the “Commercial” row heading.
- b) It is not correct to infer that less than 10% of AEP activities take place outside of First Nations. The table only shows participation for homes that are all-electric heat. The Affordable Energy Program is also offered to customers who heat their home with other fuel sources such as natural gas, fuel-oil, propane or coal. Participation numbers for homes with fuel sources other than electric were not included in this table as the focus of the AEP Annual Report is programming for all-electric customers as directed in Order 73/15.
- c) The Home Insulation Program is a separate program from the Indigenous Power Smart Program and thus the values for the two will not be the same. Please see the response to AMC-MH II-5d as to why it is more beneficial for First Nations communities to receive insulation upgrades through the Affordable Energy Program under the Indigenous stream.
- d) The HRV Control, New Homes Program, Smart Thermostat Rebate, Solar Energy programs are all relatively new offerings (please see the attached for launch dates) and therefore have not yet realized participation across all segments of the market including the Indigenous segment.

The Commercial Geothermal Program has had relatively low participation across the entire general service market due to the fact that retrofitting the heating system of an existing commercial building is a complex and costly project that also requires specific soil conditions and available space to install the ground loop.

The Smart Thermostat Pilot was not a program but a research pilot for the purposes of verifying the actual savings that could be achieved by homeowners with electric space heat with the installation of a smart thermostat. In order to obtain a valid data set of

homes that would typically benefit from a smart thermostat, only homes that met the following criteria were selected for the pilot:

1. Single detached family dwelling
 2. Average electrical consumption
 3. Respondent to the Residential End-Use 2014 Survey – required to verify specific technical requirements such as forced air furnace (versus baseboard), manual thermostat (versus smart thermostat), and home based internet access with WIFI capability.
 4. No recent change in account ownership
 5. House vintage between 1920-2005
- e) The status of “not applicable” was incorrect for this chart. It should have read “not available” as the database for the Water & Energy Saver Program (“WESP”) did not have an identifier for Indigenous Communities. A report has since been developed utilizing information from Manitoba Hydro’s billing system. This data was then cross-referenced against the WESP participants to identify customers in Indigenous communities. The number of Indigenous Homes that were participants in WESP in the 2016/17 fiscal year was 207. Please see the attached for Indigenous participants in previous years. Note that the components of the WESP kit are also available to Indigenous homes through direct installs under the Affordable Energy Program.
- f) Please see the attachment for an update to the chart provided in the Affordable Energy Program’s Annual Report that includes participation in previous years.

Participation in Power Smart Programs (all electric)																													
	Program Launch Date	FY 2010/11				FY 2011/12				FY 2012/13				FY 2013/14				FY 2014/15				FY 2015/16							
Program		Urban All Electric	Rural All Electric	Indigenous	Total	Urban All Electric	Rural All Electric	Indigenous	Total	Urban All Electric	Rural All Electric	Indigenous	Total	Urban All Electric	Rural All Electric	Indigenous	Total	Urban All Electric	Rural All Electric	Indigenous	Total	Urban All Electric	Rural All Electric	Indigenous	Total				
RESIDENTIAL (Homes)																													
Affordable Energy Program	Dec-07	24	212	133	369	79	143	244	466	36	74	314	424	100	113	373	586	78	185	467	730	33	156	1517	1706				
Financing Programs (PSRL + PAYS)	Mar-01, Nov-12	175	595	5	775	172	518	0	690	165	605	2	772	132	504	85*	721	162	483	93*	738	151	391	75*	617				
Home Insulation Program	May-04	72	1182	11	1265	74	1109	0	1183	67	873	0	940	45	809	0	854	81	967	0	1048	47	872	0	919				
HRV Control Program	Oct-16																												
Community Geothermal	Apr-13													not eligible				82	82	not eligible				93	93	not eligible		67	67
Refrigerator Retirement Program	Jun-11					145	1628	4	1777	167	1587	0	1754	218	1953	7	2178	203	2066	12	2281	225	2334	5	2564				
New Homes Program (Version 1, Version 2)	Feb-04, Oct-15	32	50	16	98	64	37	27	115																	0	0	0	0
Smart Thermostat Pilot	Jan-16																									70	17	0	87
Smart Thermostat Rebate	Sep-16																												
Appliance Rebate	Sep-16																												
Solar Energy Program	Apr-16																												
Water & Energy Saver Program (data based on electric water heat)	Sep-10	9598	8091	39	17728	6455	4616	42	11113	4140	4401	55	8596	4103	3973	46	8122	4545	5341	110	9996	8564	6414	86	15064				
COMMERCIAL (Buildings)																													
Power Smart Shops	Oct-15																									47 ¹	2 ¹	0	49
Commercial Geothermal	Jun-07	1	17	0	18	0	11	0	11	0	9	1	10	0	9	0	9	0	7	0	7	0	5	0	5				

Denotes a period of time where there was no program offering in market.

*Include participation in the Community Geothermal program.

¹ Denotes number of participating businesses with electric water heaters that received water saving measures through the Power Smart Shops Program. "Urban" is Winnipeg and "Rural" is all other communities, except Indigenous communities.

REFERENCE:

PUB/MH I-126b, Page 2 of 6

PREAMBLE TO IR (IF ANY):

The reponse specifies R- values for basement, attic, kneewalls, roofs and wall cavities (above grade) to qualify for insulation upgrades.

QUESTION:

Does a First Nations home need to meet all of these criteria in order to be eligible for insulation upgrades, or only one of them? In other words, if a home has adequate wall insulation but inadequate roof insulation, is it eligible for upgrade of its roof insulation?

RATIONALE FOR QUESTION:**RESPONSE:**

A First Nations home only needs to meet the criteria for one section to be eligible for an insulation upgrade in the corresponding section. For example, if the basement has adequate insulation but the attic has inadequate insulation, the attic is still eligible for an insulation upgrade.

REFERENCE:

PUB/MH I-126c, Page 4 of 6

PUB/MH I-126a, Attachment 1

PREAMBLE TO IR (IF ANY):

The relationship is unclear between two tables included in the response 126c and that found on the last page of the AEP Annual Report (Attachment 1 to PUB/MH I-126a).

QUESTION:

- a) In both tables, does the category “Non-Electric” apply to all three zones (urban, rural and Indigenous)? If not, please clarify.
- b) In the first table (“AEP Completed Homes”), the figures for 2016/17 for the categories “Urban All-Electric”, “Rural All-Electric” and “Indigenous” are identical those shown in the table of page 21 of 21 of the AEP Annual Report, under the heading “Affordable Energy Program”. However, the equivalent figures in the second table (“AEP Insulation Installs”) do not correspond at all with those under the heading “Home Insulation Program” in the table of page 21 of 21 of the AEP Annual Report. Please explain.

RATIONALE FOR QUESTION:**RESPONSE:**

- a) In the table for PUB/MH I-126c, Page 4 of 6, the category “Non-Electric” refers to both rural and urban homes that heat with fuel sources other than electric such as natural gas, fuel-oil, propane or coal. It does not apply to the Indigenous zone as those are listed in their own row category. The table in attachment in PUB/MH I-126a, only shows the participation for all-electric homes and does not include any participation by homes categorized as “non-electric”.

- b) Please see the response to AMC-MH II-9c that explains why the values for the Home Insulation Program and the Indigenous homes under the Affordable Energy Program are not the same.

REFERENCE:

COALITION/MH I-123, Page 2 of 3

PREAMBLE TO IR (IF ANY):

QUESTION:

Please provide a table similar to the one found on page 2 of 3 for First Nations participants only.

RATIONALE FOR QUESTION:

RESPONSE:

The chart below compares the level of planned spending and savings for the Affordable Energy Program First Nations participants for the fiscal year periods of 2016/17 and 2017/18.

	2016/17 DSM Plan	2017/18 DSM Plan
Total Participation	1,250	1,750
No. of Insulation Projects	250	281
No. of HE Natural Gas Furnaces Installed	N/A	N/A
No. of HE Natural Gas Boilers Installed	N/A	N/A
Capacity Savings (MW)	0.5	0.6
Energy Savings (GW.h)	1.4	1.7
Natural Gas Savings (million m ³)	N/A	N/A
Utility Investment (Millions, \$)	\$1.0	\$0.9
Customer Investment (Millions, \$)	\$0.0	\$0.0
Total DSM Investment (Millions, \$)	\$1.0	\$0.9

REFERENCE:

COALITION/MH I-123, page 2 of 3

MKO/MH I-7c, p. 3 of 5

PREAMBLE TO IR (IF ANY):

The tables in MKO/MH I-7c demonstrates that all of the insulation upgrades carried out in MKO communities took place in just half of them (13 communities), leaving the other 13 communities with no upgrades.

For the Refrigerator Retirement Program, there were just six refrigerators retired, one in each of six communities.

No table is provided for Direct Install upgrades.

COALITION/MH I-123 states:

The Affordable Energy Program continues to actively assist customers in upgrading their insulation and heating systems; however, the available market size for these technologies, especially with regards to standard efficiency furnaces, is shrinking with time as eligible upgrades are completed. In addition based on program experience, fewer deep-retrofit upgrades where customers insulate multiple areas of their homes are expected in future years. As a result, the annual corresponding utility investment and natural gas energy savings are projected to proportionally decline as heating system upgrades represent a large portion.

QUESTION:

- a) Please provide tables similar to those found in MKO/MH I-7c, including one for Direct Install upgrades, for all First Nations communities.
- b) Please explain how Manitoba Hydro goes about deciding in what order to offer these programs to First Nations communities.

- c) Please explain if, when Manitoba Hydro has ceased to carry out one or another type of program in a given community, it is because all eligible homes have been upgraded, or for other reasons. If other reasons, please explain in detail.

RATIONALE FOR QUESTION:

RESPONSE:

- a) Please see the attachment that tabulates insulation and direct install participation for all First Nation Communities. Prior to the launch of Direct Install in December 2014, 1,457 homes also received basic energy efficiency measures with their insulation upgrades.
- b) Manitoba Hydro promotes all Power Smart Programs with no stipulation on the order in which customers may participate; however, Manitoba Hydro has developed customized programs and approaches to encourage increased participation in energy savings opportunities among specific targeted markets. Under the Indigenous Power Smart Program, Manitoba Hydro proactively works with First Nations Communities to install free insulation and free basic energy saving materials providing funding for local labour to complete the installations thus generating economic development. Ultimately, the Band Housing Manager decides which homes should be assessed for eligibility and in what order the insulation and direct install upgrades are completed. Manitoba Hydro further assists communities in determining which additional programs may be beneficial in the residential or commercial market. Participation in any Power Smart Programs by First Nation Communities occurs when they are interested in opportunities according to their unique needs. All other programs are available and marketed to the mass market and customers can participate as they wish.
- c) Through Manitoba Hydro's Indigenous Power Smart opportunities, all participation is based on the schedule and need identified by each First Nations Community and through their Band Housing Managers. Once all eligible upgrades are completed in a community, participation is considered complete. If a program offering were expanded then Manitoba Hydro would offer such upgrades to First Nation Communities. All of Manitoba Hydro's other programs are available for mass-market participation, including First Nations Communities, and are offered until a program is ended.

Manitoba Hydro 2017/18 & 2018/19 General Rate Application
AMC/MH II-13a-c-Attachment 1
Page 1 of 1

Name of Community	Insulation Installs Completed				Direct Installs Completed			
	2014/15	2015/16	2016/17	2017/18 - to June 30, 2017	2014/15*	2015/16	2016/17	2017/18 - to June 30, 2017
Barren Lands First Nation(Brochet)	0	0	0	0	0	0	0	0
Beren's River First Nation	0	0	0	15	0	0	0	0
Birdtail Sioux First Nation(Beulah)	0	0	0	0	0	0	0	0
Bloodvein First Nation	0	15	28	0	0	0	0	0
Brokenhead Ojibway Nation (Scanterbury)	31	19	0	0	0	0	0	0
Buffalo Point First Nation	0	0	0	0	0	0	0	0
Bunibonibee Cree Nation (Oxford House)	0	0	15	30	0	0	0	0
Canupawakpa Dakota (Oak Lake) First Nation (Pipestone)	0	0	0	0	0	100	0	0
Chemawawin Cree Nation (Easterville)	0	0	0	0	0	0	0	0
Cross Lake First Nation	0	0	20	0	0	0	0	0
Dakota Plains First Nation (Portage la Prairie)	9	23	0	0	0	31	0	0
Dakota Tipi First Nation	11	0	0	0	0	50	0	0
Dauphin River First Nation (Gypsumville)	0	0	0	0	0	0	0	0
Ebb & Flow First Nation	0	0	0	0	0	0	0	0
Fisher River Cree Nation (Koostatak)	10	0	17	0	0	80	21	0
Fox Lake First Nation (Gillam)	0	0	0	0	0	40	0	0
Gamblers First Nation (Binscarth)	0	0	0	0	0	0	0	21
Garden Hill First Nation (Island Lake)	0	10	15	20	0	0	35	0
God's Lake First Nation (God's Lake Narrows)	25	13	19	16	0	0	21	0
Hollow Water First Nation (Wanipigow)	0	0	0	0	0	0	0	0
Keeseeekoowenin Ojibway Nation (Elphinstone)	0	0	0	0	40	49	0	0
Kinonjeoshtegon First Nation (Jackhead)	0	25	35	0	0	40	0	0
Lake Manitoba First Nation (Dog Creek)	0	30	19	10	0	79	0	0
Lake St. Martin First Nation	0	0	0	0	0	0	0	0
Little Black River First Nation (O'Hanley)	22	0	0	0	0	0	0	0
Little Grand Rapids First Nation	0	0	0	15	0	0	0	15
Little Saskatchewan First Nation	48	18	0	0	0	0	0	0
Long Plain First Nation	0	0	0	0	0	0	37	0
Manto Sipi Cree Nation (God's River)	0	14	35	0	0	0	40	0
Marcel Colomb First Nation Black Sturgeon (Lynn Lake)	0	0	0	0	0	0	0	0
Mathias Colomb Cree Nation (Pukatawagan)	0	23	22	0	0	0	0	0
Misipawistik (Grand Rapids)	8	0	0	0	0	0	80	40
Mosakahiken (Moose Lake)	0	0	0	0	0	0	0	0
Nisichawayasihk (Nelson House)	0	0	0	0	0	35	340	0
Northlands Dene (Lac Brochet)	0	0	0	0	0	0	0	0
Norway House	0	0	0	0	0	0	0	0
O-Chi-Chak-Ko-Sipi (Crane River)	0	0	0	0	0	0	52	0
Opaskwayak (OCN)Pas	20	20	46	21	0	40	60	0
O-Pipon-Na-Piwin (South Indian Lake)	0	0	0	0	0	0	0	9
Pauiingassi (Pauiingassie)	0	0	0	0	0	0	0	0
Peguis	0	10	0	0	0	0	0	60
Pinaymootang (Fairford)	0	0	0	11	0	0	0	0
Pine Creek (Camperville)	0	0	0	0	0	0	68	0
Poplar River (Negginan)	0	16	37	30	0	40	40	0
Red Sucker Lake (Island Lake)	0	0	19	74	0	0	99	0
Rolling River (Erickson)	10	0	0	0	0	0	0	0
Roseau River (Anishinabe)	62	19	14	0	40	0	0	0
Sagkeeng (Fort Alexander)	0	0	50	0	0	40	270	135
Sandy Bay (Marius)	21	82	40	0	0	219	255	0
Sapotaweyak (Pelican Rapids)	11	0	0	0	0	0	0	0
Sayisi Dene (Tadoule Lake)	0	0	0	0	0	40	0	0
Shamattawa	0	0	0	0	0	0	0	0
Sioux Valley (Griswold)	0	157	128	0	0	219	83	0
Skownan (Waterhen)	12	0	0	0	0	0	0	0
St. Theresa Point (Island Lake)	0	10	15	0	0	0	76	0
Swan Lake	0	0	0	0	0	0	0	0
Tataskweyak (Split Lake)	10	0	20	0	0	0	0	0
Tootinaowaziibeeng (Valley River)	26	0	0	0	0	0	0	0
War Lake (Ilford)	0	0	0	0	0	0	0	0
Wasagamack	0	10	15	20	0	0	0	0
Waywayseecappo	50	49	0	0	0	238	0	0
Wuskwi Sipihk (Birch River)	8	0	0	0	0	0	21	0
York Factory (York Landing)	21	6	0	0	0	0	0	0

*Direct Installs only began to be completed as of March 2014/15 which is why participation for this fiscal year is low.

REFERENCE:

AMC/MH I-4, Page 7

PREAMBLE TO IR (IF ANY):**QUESTION:**

Please confirm that, among the respondents, only 2% received contributions from their Band Councils for paying their Manitoba Hydro bill, and that 78% received no assistance at all.

RATIONALE FOR QUESTION:**RESPONSE:**

Confirmed. Among the respondents who received a Manitoba Hydro energy bill, 2% self-reported receiving contributions from their Band Councils and 78% self-reported receiving no assistance at all.

REFERENCE:

AMC/MH I-6, Page 7

PREAMBLE TO IR (IF ANY):

As noted in the preamble to AMC/MH I-6a-c, the percentage of Manitobans who spend 10% or more of their total annual household income on energy bills is 13.5% for LICO-125 households, and only 0.2% for non-LICO-125 households.

AMC/MH I-6a (ii) indicates that 34.4% of on-reserve First Nations customers spend 10% or more of their total annual household income on energy bills.

AMC/MH I-6c (ii) indicates that 53% of on-reserve First Nations customers in LICO-125 households spend 10% or more of their total annual household income on energy bills.

AMC/MH I-6 b) indicates that 64.8% of on-reserve First Nations customers are defined as LICO-125.

QUESTION:

- a) Please confirm that 53% of the 64.8% of on-reserve First Nations customers that are LICO-125 — in other words, more than one-third of all on-reserve First Nations households — spend 10% or more of their total annual household income on energy bills.
- b) Please confirm that, on average, energy poverty is much more severe for on-reserve First Nations customers than it is for LICO-125 households in general.
- c) What is Hydro doing to address this situation?

RATIONALE FOR QUESTION:

RESPONSE:

- a) Although the results of the 2014 Residential Energy Use Survey indicate that 53% of the 64.8% of on-reserve First Nations customers that are LICO-125 — in other words, approximately one-third of all on-reserve First Nations households — spend 10% or more of their total annual household income on energy bills, caution must be used when drawing any conclusions relating to First Nations customers. First Nations results are based on 34 survey returns and therefore may not be statistically valid due to the small sample size. In addition, this calculation is based upon survey results combined with Manitoba Hydro billing system data. Energy burdens were calculated from actual energy bills, as drawn from the billing system, divided by self-declared total annual household income provided by survey respondents. Survey respondents were not asked if they received assistance in paying for their energy bill.
- b) Although the results of the 2014 Residential Energy Use Survey indicate that a higher percentage of on-reserve LICO-125 First Nations customers spend 10% or more of their total annual household income on electricity bills compared to LICO-125 households in general, caution must be used when drawing any conclusions relating to First Nations customers. As noted above in the response to part a), First Nations results are based on 34 survey returns and therefore may not be statistically valid due to the small sample size. Furthermore, as noted in the response to part c) below, some of these respondents may have received social assistance in paying their bills, but that information was not available for the survey.
- c) One of the ways Manitoba Hydro works with customers to help them stay current with their energy bills is to ensure that they are receiving all forms of income support for which they are eligible. In the case of First Nations customers, Manitoba Hydro works with First Nation Bands each month to ensure that customers who are eligible for social assistance payments have those payments applied to their accounts. For example, in June 2017 (the last month for which payments had been applied in all communities), Manitoba Hydro applied more than 10,000 payments to accounts of First Nations customers receiving social assistance. This represents more than 58 per cent of all First Nation residential customers who were being provided with direct assistance to pay their energy bill. These payments range from 10 per cent to 100 per cent of the customer's energy bill and as such serve to significantly reduce the energy burden of these customers.

Manitoba Hydro also offers a number of Bill Affordability programs and options to customers struggling to pay their energy bills. The Indigenous Power Smart Program provides free basic energy savings items and insulation upgrades along with funding for local labour to complete upgrades help reduce energy bills. A number of Bill Management Program options are available which include flexible payment arrangements, individualized payment due dates, the Equal Payment Plan, waived late payment charges and alternative payment methods. Additionally, waiving reconnection fees, waiving security deposits and arrears forgiveness are considered in compelling situations. Customers not receiving provincial or federal assistance for their energy bill can also receive emergency funding to assist with energy bills to help avoid disconnection from the Neighbours Helping Neighbours Program which is administered by the Salvation Army and is a partnership with Manitoba Hydro.

Manitoba Hydro participated in and continues to work on recommendations from the Bill Affordability Collaborative Process to further address energy poverty.

REFERENCE:

AMC/MH I-9a-c, Page 1 of 2

PREAMBLE TO IR (IF ANY):

The first paragraph of the response refers to general service customers in First Nations communities as “First Nations owned services and infrastructure”.

QUESTION:

- a) Please explain what is meant by “First Nations owned services and infrastructure”.
- b) Please specify the criteria by which it is determined, in First Nations communities, which accounts are general service, and which are not.
- c) Does “First Nations owned ... infrastructure” include band-owned housing? If so, please explain why residential units owned by Band Councils are not eligible for a residential tariff.

RATIONALE FOR QUESTION:

RESPONSE:

- a) The First Nations Band is the owner of services and infrastructure, which could include buildings, water treatment plant, community recreation centre, and other commercially operated infrastructure. The context from AMC/MH I-9a-c was provided to differentiate between INAC’s funding arrangements for residential and general service (commercial) customers and specifically, those owned by First Nations on-reserve services and infrastructure.
- b) Accounts are deemed to be general service when used for commercial operations or have common use areas (such as apartment building common areas) and are not used for residential purposes where occupied by residents.

- c) The context from AMC/MH I-9a-c was provided to reference general service services and infrastructure owned by First Nations on reserve. Generally, “First Nations owned services and infrastructure” do include band-owned housing. Residential units owned by Band Councils are eligible for a residential tariff.

REFERENCE:

AMC/MH I-11a, Page 2 of 2

PREAMBLE TO IR (IF ANY):**CITATION:**

“In the scenario where electricity rates were assumed to increase 5.95% annually for six years, the simulation model indicates that 73 and 22 households would meet the definition of energy poverty by 2026, when 6% or 10% thresholds are applied; this is equivalent to 12.05% and 3.63%, respectively.”

The response suggests that the simulation model simulates the behaviour of individual households.

QUESTION:

- a) Please describe in detail the simulation model used by PRA, and in particular how it models households on and off reserve.
- b) Please describe in detail how PRA’s simulation model was configured to analyze the implications of various rate increase strategies on energy poverty in First Nations in Manitoba.

RATIONALE FOR QUESTION:**RESPONSE:**

The following response was prepared by Prairie Research Associates:

- a) The simulations were generated through application of an Excel-based spreadsheet model developed by PRA, with oversight and support provided by the Bill Affordability Working Group. The model was specifically designed to investigate how potential rate increases could influence energy burdens and energy poverty experienced by Manitoba Hydro customers between 2016-2036 (inclusive), as well as the extent to which rate

design models implemented in other selected jurisdictions (i.e., straight rate discount, fixed charge waiver, and percentage of income payment plan [PIPP]) might promote bill affordability in Manitoba, while generating costs for various stakeholder groups.

The model draws upon data collected from a subset of respondents participating in the survey of Manitoba Hydro customers (N = 606) who agreed both to provide information on household income and to permit linkage between their responses and Manitoba Hydro administrative data. As we indicated in our original report (Section 1.3.5, Appendix 10.5, pages 57-58 of 242), the absolute number of customers sampled from individuals residing in remote and/or rural First Nations communities (N = 3) is too small to allow for any assessment of how individuals in these communities would be specifically impacted by rate increases or the availability of bill affordability programming. Consequently, the model does not differentiate between households on and off reserve.

With reference to the statement in the preamble, we clarify that the model does not in fact simulate the behaviour of individual households (e.g., intentionally reducing energy consumption in response to price changes) (Section 1.3.5, Appendix 10.5, page 57 of 242), but simply monitors and records changes in circumstances (i.e., levels of household energy burden and transitions into and out of energy poverty) that may result upon applying the assumptions accompanying each scenario.

- b) As just noted, PRA's simulation model is not configured to analyze the implications of various rate increase strategies on energy poverty in First Nations communities in Manitoba. Given the small number of responses collected from individuals residing in remote and/or rural First Nations communities, such analyses would not be credible.

REFERENCE:

AMC/MH I-13a-b; AMC/MH I-43, Page 2 of 3

PREAMBLE TO IR (IF ANY):

In AMC/MH I-13a-b, Manitoba Hydro indicated that it expects that affordability measures such as a 25% straight discount, a waiver of the fixed charge or a Percentage of Income Payment Plan (PIPP) would not be revenue neutral and so would have to be funded as part of the Corporation's revenue requirement.

Table 25 of the PRA report (page 121 of 242 of Appendix 10.5) shows that the lost electricity revenues to MH as a result of meeting a 6% or 10% affordability threshold for each of the three measures range from \$2 to \$26 million, as follows:

(in \$ millions)	6% threshold	10% threshold
Straight discount (25%)	\$18.6	\$7.3
Fixed charge waiver	\$5.5	\$1.8
PIPP	\$25.8	\$9.8

Table 5 of AMC/MH I-43 indicates PRA's estimate of the rate increases, including taxes, that would be required from residential ratepayers in order to fund these measures, again under three rate strategies:

3.95% increase for 12 years	6% threshold	10% threshold
Straight discount (25%)	0.42¢/kWh	0.15¢/kWh
Fixed charge waiver	0.12¢/kWh	0.03¢/kWh
PIPP	0.56¢/kWh	0.2¢/kWh

5.95% increase for 6 years	6% threshold	10% threshold
Straight discount (25%)	0.5¢/kWh	0.16¢/kWh
Fixed charge waiver	0.13¢/kWh	0.04¢/kWh
PIPP	0.7¢/kWh	0.25¢/kWh

7.95 increase for 4 years	6% threshold	10% threshold
Straight discount (25%)	0.6¢/kWh	0.19¢/kWh
Fixed charge waiver	0.14¢/kWh	0.04¢/kWh
PIPP	0.88¢/kWh	0.31¢/kWh

The same information can be reorganized as follows:

	6% threshold	10% threshold
Straight discount (25%)		
3.95% increase for 12 years	0.42¢/kWh	0.15¢/kWh
5.95% increase for 6 years	0.5¢/kWh	0.16¢/kWh
7.95 increase for 4 years	0.6¢/kWh	0.19¢/kWh

	6% threshold	10% threshold
Fixed charge waiver		
3.95% increase for 12 years	0.12¢/kWh	0.03¢/kWh
5.95% increase for 6 years	0.13¢/kWh	0.04¢/kWh
7.95 increase for 4 years	0.14¢/kWh	0.04¢/kWh

	6% threshold	10% threshold
PIPP		
3.95% increase for 12 years	0.56¢/kWh	0.2¢/kWh
5.95% increase for 6 years	0.7¢/kWh	0.25¢/kWh
7.95 increase for 4 years	0.88¢/kWh	0.31¢/kWh

In other words, based on a 10% energy poverty threshold:

- the rate impact of applying a straight 25% discount based would be between 0.15 and 0.19¢/kWh, depending on the rate increase scenario;
- the rate impact of applying a fixed charge waiver would be between 0.03 and 0.04¢/kWh;
- the rate impact of applying a PIPP would be between 0.2 and 0.31¢/kWh.

Based on a 6% energy poverty threshold:

- the rate impact of applying a straight 25% discount based would be between 0.42 and 0.6¢/kWh;
- the rate impact of applying a fixed charge waiver would be between 0.12 and 0.14¢/kWh;

- the rate impact of applying a PIPP would be between 0.56 and 0.88¢/kWh;

The residential class accounts for about 42% of the total revenue requirement (\$811 million / \$1,910 million). (Tab 8, p. 26 of 34, Figure 8.9.)

QUESTION:

- a) Please confirm or correct the figures presented in the Preamble.

RATIONALE FOR QUESTION:**RESPONSE:**

The following responses were prepared by Manitoba Hydro:

Manitoba Hydro notes that the analysis undertaken by PRA and the associated rate impact calculations were based upon their own methodology. This methodology is not consistent with the rate making treatment of such costs in this jurisdiction as directed by the PUB in Order 164/16.

For the purposes of analysis in the Bill Affordability Working Group, PRA calculated their assessment of the costs of providing bill assistance, and then applied those cost recoveries to non-participating customers. Manitoba Hydro notes that this is inconsistent with typical treatment of such costs for rate making purposes.

In traditional rate making practice, the costs of bill assistance programming would become part of Manitoba Hydro's revenue requirement. Any such costs included in revenue requirement would need to be allocated to customer classes through the Cost of Service Study. An increase in costs allocated to the class, without any change in class revenues, would lower the Residential Revenue to Cost Coverage ("RCC") for that class. To maintain the class RCC, class revenues would need to be increased in an amount equal to the increase in cost.

In Order 164/16, the PUB provided its direction on the treatment of customer service related costs. It directed that costs related to serving and communicating with customers after delivery of energy, including meter reading, billing, collections, information and customer assistance, advertising, sales, sections, research and development, rates and cost of service, load research, and other departmental costs such as Power Smart Energy Services, shall be functionalized and classified as Customer Services and that such costs would be allocated to customer classes on the basis of customer weightings in the Cost of Service study.

In addition, late payment revenues are allocated on the basis of historical proportion of late payment revenues from each customer class. In Order 164/16, the PUB found that late payment revenues can be directly attributed to the classes from which they arise and comprise the majority of the late payment and customer adjustment costs, as discussed at page 88 of Order 164/16. Those revenues are assigned to the Residential class and form part of the cost of service for that class. Residential class revenues produced by rates are intended to recover the costs allocated and assigned to the class, with regard to the RCC of the customer class. Therefore all residential customers share cost responsibility for the cost of such programming.

The following response was prepared by Prairie Research Associates:

PRA can confirm that the table reporting electricity revenues lost to MH as a result of implementing each of the three bill affordability measures correctly recreates Table 25 of PRA report and that the figures it contains align with the values generated by the simulation model. PRA moreover confirms the figures presented in the Preamble and the accuracy of the narrative description, excluding the statement regarding the residential rate class proportion of the total revenue requirement, although we caution that the results should be interpreted with reference to the following assumptions:

- Table 5 of AMC/MH I-43 reflects estimates of the rate increases, including taxes, that would be required from non-energy poor residential ratepayers in order to fund various bill affordability measures in 2020.
- Inflation increases at 1.78% annually between now and 2020, while household income grows at 2.96% (in nominal terms) over the same interval.

- Electricity rate increases do not apply to the basic charge (which is instead assumed to increase at the rate of inflation).
- The rate increase scenarios do not incorporate Order 80/17 (i.e., the 3.36% interim rate increase which came into effect August 1st, 2017).

REFERENCE:

AMC/MH I-13a-b; AMC/MH I-43, Page 2 of 3

PREAMBLE TO IR (IF ANY):

In AMC/MH I-13a-b, Manitoba Hydro indicated that it expects that affordability measures such as a 25% straight discount, a waiver of the fixed charge or a Percentage of Income Payment Plan (PIPP) would not be revenue neutral and so would have to be funded as part of the Corporation's revenue requirement.

Table 25 of the PRA report (page 121 of 242 of Appendix 10.5) shows that the lost electricity revenues to MH as a result of meeting a 6% or 10% affordability threshold for each of the three measures range from \$2 to \$26 million, as follows:

(in \$ millions)	6% threshold	10% threshold
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Fixed charge waiver	\$5.5	\$1.8
PIPP	\$25.8	\$9.8

Table 5 of AMC/MH I-43 indicates PRA's estimate of the rate increases, including taxes, that would be required from residential ratepayers in order to fund these measures, again under three rate strategies:

3.95% increase for 12 years	6% threshold	10% threshold
Straight discount (25%)	0.42¢/kWh	0.15¢/kWh
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	6% threshold	10% threshold
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7.95 increase for 4 years	0.14¢/kWh	0.04¢/kWh

	6% threshold	10% threshold
PIPP		
3.95% increase for 12 years	0.56¢/kWh	0.2¢/kWh
5.95% increase for 6 years	0.7¢/kWh	0.25¢/kWh
7.95 increase for 4 years	0.88¢/kWh	0.31¢/kWh

In other words, based on a 10% energy poverty threshold:

- the rate impact of applying a straight 25% discount based would be between 0.15 and 0.19¢/kWh, depending on the rate increase scenario;
- the rate impact of applying a fixed charge waiver would be between 0.03 and 0.04¢/kWh;
- the rate impact of applying a PIPP would be between 0.2 and 0.31¢/kWh.

Based on a 6% energy poverty threshold:

- the rate impact of applying a straight 25% discount based would be between 0.42 and 0.6¢/kWh;
- the rate impact of applying a fixed charge waiver would be between 0.12 and 0.14¢/kWh;

- the rate impact of applying a PIPP would be between 0.56 and 0.88¢/kWh;

The residential class accounts for about 42% of the total revenue requirement (\$811 million / \$1,910 million). (Tab 8, p. 26 of 34, Figure 8.9.)

QUESTION:

- b) Given the order of magnitude of these rate increases (from 0.03 to 0.88¢/kWh), is Manitoba Hydro willing to consider the use of one or another of these mechanisms? If not, why not?
- c) As the residential class accounts for just 42.5% of the total revenue requirement, can one conclude that, if the lost revenues resulting from affordability measures were shared among all ratepayers (and not just residential ratepayers), the impact per kWh would be reduced by more than half?

RATIONALE FOR QUESTION:**RESPONSE:**

- b) In Manitoba Hydro's view, the bill affordability measures discussed in this response are direct customer bill subsidies. The direct subsidization of low income customers in this manner is akin to addressing issues of household income sufficiency and such matters are more appropriately addressed by government and not by Manitoba Hydro.

Therefore, regardless of the order of magnitude of any of the potential options discussed in this response, Manitoba Hydro is not in a position to consider any such customer subsidies.

- c) Please see the response to part a).

REFERENCE:

AMC/MH I-16c, Pages 1 and 2 of 2

PREAMBLE TO IR (IF ANY):

Question 16c asked:

Please indicate for which, if any, of the rate design options would have been recommended but for the opposition of Manitoba Hydro and/or governmental entities.

QUESTION:

- a) Were there any members of the Bill Affordability Working Group other than Manitoba Hydro and government entities that opposed recommending adoption of the Percentage of Income Payment Plan?
- b) Which members opposed it?

RATIONALE FOR QUESTION:**RESPONSE:**

Response to parts a) and b):

Manitoba Hydro is reluctant to represent the views of others beyond that which is contained in the bill affordability report, which indicates it was a consensus view not to recommend the Percentage of Income Payment Plan.

The Working Group recognized the position of Manitoba Hydro that absent a sound and defensible business case to substantiate the cost savings of such rate assistance options, that Manitoba Hydro was not in a position to commit any funding for the purposes of subsidizing customer's bills, nor could it anticipate that non-participating customers in the residential class or other customer classes would agree to funding the cost of rate assistance through their electricity rates.

As noted on page 28 of Appendix 10.5 in the Report of the Working Group:

“Noting that a PIPP could effectively eliminate energy poverty by design, the Working Group identified the PIPP as the rate option that best addresses both the accuracy and equity principles of energy affordability. However, in light of administrative costs related to implementation of an income-qualified program, and uncertainty about the sufficiency of potential offsets and overall costs of the PIPP at full subscription, the Working Group did not recommend this as an option, but instead agreed that it may warrant further study by Manitoba Hydro.”

REFERENCE:

AMC/MH I-23, Page 2 of 2

PREAMBLE TO IR (IF ANY):

The tables presented indicate that, for all categories, average weather-adjusted electricity consumption per square foot is more than twice as great for First Nations residential customers than it is for all residential customers in Manitoba.

QUESTION:

Please confirm the statement made in the preamble.

RATIONALE FOR QUESTION:**RESPONSE:**

It is confirmed that the tables presented in AMC/MH I-23 do indicate that, for all categories, average weather-adjusted electricity consumption per square foot is more than twice as great for First Nations residential customers than it is for all residential customers in Manitoba. It should be noted that the average weather adjusted electricity per square foot for all residential customers represents all customers including those heating with electricity, natural gas, and other fuel sources.

REFERENCE:

AMC/MH I-27a, Pages 1 and 2 of 2

PREAMBLE TO IR (IF ANY):

Question 27a asked:

Please elaborate on the observation that housing in First Nations communities may be in such a poor state that retrofits to increase energy efficiency may have little impact on reducing energy burden, and its implications for bill affordability measures required in these communities;

The response makes reference to the work done by PRA, but was not provided directly by PRA.

The response also states:

Through the Affordable Energy Program however, under the Indigenous Power Smart Approach, the dedicated Indigenous Energy Advisor works with each Community Band Housing Manager to identify homes eligible for upgrades. If a home is found to have structural issues which would delay the installation of energy efficiency upgrades, the Indigenous Energy Advisor identifies the need for repair and then follows up with the Band Housing Manager until repairs are complete at which point the upgrade can be then be undertaken.

QUESTION:

a) Please ask PRA to respond to question 27a.

RATIONALE FOR QUESTION:

RESPONSE:**The following response was prepared by Prairie Research Associates:**

The observation referenced by AMC was derived from interviews with band representatives and Aboriginal Affairs and Northern Development representatives. It represents interview opinion and does not reflect any actual case studies or inventory of housing conditions. The only other information contained in the PRA report, which may be salient to this question, is the observation from our review of the literature that the quality of housing can reduce the benefit households derive from their purchases of energy services (Appendix 10.5, Section 2.5, pg. 65 of 242); this observation was, however, general, and did not relate to housing in First Nations communities.

REFERENCE:

AMC/MH I-27a, Pages 1 and 2 of 2

PREAMBLE TO IR (IF ANY):

Question 27a asked:

Please elaborate on the observation that housing in First Nations communities may be in such a poor state that retrofits to increase energy efficiency may have little impact on reducing energy burden, and its implications for bill affordability measures required in these communities;

The response makes reference to the work done by PRA, but was not provided directly by PRA.

The response also states:

Through the Affordable Energy Program however, under the Indigenous Power Smart Approach, the dedicated Indigenous Energy Advisor works with each Community Band Housing Manager to identify homes eligible for upgrades. If a home is found to have structural issues which would delay the installation of energy efficiency upgrades, the Indigenous Energy Advisor identifies the need for repair and then follows up with the Band Housing Manager until repairs are complete at which point the upgrade can be then be undertaken.

QUESTION:

- b) Please indicate, for each First Nation in the province:
- i. who makes the determination that “a home... [has] structural issues which would delay the installation of energy efficiency upgrades”?
 - ii. how many times in the last five (5) years the Indigenous Energy Advisor has identified the need for repair;
 - iii. excluding repairs which have not been completed, the average length of time taken to complete the repairs; and
 - iv. how many times the upgrade was undertaken after repairs were completed.

- c) Please provide a chart showing the types of repairs identified as needed for the purpose of AEP Upgrades, and the number of times in the last five (5) years that type of repair has been required.
- d) When it is determined that repairs are required prior to installing energy efficiency upgrades, is a distinction made between each potential upgrade? That is to say, are all potential upgrades to a home put on hold, or are only those upgrades affected by the needed repair put on hold?

RATIONALE FOR QUESTION:**RESPONSE:**

- b)
 - i. All homes identified to be assessed for eligibility in the Indigenous Power Smart Program are brought forward by the Band Housing Manager for each individual First Nation Community. The determination that “a home... [has] structural issues which would delay the installation of energy efficiency upgrades” may have been made prior to the Indigenous Energy Advisor’s (“IEA”) site visit and may or may not be brought to Manitoba Hydro’s attention. If the IEA feels that an area of the home has insufficient insulation, but adding insulation prior to a repair being made would not be done in good building practice, the IEA recommends the repair occur first.
 - ii. Manitoba Hydro’s Indigenous Energy Advisor does not track the need for repairs to First Nation housing stock as it is a rare occurrence to come across this situation. The insulation upgrades are completed in phases, thus the Band Housing Managers ideally select homes for assessment that are ready to receive insulation upgrades for each new phase.
 - iii. Please see the responses to part (b) i-ii.
 - iv. Please see the responses to part (b) i-ii.
- c) As noted above, Manitoba Hydro does not track repairs to First Nation housing stock as the IEA does not come across these types of issues often enough to justify additional administrative effort. Please see AMC/MH I-27a for further information on homes with structural issues that may delay insulation upgrades.

- d) Yes, only upgrades affected by the needed repair are delayed, other eligible upgrades are completed as per the Band Housing Manager.

REFERENCE:

AMC/MH I-30b, Page 4 of 6

PREAMBLE TO IR (IF ANY):**CITATION:**

“Each community works with one dedicated Indigenous Energy Advisor who along with each Band Housing Manager identifies qualifying homes and recommends energy efficient measures.”

The term “dedicated Indigenous Energy Advisor” suggests that there is one such advisor per First Nations community.

QUESTION:

Please confirm that there is one Indigenous Energy Advisors for each First Nations community. If this is not the case, please specify how many Indigenous Energy Advisors are employed by the program, and how many First Nations each one is responsible for.

RATIONALE FOR QUESTION:**RESPONSE:**

There is one dedicated Indigenous Energy Advisor responsible for serving all 63 First Nations communities.

REFERENCE:

AMC/MH I-31a, Pages 2 and 3 of 3

PREAMBLE TO IR (IF ANY):

In its response, PRA acknowledges that its assumptions are inconsistent with the present application, in that it modeled rate increases in which the basic charge was held constant.

Table 1 shows the characteristics of the rate structure used as the basis for the modelling exercise, in which the basic charge is held constant at \$7.82 from 2016 to 2026.

Several other responses, including those related to the cost and impact of a Fixed Charge Waiver as an affordability measure, were apparently also based on the assumption that the fixed charge would remain constant.

Furthermore, in response to Order 79/15, Manitoba Hydro has now amended its rate proposal to include six (6) annual increases of 7.9%, followed by one increase of 4.54%.

In his letter dated September 5, 2017, Hydro's CEO indicated that "all relevant IRs have been answered incorporating Order 80/17 and the consequent impact on indicative rate increases beyond the test years" (page 2 of 4). However, the analysis of the estimated bill impact on customers (section 3.4 of the PRA report, Appendix 10.5, pages 89-95 of the pdf) has not been updated either to account for the incorrect assumption that the fixed charge would be unaffected by the rate increases, or by the modification announced on September 5.

QUESTION:

- a) Please update section 3.4 of the PRA report ("Estimated impact of potential rate increases on customers", Appendix 10.5, pages 89-95 of the pdf) as well as section 5.2 ("Estimated impact of bill affordability options on Manitoba Hydro and its customers") to account for the incorrect assumption that the fixed charge would be unaffected by the rate increases, and to include a scenario representing the current Manitoba Hydro

rate proposal (7.9% nominal electricity rate increases for 6 years, followed by a 4.54% nominal electricity rate increases for one year).

- b) Please provide a revised version of Table 1 of AMC/MH I-31a, showing the anticipated basic charge in 2026, based on the revised financial outlook, and adding a line representing the current rate proposal.
- c) Please provide revised data and responses, in particular to Table 25 of the PRA Report and to Table 5 of AMC/MH I-43, taking into account the anticipated evolution of the fixed charge, based on Manitoba Hydro's current proposed rate strategy, and including a scenario representing the current Manitoba Hydro rate proposal (7.9% nominal electricity rate increases for 6 years, followed by a 4.54% nominal electricity rate increases for one year).

RATIONALE FOR QUESTION:

RESPONSE:

The following response was prepared by Prairie Research Associates:

- a) The discussion below updates Section 3.4 and the tables in Section 5.2 of our original report. As requested, the analysis now incorporates the following assumptions:
 - The basic charge increases at the same rate as the energy charge, rather than at the rate of inflation.
 - A fourth scenario reflects both the interim rate increases laid out in Order 80/17 (i.e., the 3.36% interim rate increase which came into effect August 1st, 2017) as well as Manitoba Hydro's response to Order 79/15 (hereafter referred to as the "fourth scenario" or "Scenario 4"); the annual nominal rate increases incorporated into this scenario for the purposes of the modelling exercise are presented in Table 1 below:

Table 1: Annual nominal rate increases for the fourth scenario									
2017	2018	2019	2020	2021	2022	2023	2024	2025	2026-2036
1.40%	5.25%	7.90%	7.90%	7.90%	7.90%	7.90%	6.50%	3.48%	2.00%
Note: We assume that rate adjustments come into effect on August 1 st of each calendar year. To "annualize" these adjustments, rate increases listed in the table reflect the weighted average of the increase applying to the first seven months of each calendar year and the one in effect during the five remaining months. For example, the adjustment for 2018 is calculated as follows: $(7/12) \times 3.36\% + (5/12) \times 7.90\% = 1.96\% + 3.29\% = 5.25\%$.									

3.4 Estimated impact of potential rate increases on customers

Manitoba Hydro is currently exploring the possibility of requesting approval of annual electricity rate increases upon its customer base that are larger than previously forecast in order to promote financial sustainability in the coming years. One objective of the quantitative modeling exercise was therefore to assess how a range of potential increases may affect Manitoba Hydro customers, with particular emphasis on the magnitude of energy poverty and the energy burden experienced by low-income households. To this end, the following four distinct scenarios were modeled over a 20-year horizon (2016–2036, inclusive):

- 3.95% nominal electricity rate increases for 12 years
- 5.95% nominal electricity rate increases for 6 years
- 7.95% nominal electricity rate increases for 4 years
- 3.36% nominal electricity rate increase mid-way through 2017, followed by 6 years of 7.9% increases (i.e., beginning partway through year 2018 and continuing until partway through 2024), followed by an increase of 4.54% in year 2024 which persists into part of 2025 (hereafter referred to as the “fourth scenario” or “Scenario 4”)

All nominal rate increases applied both to the energy charge (i.e., the per-kWh price of electricity) as well as the monthly basic charge (i.e., the fixed component of the customer’s bill that does not vary with actual electricity use). Furthermore, rate increases were assumed to begin in 2017, to persist over the intervals listed above, and then to increase at levels slightly in excess of inflation (i.e., 2.0%).

Independent of electricity rate increases, all scenarios incorporated the assumption that the imposition of a carbon tax at the federal level would result in annual natural gas rate increases amounting to about \$0.02 per cubic metre (m³) between 2018 and 2022 — representing an increase of slightly more than one-third (i.e., 35.7%) over the rates prevailing in 2016 — before declining to the rate of inflation.¹ In contrast to the electricity side, the carbon tax was assumed to affect only the variable component of customers’ natural gas expenditures; by contrast, the monthly basic charge was assumed to grow in step with prices.

To complete the model, it was assumed that both price levels and household incomes would grow at levels equivalent to the averages of increases observed in Manitoba since

¹ A price on carbon of \$10 per tonne will be introduced in 2018; it will subsequently increase by \$10 per tonne each year until 2022, at which point the price will have reached \$50 per tonne (McCarthy & LeBlanc, 2016).

2009. As shown in Table 13, these were determined to be 1.78% and 2.96%, respectively.

Table 13: Derivation of annual inflation and increases in household income						
Year	Inflation			Average total household income		
	CPI	2014 rebase	% inflation	Constant dollars (2014)	Current dollars	% growth
2009	114.1	0.91	N/A	\$73,600	\$67,021	N/A
2010	115	0.92	0.79%	\$73,800	\$67,733	1.06%
2011	118.4	0.94	2.96%	\$72,800	\$68,791	1.56%
2012	120.3	0.96	1.60%	\$73,700	\$70,759	2.86%
2013	123	0.98	2.24%	\$76,600	\$75,194	6.27%
2014	125.3	1.00	1.87%	\$77,500	\$77,500	3.07%
2015	126.8	1.01	1.20%	N/A	N/A	N/A
AVERAGE			1.78%			2.96%
Sources: Statistics Canada (2016a, 2016b)						

Table 14 contains the effects of combined electricity and natural gas rate increases described above on the average real (i.e., inflation-adjusted) energy bill for households included in the customer survey.

Table 14: Projected impact of Manitoba Hydro rate increases on (inflation-adjusted) average bill amounts								
Year	Scenario 1 (3.95% nominal increases for 12 years)		Scenario 2 (5.95% nominal increases for 6 years)		Scenario 3 (7.95% nominal increases for 4 years)		Scenario 4	
	Amount	% change vs 2016	Amount	% change vs 2016	Amount	% change vs 2016	Amount	% change vs 2016
2016	\$1,624.23	0.0%	\$1,624.23	0.0%	\$1,624.23	0.0%	\$1,624.23	0.0%
2020	\$1,801.24	10.9%	\$1,906.09	17.4%	\$2,017.15	24.2%	\$1,886.14	16.1%
2024	\$1,964.59	21.0%	\$2,079.20	28.0%	\$2,077.30	27.9%	\$2,281.28	40.5%
2028	\$2,091.84	28.8%	\$2,092.92	28.9%	\$2,091.00	28.7%	\$2,322.67	43.0%
2032	\$2,105.67	29.6%	\$2,106.76	29.7%	\$2,104.82	29.6%	\$2,338.56	44.0%
2036	\$2,119.62	30.5%	\$2,120.72	30.6%	\$2,118.76	30.4%	\$2,354.60	45.0%
Source: PRA calculations based on survey of Manitoba Hydro customers.								

As shown, by 2036, the effect of the rate changes in the scenarios is to increase the amount of the average energy bill (in real terms) by about 30% and 45%, respectively. In the second, third, and fourth scenario the bulk of these increases is expected to have taken place by 2024, coinciding with the full phasing-in of the federal carbon tax and the

end of the period of significant electricity rate increases planned by Manitoba Hydro. In the first scenario, the increases are more gradual, although the introduction of the carbon tax still implies relatively larger bill growth in the first years of the simulation.

The impact of the rate increases upon the proportion of LICO-125 households with energy burdens exceeding 6% (i.e., are defined as “energy poor” in the context of a 6% threshold) is illustrated in Figure 7. As shown, all scenarios are predicted to result in significant growth in energy poverty over roughly the next decade. However, in the second and third scenario simulations in which electricity rates grow by 5.95% for six years or 7.95% for four years, or in which rate changes align with the schedule laid out by Manitoba Hydro in its response to Order 79/15 (i.e., Scenario 4), these increases are far more pronounced, in that they occur more quickly and persist for longer, relative to the first scenario in which 3.95% increases occur for 12 years. By 2028, rates of energy poverty across all but the fourth scenario have essentially converged, and thereafter, rates in every scenario decline as a consequence of steady growth in household incomes.

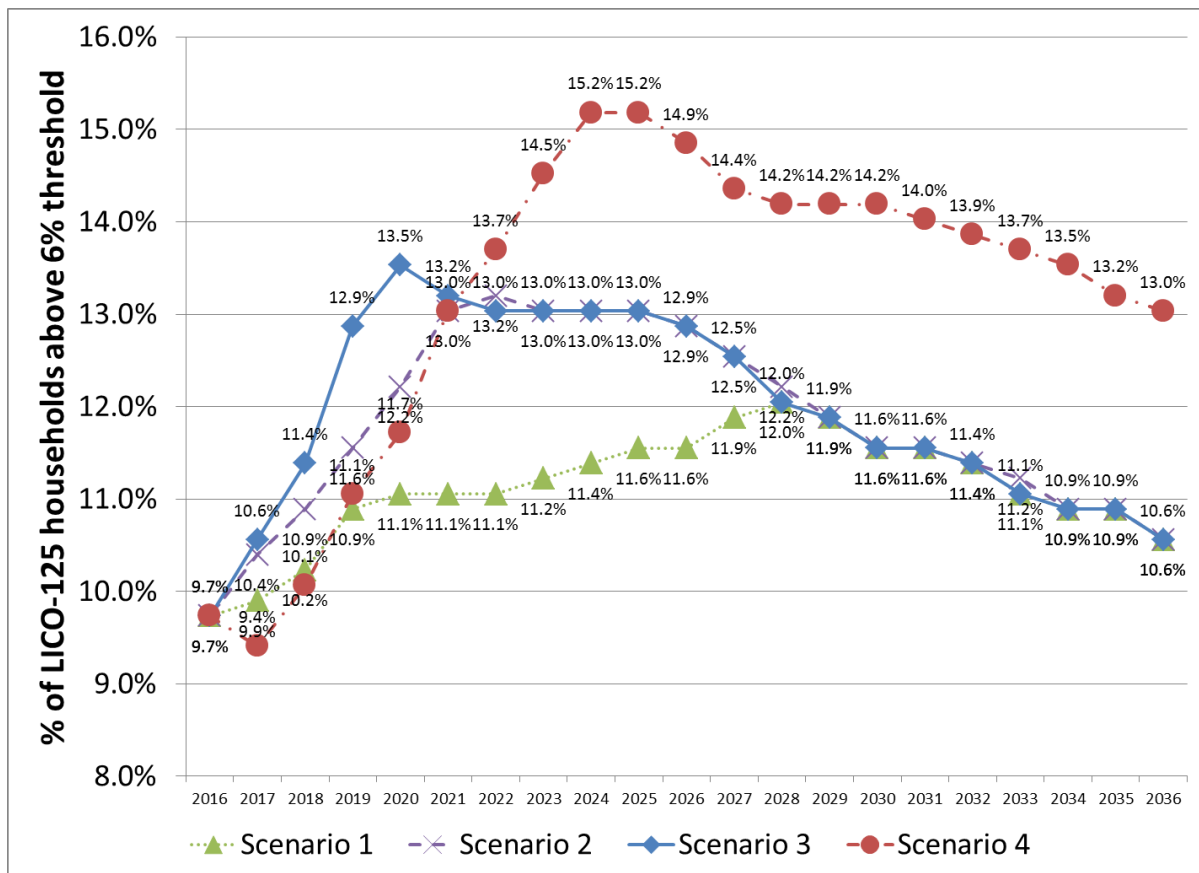


Figure 7: Impact of Manitoba Hydro rate increases on proportion of LICO-125 households above 6% energy poverty threshold, 2016–36, inclusive

Source: PRA calculations based on survey of Manitoba Hydro customers

Note: *Scenario 1*—3.95% nominal electricity rate increases for 12 years; *Scenario 2*—5.95% nominal electricity rate increases for 6 years; *Scenario 3*—7.95% nominal electricity rate increases for 4 years; *Scenario 4*—3.36% nominal electricity rate increase in 2017, followed by 7.9% rate increases for 6 years and a 4.54% rate increase for 1 year (assumed to come into effect on August 1st of each calendar year)

Similar results are observed when energy poverty is defined with reference to a 10% threshold. As Figure 8 suggests, the simulated impacts of rate increases on energy poverty tend to be less pronounced in the first, second and third scenarios than when the 6% threshold is employed, as are the differences between scenarios. As in Figure 7, beginning in the early-2020s, the fourth scenario is associated with substantially higher levels of energy poverty than the other scenarios; although energy poverty is projected to start leveling off later in the decade, it does not converge with the other scenarios prior to the end of the simulation horizon.

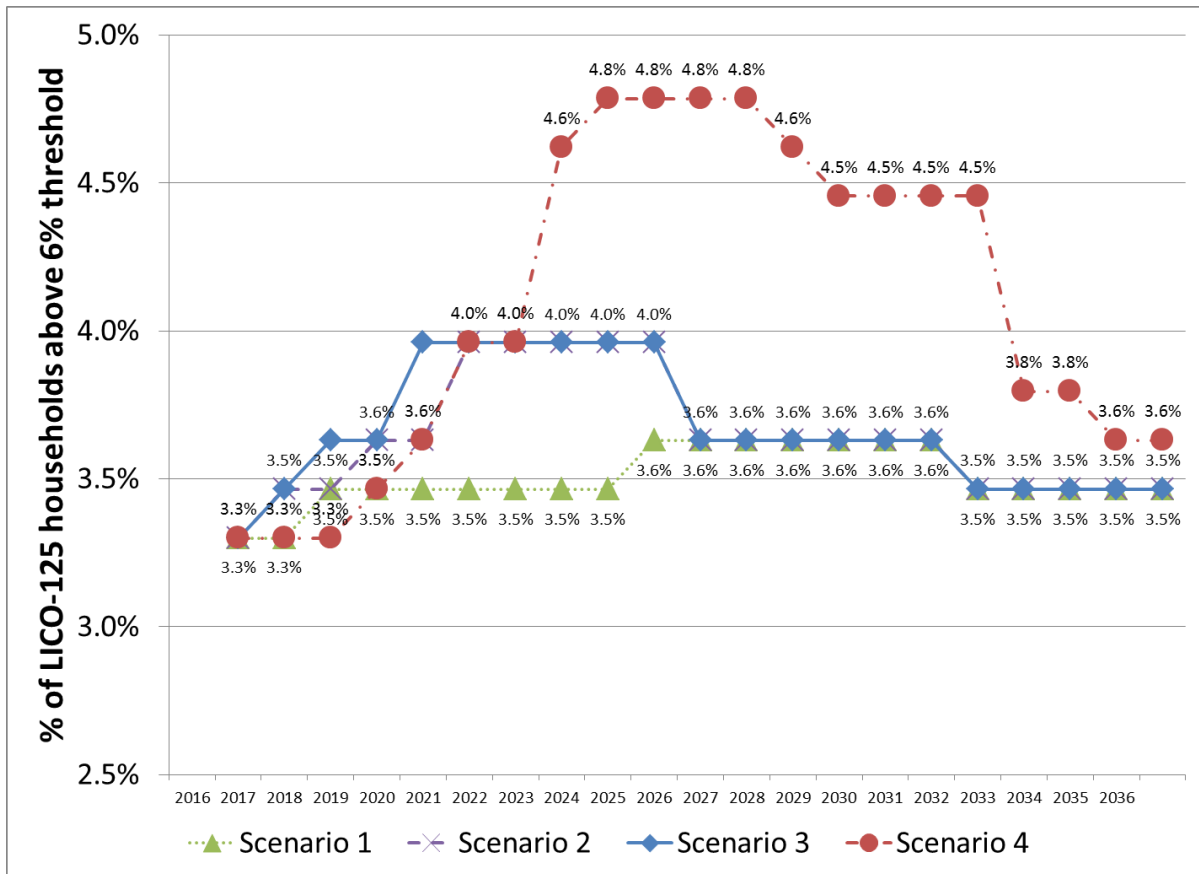


Figure 8: Impact of Manitoba Hydro rate increases on proportion of LICO-125 households with energy burdens exceeding 10%, 2016–36, inclusive

Source: PRA calculations based on survey of Manitoba Hydro customers

The simulation of Manitoba Hydro rate increases also examined how various rate increases might affect the energy burden experienced by households that are or are not currently energy poor. Since the results presented above suggest that steady growth in household incomes will gradually counteract the effects of even substantial rate increases, this analysis focuses on the period between 2016 and 2024. The results of the analysis, assuming energy poverty to be defined with reference to 6% of gross household income, are presented in Figure 9 below.

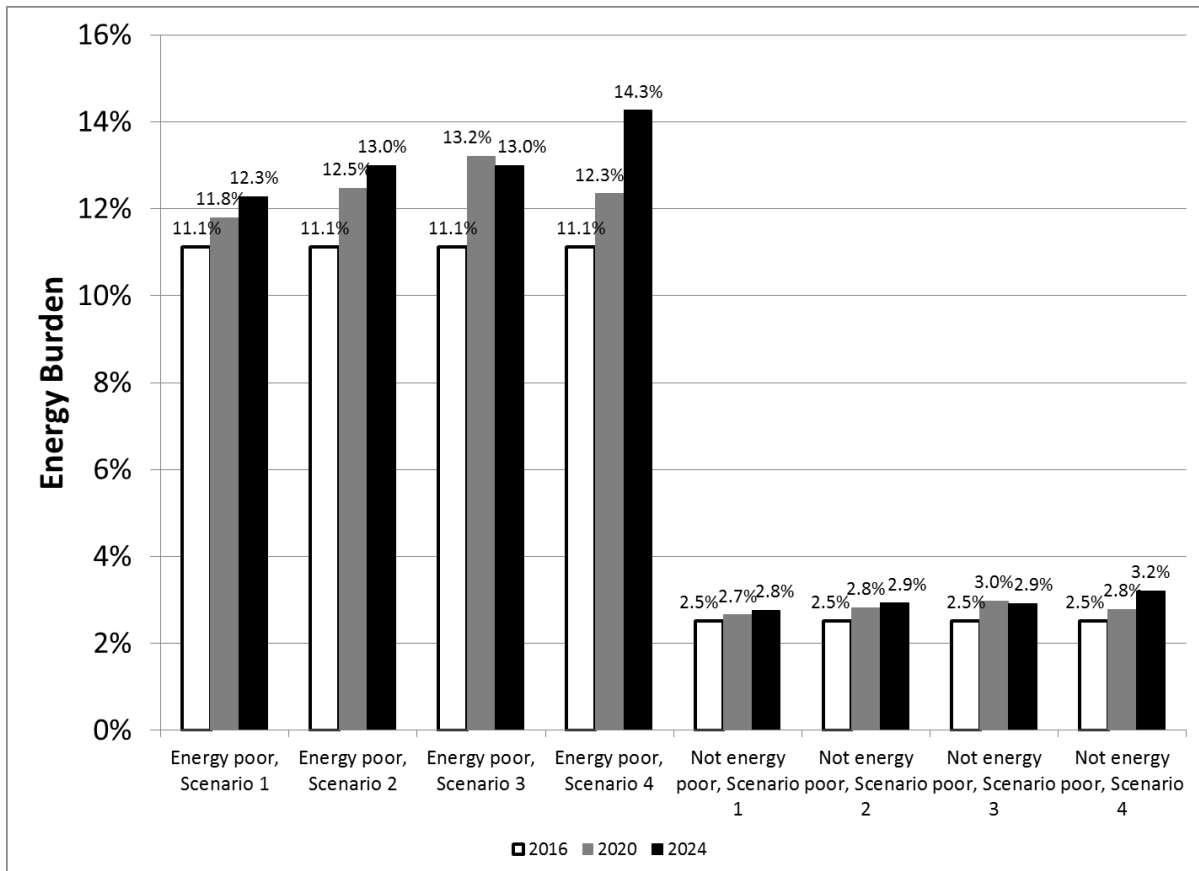


Figure 9: Impact of Manitoba Hydro rate increases on energy burdens experienced by energy poor and non-energy poor households (6% threshold), 2016–24 (n=59)

Source: PRA calculations based on survey of Manitoba Hydro customers

As shown, energy burdens are not only initially much larger (more than four times) in the subset of households that are classified as energy poor, but also expand to a much greater extent in response to potential rate increases. For example, whereas the pattern of rate increases in Scenario 3 (i.e., four years of 7.95% annual growth in electricity rates, combined with incremental increases in natural gas rates stemming from the introduction of the federal carbon tax) is expected to increase the share of gross household income devoted to energy expenditures among energy poor households from 11.1% to 13.0%, in non-energy poor households, this proportion is anticipated to increase from 2.5% to 2.9%.

Figure 10 presents similar results, in the case where allocating more than 10% of gross household income to energy bills is defined as the threshold for energy poverty. Differences between energy poor and non-energy poor households with respect to the

impact of potential electricity rate increases are greater still in this context. For instance, four years of 7.95% annual growth in electricity rates (i.e., Scenario 3) would increase the proportion of household income dedicated to Manitoba Hydro bills among energy poor households from 18.9% to 22.2%, while non-energy poor households would experience increases from 2.8% to 3.3%.

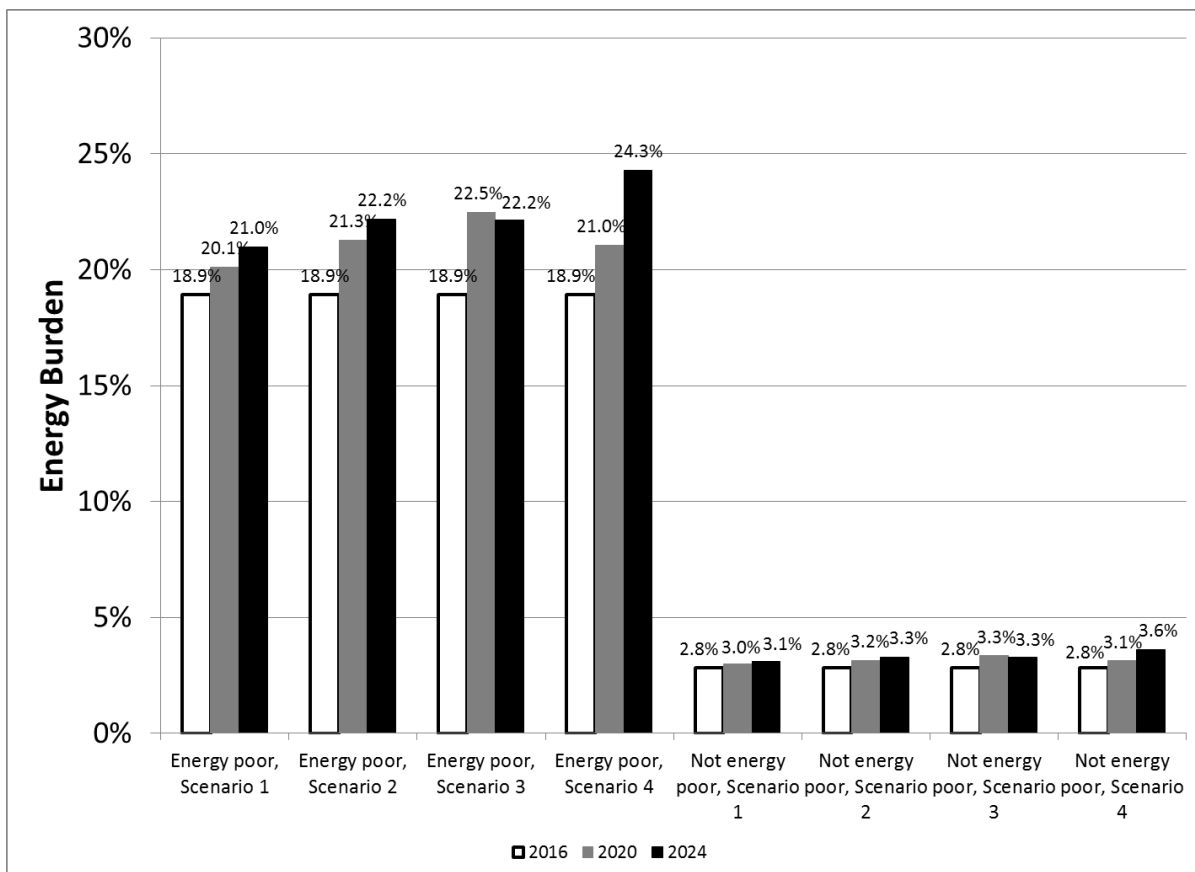


Figure 10: Impact of Manitoba Hydro rate increases on energy burdens experienced by energy poor and non-energy poor households (10% threshold), 2016–24 (n=20)

Source: PRA calculations based on survey of Manitoba Hydro customers

It is important to acknowledge the extent to which the results of the modeling exercise are driven by the assumptions presented at the beginning of this section. Of these, assumptions regarding the regularity and uniformity of growth in household income are perhaps the most critical. The model used as the basis for the above results effectively imposes the assumption that growth in household income will occur at precisely the same rates over time for all Manitobans (i.e., 2.96% annually). In reality, however, the evidence suggests that income growth has historically occurred more quickly among higher-income households (Canada Without Poverty, 2015). Furthermore, changing

economic circumstances could conceivably generate average rates of income growth that are higher or lower than the rates observed for the past five years.

The assumption of regular and uniform income growth across Manitoba Hydro customers is not necessarily innocuous. Table 15, for example, reports the levels of energy poverty associated with utility rate increases under varying assumptions about the rate of household income growth. As shown, if lower-income households encounter lower levels of income growth than has been assumed, the proportion of Manitobans experiencing energy poverty could be significantly higher than depicted in Figure 7, irrespective of the rate increases that are ultimately imposed by Manitoba Hydro.

Table 15: Proportion of LICO-125 households with energy burdens exceeding 6% under varying income growth assumptions (2020)				
Annual income growth	Annual electricity rate increases			
	Scenario 1 (3.95% nominal increases for 12 years)	Scenario 2 (5.95% nominal increases for 6 years)	Scenario 3 (7.95% nominal increases for 4 years)	Scenario 4
3.0%	11.1%	12.0%	13.5%	11.6%
2.5%	11.1%	12.9%	13.7%	12.5%
2.0%	11.4%	13.0%	14.2%	13.0%
1.5%	11.9%	13.2%	14.7%	13.0%
1.0%	12.5%	13.7%	15.2%	13.4%
0.5%	12.9%	14.4%	15.5%	13.7%
0.0%	13.2%	15.0%	15.8%	14.9%
Source: PRA calculations based on survey of Manitoba Hydro customers.				

5.2 Estimated impact of bill affordability options on Manitoba Hydro and its customers

5.2.1 Impact on beneficiaries

Table 23: Impact of affordable rate design options upon the proportion of Manitoba Hydro customers experiencing energy poverty (2020)							
Rate design option		6% threshold			10% threshold		
		Households experiencing energy poverty		% decline relative to no intervention	Households experiencing energy poverty		% decline relative to no intervention
		#	%		#	%	
No intervention		71	11.7%	N/A	22	3.6%	N/A
Straight rate discount	25%	34	5.6%	-52.1%	12	2.0%	-45.5%
	35%	24	4.0%	-66.2%	9	1.5%	-59.1%
	45%	21	3.5%	-70.4%	5	0.8%	-77.3%
Fixed charge waiver		63	10.4%	-11.3%	21	3.5%	-4.5%
Percentage of income payment plan (PIPP)		0	0.0%	-100.0%	0	0.0%	-100.0%
Source: PRA calculations based on survey of Manitoba Hydro customers							

5.2.2 Impact on Manitoba Hydro revenues

Table 24: Estimated total revenue losses associated with energy affordability programs (\$ millions) (2020)				
Rate design option	Threshold	Source of lost revenue		
		Energy sales	Tax revenue*	Total
Straight rate discount (25%)	6%	\$32.8	\$4.7	\$37.5
	10%	\$10.9	\$1.6	\$12.5
Fixed charge waiver	6%	\$13.1	\$1.7	\$14.8
	10%	\$3.6	\$0.5	\$4.1
Percentage of Income Payment Plan (PIPP)	6%	\$45.9	\$6.5	\$52.4
	10%	\$17.2	\$2.5	\$19.7
<p>* This refers to revenues lost as a consequence of reduced revenues from the sale of electricity and natural gas. For electricity, city and provincial taxes are 2.5% and 8.0%, respectively, while for natural gas, these are 2.5% and 1.4%, respectively; 5.0% GST is applied to both electricity and natural gas expenditures, as well as to the city tax (MB Hydro, 2016h).</p> <p>Source: PRA calculations based on survey of Manitoba Hydro customers and MB Hydro (2016d)</p>				

Table 25: Estimated total electricity revenue losses associated with energy affordability programs (\$ millions) (2020)

Rate design option	Threshold	Source of lost revenue		
		Energy sales	Tax revenue*	Total
Straight rate discount (25%)	6%	\$25.6	\$4.0	\$29.6
	10%	\$9.1	\$1.4	\$10.6
Fixed charge waiver	6%	\$7.6	\$1.2	\$8.8
	10%	\$2.3	\$0.4	\$2.7
Percentage of Income Payment Plan (PIPP)	6%	\$36.4	\$5.7	\$42.1
	10%	\$14.1	\$2.2	\$16.3

* This refers to revenues lost as a consequence of reduced revenues from the sale of electricity. City and provincial taxes are 2.5% and 8.0%, respectively; furthermore, 5.0% GST is applied to electricity expenditures, as well as to the city tax (MB Hydro, 2016h).

Source: PRA calculations based on survey of Manitoba Hydro customers and MB Hydro (2016d)

Table 26: Estimated total natural gas revenue losses associated with energy affordability programs (\$ millions) (2020)

Rate design option	Threshold	Source of lost revenue		
		Energy sales	Tax revenue*	Total
Straight rate discount (25%)	6%	\$7.2	\$0.6	\$7.8
	10%	\$1.8	\$0.2	\$2.0
Fixed charge waiver	6%	\$5.5	\$0.5	\$6.0
	10%	\$1.3	\$0.1	\$1.4
Percentage of Income Payment Plan (PIPP)	6%	\$9.5	\$0.9	\$10.3
	10%	\$3.1	\$0.3	\$3.3

* This refers to revenues lost as a consequence of reduced revenues from the sale of natural gas. City and provincial taxes are 2.5% and 1.4%, respectively; furthermore, 5.0% GST is applied to natural gas expenditures, as well as to the city tax (MB Hydro, 2016h).

Source: PRA calculations based on survey of Manitoba Hydro customers and MB Hydro (2016d)

5.2.3 Impact on non-beneficiaries

Table 27: Electricity rate increases required from residential ratepayers to recover revenues lost as a consequence of affordable rate design (per kWh) (2020)

Rate design option	Threshold	Source of lost revenue		
		Energy sales	Tax revenue*	Total
Straight rate discount (25%)	6%	\$0.0042	\$0.0007	\$0.0049
	10%	\$0.0014	\$0.0002	\$0.0016
Fixed charge waiver	6%	\$0.0013	\$0.0002	\$0.0015
	10%	\$0.0004	\$0.0001	\$0.0004
Percentage of Income Payment Plan (PIPP)	6%	\$0.0060	\$0.0009	\$0.0070
	10%	\$0.0022	\$0.0003	\$0.0025
<p>* This refers to revenues lost as a consequence of reduced revenues from the sale of electricity and natural gas. For electricity, city and provincial taxes are 2.5% and 8.0%, respectively, while for natural gas, these are 2.5% and 1.4%, respectively; 5.0% GST is applied to both electricity and natural gas expenditures, as well as to the city tax (MB Hydro, 2016h).</p> <p>Source: PRA calculations based on survey of Manitoba Hydro customers</p>				

Table 28: Natural gas rate increases required from residential ratepayers to recover revenues lost as a consequence of affordable rate design (per m³) (2020)

Rate design option	Threshold	Source of lost revenue		
		Energy sales	Tax revenue*	Total
Straight rate discount (25%)	6%	\$0.0126	\$0.0011	\$0.0137
	10%	\$0.0030	\$0.0003	\$0.0033
Fixed charge waiver	6%	\$0.0096	\$0.0009	\$0.0105
	10%	\$0.0021	\$0.0002	\$0.0023
Percentage of Income Payment Plan (PIPP)	6%	\$0.0166	\$0.0015	\$0.0181
	10%	\$0.0051	\$0.0005	\$0.0055
<p>* This refers to revenues lost as a consequence of reduced revenues from the sale of electricity and natural gas. For electricity, city and provincial taxes are 2.5% and 8.0%, respectively, while for natural gas, these are 2.5% and 1.4%, respectively; 5.0% GST is applied to both electricity and natural gas expenditures, as well as to the city tax (MB Hydro, 2016h).</p> <p>Source: PRA calculations based on survey of Manitoba Hydro customers</p>				

- b) A revised version of Table 1 of AMC/MH I-31a (reflecting the anticipated evolution of the basic charge and including a separate scenario based on Manitoba Hydro's current proposed rate strategy) is presented in Table 2 below:

Table 2: Characteristics of the rate structure used as the basis for the modelling exercise, including sample calculation (all monetary amounts expressed in inflation-adjusted terms)				
Rate component	Scenario	Interval	2016	2026
Basic charge (≤ 200 Amp)	3.95% increases, 12 years	Monthly	\$7.82	\$9.70
	5.95% increases, 6 years	Monthly	\$7.82	\$10.08
	7.95% increases, 4 years	Monthly	\$7.82	\$10.07
	Scenario 4	Monthly	\$7.82	\$11.58
Energy charge (\$/kWh)s	3.95% increases, 12 years	N/A	\$0.0793	\$0.0983
	5.95% increases, 6 years	N/A	\$0.0793	\$0.1023
	7.95% increases, 4 years	N/A	\$0.0793	\$0.1021
	Scenario 4	N/A	\$0.0793	\$0.1175
<p><i>Illustration of annual electricity bill calculation in the simulation model, assuming consumption of 11,830 kWh (i.e., the household survey average):</i></p> <p>Electricity Bill (2016, any scenario) = (Basic Charge + Energy Charge) x Taxes = (12 x \$7.82 + 11,830 kWh x \$0.0983 / kWh = (\$93.84 + \$938.12) x 1.1563 = (\$1,031.96) x 1.1563 = \$1,193.26 [basic charge accounts for 9.1% of total bill]</p> <p>Electricity Bill (2026, 5.95% increases for 6 years) = (Basic Charge + Energy Charge) x Taxes = (12 x \$10.08 + 11,830 kWh x \$0.1023 / kWh = (\$120.96 + \$1,209.66) x 1.1563 = (\$1,330.62) x 1.1563 = \$1,538.60 [basic charge accounts for 9.1% of total bill]</p>				

- c) A revised version of Table 25 in PRA's original report, reflecting the anticipated evolution of the basic charge and incorporating the fourth scenario, is presented in Table 3 below. We note that Table 25 reflected total electricity revenue losses in 2016; since simulated rate increases took effect beginning in the following year (i.e., starting in 2017), and since Table 5 of AMC/MH I-43 studied electricity rate increases required from residential ratepayers to recover revenues lost as a consequence of affordable rate design in 2020, we use the same year as the basis for Table 3:

Table 3: Estimated total electricity revenue losses associated with energy affordability programs in 2020 (\$ millions)

Rate design option	Threshold	Source of lost revenue		
		Energy sales	Tax revenue*	Total
Scenario 1: 3.95% nominal rate increases for 12 years				
Straight rate discount (25%)	6%	\$22.6	\$3.5	\$26.1
	10%	\$8.4	\$1.3	\$9.7
Fixed charge waiver	6%	\$6.8	\$1.1	\$7.8
	10%	\$2.1	\$0.3	\$2.4
Percentage of Income Payment Plan (PIPP)	6%	\$30.3	\$4.7	\$35.0
	10%	\$11.7	\$1.8	\$13.5
Scenario 2: 5.95% nominal rate increases for 6 years				
Straight rate discount (25%)	6%	\$27.0	\$4.2	\$31.2
	10%	\$9.3	\$1.4	\$10.7
Fixed charge waiver	6%	\$8.1	\$1.3	\$9.3
	10%	\$2.3	\$0.4	\$2.7
Percentage of Income Payment Plan (PIPP)	6%	\$38.0	\$5.9	\$43.9
	10%	\$14.7	\$2.3	\$17.1
Scenario 3: 7.95% nominal rate increases for 4 years				
Straight rate discount (25%)	6%	\$32.0	\$5.0	\$37.0
	10%	\$10.6	\$1.7	\$12.3
Fixed charge waiver	6%	\$9.7	\$1.5	\$11.2
	10%	\$2.7	\$0.4	\$3.2
Percentage of Income Payment Plan (PIPP)	6%	\$47.3	\$7.4	\$54.7
	10%	\$18.3	\$2.9	\$21.2
Scenario 4				
Straight rate discount (25%)	6%	\$25.6	\$4.0	\$29.6
	10%	\$9.1	\$1.4	\$10.6
Fixed charge waiver	6%	\$7.6	\$1.2	\$8.8
	10%	\$2.3	\$0.4	\$2.7
Percentage of Income Payment Plan (PIPP)	6%	\$36.4	\$5.7	\$42.1
	10%	\$14.1	\$2.2	\$16.3
* This refers to revenues lost as a consequence of reduced revenues from the sale of electricity. City and provincial taxes are 2.5% and 8.0%, respectively; furthermore, 5.0% GST is applied to electricity expenditures, as well as to the city tax. Source: PRA calculations based on survey of Manitoba Hydro customers (N=606) and the Residential Energy Use Survey 2014. ²				

Analogously, Table 4 below updates Table 5 of AMC/MH I-43, again reflecting the anticipated evolution of the basic charge and incorporating the fourth scenario:

² MB Hydro. (2016, May 6). Residential Energy Use Survey 2014.

Table 4: Electricity rate increases required from residential ratepayers to recover revenues lost as a consequence of affordable rate design in 2020 (per kWh)				
Rate design option	Threshold	Source of lost revenue		
		Energy sales	Tax revenue*	Total
Scenario 1: 3.95% nominal rate increases for 12 years				
Straight rate discount (25%)	6%	\$0.0037	\$0.0006	\$0.0043
	10%	\$0.0013	\$0.0002	\$0.0015
Fixed charge waiver	6%	\$0.0011	\$0.0002	\$0.0013
	10%	\$0.0003	\$0.0000	\$0.0004
Percentage of Income Payment Plan (PIPP)	6%	\$0.0049	\$0.0008	\$0.0057
	10%	\$0.0018	\$0.0003	\$0.0021
Scenario 2: 5.95% nominal rate increases for 6 years				
Straight rate discount (25%)	6%	\$0.0045	\$0.0007	\$0.0052
	10%	\$0.0014	\$0.0002	\$0.0016
Fixed charge waiver	6%	\$0.0013	\$0.0002	\$0.0016
	10%	\$0.0004	\$0.0001	\$0.0004
Percentage of Income Payment Plan (PIPP)	6%	\$0.0063	\$0.0010	\$0.0073
	10%	\$0.0023	\$0.0004	\$0.0026
Scenario 3: 7.95% nominal rate increases for 4 years				
Straight rate discount (25%)	6%	\$0.0054	\$0.0008	\$0.0063
	10%	\$0.0016	\$0.0003	\$0.0019
Fixed charge waiver	6%	\$0.0016	\$0.0003	\$0.0019
	10%	\$0.0004	\$0.0001	\$0.0005
Percentage of Income Payment Plan (PIPP)	6%	\$0.0080	\$0.0013	\$0.0093
	10%	\$0.0028	\$0.0004	\$0.0033
Scenario 4				
Straight rate discount (25%)	6%	\$0.0042	\$0.0007	\$0.0049
	10%	\$0.0014	\$0.0002	\$0.0016
Fixed charge waiver	6%	\$0.0013	\$0.0002	\$0.0015
	10%	\$0.0004	\$0.0001	\$0.0004
Percentage of Income Payment Plan (PIPP)	6%	\$0.0060	\$0.0009	\$0.0070
	10%	\$0.0022	\$0.0003	\$0.0025
* This refers to revenues lost as a consequence of reduced revenues from the sale of electricity and natural gas. For electricity, city and provincial taxes are 2.5% and 8.0%, respectively, while for natural gas, these are 2.5% and 1.4%, respectively; 5.0% GST is applied to both electricity and natural gas expenditures, as well as to the city tax.				
Source: PRA calculations based on survey of Manitoba Hydro customers (N=606)				

REFERENCE:

AMC/MH I-32, Pages 1 of 1

PREAMBLE TO IR (IF ANY):

The question asked Manitoba Hydro's views concerning the reasonableness of the assumption that household incomes on First Nations reserves will grow at a rate of 2.96%/year through 2036.

Manitoba Hydro referred the question to PRA. However, PRA cannot speak for Manitoba Hydro.

QUESTION:

Please respond to the question posed in AMC/MH I-32, namely:

Does Manitoba Hydro consider it reasonable to assume that household incomes on First Nations reserves will grow at a rate of 2.96%/year through 2036? If not, please elaborate on the significance of the results of this modelling exercise.

RATIONALE FOR QUESTION:**RESPONSE:**

Manitoba Hydro is unable to comment on the reasonableness of projected income growth on First Nations reserves as it has not undertaken any analysis to this effect nor does it possess any income growth information specific to First Nations reserves. Manitoba Hydro, along with other Bill Affordability collaborative members, relied on PRA's expertise and research methods to use the best available data for the modeling exercise.

REFERENCE:

AMC/MH I-33a-b, Pages 1 of 2

PREAMBLE TO IR (IF ANY):

AMC acknowledges the privacy concerns described by PRA. It is not seeking the raw household-level data, but rather the aggregate values and calculations that were used to produce the charts found in Figures 7 and 8.

QUESTION:

Please provide Excel spreadsheets, including formulas, of the calculations used to produce the figures presented in these graphs. For cells where the formulas refer directly to raw household-level data, it is acceptable to provide the calculated amount rather than the formula.

RATIONALE FOR QUESTION:**RESPONSE:**

The Excel file in response to this question has separately been provided to the PUB and Registered Interveners.

The following response was prepared by Prairie Research Associates:

As requested, we have provided the aggregate counts and proportions used to prepare the figures as an Excel workbook. All proportions represented in the two figures can be calculated by dividing the aggregate household counts for each year, threshold, and rate increase scenario by the number of households in the subset of the survey sample used as the basis for the simulation modeling (N = 606).

REFERENCE:

AMC/MH I-34a-b, Pages 1 of 2

PREAMBLE TO IR (IF ANY):

AMC acknowledges the privacy concerns described by PRA. It is not seeking the raw household-level data, but rather the aggregate values and calculations that were used to produce the charts found in Figures 9 and 10.

QUESTION:

Please provide Excel spreadsheets, including formulas, of the calculations used to produce the figures presented in these graphs. For cells where the formulas refer directly to raw household-level data, it is acceptable to provide the calculated amount rather than the formula.

RATIONALE FOR QUESTION:**RESPONSE:**

The Excel file in response to this question has separately been provided to the PUB and Registered Interveners.

The following response was prepared by Prairie Research Associates:

As requested, we have provided the aggregate data used to prepare the figures as an Excel workbook. This data in fact extends the information presented in the original figures by covering the entire 2016-2036 simulation horizon. The data series represented in Figures 9 and 10, and included in the accompanying Excel workbook, were derived by separately averaging the energy burden experienced by energy poor and non-energy poor households across the three rate increase scenarios (a household was defined as energy poor in any given simulation year if the energy burden projected for that year was determined to

exceed pre-defined thresholds [i.e., 6% or 10%], and *also* if the household had a level of self-reported pre-tax income lower than the current LICO-125 in 2016).

It should be further noted that the number of energy poor households to which the averages apply can be determined with reference to the aggregate counts for the corresponding year, threshold, and rate increase scenario in the separate Excel workbook provided as part of PRA's response to AMC II-25; similarly, the number of non-energy poor households to which the averages apply can be determined by subtracting the number of energy poor households from the number of households in the subset of the survey sample used as the basis for the simulation modeling (N = 606).

REFERENCE:

AMC/MH I-35, Pages 3 of 3

PREAMBLE TO IR (IF ANY):

Figure 1 illustrates impacts on energy poverty based on the requested assumptions, for a 6% threshold.

QUESTION:

Please update Figure 1 to take into account the application of the rate increases to the fixed charge, and add a fourth line to represent the current rate proposal following Order 79/15.

RATIONALE FOR QUESTION:**RESPONSE:**

The following response was prepared by Prairie Research Associates:

The updated figure is presented below; as requested, it extends rate increases in all scenarios to include basic charges, and incorporates a new data series to represent the current rate proposal following Order 79/15 (please refer to PRA's response to AMC/MH II-23a-c for details regarding this scenario).

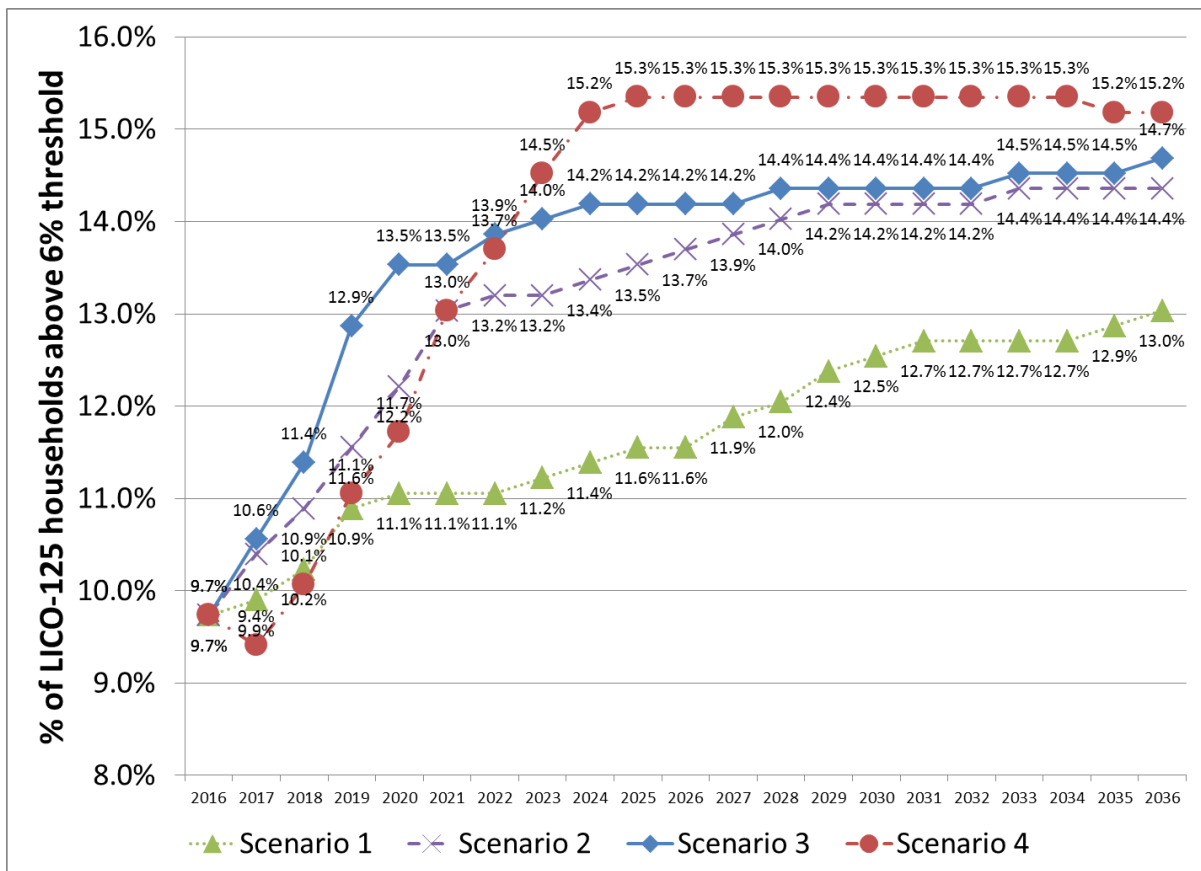


Figure 1: Impact of Manitoba Hydro rate increases on proportion of LICO-125 households above 6% energy poverty threshold, 2016–36, inclusive (3.78% trailing-year increases, 2.96% nominal increases in household income)

Source: PRA calculations based on survey of Manitoba Hydro customers (N=606)

Note: *Scenario 1*—3.95% nominal electricity rate increases for 12 years; *Scenario 2*—5.95% nominal electricity rate increases for 6 years; *Scenario 3*—7.95% nominal electricity rate increases for 4 years; *Scenario 4*—3.36% nominal electricity rate increase in 2017, followed by 7.9% rate increases for 6 years and a 4.54% rate increase for 1 year (assumed to come into effect on August 1st of each calendar year)

REFERENCE:

AMC/MH I-36c, Pages 3 to 14 of 14

PREAMBLE TO IR (IF ANY):

Tables 1 and 2 illustrate impacts on energy poverty based on the requested assumptions.

QUESTION:

Please update Tables 1 and 2 to take into account the application of the rate increases to the fixed charge, and add a fourth scenario to represent the current rate proposal following Order 79/15.

RATIONALE FOR QUESTION:**RESPONSE:**

The following response was prepared by Prairie Research Associates:

Updated versions of Tables 1 and 2 from AMC/MH I-36c appear as Tables **1** and **2** below; as requested, the results in both tables extend rate increases in all scenarios to include basic charges, and incorporates a new data series to represent the current rate proposal following Order 79/15 (please refer to PRA's response to AMC/MH II-23a-c for details regarding this scenario):

Table 1: Proportion of households with income below LICO-125 threshold and energy burdens exceeding 6% and 10%, under varying assumptions around immediate and longer-term electricity rate increases and household income growth—2% trailing-year increases (N=606)

Annual nominal income growth	6% energy poverty threshold								10% energy poverty threshold							
	S1 3.95%, 12 years		S2 5.95%, 6 years		S3 7.95%, 4 years		Scenario 4		S1 3.95%, 12 years		S2 5.95%, 6 years		S3 7.95%, 4 years		Scenario 4	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
2016																
3.00%	59	9.7%	59	9.7%	59	9.7%	59	9.7%	20	3.3%	20	3.3%	20	3.3%	20	3.3%
2.96%	59	9.7%	59	9.7%	59	9.7%	59	9.7%	20	3.3%	20	3.3%	20	3.3%	20	3.3%
2.50%	59	9.7%	59	9.7%	59	9.7%	59	9.7%	20	3.3%	20	3.3%	20	3.3%	20	3.3%
2.00%	59	9.7%	59	9.7%	59	9.7%	59	9.7%	20	3.3%	20	3.3%	20	3.3%	20	3.3%
1.50%	59	9.7%	59	9.7%	59	9.7%	59	9.7%	20	3.3%	20	3.3%	20	3.3%	20	3.3%
1.00%	59	9.7%	59	9.7%	59	9.7%	59	9.7%	20	3.3%	20	3.3%	20	3.3%	20	3.3%
0.50%	59	9.7%	59	9.7%	59	9.7%	59	9.7%	20	3.3%	20	3.3%	20	3.3%	20	3.3%
0.00%	59	9.7%	59	9.7%	59	9.7%	59	9.7%	20	3.3%	20	3.3%	20	3.3%	20	3.3%
2017																
3.00%	60	9.9%	62	10.2%	64	10.6%	57	9.4%	20	3.3%	21	3.5%	21	3.5%	20	3.3%
2.96%	60	9.9%	63	10.4%	64	10.6%	57	9.4%	20	3.3%	21	3.5%	21	3.5%	20	3.3%
2.50%	60	9.9%	64	10.6%	65	10.7%	59	9.7%	21	3.5%	21	3.5%	21	3.5%	20	3.3%
2.00%	62	10.2%	64	10.6%	65	10.7%	59	9.7%	21	3.5%	21	3.5%	21	3.5%	20	3.3%
1.50%	62	10.2%	65	10.7%	65	10.7%	59	9.7%	21	3.5%	21	3.5%	21	3.5%	20	3.3%
1.00%	64	10.6%	65	10.7%	67	11.1%	60	9.9%	21	3.5%	21	3.5%	21	3.5%	20	3.3%
0.50%	65	10.7%	65	10.7%	68	11.2%	62	10.2%	21	3.5%	21	3.5%	21	3.5%	20	3.3%
0.00%	65	10.7%	66	10.9%	68	11.2%	62	10.2%	21	3.5%	21	3.5%	21	3.5%	21	3.5%
2018																
3.00%	62	10.2%	66	10.9%	69	11.4%	61	10.1%	21	3.5%	21	3.5%	22	3.6%	20	3.3%
2.96%	62	10.2%	66	10.9%	69	11.4%	61	10.1%	21	3.5%	21	3.5%	22	3.6%	20	3.3%
2.50%	64	10.6%	67	11.1%	72	11.9%	63	10.4%	21	3.5%	21	3.5%	22	3.6%	21	3.5%
2.00%	66	10.9%	69	11.4%	73	12.0%	64	10.6%	21	3.5%	21	3.5%	22	3.6%	21	3.5%
1.50%	66	10.9%	70	11.6%	75	12.4%	66	10.9%	21	3.5%	22	3.6%	22	3.6%	21	3.5%
1.00%	67	11.1%	70	11.6%	77	12.7%	66	10.9%	21	3.5%	22	3.6%	22	3.6%	21	3.5%
0.50%	68	11.2%	72	11.9%	79	13.0%	67	11.1%	21	3.5%	22	3.6%	22	3.6%	21	3.5%
0.00%	69	11.4%	74	12.2%	79	13.0%	67	11.1%	21	3.5%	22	3.6%	22	3.6%	21	3.5%
2019																
3.00%	64	10.6%	70	11.6%	78	12.9%	67	11.1%	21	3.5%	22	3.6%	22	3.6%	21	3.5%
2.96%	66	10.9%	70	11.6%	78	12.9%	67	11.1%	21	3.5%	22	3.6%	22	3.6%	21	3.5%
2.50%	67	11.1%	71	11.7%	79	13.0%	68	11.2%	21	3.5%	22	3.6%	22	3.6%	21	3.5%
2.00%	67	11.1%	73	12.0%	79	13.0%	70	11.6%	21	3.5%	22	3.6%	23	3.8%	22	3.6%
1.50%	69	11.4%	77	12.7%	80	13.2%	70	11.6%	21	3.5%	22	3.6%	24	4.0%	22	3.6%
1.00%	70	11.6%	79	13.0%	82	13.5%	74	12.2%	22	3.6%	23	3.8%	24	4.0%	22	3.6%
0.50%	74	12.2%	79	13.0%	84	13.9%	77	12.7%	22	3.6%	24	4.0%	27	4.5%	23	3.8%
0.00%	76	12.5%	80	13.2%	87	14.4%	79	13.0%	23	3.8%	24	4.0%	28	4.6%	24	4.0%
2020																
3.00%	67	11.1%	73	12.0%	82	13.5%	70	11.6%	21	3.5%	22	3.6%	24	4.0%	22	3.6%
2.96%	67	11.1%	74	12.2%	82	13.5%	71	11.7%	21	3.5%	22	3.6%	24	4.0%	22	3.6%
2.50%	67	11.1%	78	12.9%	83	13.7%	76	12.5%	21	3.5%	22	3.6%	24	4.0%	22	3.6%
2.00%	69	11.4%	79	13.0%	86	14.2%	79	13.0%	21	3.5%	24	4.0%	27	4.5%	24	4.0%
1.50%	72	11.9%	80	13.2%	89	14.7%	79	13.0%	22	3.6%	24	4.0%	28	4.6%	24	4.0%
1.00%	76	12.5%	83	13.7%	92	15.2%	81	13.4%	24	4.0%	24	4.0%	31	5.1%	24	4.0%
0.50%	78	12.9%	87	14.4%	94	15.5%	83	13.7%	24	4.0%	24	4.0%	33	5.4%	24	4.0%

Table 1: Proportion of households with income below LICO-125 threshold and energy burdens exceeding 6% and 10%, under varying assumptions around immediate and longer-term electricity rate increases and household income growth—2% trailing-year increases (N=606)

Annual nominal income growth	6% energy poverty threshold								10% energy poverty threshold							
	S1 3.95%, 12 years		S2 5.95%, 6 years		S3 7.95%, 4 years		Scenario 4		S1 3.95%, 12 years		S2 5.95%, 6 years		S3 7.95%, 4 years		Scenario 4	
0.00%	80	13.2%	91	15.0%	96	15.8%	90	14.9%	24	4.0%	28	4.6%	34	5.6%	27	4.5%
2021																
3.00%	67	11.1%	79	13.0%	80	13.2%	79	13.0%	21	3.5%	24	4.0%	24	4.0%	24	4.0%
2.96%	67	11.1%	79	13.0%	80	13.2%	79	13.0%	21	3.5%	24	4.0%	24	4.0%	24	4.0%
2.50%	69	11.4%	79	13.0%	84	13.9%	79	13.0%	21	3.5%	24	4.0%	24	4.0%	24	4.0%
2.00%	72	11.9%	83	13.7%	90	14.9%	83	13.7%	24	4.0%	24	4.0%	27	4.5%	24	4.0%
1.50%	77	12.7%	88	14.5%	91	15.0%	89	14.7%	24	4.0%	27	4.5%	31	5.1%	27	4.5%
1.00%	80	13.2%	91	15.0%	94	15.5%	91	15.0%	24	4.0%	31	5.1%	32	5.3%	31	5.1%
0.50%	82	13.5%	95	15.7%	96	15.8%	95	15.7%	24	4.0%	32	5.3%	34	5.6%	32	5.3%
0.00%	87	14.4%	96	15.8%	98	16.2%	96	15.8%	26	4.3%	33	5.4%	36	5.9%	34	5.6%
2022																
3.00%	67	11.1%	79	13.0%	79	13.0%	83	13.7%	21	3.5%	24	4.0%	24	4.0%	24	4.0%
2.96%	67	11.1%	80	13.2%	79	13.0%	83	13.7%	21	3.5%	24	4.0%	24	4.0%	24	4.0%
2.50%	72	11.9%	83	13.7%	83	13.7%	89	14.7%	24	4.0%	24	4.0%	24	4.0%	27	4.5%
2.00%	76	12.5%	91	15.0%	91	15.0%	91	15.0%	24	4.0%	29	4.8%	29	4.8%	31	5.1%
1.50%	81	13.4%	94	15.5%	94	15.5%	95	15.7%	24	4.0%	32	5.3%	32	5.3%	32	5.3%
1.00%	84	13.9%	96	15.8%	95	15.7%	98	16.2%	25	4.1%	33	5.4%	33	5.4%	34	5.6%
0.50%	90	14.9%	98	16.2%	98	16.2%	100	16.5%	27	4.5%	34	5.6%	34	5.6%	37	6.1%
0.00%	96	15.8%	103	17.0%	103	17.0%	103	17.0%	31	5.1%	39	6.4%	39	6.4%	41	6.8%
2023																
3.00%	67	11.1%	79	13.0%	79	13.0%	87	14.4%	21	3.5%	24	4.0%	24	4.0%	28	4.6%
2.96%	68	11.2%	79	13.0%	79	13.0%	88	14.5%	21	3.5%	24	4.0%	24	4.0%	28	4.6%
2.50%	72	11.9%	83	13.7%	83	13.7%	92	15.2%	24	4.0%	24	4.0%	24	4.0%	31	5.1%
2.00%	79	13.0%	91	15.0%	91	15.0%	96	15.8%	24	4.0%	28	4.6%	28	4.6%	34	5.6%
1.50%	82	13.5%	94	15.5%	94	15.5%	98	16.2%	24	4.0%	32	5.3%	32	5.3%	36	5.9%
1.00%	89	14.7%	97	16.0%	97	16.0%	101	16.7%	27	4.5%	34	5.6%	34	5.6%	38	6.3%
0.50%	95	15.7%	101	16.7%	101	16.7%	104	17.2%	31	5.1%	37	6.1%	37	6.1%	43	7.1%
0.00%	97	16.0%	103	17.0%	103	17.0%	105	17.3%	33	5.4%	41	6.8%	41	6.8%	50	8.3%
2024																
3.00%	69	11.4%	79	13.0%	79	13.0%	92	15.2%	21	3.5%	24	4.0%	24	4.0%	29	4.8%
2.96%	69	11.4%	79	13.0%	79	13.0%	92	15.2%	21	3.5%	24	4.0%	24	4.0%	29	4.8%
2.50%	75	12.4%	83	13.7%	83	13.7%	96	15.8%	24	4.0%	24	4.0%	24	4.0%	34	5.6%
2.00%	80	13.2%	91	15.0%	91	15.0%	97	16.0%	24	4.0%	28	4.6%	28	4.6%	36	5.9%
1.50%	86	14.2%	95	15.7%	95	15.7%	101	16.7%	25	4.1%	32	5.3%	32	5.3%	39	6.4%
1.00%	93	15.3%	97	16.0%	97	16.0%	103	17.0%	31	5.1%	34	5.6%	34	5.6%	45	7.4%
0.50%	97	16.0%	103	17.0%	103	17.0%	105	17.3%	32	5.3%	37	6.1%	37	6.1%	51	8.4%
0.00%	101	16.7%	104	17.2%	104	17.2%	106	17.5%	38	6.3%	44	7.3%	44	7.3%	59	9.7%
2025																
3.00%	70	11.6%	79	13.0%	79	13.0%	91	15.0%	22	3.6%	24	4.0%	24	4.0%	29	4.8%
2.96%	70	11.6%	79	13.0%	79	13.0%	92	15.2%	22	3.6%	24	4.0%	24	4.0%	29	4.8%
2.50%	77	12.7%	81	13.4%	81	13.4%	97	16.0%	24	4.0%	24	4.0%	24	4.0%	34	5.6%
2.00%	81	13.4%	91	15.0%	91	15.0%	97	16.0%	24	4.0%	28	4.6%	28	4.6%	37	6.1%
1.50%	89	14.7%	95	15.7%	95	15.7%	102	16.8%	30	5.0%	32	5.3%	32	5.3%	40	6.6%
1.00%	95	15.7%	98	16.2%	98	16.2%	104	17.2%	32	5.3%	34	5.6%	34	5.6%	48	7.9%
0.50%	100	16.5%	103	17.0%	103	17.0%	106	17.5%	35	5.8%	41	6.8%	41	6.8%	58	9.6%

Table 1: Proportion of households with income below LICO-125 threshold and energy burdens exceeding 6% and 10%, under varying assumptions around immediate and longer-term electricity rate increases and household income growth—2% trailing-year increases (N=606)

Annual nominal income growth	6% energy poverty threshold								10% energy poverty threshold							
	S1 3.95%, 12 years		S2 5.95%, 6 years		S3 7.95%, 4 years		Scenario 4		S1 3.95%, 12 years		S2 5.95%, 6 years		S3 7.95%, 4 years		Scenario 4	
0.00%	104	17.2%	104	17.2%	104	17.2%	111	18.3%	40	6.6%	44	7.3%	44	7.3%	66	10.9%
2026																
3.00%	70	11.6%	78	12.9%	77	12.7%	90	14.9%	22	3.6%	22	3.6%	22	3.6%	29	4.8%
2.96%	70	11.6%	78	12.9%	78	12.9%	90	14.9%	22	3.6%	22	3.6%	22	3.6%	29	4.8%
2.50%	79	13.0%	80	13.2%	80	13.2%	95	15.7%	24	4.0%	24	4.0%	24	4.0%	34	5.6%
2.00%	83	13.7%	91	15.0%	91	15.0%	97	16.0%	24	4.0%	28	4.6%	28	4.6%	37	6.1%
1.50%	93	15.3%	95	15.7%	95	15.7%	102	16.8%	31	5.1%	32	5.3%	32	5.3%	40	6.6%
1.00%	97	16.0%	99	16.3%	98	16.2%	104	17.2%	33	5.4%	37	6.1%	37	6.1%	51	8.4%
0.50%	103	17.0%	104	17.2%	104	17.2%	107	17.7%	40	6.6%	41	6.8%	41	6.8%	60	9.9%
0.00%	104	17.2%	105	17.3%	105	17.3%	114	18.8%	44	7.3%	49	8.1%	49	8.1%	69	11.4%
2027																
3.00%	72	11.9%	76	12.5%	76	12.5%	87	14.4%	22	3.6%	22	3.6%	22	3.6%	29	4.8%
2.96%	72	11.9%	76	12.5%	76	12.5%	87	14.4%	22	3.6%	22	3.6%	22	3.6%	29	4.8%
2.50%	79	13.0%	80	13.2%	80	13.2%	94	15.5%	24	4.0%	24	4.0%	24	4.0%	34	5.6%
2.00%	86	14.2%	91	15.0%	91	15.0%	97	16.0%	24	4.0%	28	4.6%	28	4.6%	37	6.1%
1.50%	95	15.7%	95	15.7%	95	15.7%	102	16.8%	32	5.3%	33	5.4%	32	5.3%	40	6.6%
1.00%	98	16.2%	101	16.7%	101	16.7%	105	17.3%	35	5.8%	37	6.1%	37	6.1%	52	8.6%
0.50%	104	17.2%	104	17.2%	104	17.2%	110	18.2%	41	6.8%	44	7.3%	44	7.3%	61	10.1%
0.00%	105	17.3%	105	17.3%	105	17.3%	116	19.1%	50	8.3%	54	8.9%	54	8.9%	72	11.9%
2028																
3.00%	72	11.9%	72	11.9%	72	11.9%	86	14.2%	22	3.6%	22	3.6%	22	3.6%	28	4.6%
2.96%	73	12.0%	74	12.2%	73	12.0%	86	14.2%	22	3.6%	22	3.6%	22	3.6%	28	4.6%
2.50%	79	13.0%	79	13.0%	79	13.0%	93	15.3%	24	4.0%	24	4.0%	24	4.0%	33	5.4%
2.00%	91	15.0%	91	15.0%	90	14.9%	97	16.0%	28	4.6%	28	4.6%	28	4.6%	37	6.1%
1.50%	96	15.8%	96	15.8%	95	15.7%	103	17.0%	33	5.4%	33	5.4%	33	5.4%	43	7.1%
1.00%	102	16.8%	102	16.8%	102	16.8%	105	17.3%	37	6.1%	37	6.1%	37	6.1%	55	9.1%
0.50%	104	17.2%	104	17.2%	104	17.2%	111	18.3%	44	7.3%	44	7.3%	44	7.3%	66	10.9%
0.00%	106	17.5%	106	17.5%	106	17.5%	116	19.1%	56	9.2%	56	9.2%	56	9.2%	76	12.5%
2029																
3.00%	71	11.7%	72	11.9%	71	11.7%	86	14.2%	22	3.6%	22	3.6%	22	3.6%	27	4.5%
2.96%	72	11.9%	72	11.9%	72	11.9%	86	14.2%	22	3.6%	22	3.6%	22	3.6%	27	4.5%
2.50%	79	13.0%	79	13.0%	79	13.0%	93	15.3%	24	4.0%	24	4.0%	24	4.0%	33	5.4%
2.00%	90	14.9%	90	14.9%	90	14.9%	97	16.0%	28	4.6%	28	4.6%	28	4.6%	37	6.1%
1.50%	96	15.8%	96	15.8%	96	15.8%	103	17.0%	34	5.6%	34	5.6%	34	5.6%	43	7.1%
1.00%	103	17.0%	103	17.0%	103	17.0%	105	17.3%	39	6.4%	39	6.4%	39	6.4%	57	9.4%
0.50%	105	17.3%	105	17.3%	105	17.3%	112	18.5%	47	7.8%	47	7.8%	47	7.8%	67	11.1%
0.00%	108	17.8%	108	17.8%	108	17.8%	117	19.3%	60	9.9%	60	9.9%	59	9.7%	83	13.7%
2030																
3.00%	70	11.6%	70	11.6%	70	11.6%	86	14.2%	22	3.6%	22	3.6%	22	3.6%	27	4.5%
2.96%	70	11.6%	70	11.6%	70	11.6%	86	14.2%	22	3.6%	22	3.6%	22	3.6%	27	4.5%
2.50%	79	13.0%	79	13.0%	79	13.0%	93	15.3%	24	4.0%	24	4.0%	24	4.0%	33	5.4%
2.00%	90	14.9%	90	14.9%	90	14.9%	97	16.0%	28	4.6%	28	4.6%	28	4.6%	37	6.1%
1.50%	96	15.8%	96	15.8%	96	15.8%	103	17.0%	34	5.6%	34	5.6%	34	5.6%	45	7.4%
1.00%	103	17.0%	103	17.0%	103	17.0%	106	17.5%	41	6.8%	41	6.8%	41	6.8%	58	9.6%
0.50%	105	17.3%	105	17.3%	105	17.3%	115	19.0%	52	8.6%	52	8.6%	52	8.6%	71	11.7%

Table 1: Proportion of households with income below LICO-125 threshold and energy burdens exceeding 6% and 10%, under varying assumptions around immediate and longer-term electricity rate increases and household income growth—2% trailing-year increases (N=606)

Annual nominal income growth	6% energy poverty threshold								10% energy poverty threshold							
	S1 3.95%, 12 years		S2 5.95%, 6 years		S3 7.95%, 4 years		Scenario 4		S1 3.95%, 12 years		S2 5.95%, 6 years		S3 7.95%, 4 years		Scenario 4	
0.00%	108	17.8%	108	17.8%	108	17.8%	120	19.8%	64	10.6%	64	10.6%	64	10.6%	87	14.4%
2031																
3.00%	70	11.6%	70	11.6%	70	11.6%	85	14.0%	22	3.6%	22	3.6%	22	3.6%	27	4.5%
2.96%	70	11.6%	70	11.6%	70	11.6%	85	14.0%	22	3.6%	22	3.6%	22	3.6%	27	4.5%
2.50%	79	13.0%	79	13.0%	79	13.0%	93	15.3%	24	4.0%	24	4.0%	24	4.0%	32	5.3%
2.00%	90	14.9%	90	14.9%	90	14.9%	97	16.0%	28	4.6%	28	4.6%	28	4.6%	37	6.1%
1.50%	97	16.0%	97	16.0%	97	16.0%	103	17.0%	34	5.6%	34	5.6%	34	5.6%	47	7.8%
1.00%	104	17.2%	104	17.2%	104	17.2%	107	17.7%	41	6.8%	41	6.8%	41	6.8%	59	9.7%
0.50%	106	17.5%	106	17.5%	106	17.5%	116	19.1%	54	8.9%	54	8.9%	54	8.9%	72	11.9%
0.00%	113	18.6%	113	18.6%	113	18.6%	121	20.0%	67	11.1%	67	11.1%	67	11.1%	89	14.7%
2032																
3.00%	69	11.4%	69	11.4%	69	11.4%	83	13.7%	21	3.5%	21	3.5%	21	3.5%	24	4.0%
2.96%	69	11.4%	69	11.4%	69	11.4%	84	13.9%	21	3.5%	21	3.5%	21	3.5%	27	4.5%
2.50%	79	13.0%	79	13.0%	79	13.0%	91	15.0%	24	4.0%	24	4.0%	24	4.0%	30	5.0%
2.00%	90	14.9%	90	14.9%	90	14.9%	97	16.0%	28	4.6%	28	4.6%	28	4.6%	37	6.1%
1.50%	97	16.0%	97	16.0%	97	16.0%	103	17.0%	34	5.6%	34	5.6%	34	5.6%	47	7.8%
1.00%	104	17.2%	104	17.2%	104	17.2%	109	18.0%	42	6.9%	42	6.9%	42	6.9%	61	10.1%
0.50%	106	17.5%	106	17.5%	106	17.5%	116	19.1%	55	9.1%	55	9.1%	55	9.1%	76	12.5%
0.00%	113	18.6%	113	18.6%	113	18.6%	122	20.1%	71	11.7%	71	11.7%	71	11.7%	94	15.5%
2033																
3.00%	66	10.9%	66	10.9%	66	10.9%	82	13.5%	21	3.5%	21	3.5%	21	3.5%	23	3.8%
2.96%	67	11.1%	68	11.2%	67	11.1%	83	13.7%	21	3.5%	21	3.5%	21	3.5%	23	3.8%
2.50%	79	13.0%	79	13.0%	79	13.0%	91	15.0%	24	4.0%	24	4.0%	24	4.0%	29	4.8%
2.00%	90	14.9%	90	14.9%	90	14.9%	97	16.0%	28	4.6%	28	4.6%	28	4.6%	37	6.1%
1.50%	98	16.2%	98	16.2%	98	16.2%	103	17.0%	34	5.6%	34	5.6%	34	5.6%	47	7.8%
1.00%	104	17.2%	104	17.2%	104	17.2%	110	18.2%	44	7.3%	44	7.3%	44	7.3%	63	10.4%
0.50%	108	17.8%	108	17.8%	108	17.8%	116	19.1%	58	9.6%	58	9.6%	58	9.6%	80	13.2%
0.00%	117	19.3%	117	19.3%	117	19.3%	122	20.1%	73	12.0%	73	12.0%	73	12.0%	97	16.0%
2034																
3.00%	66	10.9%	66	10.9%	66	10.9%	82	13.5%	21	3.5%	21	3.5%	21	3.5%	22	3.6%
2.96%	66	10.9%	66	10.9%	66	10.9%	82	13.5%	21	3.5%	21	3.5%	21	3.5%	23	3.8%
2.50%	79	13.0%	79	13.0%	79	13.0%	90	14.9%	22	3.6%	22	3.6%	22	3.6%	29	4.8%
2.00%	90	14.9%	90	14.9%	90	14.9%	97	16.0%	28	4.6%	28	4.6%	27	4.5%	37	6.1%
1.50%	98	16.2%	98	16.2%	98	16.2%	103	17.0%	34	5.6%	34	5.6%	34	5.6%	48	7.9%
1.00%	104	17.2%	104	17.2%	104	17.2%	110	18.2%	44	7.3%	44	7.3%	44	7.3%	64	10.6%
0.50%	108	17.8%	108	17.8%	108	17.8%	117	19.3%	63	10.4%	63	10.4%	63	10.4%	84	13.9%
0.00%	117	19.3%	117	19.3%	117	19.3%	123	20.3%	77	12.7%	77	12.7%	77	12.7%	100	16.5%
2035																
3.00%	64	10.6%	64	10.6%	64	10.6%	79	13.0%	21	3.5%	21	3.5%	21	3.5%	22	3.6%
2.96%	66	10.9%	66	10.9%	66	10.9%	80	13.2%	21	3.5%	21	3.5%	21	3.5%	22	3.6%
2.50%	78	12.9%	78	12.9%	78	12.9%	89	14.7%	22	3.6%	22	3.6%	22	3.6%	29	4.8%
2.00%	90	14.9%	90	14.9%	90	14.9%	97	16.0%	28	4.6%	28	4.6%	27	4.5%	37	6.1%
1.50%	98	16.2%	98	16.2%	98	16.2%	103	17.0%	34	5.6%	35	5.8%	34	5.6%	48	7.9%
1.00%	104	17.2%	104	17.2%	104	17.2%	112	18.5%	45	7.4%	45	7.4%	45	7.4%	66	10.9%
0.50%	108	17.8%	108	17.8%	108	17.8%	120	19.8%	64	10.6%	64	10.6%	64	10.6%	87	14.4%

Table 1: Proportion of households with income below LICO-125 threshold and energy burdens exceeding 6% and 10%, under varying assumptions around immediate and longer-term electricity rate increases and household income growth—2% trailing-year increases (N=606)

Annual nominal income growth	6% energy poverty threshold								10% energy poverty threshold							
	S1 3.95%, 12 years		S2 5.95%, 6 years		S3 7.95%, 4 years		Scenario 4		S1 3.95%, 12 years		S2 5.95%, 6 years		S3 7.95%, 4 years		Scenario 4	
0.00%	118	19.5%	118	19.5%	118	19.5%	123	20.3%	80	13.2%	80	13.2%	80	13.2%	105	17.3%
2036																
3.00%	64	10.6%	64	10.6%	64	10.6%	77	12.7%	21	3.5%	21	3.5%	21	3.5%	22	3.6%
2.96%	64	10.6%	64	10.6%	64	10.6%	79	13.0%	21	3.5%	21	3.5%	21	3.5%	22	3.6%
2.50%	77	12.7%	77	12.7%	76	12.5%	87	14.4%	22	3.6%	22	3.6%	22	3.6%	29	4.8%
2.00%	90	14.9%	90	14.9%	90	14.9%	97	16.0%	27	4.5%	28	4.6%	27	4.5%	37	6.1%
1.50%	98	16.2%	98	16.2%	98	16.2%	103	17.0%	36	5.9%	36	5.9%	36	5.9%	49	8.1%
1.00%	105	17.3%	105	17.3%	105	17.3%	114	18.8%	47	7.8%	47	7.8%	47	7.8%	66	10.9%
0.50%	113	18.6%	113	18.6%	113	18.6%	120	19.8%	67	11.1%	67	11.1%	67	11.1%	89	14.7%
0.00%	120	19.8%	120	19.8%	120	19.8%	124	20.5%	85	14.0%	86	14.2%	85	14.0%	109	18.0%

Source: PRA calculations based on survey of Manitoba Hydro customers.

Table 2: Proportion of households with income below LICO-125 threshold and energy burdens exceeding 6% and 10%, under varying assumptions around immediate and longer-term electricity rate increases and household income growth—inflation plus 2% (i.e., 3.78%) trailing-year increases (N=606)

Annual nominal income growth	6% energy poverty threshold								10% energy poverty threshold							
	S1 3.95%, 12 years		S2 5.95%, 6 years		S3 7.95%, 4 years		Scenario 4		S1 3.95%, 12 years		S2 5.95%, 6 years		S3 7.95%, 4 years		Scenario 4	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
2016																
3.00%	59	9.7%	59	9.7%	59	9.7%	59	9.7%	20	3.3%	20	3.3%	20	3.3%	20	3.3%
2.96%	59	9.7%	59	9.7%	59	9.7%	59	9.7%	20	3.3%	20	3.3%	20	3.3%	20	3.3%
2.50%	59	9.7%	59	9.7%	59	9.7%	59	9.7%	20	3.3%	20	3.3%	20	3.3%	20	3.3%
2.00%	59	9.7%	59	9.7%	59	9.7%	59	9.7%	20	3.3%	20	3.3%	20	3.3%	20	3.3%
1.50%	59	9.7%	59	9.7%	59	9.7%	59	9.7%	20	3.3%	20	3.3%	20	3.3%	20	3.3%
1.00%	59	9.7%	59	9.7%	59	9.7%	59	9.7%	20	3.3%	20	3.3%	20	3.3%	20	3.3%
0.50%	59	9.7%	59	9.7%	59	9.7%	59	9.7%	20	3.3%	20	3.3%	20	3.3%	20	3.3%
0.00%	59	9.7%	59	9.7%	59	9.7%	59	9.7%	20	3.3%	20	3.3%	20	3.3%	20	3.3%
2017																
3.00%	60	9.9%	62	10.2%	64	10.6%	57	9.4%	20	3.3%	21	3.5%	21	3.5%	20	3.3%
2.96%	60	9.9%	63	10.4%	64	10.6%	57	9.4%	20	3.3%	21	3.5%	21	3.5%	20	3.3%
2.50%	60	9.9%	64	10.6%	65	10.7%	59	9.7%	21	3.5%	21	3.5%	21	3.5%	20	3.3%
2.00%	62	10.2%	64	10.6%	65	10.7%	59	9.7%	21	3.5%	21	3.5%	21	3.5%	20	3.3%
1.50%	62	10.2%	65	10.7%	65	10.7%	59	9.7%	21	3.5%	21	3.5%	21	3.5%	20	3.3%
1.00%	64	10.6%	65	10.7%	67	11.1%	60	9.9%	21	3.5%	21	3.5%	21	3.5%	20	3.3%
0.50%	65	10.7%	65	10.7%	68	11.2%	62	10.2%	21	3.5%	21	3.5%	21	3.5%	20	3.3%
0.00%	65	10.7%	66	10.9%	68	11.2%	62	10.2%	21	3.5%	21	3.5%	21	3.5%	21	3.5%
2018																
3.00%	62	10.2%	66	10.9%	69	11.4%	61	10.1%	21	3.5%	21	3.5%	22	3.6%	20	3.3%
2.96%	62	10.2%	66	10.9%	69	11.4%	61	10.1%	21	3.5%	21	3.5%	22	3.6%	20	3.3%
2.50%	64	10.6%	67	11.1%	72	11.9%	63	10.4%	21	3.5%	21	3.5%	22	3.6%	21	3.5%
2.00%	66	10.9%	69	11.4%	73	12.0%	64	10.6%	21	3.5%	21	3.5%	22	3.6%	21	3.5%
1.50%	66	10.9%	70	11.6%	75	12.4%	66	10.9%	21	3.5%	22	3.6%	22	3.6%	21	3.5%
1.00%	67	11.1%	70	11.6%	77	12.7%	66	10.9%	21	3.5%	22	3.6%	22	3.6%	21	3.5%
0.50%	68	11.2%	72	11.9%	79	13.0%	67	11.1%	21	3.5%	22	3.6%	22	3.6%	21	3.5%
0.00%	69	11.4%	74	12.2%	79	13.0%	67	11.1%	21	3.5%	22	3.6%	22	3.6%	21	3.5%
2019																
3.00%	64	10.6%	70	11.6%	78	12.9%	67	11.1%	21	3.5%	22	3.6%	22	3.6%	21	3.5%
2.96%	66	10.9%	70	11.6%	78	12.9%	67	11.1%	21	3.5%	22	3.6%	22	3.6%	21	3.5%
2.50%	67	11.1%	71	11.7%	79	13.0%	68	11.2%	21	3.5%	22	3.6%	22	3.6%	21	3.5%
2.00%	67	11.1%	73	12.0%	79	13.0%	70	11.6%	21	3.5%	22	3.6%	23	3.8%	22	3.6%
1.50%	69	11.4%	77	12.7%	80	13.2%	70	11.6%	21	3.5%	22	3.6%	24	4.0%	22	3.6%
1.00%	70	11.6%	79	13.0%	82	13.5%	74	12.2%	22	3.6%	23	3.8%	24	4.0%	22	3.6%
0.50%	74	12.2%	79	13.0%	84	13.9%	77	12.7%	22	3.6%	24	4.0%	27	4.5%	23	3.8%
0.00%	76	12.5%	80	13.2%	87	14.4%	79	13.0%	23	3.8%	24	4.0%	28	4.6%	24	4.0%
2020																
3.00%	67	11.1%	73	12.0%	82	13.5%	70	11.6%	21	3.5%	22	3.6%	24	4.0%	22	3.6%
2.96%	67	11.1%	74	12.2%	82	13.5%	71	11.7%	21	3.5%	22	3.6%	24	4.0%	22	3.6%
2.50%	67	11.1%	78	12.9%	83	13.7%	76	12.5%	21	3.5%	22	3.6%	24	4.0%	22	3.6%
2.00%	69	11.4%	79	13.0%	86	14.2%	79	13.0%	21	3.5%	24	4.0%	27	4.5%	24	4.0%
1.50%	72	11.9%	80	13.2%	89	14.7%	79	13.0%	22	3.6%	24	4.0%	28	4.6%	24	4.0%
1.00%	76	12.5%	83	13.7%	92	15.2%	81	13.4%	24	4.0%	24	4.0%	31	5.1%	24	4.0%
0.50%	78	12.9%	87	14.4%	94	15.5%	83	13.7%	24	4.0%	24	4.0%	33	5.4%	24	4.0%

Table 2: Proportion of households with income below LICO-125 threshold and energy burdens exceeding 6% and 10%, under varying assumptions around immediate and longer-term electricity rate increases and household income growth—inflation plus 2% (i.e., 3.78%) trailing-year increases (N=606)

Annual nominal income growth	6% energy poverty threshold								10% energy poverty threshold							
	S1 3.95%, 12 years		S2 5.95%, 6 years		S3 7.95%, 4 years		Scenario 4		S1 3.95%, 12 years		S2 5.95%, 6 years		S3 7.95%, 4 years		Scenario 4	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
0.00%	80	13.2%	91	15.0%	96	15.8%	90	14.9%	24	4.0%	28	4.6%	34	5.6%	27	4.5%
2021																
3.00%	67	11.1%	79	13.0%	82	13.5%	79	13.0%	21	3.5%	24	4.0%	24	4.0%	24	4.0%
2.96%	67	11.1%	79	13.0%	82	13.5%	79	13.0%	21	3.5%	24	4.0%	24	4.0%	24	4.0%
2.50%	69	11.4%	79	13.0%	86	14.2%	79	13.0%	21	3.5%	24	4.0%	27	4.5%	24	4.0%
2.00%	72	11.9%	83	13.7%	91	15.0%	83	13.7%	24	4.0%	24	4.0%	28	4.6%	24	4.0%
1.50%	77	12.7%	88	14.5%	92	15.2%	89	14.7%	24	4.0%	27	4.5%	32	5.3%	27	4.5%
1.00%	80	13.2%	91	15.0%	96	15.8%	91	15.0%	24	4.0%	31	5.1%	34	5.6%	31	5.1%
0.50%	82	13.5%	95	15.7%	97	16.0%	95	15.7%	24	4.0%	32	5.3%	34	5.6%	32	5.3%
0.00%	87	14.4%	96	15.8%	98	16.2%	96	15.8%	26	4.3%	33	5.4%	36	5.9%	34	5.6%
2022																
3.00%	67	11.1%	79	13.0%	84	13.9%	83	13.7%	21	3.5%	24	4.0%	24	4.0%	24	4.0%
2.96%	67	11.1%	80	13.2%	84	13.9%	83	13.7%	21	3.5%	24	4.0%	24	4.0%	24	4.0%
2.50%	72	11.9%	83	13.7%	90	14.9%	89	14.7%	24	4.0%	24	4.0%	28	4.6%	27	4.5%
2.00%	76	12.5%	91	15.0%	93	15.3%	91	15.0%	24	4.0%	29	4.8%	32	5.3%	31	5.1%
1.50%	81	13.4%	94	15.5%	96	15.8%	95	15.7%	24	4.0%	32	5.3%	34	5.6%	32	5.3%
1.00%	84	13.9%	96	15.8%	98	16.2%	98	16.2%	25	4.1%	33	5.4%	34	5.6%	34	5.6%
0.50%	90	14.9%	98	16.2%	101	16.7%	100	16.5%	27	4.5%	34	5.6%	37	6.1%	37	6.1%
0.00%	96	15.8%	103	17.0%	104	17.2%	103	17.0%	31	5.1%	39	6.4%	41	6.8%	41	6.8%
2023																
3.00%	67	11.1%	80	13.2%	85	14.0%	87	14.4%	21	3.5%	24	4.0%	24	4.0%	28	4.6%
2.96%	68	11.2%	80	13.2%	85	14.0%	88	14.5%	21	3.5%	24	4.0%	26	4.3%	28	4.6%
2.50%	72	11.9%	85	14.0%	91	15.0%	92	15.2%	24	4.0%	24	4.0%	28	4.6%	31	5.1%
2.00%	79	13.0%	91	15.0%	94	15.5%	96	15.8%	24	4.0%	31	5.1%	32	5.3%	34	5.6%
1.50%	82	13.5%	95	15.7%	97	16.0%	98	16.2%	24	4.0%	32	5.3%	34	5.6%	36	5.9%
1.00%	89	14.7%	98	16.2%	99	16.3%	101	16.7%	27	4.5%	34	5.6%	37	6.1%	38	6.3%
0.50%	95	15.7%	102	16.8%	103	17.0%	104	17.2%	31	5.1%	37	6.1%	40	6.6%	43	7.1%
0.00%	97	16.0%	104	17.2%	104	17.2%	105	17.3%	33	5.4%	42	6.9%	45	7.4%	50	8.3%
2024																
3.00%	69	11.4%	80	13.2%	85	14.0%	92	15.2%	21	3.5%	24	4.0%	27	4.5%	29	4.8%
2.96%	69	11.4%	81	13.4%	86	14.2%	92	15.2%	21	3.5%	24	4.0%	27	4.5%	29	4.8%
2.50%	75	12.4%	87	14.4%	92	15.2%	96	15.8%	24	4.0%	27	4.5%	29	4.8%	34	5.6%
2.00%	80	13.2%	93	15.3%	96	15.8%	97	16.0%	24	4.0%	32	5.3%	34	5.6%	36	5.9%
1.50%	86	14.2%	96	15.8%	98	16.2%	101	16.7%	25	4.1%	34	5.6%	36	5.9%	39	6.4%
1.00%	93	15.3%	99	16.3%	102	16.8%	103	17.0%	31	5.1%	37	6.1%	38	6.3%	45	7.4%
0.50%	97	16.0%	103	17.0%	104	17.2%	105	17.3%	32	5.3%	41	6.8%	43	7.1%	51	8.4%
0.00%	101	16.7%	104	17.2%	105	17.3%	106	17.5%	38	6.3%	46	7.6%	51	8.4%	59	9.7%
2025																
3.00%	70	11.6%	82	13.5%	86	14.2%	92	15.2%	22	3.6%	24	4.0%	27	4.5%	30	5.0%
2.96%	70	11.6%	82	13.5%	86	14.2%	93	15.3%	22	3.6%	24	4.0%	27	4.5%	30	5.0%
2.50%	77	12.7%	89	14.7%	92	15.2%	97	16.0%	24	4.0%	28	4.6%	30	5.0%	36	5.9%
2.00%	81	13.4%	94	15.5%	97	16.0%	98	16.2%	24	4.0%	32	5.3%	34	5.6%	37	6.1%
1.50%	89	14.7%	98	16.2%	98	16.2%	102	16.8%	30	5.0%	36	5.9%	37	6.1%	40	6.6%
1.00%	95	15.7%	102	16.8%	103	17.0%	104	17.2%	32	5.3%	38	6.3%	41	6.8%	50	8.3%

Table 2: Proportion of households with income below LICO-125 threshold and energy burdens exceeding 6% and 10%, under varying assumptions around immediate and longer-term electricity rate increases and household income growth—inflation plus 2% (i.e., 3.78%) trailing-year increases (N=606)

Annual nominal income growth	6% energy poverty threshold								10% energy poverty threshold							
	S1 3.95%, 12 years		S2 5.95%, 6 years		S3 7.95%, 4 years		Scenario 4		S1 3.95%, 12 years		S2 5.95%, 6 years		S3 7.95%, 4 years		Scenario 4	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
0.50%	100	16.5%	104	17.2%	105	17.3%	106	17.5%	35	5.8%	45	7.4%	50	8.3%	58	9.6%
0.00%	104	17.2%	105	17.3%	106	17.5%	112	18.5%	40	6.6%	54	8.9%	59	9.7%	66	10.9%
2026																
3.00%	70	11.6%	82	13.5%	86	14.2%	92	15.2%	22	3.6%	24	4.0%	27	4.5%	31	5.1%
2.96%	70	11.6%	83	13.7%	86	14.2%	93	15.3%	22	3.6%	24	4.0%	27	4.5%	31	5.1%
2.50%	79	13.0%	90	14.9%	92	15.2%	97	16.0%	24	4.0%	28	4.6%	32	5.3%	36	5.9%
2.00%	83	13.7%	96	15.8%	97	16.0%	98	16.2%	24	4.0%	34	5.6%	36	5.9%	38	6.3%
1.50%	93	15.3%	98	16.2%	100	16.5%	103	17.0%	31	5.1%	36	5.9%	38	6.3%	46	7.6%
1.00%	97	16.0%	103	17.0%	104	17.2%	105	17.3%	33	5.4%	41	6.8%	46	7.6%	54	8.9%
0.50%	103	17.0%	105	17.3%	105	17.3%	110	18.2%	40	6.6%	50	8.3%	56	9.2%	63	10.4%
0.00%	104	17.2%	107	17.7%	111	18.3%	116	19.1%	44	7.3%	59	9.7%	63	10.4%	72	11.9%
2027																
3.00%	72	11.9%	83	13.7%	86	14.2%	92	15.2%	22	3.6%	24	4.0%	28	4.6%	31	5.1%
2.96%	72	11.9%	84	13.9%	86	14.2%	93	15.3%	22	3.6%	24	4.0%	28	4.6%	32	5.3%
2.50%	79	13.0%	92	15.2%	93	15.3%	97	16.0%	24	4.0%	29	4.8%	33	5.4%	36	5.9%
2.00%	86	14.2%	97	16.0%	97	16.0%	99	16.3%	24	4.0%	34	5.6%	36	5.9%	38	6.3%
1.50%	95	15.7%	100	16.5%	102	16.8%	103	17.0%	32	5.3%	38	6.3%	39	6.4%	48	7.9%
1.00%	98	16.2%	104	17.2%	104	17.2%	107	17.7%	35	5.8%	45	7.4%	50	8.3%	59	9.7%
0.50%	104	17.2%	106	17.5%	108	17.8%	114	18.8%	41	6.8%	55	9.1%	60	9.9%	67	11.1%
0.00%	105	17.3%	111	18.3%	115	19.0%	116	19.1%	50	8.3%	66	10.9%	69	11.4%	82	13.5%
2028																
3.00%	72	11.9%	84	13.9%	86	14.2%	92	15.2%	22	3.6%	27	4.5%	28	4.6%	31	5.1%
2.96%	73	12.0%	85	14.0%	87	14.4%	93	15.3%	22	3.6%	27	4.5%	29	4.8%	32	5.3%
2.50%	79	13.0%	92	15.2%	93	15.3%	97	16.0%	24	4.0%	29	4.8%	33	5.4%	37	6.1%
2.00%	91	15.0%	97	16.0%	97	16.0%	100	16.5%	28	4.6%	36	5.9%	37	6.1%	42	6.9%
1.50%	96	15.8%	101	16.7%	103	17.0%	103	17.0%	33	5.4%	39	6.4%	43	7.1%	51	8.4%
1.00%	102	16.8%	104	17.2%	105	17.3%	110	18.2%	37	6.1%	50	8.3%	55	9.1%	64	10.6%
0.50%	104	17.2%	107	17.7%	111	18.3%	116	19.1%	44	7.3%	60	9.9%	66	10.9%	72	11.9%
0.00%	106	17.5%	116	19.1%	116	19.1%	119	19.6%	56	9.2%	71	11.7%	77	12.7%	88	14.5%
2029																
3.00%	74	12.2%	85	14.0%	87	14.4%	93	15.3%	22	3.6%	27	4.5%	29	4.8%	31	5.1%
2.96%	75	12.4%	86	14.2%	87	14.4%	93	15.3%	22	3.6%	27	4.5%	29	4.8%	32	5.3%
2.50%	80	13.2%	92	15.2%	94	15.5%	97	16.0%	24	4.0%	31	5.1%	33	5.4%	37	6.1%
2.00%	91	15.0%	97	16.0%	98	16.2%	102	16.8%	29	4.8%	36	5.9%	37	6.1%	45	7.4%
1.50%	98	16.2%	102	16.8%	103	17.0%	104	17.2%	34	5.6%	40	6.6%	47	7.8%	56	9.2%
1.00%	103	17.0%	105	17.3%	107	17.7%	113	18.6%	40	6.6%	54	8.9%	59	9.7%	66	10.9%
0.50%	105	17.3%	111	18.3%	114	18.8%	116	19.1%	52	8.6%	66	10.9%	71	11.7%	83	13.7%
0.00%	108	17.8%	117	19.3%	119	19.6%	121	20.0%	64	10.6%	78	12.9%	86	14.2%	95	15.7%
2030																
3.00%	75	12.4%	86	14.2%	87	14.4%	93	15.3%	22	3.6%	27	4.5%	29	4.8%	31	5.1%
2.96%	76	12.5%	86	14.2%	87	14.4%	93	15.3%	22	3.6%	27	4.5%	29	4.8%	34	5.6%
2.50%	82	13.5%	93	15.3%	94	15.5%	97	16.0%	24	4.0%	33	5.4%	36	5.9%	38	6.3%
2.00%	92	15.2%	97	16.0%	99	16.3%	103	17.0%	32	5.3%	37	6.1%	38	6.3%	45	7.4%
1.50%	98	16.2%	103	17.0%	103	17.0%	108	17.8%	36	5.9%	47	7.8%	49	8.1%	58	9.6%

Table 2: Proportion of households with income below LICO-125 threshold and energy burdens exceeding 6% and 10%, under varying assumptions around immediate and longer-term electricity rate increases and household income growth—inflation plus 2% (i.e., 3.78%) trailing-year increases (N=606)

Annual nominal income growth	6% energy poverty threshold								10% energy poverty threshold							
	S1 3.95%, 12 years		S2 5.95%, 6 years		S3 7.95%, 4 years		Scenario 4		S1 3.95%, 12 years		S2 5.95%, 6 years		S3 7.95%, 4 years		Scenario 4	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
1.00%	104	17.2%	106	17.5%	110	18.2%	114	18.8%	42	6.9%	58	9.6%	63	10.4%	70	11.6%
0.50%	106	17.5%	115	19.0%	116	19.1%	119	19.6%	55	9.1%	71	11.7%	75	12.4%	88	14.5%
0.00%	113	18.6%	120	19.8%	121	20.0%	123	20.3%	69	11.4%	87	14.4%	92	15.2%	104	17.2%
2031																
3.00%	76	12.5%	86	14.2%	87	14.4%	93	15.3%	22	3.6%	27	4.5%	29	4.8%	33	5.4%
2.96%	77	12.7%	86	14.2%	87	14.4%	93	15.3%	22	3.6%	27	4.5%	29	4.8%	35	5.8%
2.50%	83	13.7%	94	15.5%	96	15.8%	97	16.0%	24	4.0%	33	5.4%	36	5.9%	38	6.3%
2.00%	93	15.3%	98	16.2%	100	16.5%	103	17.0%	32	5.3%	38	6.3%	40	6.6%	47	7.8%
1.50%	98	16.2%	103	17.0%	104	17.2%	110	18.2%	37	6.1%	47	7.8%	54	8.9%	63	10.4%
1.00%	104	17.2%	110	18.2%	114	18.8%	115	19.0%	47	7.8%	63	10.4%	65	10.7%	80	13.2%
0.50%	108	17.8%	116	19.1%	118	19.5%	120	19.8%	61	10.1%	76	12.5%	85	14.0%	94	15.5%
0.00%	117	19.3%	121	20.0%	122	20.1%	125	20.6%	75	12.4%	93	15.3%	99	16.3%	107	17.7%
2032																
3.00%	77	12.7%	86	14.2%	87	14.4%	92	15.2%	22	3.6%	27	4.5%	29	4.8%	34	5.6%
2.96%	77	12.7%	86	14.2%	87	14.4%	93	15.3%	22	3.6%	28	4.6%	30	5.0%	35	5.8%
2.50%	85	14.0%	94	15.5%	97	16.0%	97	16.0%	27	4.5%	35	5.8%	36	5.9%	39	6.4%
2.00%	95	15.7%	99	16.3%	100	16.5%	103	17.0%	34	5.6%	38	6.3%	45	7.4%	51	8.4%
1.50%	101	16.7%	103	17.0%	106	17.5%	113	18.6%	38	6.3%	51	8.4%	57	9.4%	65	10.7%
1.00%	105	17.3%	112	18.5%	114	18.8%	118	19.5%	50	8.3%	65	10.7%	71	11.7%	84	13.9%
0.50%	111	18.3%	119	19.6%	120	19.8%	123	20.3%	67	11.1%	85	14.0%	89	14.7%	102	16.8%
0.00%	117	19.3%	122	20.1%	123	20.3%	125	20.6%	81	13.4%	100	16.5%	105	17.3%	115	19.0%
2033																
3.00%	77	12.7%	87	14.4%	87	14.4%	92	15.2%	22	3.6%	29	4.8%	30	5.0%	34	5.6%
2.96%	77	12.7%	87	14.4%	88	14.5%	93	15.3%	22	3.6%	29	4.8%	31	5.1%	35	5.8%
2.50%	86	14.2%	94	15.5%	97	16.0%	97	16.0%	27	4.5%	35	5.8%	37	6.1%	41	6.8%
2.00%	97	16.0%	100	16.5%	102	16.8%	103	17.0%	34	5.6%	40	6.6%	45	7.4%	53	8.7%
1.50%	102	16.8%	105	17.3%	109	18.0%	113	18.6%	39	6.4%	56	9.2%	60	9.9%	67	11.1%
1.00%	106	17.5%	114	18.8%	116	19.1%	118	19.5%	56	9.2%	71	11.7%	79	13.0%	91	15.0%
0.50%	116	19.1%	120	19.8%	121	20.0%	124	20.5%	70	11.6%	90	14.9%	96	15.8%	107	17.7%
0.00%	121	20.0%	123	20.3%	125	20.6%	127	21.0%	88	14.5%	107	17.7%	110	18.2%	120	19.8%
2034																
3.00%	77	12.7%	87	14.4%	88	14.5%	92	15.2%	22	3.6%	29	4.8%	31	5.1%	34	5.6%
2.96%	77	12.7%	87	14.4%	88	14.5%	93	15.3%	22	3.6%	29	4.8%	31	5.1%	36	5.9%
2.50%	86	14.2%	94	15.5%	97	16.0%	98	16.2%	28	4.6%	35	5.8%	37	6.1%	44	7.3%
2.00%	97	16.0%	100	16.5%	103	17.0%	107	17.7%	36	5.9%	45	7.4%	46	7.6%	54	8.9%
1.50%	103	17.0%	109	18.0%	110	18.2%	114	18.8%	43	7.1%	58	9.6%	63	10.4%	73	12.0%
1.00%	106	17.5%	116	19.1%	118	19.5%	120	19.8%	59	9.7%	75	12.4%	83	13.7%	94	15.5%
0.50%	116	19.1%	121	20.0%	123	20.3%	125	20.6%	75	12.4%	96	15.8%	104	17.2%	110	18.2%
0.00%	122	20.1%	125	20.6%	127	21.0%	129	21.3%	95	15.7%	111	18.3%	119	19.6%	125	20.6%
2035																
3.00%	77	12.7%	87	14.4%	88	14.5%	92	15.2%	22	3.6%	29	4.8%	31	5.1%	35	5.8%
2.96%	78	12.9%	87	14.4%	88	14.5%	92	15.2%	22	3.6%	29	4.8%	31	5.1%	36	5.9%
2.50%	87	14.4%	95	15.7%	97	16.0%	98	16.2%	29	4.8%	36	5.9%	38	6.3%	44	7.3%
2.00%	97	16.0%	102	16.8%	103	17.0%	107	17.7%	36	5.9%	45	7.4%	48	7.9%	57	9.4%

Table 2: Proportion of households with income below LICO-125 threshold and energy burdens exceeding 6% and 10%, under varying assumptions around immediate and longer-term electricity rate increases and household income growth—inflation plus 2% (i.e., 3.78%) trailing-year increases (N=606)

Annual nominal income growth	6% energy poverty threshold								10% energy poverty threshold							
	S1 3.95%, 12 years		S2 5.95%, 6 years		S3 7.95%, 4 years		Scenario 4		S1 3.95%, 12 years		S2 5.95%, 6 years		S3 7.95%, 4 years		Scenario 4	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
1.50%	103	17.0%	110	18.2%	113	18.6%	116	19.1%	47	7.8%	63	10.4%	65	10.7%	78	12.9%
1.00%	111	18.3%	118	19.5%	118	19.5%	122	20.1%	63	10.4%	83	13.7%	91	15.0%	102	16.8%
0.50%	117	19.3%	123	20.3%	125	20.6%	125	20.6%	84	13.9%	104	17.2%	107	17.7%	115	19.0%
0.00%	123	20.3%	127	21.0%	128	21.1%	129	21.3%	102	16.8%	120	19.8%	124	20.5%	128	21.1%
2036																
3.00%	78	12.9%	87	14.4%	89	14.7%	92	15.2%	22	3.6%	29	4.8%	31	5.1%	36	5.9%
2.96%	79	13.0%	87	14.4%	89	14.7%	92	15.2%	22	3.6%	30	5.0%	31	5.1%	36	5.9%
2.50%	87	14.4%	96	15.8%	97	16.0%	98	16.2%	29	4.8%	36	5.9%	38	6.3%	45	7.4%
2.00%	97	16.0%	103	17.0%	103	17.0%	111	18.3%	37	6.1%	46	7.6%	51	8.4%	59	9.7%
1.50%	103	17.0%	113	18.6%	113	18.6%	117	19.3%	49	8.1%	64	10.6%	69	11.4%	82	13.5%
1.00%	114	18.8%	118	19.5%	120	19.8%	122	20.1%	66	10.9%	88	14.5%	93	15.3%	107	17.7%
0.50%	120	19.8%	125	20.6%	125	20.6%	126	20.8%	89	14.7%	107	17.7%	112	18.5%	121	20.0%
0.00%	124	20.5%	128	21.1%	129	21.3%	131	21.6%	109	18.0%	125	20.6%	127	21.0%	132	21.8%

Source: PRA calculations based on survey of Manitoba Hydro customers.

REFERENCE:

AMC/MH I-45c, Page 2 of 2

PREAMBLE TO IR (IF ANY):

The response restates PRA's conclusions concerning the lost revenues to Manitoba Hydro of various affordability measures.

QUESTION:

Please update the conclusions referred to in the preamble to take into account the application of the rate increases to the fixed charge and the current rate proposal following Order 79/15.

RATIONALE FOR QUESTION:**RESPONSE:**

The following response was prepared by Prairie Research Associates:

The updated conclusions are presented below for the year 2020; we note that, as in our response to AMC/MH I-45c, these values exclude lost tax revenues, focusing exclusively on revenue lost to Manitoba Hydro through the sale of energy services (bold text reflects new or revised content):

*As shown, the results suggest that if a 6% threshold is used as the basis for defining energy poverty in Manitoba, introducing a 25% straight rate discount, a fixed charge waiver, or a PIPP would generate lost revenues **to Manitoba Hydro in 2020** amounting to **\$32.8** million, **\$13.1** million, and **\$45.9** million, respectively. By contrast, if a 10% threshold is applied, each form of rate assistance would result in lost revenues amounting to **\$10.9** million, **\$3.6** million, and **\$17.2** million, respectively.*

REFERENCE:

AMC/MH I-46a, Page 2 of 2

PREAMBLE TO IR (IF ANY):**QUESTION:**

- a) Please revise the rate impacts on non-energy-poor residential customers, assuming that they are called upon to fund the full revenue shortfall resulting from the affordable rate design initiative, to take into account the application of the rate increases to the fixed charge and the current rate proposal following Order 79/15.
- b) Please state the rate impacts on non-energy-poor residential customers, assuming that the revenue shortfall resulting from the affordable rate design initiative shared among ratepayers from all rate classes.

RATIONALE FOR QUESTION:**RESPONSE:**

The following response was prepared by Prairie Research Associates:

- a) Revised rate impacts on non-energy-poor residential customers under the assumptions provided by AMC are presented in PRA's response to AMC/MH II-23a (i.e., in Tables 27-28 in the updated content for Section 5.2 from the original report).
- b) The simulation model calculates rate impacts on non-energy-poor residential customers with reference to energy consumption data collected for a sample of households (N=606) participating in the customer survey, not Manitoba Hydro's customer base more generally. As we noted in our original study (Appendix 10.5, Section 5.2.3, pg. 122 of 242), when conducting the original analysis we did not possess data on energy consumption for all non-energy poor residential customers in Manitoba, meaning that it is not possible to extrapolate from the survey sample to the entire residential class. As such, PRA would not be positioned to provide the requested information using the simulation model, even if energy consumption data were available for all non-residential rate classes.

REFERENCE:

AMC/MH I-47b, Page 2 of 2

PREAMBLE TO IR (IF ANY):

Manitoba Hydro's response states:

All of the rate design options considered, including Fixed Credit, may theoretically allow for a targeted approach to benefit First Nations or any other specific subset of a customer group identified for targeting through the development of tailored eligibility and qualifying criteria. However, the targeting of any such programs or options would require Manitoba Hydro to have access to robust, reliable and verifiable data on a customer-specific basis with regards to household income and other personal financial status.

QUESTION:

Please elaborate on the extent to which Manitoba Hydro would need to have access to robust, reliable and verifiable data on a customer-specific basis with regards to household income and other personal financial status in order to target all on-reserve First Nations households using:

- a) The straight discount approach,
- b) The fixed charge waiver,
- c) PIPP, and
- d) the Fixed Credit approach.

RATIONALE FOR QUESTION:**RESPONSE:**

Manitoba Hydro would need to have access to robust, reliable and verifiable data on individual household incomes, updated and re-verified annually, to determine whether the customer met established income criteria to qualify for any such program or subsidy option, should one be made available. Therefore, individual household income information would be required to evaluate the eligibility for all of the options referenced in this question.

REFERENCE:

Appendix 9.14, Page 4 of 20

PREAMBLE TO IR (IF ANY):

At the above-cited reference, the Report gives statistics on the availability of natural gas service to customers generally.

QUESTION:

Please complete the following table for each First Nation in the province:

First Nation	Gas available?	Residential Basic Service – Number of Accounts		Residential Basic Service – Avg Annual Consumption (kWh)		Residential Basic Service – Avg Annual Bills (\$)		General Service	
		Electric Heat Billed	Non Electric Heat Billed	Electric Heat Billed	Non Electric Heat Billed	Electric Heat Billed	Non Electric Heat Billed	Number of Accounts	avg annual Consumption (kWh)

RATIONALE FOR QUESTION:

RESPONSE:

Please see attached for the completed table. This information is drawn from Manitoba Hydro’s billing system. As was noted in the response to Coalition/MH I-129b, First Nation customers who have provided a treaty or status number are not billed tax. Within the billing system, the presence of a treaty or status number supersedes the tax treatment related to heating capability. For this reason, the distinction between “All Electric” and “Standard” or “Electric Heat Billed” and “Non Electric Heat Billed” for these customers is not validated as frequently as it would be for a customer for whom this distinction resulted in differential tax treatment. Therefore, the any distinctions based on this specific attribute should be interpreted with caution.

First Nation	Gas available?	Residential Basic Service - Number of Accounts		Residential Basic 2016/17 Average Use (kWh)		Residential Basic 2016/17 Average Bills (\$)		General Service	
		Electric Heat Billed	Non Electric Heat Billed	Electric Heat Billed	Non Electric Heat Billed	Electric Heat Billed	Non Electric Heat Billed	Number Of Accounts	2016/17 Average Use (kWh)
Barren Lands First Nation		0	138	0	14,161	0	1,199	43	23,996
Berens River First Nation		201	113	26,327	22,823	2,160	1,884	59	83,036
Birdtail Sioux Nation		114	5	26,803	19,048	2,196	1,589	18	91,523
Bloodvein First Nation		173	23	28,482	20,227	2,328	1,680	37	71,136
Brokenhead Ojibway First Nation		182	2	24,309	25,079	1,996	2,061	38	76,900
Buffalo Point First Nation		151	31	19,118	11,501	1,596	996	28	73,801
Bunibonibee (Oxford House) First Nation		179	239	32,638	30,053	2,654	2,452	55	132,345
Canupawpka Dakota First Nation		108	1	25,185	33,363	2,071	2,716	18	33,097
Chemanwawin Cree Nation		270	50	32,765	32,574	2,667	2,654	32	126,864
Dakota Plains First Nation		34	0	19,013	0	1,589	0	9	69,139
Dakota Tipi First Nation	Yes	49	3	31,219	28,396	2,535	2,311	8	67,879
Dauphin River First Nation		69	2	19,377	27,887	1,614	2,284	16	24,381
Ebb And Flow First Nation		381	24	29,815	5,120	2,441	487	27	124,413
Fisher River First Nation		398	80	23,449	26,590	1,930	2,177	50	132,388
Fox Lake First Nation		62	9	30,110	23,715	2,452	1,954	31	65,406
Gamblers First Nation		33	1	24,107	23,865	1,990	1,969	5	37,559
Garden Hill First Nation		271	261	28,733	30,009	2,344	2,445	48	175,390
Gods Lake First Nation		129	171	29,390	28,297	2,398	2,315	58	93,280
Hollow Water First Nation		156	29	25,945	25,004	2,121	2,053	28	78,605
Keeseekoowenin First Nation		153	7	25,633	32,281	2,107	2,635	20	60,727
Kinonjeoshtegon First Nation		61	26	27,430	24,965	2,247	2,049	13	71,931
Lake Manitoba First Nation		228	21	31,186	25,972	2,541	2,132	22	89,908
Lake St Martin First Nation		2	1	38,690	10,934	3,126	952	7	116,330
Little Black River First Nation		188	11	23,978	22,694	1,970	1,871	26	76,212
Little Grand Rapids First Nation		177	89	28,193	23,929	2,302	1,964	57	64,534
Little Saskatchewan First Nation		75	2	23,362	0	1,924	93	12	76,108
Long Plains First Nation		356	4	27,291	9,288	2,233	821	32	159,621
Manto Sipi Cree Nation		55	72	35,306	40,227	2,860	3,251	37	75,097
Marcel Colomb First Nation		15	0	36,688	0	2,971	0	6	83,485
Mathias Colomb First Nation		376	18	35,677	35,699	2,897	2,881	45	114,285
Misipawistik (Grand Rapids) First Nation		231	14	30,681	26,358	2,501	2,159	32	115,915
Mosakahiken Cree Nation		219	42	33,242	26,558	2,708	2,181	24	112,459
Nischawayaksihk Cree Nation		483	26	35,935	28,710	2,912	2,340	85	116,042

First Nation	Gas available?	Residential Basic Service - Number of Accounts		Residential Basic 2016/17 Average Use (kWh)		Residential Basic 2016/17 Average Bills (\$)		General Service	
		Electric Heat Billed	Non Electric Heat Billed	Electric Heat Billed	Non Electric Heat Billed	Electric Heat Billed	Non Electric Heat Billed	Number Of Accounts	2016/17 Average Use (kWh)
Northlands Dene First Nation		0	150	0	14,292	0	1,212	54	27,333
Norway House Cree Nation		1141	63	33,450	28,155	2,721	2,308	126	132,840
O-Chi-Chak-Ko-Sipi First Nation		122	4	28,495	-2,415	2,336	-97	18	61,905
O-PIPON-NA-PIWIN		199	19	30,779	40,191	2,506	3,233	38	118,723
Opaskwayak (OCN) Cree Nation		638	98	28,236	28,540	2,308	2,335	89	184,522
Pauingassi First Nation		80	43	24,595	20,737	2,025	1,722	32	66,884
Peguis First Nation		739	97	30,225	25,709	2,464	2,111	98	116,525
Pimicikamak Cree Nation		923	15	34,301	37,051	2,784	2,999	84	98,490
Pinaymootang (Fairford) First Nation		290	54	26,466	26,117	2,162	2,135	33	100,603
Pine Creek First Nation		202	13	29,430	10,641	2,407	873	17	142,117
Poplar River First Nation		145	77	25,402	21,837	2,084	1,805	38	84,021
Red Sucker Lake First Nation		91	112	30,436	26,797	2,484	2,201	33	95,263
Rolling River First Nation		136	3	21,344	13,187	1,770	1,127	22	61,933
Roseau River First Nation	Yes	164	38	32,012	27,969	2,611	2,293	28	84,898
Sagkeeng First Nation		630	21	26,816	20,503	2,198	1,699	64	135,302
Sandy Bay First Nation		544	8	35,682	27,402	2,899	2,249	35	153,673
Sapotaweyak Cree Nation		246	5	28,563	16,080	2,338	1,350	25	116,512
Sayisi Dene First Nation		0	119	0	10,794	0	938	38	26,318
Shamattawa First Nation		0	183	0	18,085	0	1,511	39	62,210
Sioux Valley First Nation		344	17	24,154	29,440	1,992	2,410	36	79,166
Skownan First Nation		118	10	27,904	20,009	2,283	1,654	17	79,815
St Theresa Point First Nation		307	297	34,138	33,233	2,773	2,703	84	108,758
Swan Lake First Nation		141	7	23,249	15,413	1,916	1,304	38	127,245
Tataskweyak (Split Lake) First Nation		376	25	37,494	29,809	3,039	2,419	64	118,017
Tootinaowaziibeeng (Valley River) First Nation		98	10	32,194	24,715	2,623	2,022	15	61,106
War Lake First Nation		30	6	28,188	27,015	2,304	2,211	9	79,862
Wasagamack First Nation		130	144	29,071	34,140	2,371	2,772	43	100,692
Waywayseecappo First Nation		397	39	30,911	29,078	2,526	2,385	26	225,522
Wuskwi Sipihk First Nation		28	2	29,308	0	2,394	89	10	48,370
York Factory First Nation		119	11	34,270	33,618	2,779	2,726	24	119,917

REFERENCE:

Appendix 9.14, Page 10 of 20

PREAMBLE TO IR (IF ANY):

At the above-cited reference, Figure 5 of the Report gives statistics on the availability of natural gas service to customers generally.

QUESTION:

Please create a version of Figure 5 of the Report with data from on-reserve customers only.

RATIONALE FOR QUESTION:**RESPONSE:**

Manitoba Hydro is unable to produce a version of Figure 5 of the Report with data from on-reserve customers only as there were an insufficient number of survey responses to break down the figure in a similar fashion.