Q. Please provide Newfoundland Power's socket saturation study report.

A. Attachment A to this response provides a copy of Newfoundland Power's *2018 Socket Saturation Survey*.

2018 Socket Saturation Survey

2018 Socket Saturation Survey
April 2018 – FINAL REPORT

NEWFOUNDLAND POWER
A FORTIS COMPANY

Presented by:

MQO RESEARCH RECHERCHE
a group m5 company

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Background and Methodology

Background

Since 2014, Newfoundland Power and Newfoundland and Labrador Hydro's takeCHARGE Instant Rebates Program has provided consumers with instant rebates on energy efficient products to help reduce home energy consumption. In order to determine the impact of the program on the use of energy efficient LED light bulbs in particular, Newfoundland Power and Newfoundland and Labrador Hydro set out to conduct a socket saturation survey. This survey allows Newfoundland Power and Newfoundland and Labrador Hydro to track the penetration and saturation of LED light bulbs in homes across the province to monitor the effectiveness of the takeCHARGE Instant Rebates program.

Methodology

The population for the Newfoundland Power survey included all ebill customers with a valid email address. The survey was conducted online using a list of email addresses provided by Newfoundland Power. The survey was conducted online between March 22nd and April 9th, 2018. A copy of the questionnaire is provided as Appendix A. A total of 546 surveys were collected. A breakdown of the completed sample by region is provided below.

Figure 1: Sample Distribution by Region

Region	n
St. John's CMA	335
Other East*	83
Central	66
Western	62
Total	**546**

*The Avalon (excluding St. John's CMA) to Clarenville.

A series of 47 home visits were conducted with respondents from the St. John's area as a quality control check of the self-reported data provided by respondents in the online survey. Upon comparison of the online and home visit data for these 47 households it was determined that the socket saturation rates were very similar. Further details on the in-home visits are provided in the report.

Analysis and Reporting

Comparisons are made to 2017 and between regions throughout the report where sample size permits. These differences are highlighted in the tables and noted in the text throughout. A complete set of data tables by region is provided as Appendix B.

Three key indicators were calculated for this study:

Indicator #1 - Household Penetration: The percentage of homes using a particular bulb type.
Indicator #2 – Socket Saturation: The percentage of sockets filled with each bulb type.
Indicator #3 – Market Potential: Potential for LED bulbs

Socket Profile

The survey required respondents to fill out a series of grids in the online survey to record the number of bulbs in each room/area of their home broken out by the four main bulb types (incandescent, halogen, CFL and LED). Further, for each bulb type, respondents were asked to identify whether the bulb in each socket was a regular or specialty bulb. Provided below is an overview of the total bulbs reported by bulb type and regular vs. specialty bulbs.

Figure 2: Total Number of Bulbs Reported by Type – Online Survey Sample

	Total	Reg.	Spec.
Incandescent	6,755	5,193	1,562
Halogen	2,090	1,111	979
CFL	6,704	5,478	1,226
LED	11,434	7,847	3,587
Total	**26,983**	**19,629**	**7,354**

On average homes surveyed within Newfoundland Power's service territory had approximately 50 sockets per household (49.4). The table below shows the number of houses reporting having at least one of each bulb type (n) and the average number currently installed in their home (mean). Including both regular and specialty bulbs within each category, the means ranged from a low of 8.3 for homes with halogen bulbs to a high of 27.1 for homes with LED bulbs.

Figure 3: Mean Number of Bulbs Reported by Type – Online Survey Sample

	Total		Reg.		Spec.	
	n*	**Mean**	**n**	**mean**	**n**	**Mean**
Incandescent	413	16.2	357	14.4	218	7.1
Halogen	255	8.3	158	7.3	164	5.9
CFL	404	16.6	359	15.3	201	6.1
LED	424	27.1	371	21.3	300	11.9
Total	**546**	**49.4**	**544**	**36.3**	**453**	**16.0**

Note: Not all homes had all types of bulbs installed and thus the n, or number of households reporting is different for the various bulb types.

In order to provide a general estimate of the total number of sockets within Newfoundland Power's service territory in the province the total population of households within Newfoundland Power's service territory (230,406) was used and using the data obtained from the survey a calculation of the total sockets was estimated. Based on this calculation, it is estimated that there are a total of 11,386,529 sockets in the Newfoundland Power's service territory. The following table provides a breakdown of the total number of sockets by the four bulb types and regular vs. specialty.

Figure 4: Total Number of Bulbs by Type – Total Population [Estimated]

	Total	Reg.	Spec.
Incandescent	2,850,536	2,191,389	659,147
Halogen	881,957	468,830	413,127
CFL	2,829,014	2,311,656	517,359
LED	4,825,022	3,311,348	1,513,675
Total	11,386,529	8,283,222	3,103,307

As referenced in the methodology for this study, a series of in-home visits were conducted as a quality control measure (a more detailed analysis of the in-home visit is provided later in the report). While the saturation rates were consistent (no statistically significant differences), it was noted that the total number of sockets in the homes were underreported in the online survey. As a result, for the purposes of providing a general estimate of the total number of sockets, a correction factor has been applied. Based on the in-home vs. online data, a correction factor of 1.114 was calculated. This resulted in an increase in the estimated average number of sockets per home from 49.4 to 55.0 and increased the general estimate of the total number of sockets from 11,386,529 to 12,684,594. The table below provides a breakdown by bulb type based on this adjusted estimate.

Figure 5: Total Number of Bulbs by Type – Total Population (with Correction Factor) [Estimated]

	Total	Reg.	Spec.
Incandescent	3,175,497	2,441,207	734,290
Halogen	982,500	522,276	460,224
CFL	3,151,522	2,575,185	576,337
LED	5,375,075	3,688,841	1,686,233
Total	12,684,594	9,227,510	3,457,084

In summary, the estimated range of bulbs in homes across Newfoundland Power's service territory is 11.4 million to 12.7 million.

Penetration and Saturation by Bulb Type

Household Penetration

In order to understand the impact of the takeCHARGE Instant Rebates program on the type of light bulbs currently in homes within Newfoundland Power's service territory two key indicators were measured in the survey.

Indicator #1 - Household Penetration: The percentage of homes using a particular bulb type.

Overall, penetration was highest for LED bulbs (78%), followed closely by incandescent bulbs (76%) and CFL bulbs (74%). The household penetration of LED bulbs was up significantly from 68% a year ago. Household penetration of halogen bulbs was much lower at 46%.

Home penetration of LED bulbs was relatively consistent across the four regions of the province. Observationally, all regions have seen a general increase in LED bulb penetration since 2017.

Figure 6: Household Penetration by Bulb Type and Region

	Total (n)	Incandescent	Halogen	CFL	LED
Overall	546	76%	46%	74%	78%
St. John's CMA	335	76%	49%	74%	77%
Other East	83	78%	42%	73%	76%
Central	66	74%	41%	81%	85%
Western	62	74%	48%	67%	78%

Note: Results for LED bulbs are highlighted throughout.

Household penetration was also analyzed based on household income to determine what impact, if any, income had on the usage of the different bulb types. Income continues to have a significant impact on household penetration of LED bulbs, with higher income households being more likely to use LED bulbs in their home compared to lower income households.

Household penetration of LED bulbs was 64% among the lowest income group compared to 88% penetration in the highest income category. Observationally, LED bulb penetration was up among the lowest income group from 2017 (51%) which is encouraging. Usage of the incandescent bulbs was consistent across income categories while penetration of halogen and CFLs did trend up with income.

Figure 7: Household Penetration by Bulb Type and Income Level

	Total (n)	Incandescent	Halogen	CFL	LED
< $40,000	77	78%	35%	68%	64%
$40,000 - $80,000	135	72%	40%	72%	76%
$80,000 - $100,000	74	75%	50%	78%	76%
> $100,000	165	75%	59%	81%	88%

Looking at the household penetration of the category of bulbs within bulb types, household penetration was significantly higher for regular bulbs, except for halogen bulbs which had similar household penetration of regular versus specialty bulbs. Further, compared to 2017, there was an upward trend across the board in terms of the penetration of specialty bulbs for all four bulb types.

Figure 8: Household Penetration by Bulb Type and Regular vs. Specialty

	Total (n)	Incandescent	Halogen	CFL	LED
Regular	544	65%	29%	66%	68%
Specialty	453	40%	30%	37%	55%

Socket Saturation

Indicator #2 – Socket Saturation: The percentage of sockets filled with each bulb type.

The second indicator, socket saturation, measures the percentage of sockets in homes which are filled with each bulb type. Overall, 43% of all sockets in homes across Newfoundland Power's service territory are filled with an LED bulb which is up from 34% from a year ago.

Socket saturation for LED bulbs was largely similar across the four regions.

Figure 9: Socket Saturation by Bulb Type and Region

	Total (n)	Incandescent	Halogen	CFL	LED
Overall	546	25%	8%	25%	43%
St. John's CMA	335	27%	8%	24%	41%
Other East	83	22%	8%	26%	45%
Central	66	20%	7%	25%	48%
Western	62	24%	9%	27%	40%

In general, saturation rates were relatively consistent across bulb types and income levels in 2018. This was a departure from 2017 when higher income groups reported higher saturation rates for LED bulbs. This change was a result of significant increases in the saturation levels of LED bulbs among the <$40,000 (21% vs. 39%) and $40-000 - $80,000 (30% vs. 45%) income groups.

Figure 10: Socket Saturation by Bulb Type and Income Level

	Total (n)	Incandescent	Halogen	CFL	LED
< $40,000	77	28%	4%	28%	39%
$40,000 - $80,000	135	28%	7%	20%	45%
$80,000 - $100,000	74	22%	9%	31%	38%
> $100,000	165	21%	9%	25%	45%

Socket saturation was also examined by regular vs. specialty bulbs. CFLs made up a higher proportion of regular bulbs (28%) compared to specialty bulbs (17%). Incandescent bulbs had relatively similar rates of regular (26%) versus specialty (21%) bulbs. Socket saturation for halogen bulbs was only 6% for regular bulbs and 13% for specialty bulbs. For LED bulbs, the saturation was observationally higher for specialty bulbs (49%) compared to regular bulbs (40%).

Figure 11: Socket Saturation by Bulb Type and Regular vs. Specialty

	Total (n)	Incandescent	Halogen	CFL	LED
Regular	684	26%	6%	28%	40%
Specialty	570	21%	13%	17%	49%

Bulbs in Storage

Respondents were also asked to indicate what bulbs they currently had in storage. Overall, 67% of homes have at least one bulb in storage (down from 83% a year ago). The table below illustrates the percentage of homes having at least one of each bulb type in storage and the mean number stored. The incidence of each bulb type in storage was relatively steady across regions. Almost four in ten households (38%) had at least one LED bulb in storage.

Figure 12: Percentage of Homes with Each Bulb Type in Storage and Mean Number of each Bulb Type in Storage by Region

Type	Overall		I		Other East		Central		Western	
	n=546		n=335		n=83		n=66		n=62	
	%	mean	%	mean	%	mean	%	mean	%	mean
Incandescent	30%	5.8	30%	6.3	28%	5.8	31%	4.8	29%	4.5
Halogen	10%	4.7	12%	4.6	10%	3.2	1%	11.0	15%	5.9
CFL	28%	5.0	31%	4.9	27%	5.8	25%	4.2	21%	5.2
LED	38%	6.0	40%	6.0	39%	5.0	38%	6.1	29%	7.5

When looking at the distribution by bulb type, LED bulbs make up 39% of all bulbs in storage which was up from 31% last year. Just over one-quarter of households still have incandescent bulbs stored (29% of all bulbs in storage). It is worth noting that this is down from 36% in 2017. Overall, storage levels of the different bulb types were relatively similar across all regions.

Figure 13: Distribution of Bulbs in Storage by Bulb Type and Region

	Total (n)	Incandescent	Halogen	CFL	LED
Overall	546	29%	8%	24%	39%
St. John's CMA	335	30%	8%	24%	38%
Other East	83	30%	6%	29%	35%
Central	66	30%	3%	21%	46%
Western	62	24%	16%	20%	40%

Room Analysis

Household penetration and socket saturation were also analyzed for each room type to determine whether or not LED usage was higher in any particular area of the home.

The following table provides a snapshot of the total number of bulbs reported by survey respondents for each bulb type across different areas of the home. Note the table is split into rooms with high energy use versus rooms with relatively less energy use.

Figure 14: Total Number of Bulbs by Type and Area of the Home[1]

Type		Incandescent		Halogen		CFL		LED	
	Total (n)	Reg.	Spec.	Reg.	Spec.	Reg.	Spec.	Reg.	Spec.
Bedroom	546	995	202	72	67	950	126	1172	361
Kitchen	546	507	193	212	252	432	136	936	659
Bathroom	542	588	241	71	68	683	182	1081	316
Living/Family Room	542	526	172	215	160	628	88	948	679
Dining Room	404	288	202	46	25	267	85	464	181
Hallways / Landing	520	441	159	44	45	499	55	673	192
Porch / Foyer	460	264	88	5	9	292	39	347	91
Subtotal	**546**	**3609**	**1257**	**665**	**626**	**3751**	**711**	**5621**	**2479**

Type		Incandescent		Halogen		CFL		LED	
	Total (n)	Reg.	Spec.	Reg.	Spec.	Reg.	Spec.	Reg.	Spec.
Attached Garage	105	103	8	9	3	89	55	107	30
Detached Garage/Shed	291	169	52	39	37	260	98	301	118
Office / Study	164	84	18	20	17	70	8	127	60
Laundry Room	415	165	22	27	6	183	34	205	74
Storage / Pantry	266	116	8	6	8	127	18	123	33
Basement	340	312	41	73	70	372	81	425	226
Utility Room	175	65	3	6	0	78	15	70	22
Closet	454	146	13	18	7	133	16	171	53
Other	28	41	9	1	7	8	6	23	0
Exterior	546	383	131	247	198	407	184	674	492
Subtotal	**546**	**1584**	**305**	**248**	**198**	**148**	**205**	**1727**	**515**

[1] Total number of bulbs reported in the online survey for the 546 homes surveyed.

In general, household penetration was relatively consistent across areas of the home (some variation is expected given the smaller sample sizes for certain areas of the home over others). LED penetration was highest in kitchens (55%) and living or family rooms (55%), which was also the case in 2017. The number of homes reporting bulbs for each room type is also presented in the table below.

Figure 15: Household Penetration by Bulb Type and Room Type

	Total (n)				
Bedroom	546	45%	7%	41%	49%
Kitchen	546	37%	20%	31%	55%
Bathroom	542	35%	7%	38%	49%
Living / Family Room	542	33%	13%	36%	55%
Dining Room	404	32%	4%	26%	42%
Hallways / Landing	520	34%	5%	34%	40%
Porch / Foyer	460	32%	2%	33%	39%
Attached Garage	105	28%	5%	33%	32%
Detached Garage or Shed	291	22%	7%	28%	29%
Office / Study	164	29%	9%	26%	44%
Laundry Room	415	28%	4%	30%	36%
Storage Room / Pantry	266	30%	2%	30%	35%
Basement	340	29%	7%	35%	39%
Utility Room	175	28%	2%	33%	29%
Closet	454	17%	1%	16%	22%
Other	28	55%	10%	14%	25%
Exterior	546	28%	22%	32%	44%

Similar to household penetration, socket saturation, was relatively consistent across room types, given the fluctuating sample size for the different rooms. For LED bulbs, observationally, saturation was again highest in kitchens (48%) living or family rooms (48%), as well as the office/study (47%).

Figure 16: Socket Saturation by Bulb Type and Room Type

	Total (n)	Incandescent	Halogen	CFL	LED
Bedroom	546	30%	4%	27%	39%
Kitchen	546	21%	14%	17%	48%
Bathroom	542	26%	4%	27%	44%
Living / Family Room	542	20%	11%	21%	48%
Dining Room	404	31%	4%	23%	42%
Hallways / Landing	520	28%	5%	27%	41%
Porch / Foyer	460	31%	1%	29%	39%
Attached Garage	105	27%	3%	36%	34%
Detached Garage or Shed	291	21%	7%	33%	39%
Office / Study	164	25%	9%	19%	47%
Laundry Room	415	26%	5%	31%	39%
Storage Room / Pantry	266	27%	3%	33%	36%
Basement	340	22%	8%	28%	42%
Utility Room	175	26%	3%	37%	34%
Closet	454	28%	5%	28%	40%
Other	28	54%	7%	14%	24%
Exterior	546	19%	17%	22%	43%

Also provided is the socket saturation by bulb type for each area of the home broken out by regular and specialty bulbs. The trend seen at the overall level was relatively consistent at the room level as well.

Figure 17: Socket Saturation by Bulb Type and Room Type

Type		Incandescent	Halogen	CFL	LED
Kitchen	Total (n)				
Regular	466	24%	10%	21%	45%
Specialty	240	15%	20%	11%	53%
Type		Incandescent	Halogen	CFL	LED
Bedroom	Total (n)				
Regular	515	31%	3%	30%	37%
Specialty	169	27%	8%	16%	48%
Type		Incandescent	Halogen	CFL	LED
Bathroom	Total (n)				
Regular	477	24%	3%	28%	45%
Specialty	182	30%	8%	22%	40%
Type		Incandescent	Halogen	CFL	LED
Living Room	Total (n)				
Regular	481	22%	10%	27%	41%
Specialty	199	15%	14%	8%	62%
Type		Incandescent	Halogen	CFL	LED
Dining Room	Total (n)				
Regular	296	27%	4%	25%	44%
Specialty	117	41%	5%	17%	37%
Type		Incandescent	Halogen	CFL	LED
Hallway	Total (n)				
Regular	456	26%	3%	30%	41%
Specialty	110	34%	10%	12%	43%
Type		Incandescent	Halogen	CFL	LED
Porch	Total (n)				
Regular	387	29%	1%	32%	39%
Specialty	85	38%	4%	17%	41%
Type		Incandescent	Halogen	CFL	LED
Office	Total (n)				
Regular	133	28%	7%	23%	43%
Specialty	40	16%	15%	8%	60%

Type		Incandescent	Halogen	CFL	LED
Laundry Room	Total (n)				
Regular	343	28%	5%	32%	35%
Specialty	62	17%	4%	26%	54%
Type		Incandescent	Halogen	CFL	LED
Storage Room	Total (n)				
Regular	225	30%	1%	34%	34%
Specialty	32	11%	11%	29%	49%
Type		Incandescent	Halogen	CFL	LED
Closet	Total (n)				
Regular	216	31%	4%	29%	36%
Specialty	34	14%	7%	20%	59%
Type		Incandescent	Halogen	CFL	LED
Utility Room	Total (n)				
Regular	141	29%	3%	37%	31%
Specialty	19	9%	0%	39%	52%
Type		Incandescent	Halogen	CFL	LED
Basement	Total (n)				
Regular	275	26%	6%	31%	37%
Specialty	69	10%	16%	20%	54%
Type		Incandescent	Halogen	CFL	LED
Attached Garage	Total (n)				
Regular	75	33%	3%	29%	35%
Specialty	20	8%	3%	58%	31%
Type		Incandescent	Halogen	CFL	LED
Detached Garage	Total (n)				
Regular	167	23%	6%	33%	39%
Specialty	61	16%	11%	33%	39%
Type		Incandescent	Halogen	CFL	LED
Other	Total (n)				
Regular	23	58%	1%	10%	31%
Specialty	6	40%	29%	31%	0%
Type		Incandescent	Halogen	CFL	LED
Exterior	Total (n)				
Regular	409	23%	15%	24%	39%
Specialty	213	12%	15%	18%	50%

In-Home Visits

Following completion of the online survey, a series of 47 in-home visits were conducted with a random sample of households from the St. John's area who gave permission for a follow-up in-home visit. Two MQO representatives visited each home to record the bulb types in each room. This was used as a quality control check of the self-reported data provided by respondents in the online survey.

The main objective of the in-home visits was to determine whether or not the socket saturation and total bulb numbers reported in the online survey was accurate given the survey was relying on self-reported data from respondents. As the table below indicates, the saturation rates for each bulb type were similar for the 47 households compared to the rates reported in the online survey. In particular, the saturation rates for LED bulbs for the in-home visits were within 3 percentage points of the number reported for those same households from the online survey.

Based on these results, it was determined that no correction factor was needed to adjust the socket saturation rates from the online survey sample.

Figure 17: Comparison of Socket Saturation for Online Survey and In-Home Visits

	Total (n)				
Online Survey	47	26%	9%	21%	44%
In-Home Visit	47	30%	8%	21%	41%

While respondents continued to underreported the total number of bulbs in their household in the online survey, changes in the survey made for 2018 resulted in fewer bulbs being missed. Among the households participating in the in-home visits, 2,972 bulbs had been reported in the online survey compared to 3,311 in the in-home visits. This was an underestimation of 11% (down from 22% in 2017).

Figure 18: Comparison of Total Bulbs Reported for Online Survey and In-Home Visits

Type	Number of Bulbs
Online Survey	2,972
In-Home Visits	3,311
Difference	339 (11%)

Market Potential

Indicator #3 – Market Potential: Potential for LED bulbs

Based on the survey results, the remaining market potential for LED bulbs was analyzed to help plan the takeCHARGE Instant Rebates program going forward. The following is a general estimate developed using the survey results and extrapolating the numbers to the total population of households in Newfoundland Power's service territory.

Two scenarios are provided. The only difference in the scenarios is the addition of a correction factor for the average number of sockets per home which was underestimated based on the results of the in-home visits.

The following are the general steps taken to calculate the market potential:

Step 1: Determine the total number of sockets within Newfoundland Power's service territory based on the average[2] sockets per home reported in the online survey.

Step 2: Calculate the total sockets filled with each bulb type based on the socket saturation rates reported in the online survey.

Step 3: Estimate market potential based on the total number of sockets remaining with bulbs other than LEDs (as well as other than LEDs and CFLs).

Step 4: Calculate the total number of bulbs in storage based on data reported in the online survey.

Step 5: Calculate the remaining market potential assuming that all LED bulbs currently in storage will be used to replace other bulb types currently in use.

[2] The average or mean percentage used for calculations is to the one decimal point.

Figure 19: Scenario 1 – Remaining Market Potential for LED Bulbs [Estimated]

Scenario 1: Excluding Correction Factor for Underestimated Socket Totals From In-Home Visits	
Sockets per Home	
11,386,529	Total sockets within Newfoundland Power's service territory (Estimated)
Saturation by Bulb Type	
2,820,030	Total number of sockets filled with Incandescent bulbs (25% of sockets - from online survey)
883,361	Total number of sockets filled with Halogen bulbs (8% of sockets - from online survey)
2,833,344	Total number of sockets filled with CFL bulbs (25% of sockets from online survey)
4,849,794	Total number of sockets filled with LED bulbs (43% of sockets from online survey)
Remaining Market Potential	
6,536,735	Remaining Market potential for LED bulbs
3,703,391	Remaining Market potential for LED bulbs assuming no replacement of CFLs
Bulbs in Storage	
1,261	Total number of LED bulbs in storage (per online survey)
2.3	Average number of LED bulbs in storage per home (per online survey)
529,934	Total number of LED bulbs in storage (population) Estimated
Remaining Market Potential Factoring in LED Bulbs in Storage	
6,006,801	Remaining Market potential for LED bulbs factoring in LED bulbs in storage
3,173,457	Remaining Market potential for LED bulbs assuming no replacement of CFLs

Based on this scenario, the remaining market potential for LED bulbs would range from 6.0 million to 6.5 million sockets. If we exclude sockets currently filled with a CFL bulb, the remaining market potential would range from 3.2 million to 3.7 million sockets.

In the second scenario presented below, a correction factor was added based on the fact that according to the data for the 47 households that participated in the in-home visits, the total number of bulbs reported was underestimated by 11%.

Figure 20: Scenario 2 – Remaining Market Potential for LED Bulbs including Correction Factor for Underreporting of Total Bulbs [Estimate]

Scenario 2: Including Correction Factor for Underestimated Socket Totals From In-Home Visits	
Sockets per Home	
11,386,529	Sockets per home
1.114	Correction factor based on underestimated sockets per home (per home visits)
12,684,593	Total sockets within Newfoundland Power's service territory
Saturation by Bulb Type (from online survey)	
3,141,513	Total number of sockets filled with Incandescent bulbs (25% of sockets)
984,064	Total number of sockets filled with Halogen bulbs (8% of sockets)
3,156,345	Total number of sockets filled with CFL bulbs (25% of sockets)
5,402,671	Total number of sockets filled with LED bulbs (43% of sockets)
Remaining Market Potential	
7,281,923	Remaining Market potential for LED bulbs
4,125,577	Remaining Market potential for LED bulbs assuming no replacement of CFLs
Bulbs in Storage	
1,261	Total number of LED bulbs in storage (per online survey)
2.3	Average number of LED bulbs in storage per home (per online survey)
529,934	Total number of LED bulbs in storage (population)
Remaining Market Potential Factoring in LED Bulbs in Storage	
6,751,989	Remaining Market potential for LED bulbs factoring in LED bulbs in storage
3,595,644	Remaining Market potential for LED bulbs assuming no replacement of CFLs

Based on this scenario, the remaining market potential for LED bulbs would range from 6.8 million to 7.3 million sockets. If we exclude sockets currently filled with a CFL bulb, the remaining market potential would range from 3.6 million to 4.1 million sockets.

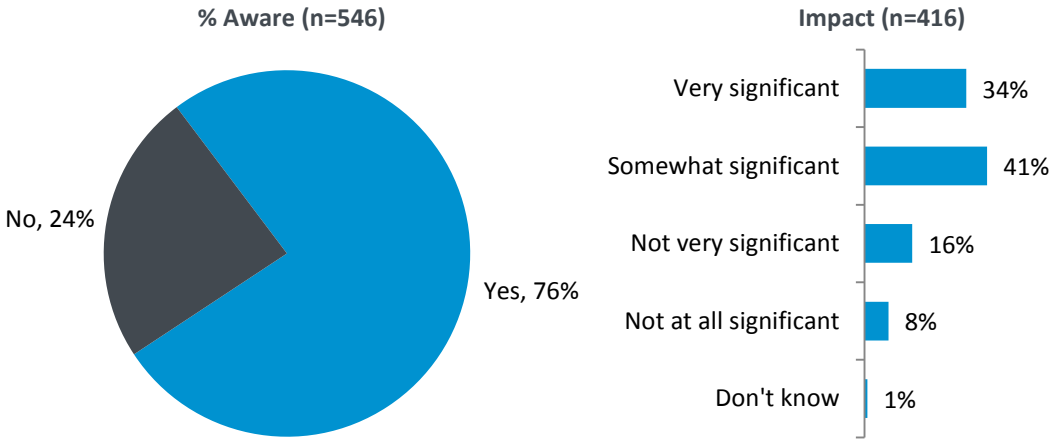
Both of these scenarios demonstrate significant capacity for growth in use of LED bulbs remains despite the increase in saturation levels seen in 2018.

ENERGY STAR® Program

Respondents were asked whether or not they had heard of (aided) the ENERGY STAR® program as well as the impact the program has on their purchase decision.

Overall, three-quarters (76%) of respondents had heard of the ENERGY STAR® program which was on par with 2017. This was consistent across Newfoundland Power's service territory. Among those aware (n=416) the program had a significant impact on their decision to purchase light bulbs. More than one-third (34%) indicated the program had a very significant impact while a further 41% said it had a somewhat significant impact.

Figure 21: Awareness of ENERGY STAR® Program



Instant Rebates Program

Over one-half (58%) of households surveyed indicated they were aware of Newfoundland Power's Instant Rebates program, which is a program that offers instant rebates at the cash register in retail stores on the purchase of energy efficient products (on par with 2017). Among those who were aware (n=314), 54% had purchased an LED light bulb during the fall program period (September 29th to October 31st, 2017) which was also unchanged from last year.

Figure 22: Awareness and Participation in Instant Rebates Program

The program continues to have a big impact on the purchase behaviour of respondents. Overall, 70% of those who purchased said that the discount was very influential in their decision to purchase LED light bulbs while a further 21% said it was somewhat influential. Both these measures were on par with 2017.

When asked what type of bulb they would have purchased if the discount had not been offered, just about one-half (45%) of those who participated in the program said they would have still purchased the LED bulbs without the discount. Observationally, this was up from 39% in 2017. This leaves over one-half (55%) who were unlikely to purchase LED bulbs had the discount not been offered.

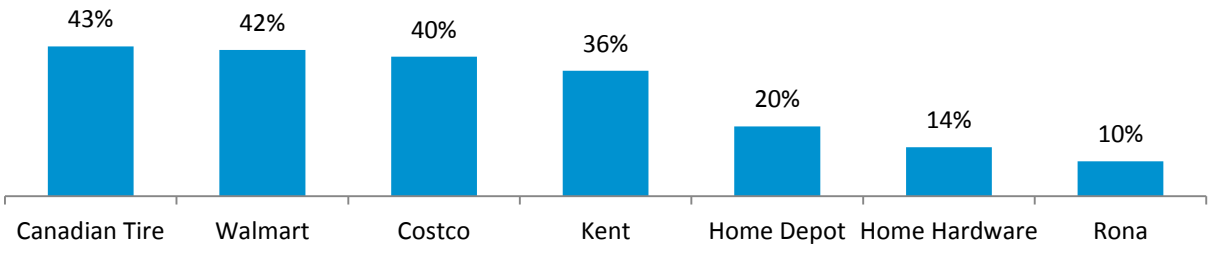
Figure 23: Bulb Type Customers Would Have Purchased Without the Discount

Households that indicated they had at least one LED bulb installed in their home were asked to rate their level of satisfaction with LED bulbs. Overall, satisfaction was extremely high with 64% very satisfied and a further 23% somewhat satisfied.

Figure 24: Satisfaction with LED Bulbs

In 2018, a question was added to the survey to identify where households tend to purchase their light bulbs. Canadian Tire (43%), Walmart (42%) and Costco (40%) were the top mentions followed closely by Kent (36%).

Figure 25: Purchase Location – Top Mentions



Conclusions

1. **Over three-quarters of homes have at least one LED light bulb installed in their home which is up from 2017.**

   Household penetration stood at 78% for LED bulbs, up significantly from 68% in 2017. Despite this, there remains a relatively high number of homes with at least one incandescent bulb in their home (household penetration of 76%, identical to 2017) demonstrating that their remains significant room for future energy savings.

2. **Household penetration and socket saturation of LED bulbs were largely similar across all regions.**

   Household penetration and saturation was relatively consistent across regions. Upward movement in penetration and saturation rates in Central and Western regions eliminated some differences seen in these areas compared to the rest of the province in 2017.

3. **LED bulbs make up over four in ten of all bulbs used in homes which was a significant increase of 2017.**

   The socket saturation for LED bulbs currently sits at 43% of all bulbs/sockets, up from 34% a year ago. There was even split of CFL (25%) and Incandescent (25%) bulbs in sockets among households surveyed, indicating further room for growth in the uptake of LED bulbs over time. Higher energy using rooms such as kitchens and living / family rooms exhibited the highest penetration and saturation rates for LED bulbs.

4. **There was growth in the use of specialty bulbs since 2017.**

   Penetration rates for specialty bulbs trended up across all four bulb types in 2017. This was particularly evident for LED bulbs where the penetration of LED specialty bulbs increased from 30% of households in 2017 to 55% in 2018.

5. **Household penetration of LED bulbs is influenced by household income levels, with those in the lower income brackets being less likely to have LED bulbs installed in their home.**

   Household penetration was significantly lower among lower income households, with the highest income group having 88% household penetration and the lowest income group having 64% penetration. It was encouraging that penetration increased significantly for the lowest income group compared to 2017 (51%).

6. **Awareness of the ENERGY STAR® Program was high, and impacts purchasing decisions.**

   Three-quarters of consumers (76%) were aware of the ENERGY STAR® program. Among those aware, the program had significant impact on their purchasing decisions, with 75% stating the program had a very significant or somewhat significant impact.

7. **Among those aware of the instant rebates program, the rebate had a significant impact on purchase behaviour.**

   Six in ten respondents were aware of the Instant Rebates program (58%). Meanwhile, just 45% of those purchasing LED bulbs would have made the same decision had the discount not been offered, indicating the program does have a noticeable impact on consumer purchasing of LED bulbs.

Recommendations and Implications for the takeCHARGE Instant Rebates Program

1. Based on the market potential analysis conducted, their remains approximately 3.5 million sockets that could be replaced with an LED bulb.

2. There remains approximately 3 million incandescent bulbs currently in use in homes across Newfoundland Power's service territory and approximately one-third of homes have additional incandescent bulbs in storage. Given there are over 500,000 LED bulbs in storage in homes across the region, encouraging replacement of incandescent bulbs with these available LED bulbs will also be important to maximizing saturation and energy efficiency.

Appendix A: Questionnaire

SECTION A: INTRODUCTION

Email Script

Newfoundland Power and Newfoundland and Labrador Hydro (Hydro) are undertaking a household lighting study to understand the different types of light bulbs customers are currently using throughout their home. The results of this study will be used to help improve the customer energy efficiency programs currently offered by Newfoundland Power and Hydro.

Survey Details

The survey will take approximately 15 minutes to complete. Throughout the survey, you will be asked to indicate the type of light bulbs in each socket/light fixture throughout your home.

Please be assured your responses will remain confidential. No individual results will be reported.

If you require assistance completing the survey, please reply to this e-mail and the survey administrator will address any issues or concerns you may have.

When you are ready to begin, please click on the link below:

<**Insert Link**>

MQO Research is a Corporate Member of the Canadian Marketing Research Intelligence Association (MRIA) which is responsible for regulating marketing research practices in Canada. MQO Research adheres very strictly to all MRIA guidelines of professionalism and privacy. If you would like to contact the MRIA to verify the legitimacy of this research study or our company please call 1-888-602-6741 ext 8728 toll free and reference study ID: 20180305-867Hor visit : www.mriaportal-arimportail.ca/mpower8/rrs/verify?t=20180305-867H

Instruction Screen

We appreciate you taking the time to participate in this study. As the information you will be providing in this survey is extremely important, please take your time when completing the survey and check any rooms/light fixtures where you are unsure of the bulb type currently being used. If for any reason you need to exit the survey before completing it, you can simply click the link again to pick up where you left off.

SECTION B: HOME BULB ASSESSMENT

S1. Which of the following best describes where you currently live?

House (Single Family or Duplex) 1
Apartment.....2
Condominium 3
Prefer not to say 9

Q1. To begin, we'd like you to identify all the rooms/areas in your home. Include all floors as well as any basement. How many of each of the following do you have:

a. Bedroom
b. Kitchen
c. Bathroom
d. Living Room/Sitting Room/Family Room
e. Dining Room
f. Hallway/Landing
g. Porch/Foyer
h. Attached Garage
i. Detached Garage or Shed
j. Office/Study
k. Laundry Room
l. Storage Room/Pantry
m. Basement
n. Utility Room
o. Closet
p. Other (Please Specify Room Type) **Programming Note: Allow for Multiple Others**

Q2. Next, for <u>each room</u>, we'd like you to indicate the total number of <u>each type</u> of light bulb used in all light fixtures/sockets.

For each bulb type, please indicate whether it is a regular or specialty bulb. Provided on this screen is an overview of all the bulb types to aid in filling out this survey.

Regular bulbs are the most common light bulbs purchased. They fit into standard fixtures and have a consistent shape and size across the four main types. Specialty bulbs vary in shapes and sizes and are used in different fixtures such as chandeliers, recessed lighting, etc.

Programming Note: Insert Image of Bulb Types

For fixtures with multiple bulbs or sockets, please record the bulb type for each individual socket. So for example, in the image below, if you have CFL bulbs in each of these sockets, record 4 bulbs for that fixture.

Programming Note: Only show each room type if mentioned in Q1. Include rows for the total number of each type of room mentioned (i.e. Bedroom #1, #2, #3 etc…)

First, let's start with your kitchen. Please record the number and type of bulbs in all sockets and fixtures in your kitchen.

Type of Light Bulbs

Room Type	# of Incandescent Bulbs		# of CFL Bulbs		# of LED Bulbs		# of Halogen Bulbs	
	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty
Kitchen								

Please record the number and type of bulbs in all sockets and fixtures in your bedrooms.

Type of Light Bulbs

Room Type	# of Incandescent Bulbs		# of CFL Bulbs		# of LED Bulbs		# of Halogen Bulbs	
	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty
Bedroom #1								

Please record the number and type of bulbs in all sockets and fixtures in your bathrooms.

Type of Light Bulbs

Room Type	# of Incandescent Bulbs		# of CFL Bulbs		# of LED Bulbs		# of Halogen Bulbs	
	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty
Bathroom #1								

Please record the number and type of bulbs in all sockets and fixtures in your living room/sitting room/family room.

Type of Light Bulbs

Room Type	# of Incandescent Bulbs		# of CFL Bulbs		# of LED Bulbs		# of Halogen Bulbs	
	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty
Living / Sitting / Family Room #1								

Please record the number and type of bulbs in all sockets and fixtures in your dining room.

Type of Light Bulbs

Room Type	# of Incandescent Bulbs		# of CFL Bulbs		# of LED Bulbs		# of Halogen Bulbs	
	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty
Dining Room								

Please record the number and type of bulbs in all sockets and fixtures in your hallways/landings.

Type of Light Bulbs

Room Type	# of Incandescent Bulbs		# of CFL Bulbs		# of LED Bulbs		# of Halogen Bulbs	
	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty
Hallway / Landing #1								

Please record the number and type of bulbs in all sockets and fixtures in your porch/foyer.

Type of Light Bulbs

Room Type	# of Incandescent Bulbs		# of CFL Bulbs		# of LED Bulbs		# of Halogen Bulbs	
	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty
Porch/Foyer								

Please record the number and type of bulbs in all sockets and fixtures in your office/study.

Type of Light Bulbs

Room Type	# of Incandescent Bulbs		# of CFL Bulbs		# of LED Bulbs		# of Halogen Bulbs	
	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty
Office/Study								

Please record the number and type of bulbs in all sockets and fixtures in your laundry room.

Type of Light Bulbs

Room Type	# of Incandescent Bulbs		# of CFL Bulbs		# of LED Bulbs		# of Halogen Bulbs	
	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty
Laundry Room								

Please record the number and type of bulbs in all sockets and fixtures in your storage room / pantry.

Type of Light Bulbs

Room Type	# of Incandescent Bulbs		# of CFL Bulbs		# of LED Bulbs		# of Halogen Bulbs	
	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty
Storage Room / Pantry #1								

Please record the number and type of bulbs in all sockets and fixtures in your basement.

Type of Light Bulbs

Room Type	# of Incandescent Bulbs		# of CFL Bulbs		# of LED Bulbs		# of Halogen Bulbs	
	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty
Basement								

Please record the number and type of bulbs in all sockets and fixtures in your utility room.

Type of Light Bulbs

Room Type	# of Incandescent Bulbs		# of CFL Bulbs		# of LED Bulbs		# of Halogen Bulbs	
	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty
Utility Room								

Please record the number and type of bulbs in all sockets and fixtures in your closets.

Type of Light Bulbs

Room Type	# of Incandescent Bulbs		# of CFL Bulbs		# of LED Bulbs		# of Halogen Bulbs	
	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty
Closet #1								

Please record the number and type of bulbs in all sockets and fixtures in your attached garage.

Type of Light Bulbs

Room Type	# of Incandescent Bulbs		# of CFL Bulbs		# of LED Bulbs		# of Halogen Bulbs	
	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty
Attached Garage								

Please record the number and type of bulbs in all sockets and fixtures in your detached garage.

Type of Light Bulbs

Room Type	# of Incandescent Bulbs		# of CFL Bulbs		# of LED Bulbs		# of Halogen Bulbs	
	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty
Detached Garage								

Please record the number and type of bulbs in all sockets and fixtures in your <Recall Other Room Type>.

Type of Light Bulbs

Room Type	# of Incandescent Bulbs		# of CFL Bulbs		# of LED Bulbs		# of Halogen Bulbs	
	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty
Other								

Q3. Next, thinking about the exterior of your home, please indicate the number of each type of bulb used in each exterior light fixture.

Programming Note: Insert Image of Bulb Types

Programming Note – If respondent had a garage in Q1, include the exterior of the garage in this table.

Type of Light Bulbs

Room Type	# of Incandescent Bulbs		# of CFL Bulbs		# of LED Bulbs		# of Halogen Bulbs	
	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty
Exterior								

Q4. Now we'd like to gather some information on the bulbs you currently have in storage. How many of each of the following type of bulbs do you have in storage to replace existing bulbs?

Programming Note: Insert Image of Bulb Types

Room Type	# of Incandescent Bulbs		# of CFL Bulbs		# of LED Bulbs		# of Halogen Bulbs	
	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty	# Regular	# Specialty
Storage								

Q5a. **If LED mentioned in Q2-Q4:** How would you rate your level of satisfaction with the LED bulbs you have installed in your home?

Very satisfied 1
Somewhat satisfied 2
Neither satisfied nor dissatisfied 3
Somewhat dissatisfied.....4
Very dissatisfied.....5
Don't know 9

Q5b. **Q5a=04/05:** Why are you dissatisfied with the LED bulbs?

_____

SECTION C: ENERGY STAR AWARENESS

The next few questions are about the ENERGY STAR® program.

Q6. Have you ever heard of the *ENERGY STAR®* program?

Yes	1	
No	2	**Go to Section D**
Prefer not to say	9	**Go to Section D**

Q7. When purchasing light bulbs, how significant is the *ENERGY STAR®* label in your purchase decision?

Very significant	1
Somewhat significant	2
Not very significant	3
Not at all significant	4
Don't know	9

SECTION D: TAKECHARGE PROGRAM

The next few questions are about purchasing light bulbs for your home.

Q8_1. From which retailer do you most often buy your light bulbs?

Rotate List – Multiple Mention

Costco 01
Canadian Tire 02
Kent 03
RONA 04
Walmart 05
Pipers 06
Home Depot 07
Home Hardware 08
Other (Please Specify) 09
Don't know 99

Q8. Have you ever heard of **<Newfoundland Power's/Newfoundland and Labrador Hydro's>** Instant Rebates program which offers rebates at the cash register in retailer stores such as **<For NF Power customers show: Costco or Kent / For NL Hydro customers show: Canadian Tire and Home Hardware>** for the purchase of energy-efficient products such as LED light bulbs, dimmer switches and smart strip power bars?

Yes 1
No .....2 **Go to Demos**
Prefer not to say .....9 **Go to Demos**

Q9. Did you purchase any LED light bulbs during the Instant Rebate campaign from September 29th to October 31st, 2017?

Yes 1
No .....2 **Go to Demos**
Prefer not to say .....9 **Go to Demos**

Q10. How influential was the discount offered by **<Newfoundland Power/Newfoundland and Labrador Hydro>** on your decision to purchase LED light bulbs?

Very influential 1
Somewhat influential 2
Not very influential 3
Not at all influential 4
Don't know 9

Q11. If the discount had not been offered, what type of bulb would you have purchased?

LED 1
CFL 2
Halogen 3
Incandescent 4
Don't know 9

SECTION E: DEMOGRAPHICS

The last few questions are for analysis purposes only.

D2. Into which of the following categories does your age fall?

18 - 24 1
25 - 34 2
35 – 44 3
45 – 54 4
55 – 64 5
65 plus 6
Prefer not to say 9

D3a. Was your total household income (before taxes) for 2017…?

Less than $40,000 1
$40,000 - $59,999 2
$60,000 - $79,999 3
$80,000 – $99,999 4
$100,000 - $119,999 5
$120,000 or more 6
Prefer not to say 9

D4. Do you rent or own the home where you currently live?

Rent 1
Own 2
Prefer not to say 9

D5. What are the first three digits of your postal code?

_____

Prefer not to say 9

On-Site Recruit – If Resident of St. John's CMA:

As a part of this research, we are conducting an in-home follow-up with a random sample of households. The in-home follow-up would involve having two MQO representatives visit your home to confirm the information provided regarding bulb types in each room of your home. The visit should take approximately 20 minutes in total and participating households would receive $50 VISA CASH CARD as a thank you for allowing us to confirm the light bulb information you have provided in the survey. Would you be willing to participate in the in-home follow-up? If your home is selected, a representative from MQO will be in contact with you to confirm an appointment time that is suitable for you.

Yes.....1
No.....2

If Yes: What would be the best telephone number to reach you to set up an appointment if your household is selected?

_____

Thank you for taking part in this study.

Appendix B: Tabular Results

Q2-Q3: Penetration by Bulb Type

	Total	Region			
		St. John's CMA	Other East	Central	Western
Total (n)	546	335	83	66	62
Incandescent	76%	76%	78%	74%	74%
Halogen	46%	49%	42%	41%	48%
CFL	74%	74%	73%	81%	67%
LED	78%	77%	76%	85%	78%

Q2-Q3: Saturation by Bulb Type

	Total	Region			
		St. John's CMA	Other East	Central	Western
Total (n)	546	335	83	66	62
Incandescent	25%	27%	22%	20%	24%
Halogen	8%	8%	8%	7%	9%
CFL	25%	24%	26%	25%	27%
LED	**43%**	**41%**	**45%**	**48%**	**40%**

Q4: Distribution of Bulb Types in Storage

	Total	Region			
		St. John's CMA	Other East	Central	Western
Total (n)	546	335	83	66	62
Overall	67%	70%	64%	65%	64%
Incandescent	30%	30%	28%	31%	29%
Halogen	10%	12%	10%	1%	15%
CFL	28%	31%	27%	25%	21%
LED	38%	40%	39%	38%	29%

Q4: Mean Number of Bulbs in Storage by Type

	Total	Region			
		St. John's CMA	Other East	Central	Western
Overall	8.8	9.2	8.5	7.6	8.5
Incandescent	5.8	6.3	5.8	4.8	4.5
Halogen	5.0	4.6	3.2	11.0	5.9
CFL	6.0	4.9	5.8	4.2	5.2
LED	**4.7**	**6.0**	**5.0**	**6.1**	**7.5**

Q5: How would you rate your level of satisfaction with the LED bulbs you have installed in your home?
SUBSET: Respondents that mentioned LED bulbs

	Total	Region			
		St. John's CMA	Other East	Central	Western
Total (n)	424	257	63	56	48
Very satisfied	64%	59%	72%	71%	65%
Somewhat satisfied	23%	24%	15%	25%	25%
Neither satisfied nor dissatisfied	6%	7%	5%	2%	6%
Somewhat dissatisfied	3%	4%	3%	0%	0%
Very dissatisfied	0%	1%	0%	0%	0%
Don't know	4%	5%	5%	2%	4%

Q6: Have you ever heard of the EnergyStar program?

	Total	Region			
		St. John's CMA	Other East	Central	Western
Total (n)	546	335	83	66	62
Yes	76%	78%	73%	72%	74%
No	24%	21%	27%	28%	26%
Prefer not to say	0%	1%	0%	0%	0%

Q7: When purchasing light bulbs, how significant is the EnergyStar label in your purchase decision?
SUBSET: Respondents that have heard of the EnergyStar program

	Total	Region			
		St. John's CMA	Other East	Central	Western
Total (n)	416	262	61	47	46
Very significant	34%	31%	38%	38%	39%
Somewhat significant	41%	41%	36%	45%	42%
Not very significant	16%	18%	16%	13%	13%
Not at all significant	8%	8%	8%	5%	7%
Don't know	1%	2%	2%	0%	0%

Q8_1: From which retailer do you most often buy your light bulbs?

	Total	Region			
		St. John's CMA	Other East	Central	Western
Total (n)	546	335	83	66	62
Canadian Tire	43%	39%	29%	55%	65%
Walmart	42%	39%	47%	43%	48%
Costco	40%	49%	47%	22%	8%
Kent	36%	36%	27%	47%	37%
Home Depot	20%	27%	22%	6%	4%
Home Hardware	14%	9%	20%	22%	16%
RONA	10%	11%	15%	2%	2%
Pipers	4%	6%	5%	0%	0%
Other (Please specify)	4%	2%	8%	3%	5%
Dominion	2%	3%	0%	0%	2%
Dollorama	2%	1%	1%	2%	6%
Sobeys	1%	2%	0%	0%	0%
Dollar Store	1%	2%	0%	0%	0%
Don't know	1%	1%	2%	0%	0%
Amazon	1%	1%	1%	0%	0%

Percentages may exceed 100% due to multiple response

Q8: Have you ever heard of Newfoundland Power's Instant Rebates program which offers instant rebates at the cash register in retailer stores such as Costco or Kent for the purchase of energy-efficient products such as LED light bulbs, dimmer switches and smart strip bars?

	Total	Region			
		St. John's CMA	Other East	Central	Western
Total (n)	546	335	83	66	62
Yes	58%	57%	59%	63%	52%
No	42%	43%	41%	34%	48%
Prefer not to say	1%	0%	0%	3%	0%

Q9: Did you purchase any LED light bulbs during the Instant Rebate Program period from September 30th to November 30th, 2016?
SUBSET: Respondents that have heard of the rebates program

	Total	Region			
		St. John's CMA	Other East	Central	Western
Total (n)	314	191	49	42	32
Yes	54%	49%	55%	66%	59%
No	45%	50%	43%	34%	41%
Prefer not to say	1%	1%	2%	0%	0%

Q10: How influential was the discount offered by Newfoundland Power on your decision to purchase LED light bulbs?SUBSET: Respondents that have heard of the rebates program and purchased LED bulbs from September 29th to October 31st, 2017

	Total	Region			
		St. John's CMA	Other East	Central	Western
Total (n)	168	94	27	28	19
Very influential	70%	69%	66%	68%	80%
Somewhat influential	21%	20%	19%	32%	15%
Not very influential	3%	5%	4%	0%	0%
Not at all influential	3%	4%	4%	0%	5%
Don't know	2%	1%	7%	0%	0%

Q11: If the discount had not been offered, what type of bulb would you have purchased?
SUBSET: Respondents that have heard of the rebates program and purchased LED bulbs from September 29th to October 31st, 2017

	Total	Region			
		St. John's CMA	Other East	Central	Western
Total (n)	168	94	27	28	19
LED	45%	47%	59%	36%	30%
CFL	20%	19%	11%	29%	22%
Halogen	1%	2%	0%	0%	0%
Incandescent	10%	11%	7%	8%	11%
Don't know	24%	21%	22%	28%	36%

Q11: If the discount had not been offered, what type of bulb would you have purchased?
SUBSET: Respondents that have heard of the rebates program and purchased LED bulbs from September 30th to November 30th, 2016

	Total	Region			
		St. John's CMA	Other East	Central	Western
Total (n)	127	74	21	20	12
LED	60%	59%	76%	49%	47%
CFL	26%	24%	15%	40%	35%
Halogen	1%	3%	0%	0%	0%
Incandescent	13%	14%	10%	11%	18%

Don't know excluded

D2: Into which of the following categories does your age fall?

	Total	Region			
		St. John's CMA	Other East	Central	Western
Total (n)	546	335	83	66	62
18 - 24	2%	2%	0%	3%	0%
25 - 34	14%	18%	7%	9%	12%
35 - 44	17%	20%	14%	9%	16%
45 - 54	25%	24%	24%	25%	26%
55 - 64	23%	19%	27%	30%	29%
65 plus	19%	15%	28%	24%	17%
Prefer not to say	1%	2%	0%	0%	0%

D3a: Was your total household income (before taxes) for 2016…?

	Total	Region			
		St. John's CMA	Other East	Central	Western
Total (n)	546	335	83	66	62
Less than $40,000	14%	13%	17%	12%	19%
$40,000 - $59,999	16%	14%	19%	20%	11%
$60,000 - $79,999	10%	8%	13%	13%	8%
$80,000 – $99,999	13%	14%	10%	9%	19%
$100,000 - $119,999	11%	12%	10%	17%	5%
$120,000 or more	19%	22%	17%	12%	11%
Prefer not to say	17%	17%	14%	17%	26%

D4: Do you rent or own the home where you currently live?

	Total	Region			
		St. John's CMA	Other East	Central	Western
Total (n)	546	335	83	66	62
Rent	16%	22%	4%	10%	12%
Own	82%	75%	95%	88%	84%
Prefer not to say	2%	3%	1%	2%	3%