ATCO Electric
YUKON

October 31, 2016

Yukon Utilities Board
Box 31728
Whitehorse, YT, Y1A 6L3

Attention: Mr. Robert Laking
Board Chair

Dear Sir:

RE: ATCO Electric Yukon ("AEY")
2016-2017 General Rate Application
Update to YUB-YECL-6(c)

In response to YUB-YECL-6(c), AEY had provided the Interim Evaluation Report: Demand Side Management Program Portfolio for the Yukon (31 July, 2015), at YUB-YECL-6(c) Attachment 1. AEY has now received the subsequent Interim Evaluation Report for the 2015-2016 period. As such, in order to ensure the Yukon Utilities Board and interveners have the most recent information available to them in relation to the relevant DSM Programs, AEY is filing the 2015-2016 Interim Evaluation Report: Demand Side Management Program Portfolio for the Yukon (31 October, 2016) on the record of this proceeding.

Should you have any questions or concerns with the above please contact the undersigned.

Yours truly,

Original Signed by:

James Grattan, CPA, CA
Director, Regulatory

YUKON ENERGY

ATCO Electric
YUKON

October 31, 2016

Yukon Utilities Board
P.O. Box 31728
Whitehorse, Yukon
Y1A 6L3

Attention: Mr. Robert Laking, Chair

Re: 2015-2016 Evaluation Report - Demand-Side Management (DSM) Program Portfolio for the Yukon

Please find attached the 2015-2016 Evaluation Report for the Demand-Side Management (DSM) Program Portfolio as per our filing requirements of Board Order 2014-06. This report has been prepared by the utilities' staff with guidance, review and approval by independent Evaluation Advisors, Marie Couture-Roy and Genevieve Lavigne of Econoler.

If you have any questions regarding the content within this report please do not hesitate to contact the undersigned.

Yours truly,

Goran Sreckovic
Director Resource Planning and Regulatory Affairs
Yukon Energy Corporation

Jay Massie
Manager
ATCO Electric Yukon

2015-2016 Evaluation Report

Demand Side Management Program Portfolio for the Yukon

31 October, 2016

Submitted to:
Yukon Utilities Board

Submitted by:
Yukon Energy Corporation
ATCO Electric Yukon

Executive Summary

inCharge is an electricity conservation program delivered to residential customers in Yukon by the territory's electrical utilities, Yukon Energy Corporation and ATCO Electric Yukon. inCharge consists of three programs: the LED and Automotive Heater Timer Rebate Program, the Low Cost Energy Efficient Products Program and the Engagement, Education and Communication Program. These programs launched in October 2014 and have been well received by Yukoners.

This evaluation report will focus on the period between April 2015 and July 2016, updating the program's projected performance with the actual costs and reported energy savings achieved from the program launch in October 2014 to the end of July 2016, as well as documenting learnings from program administration and participant feedback. The program evaluation was completed by utility staff with guidance and review by an independent evaluation advisor. This method was chosen to keep costs at an appropriate level for the program while still ensuring that the evaluation was completed in an objective manner.

Evaluation data was collected through phone interviews with program participants as well as the rebate program database, which tabulates the number of rebates and types of products rebated. The results demonstrated that customers are very satisfied with the program (96% of participants for the LED rebate and kit products and 100% of participants for the AHT rebate were satisfied). Participation rates were slightly lower than projected in 2015, however in 2016 participation rates are anticipated to be higher than projected. This is a result of increased retail partner participation, program communications and increased customer awareness. Online advertising was added to the communications tactics and was well recognized by participants. The labour cost for the program has decreased in 2016 due to streamlined processes as the utilities gained experience in program delivery and is expected to stay at this level for the remaining years.

This report's recommendations and results demonstrate that the LED and Automotive Heater Timer programs were adopted well by Yukoners. It was also shown that energy efficient products were well received. Results show the KPI's are met or exceeded in most program areas. Programs performed well financially and annual budgets were respected.

As directed by the Yukon Utilities Board, the programs achieved an overall Ratepayer Impact Measure (RIM) ratio of 1.0. This shows that the program is neutral from a utility rate impact perspective. The programs also achieved a very high Participant Cost (PC) ratio and high Program Administrator Cost (PAC) ratio results, showing they are very beneficial to the participants of the program and the utilities, who are the administrators of the programs. Most significantly, the program achieved a high Total Resource Cost (TRC) ratio. This shows that in the context of the comparison with other electricity resource options, the conservation programs performed very well. The tests were conducted assuming a five year program term in order to remain consistent with methodology used in the original program filing. Overall this evaluation has shown that the inCharge Program was well received by Yukoners, was cost effective and met or exceeded most Key Performance Indicators.

Table of Contents

1 Program Summary

inCharge is an electricity conservation program delivered to residential customers in Yukon by the territory's electrical utilities, Yukon Energy Corporation and ATCO Electric Yukon. inCharge consists of three programs; the LED and Automotive Heater Timer Rebate Program, the Low Cost Energy Efficient Products Program and an Engagement, Education and Communication Program. These programs launched in October 2014 and have been extremely well received by Yukoners.

The LED and Auto Heater Timer Rebate Program offers a $7 rebate on Energy Star LED light bulbs and $10 rebate on mechanical automotive heater timers that are purchased in the Yukon. Participants can apply for rebates by email, mail, in person at the utilities office or by leaving the rebate form with the cashier at one of the participating retailers. Local retailers can participate in the program by stocking eligible LEDs and timers as well as displaying program advertisements. In addition, stores can also participate by having their cashiers help customers fill out the rebate forms and collect them on behalf of the utilities. Customers will see the rebate appear on their next electrical bill. Retailers have also partnered with inCharge to host events where eligible products are on sale. inCharge will help to advertise the event, to provide staff instore promote the event, to help customers find the right product and fill out the rebate forms properly. The store stocks the sale products and sets up a display area for the event. There are twelve stores in the Yukon displaying program information and collecting rebate forms.

The Low Cost Energy Efficient Products Program distributes kits containing energy saving products and information. These kits contain LED bulbs, an automotive heater timer and a smart power bar. The kits are distributed at community events and utility staff value the opportunity to talk to participants about the products and electricity conservation in general. The program also included a small number of Nest smart learning thermostats that will be distributed to homes that have central electric heat.

The Engagement, Education and Communication Program seeks to raise awareness of electricity conservation and the inCharge program with Yukoners. This includes maintaining the inCharge website, sharing electricity saving tips, answering customer questions regarding electricity conservation and advertisement of the inCharge program.

2 Evaluation Context

This evaluation report will focus on the period between April 2015 and July 2016, updating the program's projected performance with the actual costs and reported energy savings achieved from the program launch in October 2014 to the end of July 2016, as well as documenting learnings from program administration and participant feedback. This report will also assess the key performance indicators laid out in the program's Evaluation, Measurement and Verification Plan. The main goals of this evaluation is to ensure that the programs are performing as projected, that participants are satisfied with the program and to provide recommendations to improve program delivery and cost effectiveness.

The program evaluation was completed by utility staff with guidance and review by an independent evaluation advisor. This method was chosen to keep costs at an appropriate level for the program while still ensuring that the evaluation was completed in an objective manner. The evaluation involved telephone surveys of customers receiving LED rebates (n=31), automotive heater timers rebates (n=11) and energy saving kits (n=30) as well as managers from participating stores (n=7).

3 Updated Cost Effectiveness Results and Program Performance

3.1 Energy Saving and Cost Effectiveness Results

Table 1 below contains the target energy savings and costs for the inCharge program as presented in the Revised Evaluation, Measurement and Verification Plan (December 3, 2014). Table 2 contains a summary of the updated energy savings and costs for the inCharge Program. These updated results are based on actual costs and deemed electricity savings from Year 1 (2014) to end of July of Year 3 (2016). The 2015 interim evaluation reported on the costs and savings for Year 1 (2014) to April of Year 2 (2015), this current evaluation report added the actual costs and deemed savings for the remainder of Year 2 (2015) to July of Year 3 (2016). The updated projections are based on the programs' preliminary results from August of Year 3 (2016) through Year 5 (2018). The updates were completed in the excel-based Program Projections Model that has been used throughout the design and duration of the program. A comparison of Tables 1 and 2 shows how the programs performed in the two years of delivery in comparison to targeted performance. Deemed savings considers the installation rates of each type of product (for more detail see Section 3.1.4). This installation rate is verified through customer surveys and as this model input is refined each year, the deemed savings for past as well as coming years will adjust. The details of the savings and costs are also discussed below in Tables 3 and 4. The following sections discuss how the actual results were incorporated into Table 2. Note that the results in Table 2 from the previous evaluation report may differ as the installation rate for each product is refined through the participant interview process.

Table 1: Targeted Energy Savings and Costs[1]

Program Elements	Net Savings with T&D Losses							Utility Expenditure ($1,000s)							Benefit/Cost Ratios for the 5-Year Period			
		Year 1	Year 2	Year 3	Year 4	Year 5	Total		Year 1	Year 2	Year 3	Year 4	Year 5	Total	TRC	PAC	PC	RIM
LED Lighting and Automotive Heater Timer Rebates	Lifetime MWh:	1,337	5,484	5,484	5,484	5,484	23,271	Incentive:	$12	$51	$51	$51	$51	$216	6.2	5.2	20.2	1.2
	Annual MWh:	67	380	692	1,005	1,272	N/A	Non-Incen:	$82	$79	$81	$84	$83	$409				
	Coincident kW:	16	111	206	301	365	N/A	Total:	$94	$130	$132	$135	$134	$625				
Low-cost Energy Efficient Products	Lifetime MWh:	4,605	3,247	3,247	3,247	3,247	17,593	Incentive:	$78	$55	$55	$55	$55	$299	2.4	2.5	5.9	1.0
	Annual MWh:	424	723	1,021	1,225	1,457	N/A	Non-Incen:	$121	$172	$177	$183	$188	$841				
	Coincident kW:	113	192	272	288	323	N/A	Total:	$199	$227	$233	$238	$243	$1,140				
Engagement, Education and Communication	Lifetime MWh:	N/A	N/A	N/A	N/A	N/A	N/A	Incentive:	$0	$0	$0	$0	$0	$0	N/A	N/A	N/A	N/A
	Annual MWh:	N/A	N/A	N/A	N/A	N/A	N/A	Non-Incen:	$103	$118	$121	$125	$129	$596				
	Coincident kW:	N/A	N/A	N/A	N/A	N/A	N/A	Total:	$103	$118	$121	$125	$129	$596				
Total for the Residential Program	Lifetime MWh:	5,942	8,731	8,731	8,731	8,731	40,864	Incentive:	$90	$106	$106	$106	$106	$515	2.7	2.6	9.6	1.0
	Annual MWh:	491	1,102	1,714	2,230	2,730	N/A	Non-Incen:	$306	$369	$380	$392	$400	$1,847				
	Coincident kW:	129	303	478	589	688	N/A	Total:	$396	$475	$486	$498	$506	$2,362				

Table 2: Updated Energy Savings and Costs

Program Elements	Net Savings with T&D Losses							Utility Expenditure ($1,000s)							Benefit/Cost Ratios for the 5-Year Period			
		Year 1	Year 2	Year 3	Year 4	Year 5	Total		Year 1	Year 2	Year 3	Year 4	Year 5	Total	TRC	PAC	PC	RIM
LED Lighting and Automotive Heater Timer Rebates	Lifetime MWh:	2,418	3,893	7,859	8,128	8,128	30,426	Incentive:	$19	$31	$71	$69	$69	$260	6.4	5.7	13.4	1.3
	Annual MWh:	121	331	747	1,192	1,619	N/A	Non-Incen:	$77	$73	$95	$98	$98	$441				
	Coincident kW:	29	88	200	327	442	N/A	Total:	$96	$105	$166	$167	$167	$700				
Low-cost Energy Efficient Products	Lifetime MWh:	3,208	2,313	2,313	2,313	2,313	12,461	Incentive:	$71	$51	$51	$51	$51	$274	3.0	2.8	6.0	1.0
	Annual MWh:	298	503	708	840	962	N/A	Non-Incen:	$110	$154	$48	$48	$48	$409				
	Coincident kW:	81	169	257	296	329	N/A	Total:	$181	$205	$99	$99	$99	$683				
Engagement, Education and Communication	Lifetime MWh:	N/A	N/A	N/A	N/A	N/A	N/A	Incentive:	$0	$0	$0	$0	$0	$0	N/A	N/A	N/A	N/A
	Annual MWh:	N/A	N/A	N/A	N/A	N/A	N/A	Non-Incen:	$86	$108	$130	$191	$191	$707				
	Coincident kW:	N/A	N/A	N/A	N/A	N/A	N/A	Total:	$86	$108	$130	$191	$191	$707				
Total for the Residential Program	Lifetime MWh:	5,625	6,207	10,173	10,441	10,441	42,887	Incentive:	$90	$82	$121	$120	$120	$533	3.1	2.9	9.2	1.0
	Annual MWh:	419	834	1,456	2,032	2,582	N/A	Non-Incen:	$272	$336	$273	$337	$337	$1,556				
	Coincident kW:	110	257	457	623	771	N/A	Total:	$363	$418	$395	$457	$457	$2,089				

[1] See page 14 of Appendix A of *2014 Annual Report – inCharge Demand Side Management (DSM) Program Portfolio for the Yukon,* Filed with Yukon Utilities Board January 29, 2015

3.1.1 Actual Costs

Cost estimates are divided by quarter in the Projections Model. The model was updated with actual costs for each quarter from the start of program launch preparation in third quarter of Year 1 (2014) up to the end of July of Year 3 (2016). The projected costs for the remainder of Year 3 (2016) through Year 5 (2018) were compared to actuals to ensure estimates were still accurate.

The inCharge program administration structure has evolved since its launch in 2014. This is a result of streamlined processes as the utilities gained experience in program delivery. As a result, the labour cost for the program has decreased in 2016 and is expected to stay at this level for the remaining years.

3.1.2 Reported Energy Savings

The energy savings attributed to the inCharge program are calculated using a deemed savings approach. An annual and lifetime energy savings is assigned to each type of product that is included in the program and documented in the Technical Reference Manual (TRM) discussed below. The energy saving projections for the LED and Automotive Heater Timer Rebate Program are based on a target number of rebates issued and included an assumption of the types of bulbs that customers will purchase with their rebates. The energy saving projections for the Low Cost Energy Saving Products Program are based on the number of each of the products the utilities will distribute.

In calculating the reported energy savings for the LED Rebate Program, the actual number of rebated units and types of bulbs purchased were tabulated and the deemed savings as per the TRM were applied. The actual results were used to update the saving projections going forward. In calculating the reported energy savings for the Automotive Heater Timer program, deemed savings as per the TRM were applied.

In calculating the reported savings for the Low Cost Energy Efficient Products Program, the number of products purchased and distributed were tabulated and the deemed savings as per the TRM were applied. The variation from projected savings to actual savings was minimal with this program as the purchasing decisions were in the control of the program administrators.

3.1.3 Technical Reference Manual

A Technical Reference Manual (TRM) was created as a part of the Program Projections Model. The TRM summarizes the assumptions and inputs to the Program Projections Model related to costs and energy savings for each individual type of product included in the programs. The TRM was updated in late 2014 as part of the work completed to launch the inCharge Programs. In particular, costs of LED bulbs were updated as this parameter changes rapidly. The energy savings attributed to each type of product was also reviewed at that time. An example of the TRM entry for standard LEDs can be found in Appendix A.

While the energy savings that can be attributed to a particular product is quite straight forward to estimate. The behavior of customers in purchasing and installing the products is a much more complex and intangible parameter that is considered in the deemed savings calculation. This is captured in the installation ratio and the Net to Gross (NTG) Ratio, discussed in the section below.

3.1.4 Installation Ratio

The installation ratio is an estimate of the percentage of program participants that have installed the product they received as part of an energy saving kit or purchased using a program rebate. As the product must be in use to result in the energy savings estimated, the installation ratio affects the amount of savings that can be claimed for the program. The installation ratio estimated for the program was confirmed through surveys with a sample of program participants.

A new evaluation protocol, the uniform methods project, has been recently developed by the US Department of Energy. This protocol uses a measurement called the in-service rate. For upstream programs like the LED and Automotive Heater Timer Rebate Program, the UMP recommends the following: "In-service rates should be calculated through an in-home audit. Since program bulbs cannot be easily identified, the in-service rate can be calculated as the number of bulbs purchased in a recent 12-month period that are installed divided by the total number of bulbs purchased in the same 12-month period. If the sample size of homes with bulbs purchased in the recent 12-month period is insufficient to provide the necessary levels of confidence and precision, a long term in-service rate can be used using all bulbs regardless of the time of purchase."[2] This new method gives the same results as the installation rate. inCharge will continue to monitor the Uniform Methods Project to adjust the evaluation protocol as needed.

3.1.5 Stipulated Net-to-Gross Ratio

The stipulated net-to-gross (NTG) ratio includes effects such as free ridership and spillover. Free ridership accounts for the program participants that would have made the energy saving change without the program, but took advantage of the program anyway. On the other end of the spectrum is spillover. These are people who made the energy saving changes because they were influenced by the inCharge program in some way, such as by point-of-purchase information posters, but did not participate in the program by applying for a rebate. The free ridership and spillover rates are more difficult and complex to confirm. It is currently assumed for the rebate program that free ridership and spillover will cancel each other. According to the survey results, the program seems to have a great influence on the customers' decision to purchase the energy-efficient products. It can also be assumed that the program will generate some spillover effects because of the general marketing, promotional displays and the fact that not all participants will take time to fill in the rebate form. For the low cost energy efficient products program, the NTG ratio is assumed to be 1 considering the relatively small size of the program, the fact that it is relatively new in the market and that no other jurisdiction has established NTG ratios that would be applicable to the program.

[2] NREL, Uniform Methods Protocol Chapter 6: Residential Lighting Evaluation Protocol, February 2014, available at < http://www.nrel.gov/extranet/ump/pdfs/20140514_ump_res_lighting_draft.pdf>

3.2 Key Performance Indicator Results

A set of key performance indicators (KPIs) and targets for each KPI were developed for each program. These KPIs are based on a logic model developed for each program. The logic model is a simple graphic and narrative that maps out the resources, activities and outcomes that are expected from each program and the linkages between those parameters that are expected to ensure the program is successful. The logic model for each program can be found in Appendix B. The KPIs are designed to test the performance of the linkages in the logic model. Tables 3 and 4 below report on how the programs are performing for each indicator and provide a brief commentary on each as appropriate. The first column references the linkage number to allow for reference to the programs logic model. Note that the results for Year 3 represent the progress made to the end of July towards meeting the annual (2016) target.

Table 3: LED and Auto Heater Timer Program KPI Summary

Link #	Narrative	Performance Indicator	Sources	Year 1		Year 2		Year 3		Progress Commentary
				Target 2014	Actuals 2014	Target 2015	Actuals 2015	Target 2016	Progress 2016	
Part A -- Visited Regularly as Part of Tracking and Performance Reporting – Key Performance Indicators (KPIs)										
00	Externalities	No associated tracked KPIs	-	-	-	-	-			
08	Utilities support EE workshops hosted by EE ambassadors	Suggested KPI(s): # workshops	Program documentation	-	20	2	-	-	-	Ambassador workshops not part of 2015 and 2016 program.
		# people attending workshops		-	80	8	-	-		Ambassador workshops not part of 2015 and 2016 program.

Link #	Narrative	Performance Indicator	Sources	Year 1		Year 2		Year 3		Progress Commentary
				Target 2014	Actuals 2014	Target 2015	Actuals 2015	Target 2016	Progress 2016	
11	Direct engagement with retail store managers	Suggested KPI(s):								
		# of new store managers being engaged for the 1st time	Direct engagement & communication logs	20	30	-	-	-	-	Store managers were contacted at the beginning of the program and efforts continue to engage them as the program continues.
		# of participating stores							12	New KPI added in 2016
		# of store managers contacted with program intel & updates		20	30	20	17	20	17	17 Retail managers were contacted in 2016. Not all participated, but were made aware of the programs and provided with contact information for the future.
13	Utilities issue point of purchase materials for retail managers	Suggested KPI(s):								
		# stores with POP materials	Program documentation	5	9	10	12	10	12	
		POP materials issued for all rebate-eligible products and refreshed as needed (Yes/No)		n/a	n/a	Yes	Yes	Yes	Yes	

Link #	Narrative	Performance Indicator	Sources	Year 1		Year 2		Year 3		Progress Commentary
				Target 2014	Actuals 2014	Target 2015	Actuals 2015	Target 2016	Progress 2016	
14 & 23	Shoppers buy and install rebate-eligible products[1]	Suggested KPI(s): # of units claimed	Tracking System	1,722	LED: 2,898	7,167	LED: 4,768 Timer: 111 Tot: 4,825	7,000	LED: 7250 Timer: 13 Tot: 7263	Participation higher than projected in 2016 and anticipated to exceed estimates. See Appendix C for rebates by type of LED bulb.
24	The LED lighting and automotive heater timer installations will yield long-term electricity and demand savings[2]	Suggested KPI(s): MWh of avoided lifetime electricity consumption	Estimate based on rebates processed	1,337	2,418	5,484	3,893	5,484	7,859	Lifetime savings were lower than projected in 2015 due to lower than estimated participation, but are on track to exceed targets in 2016.
		MWh of avoided annual electricity consumption		67	121	334	331	692	747	Annual savings were lower than projected in 2015 due to lower than estimated participation, but are on track to exceed targets in 2016.
		kW of avoided coincident electricity demand		16	29	111	88	206	200	Demand savings were lower than projected in 2015 and 2016 due to low uptake in the auto heater timers as a result of warmer than average winters.
21 & 25	Participants receive a rebate[3]	Suggested KPI(s): $ of incentive disbursement for LED lighting and automotive heater timers	Tracking System	$12K	$19,817	$51K	$32,512	$51K	$35,224	It is expected that program participation will be higher than estimated for 2016 but total program dollars is not expected to be exceeded.

Link #	Narrative	Performance Indicator	Sources	Year 1		Year 2		Year 3		Progress Commentary
				Target 2014	Actuals 2014	Target 2015	Actuals 2015	Target 2016	Progress 2016	
22	Shoppers learn about rebates through local media campaigns	Suggested KPI(s):								
		# updates of web content	Tracking System	1	1	4	4	4	10	Website updated when substantive changes made to program, events planned and in response to participant comments.
		# newspaper/radio advertisements		1	4	1	9	1	8	Radio and newspaper ads continue to be used to advertise the rebate program with the addition of online ads starting in late 2015.
		# bill insert		1	0	1	0	-	-	Bill inserts not used in 2014 and 2015.
		# online ads				1	1	4	3	Online ads were introduced in October 2015 and continue to be used to announce events and increase brand awareness due to their success.
		# email blasts		1	0	1	1	1	1	1 e-mail blast in 2015 and again in 2016 to notify past participants of planned events.

Link #	Narrative	Performance Indicator	Sources	Year 1		Year 2		Year 3		Progress Commentary
				Target 2014	Actuals 2014	Target 2015	Actuals 2015	Target 2016	Progress 2016	
26	Participating shoppers will be satisfied by the products that they bought	Suggested KPI(s): % of rebates processed in time to show up on next utility bill (if applications comes in 10 business days before issuance of bill)	Tracking System	70%	99%	80%	99%	80%	99%	Nearly all customers received their rebate on their next utility bill.
27	Word-of-mouth	No associated tracked KPIs	-	-	-	-	-			see Part B.
28	Non-energy benefits	No associated tracked KPIs	-	-	-	-	-			see Part B.
Part B -- To Be Visited, Checked and Reported On by Evaluators										
00	Externalities	Done/Not-Done – report on externalities on a yearly basis	Program documentation	Done	Done	Done	Done			
08	Utilities support EE workshops hosted by EE ambassadors	Suggested indicator(s): 1-to-5 scale, level of satisfaction with the workshop on average	Attendees	70% scoring 4-5 out of 5	100%	-	-	-	-	Ambassador workshops not part of 2015 and 2016 program.

Link #	Narrative	Performance Indicator	Sources	Year 1		Year 2		Year 3		Progress Commentary
				Target 2014	Actuals 2014	Target 2015	Actuals 2015	Target 2016	Progress 2016	
11	Direct engagement with retail store managers	Suggested indicator(s):								
		% store managers who know the program	Store managers	-	-	100%	-	100%		
		% of store managers the program influenced in general.	Tracking system	-	-	60%	-	60%	57%	
		% of store managers the program influenced in quantity of stocked items							71%	New KPI added in 2016
		% of store managers the program influenced in variety of stocked items							29%	New KPI added in 2016
		% of store managers that found the POP material influential							14%	New KPI added in 2016

Link #	Narrative	Performance Indicator	Sources	Year 1		Year 2		Year 3		Progress Commentary
				Target 2014	Actuals 2014	Target 2015	Actuals 2015	Target 2016	Progress 2016	
13	Utilities issue point of purchase materials for retail managers	Suggested indicator(s): % of shoppers who noticed POP materials	Shoppers and Participants	-	-	70%	83%	70%	LED: 73% Timer: 100% Avg: 80%	73% LED Rebate participants and 100% Auto Timer Rebate participants for a weighted average of 80%.
		% of shoppers who agree that POP materials contributed to their decision to purchase a rebate-eligible product		-	-	50%	58%	60%	LED: 55% Timer: 73% Avg: 60%	55% LED Rebate participants and 73% Auto Timer Rebate participants for a weighted average of 60%.
14 & 23	Shoppers buy and install rebate-eligible products	% of products installed	Participants	-	-	-	-	-	LED: 99% Timer: 82% Avg: 95%	The vast majority of customers installed the LED bulbs that they purchased (94%) with the rest having installed most of the lights and having purchased a few extras, for an installation rate of 99%.. Despite an unseasonably warm winter, most if the timers were installed (82%).

Link #	Narrative	Performance Indicator	Sources	Year 1		Year 2		Year 3		Progress Commentary
				Target 2014	Actuals 2014	Target 2015	Actuals 2015	Target 2016	Progress 2016	
24	The LED lighting and automotive heater timer installations will yield long-term electricity and demand savings	No evaluation indicator	-	-	-	-	-			
21 & 25	Participants receive a rebate	Suggested indicator(s): % of participants who agree the rebate contributed to them purchasing the energy efficient products rather than the base-case product	Participants	-	-	60%	LED 77% Timer 50%	60%	LED 68% Timer 72%	Participants who rated the program influential or very influential in their decision to purchase the energy efficient product: LED Rebate - 68% Auto Timer Rebate - 72%
22	Shoppers learn about rebates through local media campaigns	Suggested indicator(s): % of shoppers who can recall one of the following: bill inserts, web content, or inCharge in the news	Participants & non-participants	-	-	70%	58%	70%	64%	64% of participants can recall media advertising. Non-participants were not surveyed in this evaluation.

Link #	Narrative	Performance Indicator	Sources	Year 1		Year 2		Year 3		Progress Commentary
				Target 2014	Actuals 2014	Target 2015	Actuals 2015	Target 2016	Progress 2016	
26	Participating shoppers will be satisfied by the products that they bought	Suggested indicator(s): 1-to-5 scale, level of satisfaction with the overall rebate program	Participants	-	-	80% scoring 4-5 out of 5	LED 93% Timer 90%	80% scoring 4-5 out of 5	LED 96% Timer 100%	Percentage of participants who were very satisfied or satisfied with the program: LED Rebate - 96% Auto Timer Rebate - 100%
27	Word-of-mouth	Suggested indicator(s): % heard of the program positively from other past participants	Participants	-	-	30%	65%	30%	46%	46% of participants heard of the program from others and 100% of those discussions were positive.
		% heard of the program positively from past participants	Non-participants	-	-	10%	-	-	-	Non-participants were not surveyed in this evaluation.
28	Non-energy benefits	Suggested indicator(s): 1-to-5 scale, level of satisfaction with the LED lighting or automotive heater timer in general	Participants	-	-	90% scoring 4-5 out of 5	LED 93% Timer 90%	90% scoring 4-5 out of 5	LED 100% Timer 84%	Percentage of participants who were very satisfied or satisfied with their energy efficient products: LED Rebate - 100% Auto Timer Rebate - 84%
		1-to-5 scale, level of satisfaction with the LED light quality							100%	New KPI added in 2016

Link #	Narrative	Performance Indicator	Sources	Year 1		Year 2		Year 3		Progress Commentary
				Target 2014	Actuals 2014	Target 2015	Actuals 2015	Target 2016	Progress 2016	
		1-to-5 scale, level of satisfaction with the LED bulb lifetime							100%	New KPI added in 2016
		1-to-5 scale, level of satisfaction with the Auto Heater Timer usefulness							89%	New KPI added in 2016

Table 4: Low Cost Energy Efficient Products Program KPI Summary

Link #	Narrative	Performance Indicator	Sources	Target 2014	Actuals 2014	Target 2015	Actuals 2015	Target 2016	Progress 2016	Progress Commentary
Part A -- Visited Regularly as Part of Tracking and Performance Reporting – Key Performance Indicators (KPIs)										
00	Externalities	No associated tracked KPIs	-	-	-	-	-			
02	Utilities conduct outreach activities at community events	Suggested KPI(s): # of events w/Program booth	Program documentation	2	7	4	2	4	10	Program staff participated in a number of community events to discuss inCharge and distribute kits. Kits were also given to walk-in customers at utility offices.
		# of kits distributed		40	220	60	223	400	239	Kits were distributed to 223 customers in 2015 and 239 customers to the end of July 2016.
04	Provide EE products free-of-charge	Suggested KPI(s): # of kits/products distributed	Program documentation	300	356	180	223	400	239	

Link #	Narrative	Performance Indicator	Sources	Target 2014	Actuals 2014	Target 2015	Actuals 2015	Target 2016	Progress 2016	Progress Commentary
06	Scorecard results will be analyzed	Suggested KPI(s): # of scorecards received	Direct engagement & communication logs	30	18	20	45	-	-	Scorecards were not used in the 2016 program documentation and were replaced with phone interviews.
08	Utilities support EE workshops hosted by EE ambassadors	Suggested KPI(s): # workshops	Program documentation	-	20	2	-	-	-	Ambassador workshops not part of 2015 and 2016 program.
		# people attending workshops		-	80	8	-	-	-	Ambassador workshops not part of 2015 and 2016 program.
10	Utilities' community engagement leads to 'behavior-based' electricity and demand savings	No associated tracked KPIs	-	-	-	-	-	-	-	
14 & 19	Shoppers buy and install low-cost EE products	No associated tracked KPIs	-	-	-	-	-			

Link #	Narrative	Performance Indicator	Sources	Target 2014	Actuals 2014	Target 2015	Actuals 2015	Target 2016	Progress 2016	Progress Commentary
20	The low-cost EE products will yield long-term electricity and demand savings	Suggested KPI(s): MWh of avoided lifetime electricity consumption MWh of avoided annual electricity consumption MW of avoided coincident electricity demand	Estimate based on free products provided	 4,605 424 113	 3208 298 81	 2885 646 178	 2313 503 169	 2885 913 252	 2313 708 257	2015 &2016 kits were redesigned to be simpler than 2014 kits and focused on products that customers were installing at high rates. This resulted in similar savings for lower administrative costs.
26	Participants will be satisfied by the low-cost EE products	Suggested KPI(s): Scorecard feedback1-to-5 scale, level of satisfaction with the products	Tracking System	70%	-	70% scoring 4-5 out of 5	95%	-	-	Scorecards were not used in the 2016 program documentation and were replaced with phone interviews.
05 & 27	Word-of-mouth	No associated tracked KPIs	-	-	-	-	-			See Rebate Program KPIs above (Table 3).
28	Non-energy benefits	No associated tracked KPIs	-	-	-	-	-			See Rebate Program KPIs above (Table 3).
Part B -- To Be Visited, Checked and Reported On by Evaluators										
00	Externalities	Done/Not-Done – report on externalities on an annual basis	Program documentation	Done	-	Done	-			

Link #	Narrative	Performance Indicator	Sources	Target 2014	Actuals 2014	Target 2015	Actuals 2015	Target 2016	Progress 2016	Progress Commentary
02	Utilities conduct outreach activities at community events	No evaluation indicator	-		-		-			Done
04	Provide EE products free-of-charge	No evaluation indicator	-		-		-			Done
06	Scorecard results will be analyzed	Suggested indicator(s): % of issued score cards that are completed and returned	Program documentation	10%	16%	10%	-	-	-	Scorecards were not used in the 2015 and 2016 program documentation and were replaced with phone interviews.
08	Utilities support EE workshops hosted by EE ambassadors	Suggested indicator(s): 1-to-10 scale, level of satisfaction with the workshop on average	Attendees	7/10	10/10	8/10	-	-	-	Ambassador workshops were not part of 2015 and 2016 program.

Link #	Narrative	Performance Indicator	Sources	Target 2014	Actuals 2014	Target 2015	Actuals 2015	Target 2016	Progress 2016	Progress Commentary
14 & 19	Shoppers buy and install low-cost EE products	% products installed			-		-		LED: 72% Timer: 46% SPB: 89%	New KPI added in 2016. Note the low installation rate of Auto Heater Timers was attributed to the warmer than average winter in 2016. This low rate will be monitored in 2017 to confirm assumption.
20	The low-cost EE products will yield long-term electricity and demand savings	No evaluation indicator	-		-		-			
26	Participants will be satisfied by the low-cost EE products	Suggested indicator(s): 1-to-5 scale, level of satisfaction with their energy efficient products	Participants			80% scoring 4-5 out of 5	95%	80% scoring 4-5 out of 5	96%	Percentage of participants who were very satisfied or satisfied with each product: LEDs - 94%, powerbars - 95%, Auto heater timers - 100%, for an average of 96%.
27	Word-of-mouth	Suggested indicator(s): % heard of the program positively from other past participants	Participants			30%	65%	30%	46%	46% of participants had heard of the program from others and 100% of those discussions were positive (from Table 3). Non-participants were not surveyed in this evaluation.
		% heard of the program positively from past participants	Non-participants			10%	-	-	-	

Link #	Narrative	Performance Indicator	Sources	Target 2014	Actuals 2014	Target 2015	Actuals 2015	Target 2016	Progress 2016	Progress Commentary
28	Non-energy benefits	Suggested indicator(s): 1-to-5 scale, level of satisfaction with their energy-efficient product	Participants			80% scoring 4-5 out of 5	95%	80% scoring 4-5 out of 5	96%	Percentage of participants who were very satisfied or satisfied with each product: LEDs - 94%, powerbars - 95%, Auto heater timers - 100%, for an average of 96%.

3.3 General Program Administrator Observations

In addition to the information gathered to assess the KPIs, the staff administering the programs made the following observations and recommendations during the delivery of the inCharge program.

3.3.1 LED and Automotive Heater Timer Rebate Program Observations

The participation in the rebate program is now closely linked to instore events and communications, particularly when the price point of LED bulbs drops. LED bulb prices have dropped significantly since the start of the program and as a result participation levels have increased allowing more customers to take advantage of the rebate program. Participation rates were lower than expected in 2015, but are now higher than projected in 2016 resulting from an increase in communication and the introduction of instore events. Ongoing education with retail staff has resulted in greater in-store support and purchasing assistance for customers. The major retailers have noted the success of the instore events and are actively seeking opportunities for events and sales. National offices of the larger retailers are now aware of the Yukon programs and include the local stores in bulk purchasing opportunities resulting in lower prices and better stock choices. Online communication was also launched in late 2015 and is the most recognized advertising method.

Participants reported being very satisfied with the quality of LEDs. A bias still remains from the negative experience some customers have had with CFLs, but that comment is heard less frequently. More customers are choosing to purchase LEDs and are influenced by the program to buy more or to buy them sooner.

The larger Energy Star logo on the program forms resulted in less participant confusion and rebates being submitted for non-eligible products. Additional retail staff education has also contributed to less confusion at point of purchase.

The winter of 2015/2016 was warmer than average with the El Nino effect and the need for block heaters was minimal. This resulted in very low uptake of the automotive heater timer program. Given the uncertainties of weather for the 2016/2017 winter, a communications push regarding block heater timers will be launched in Q4 2016.

Based on the results of the participant survey, 99% of the LED bulbs purchased through the program and 82% of the block heater timers were installed. This means that only a small number of LED bulbs were left in storage. As for the timers, the explanation given by the participants who did not install it yet was the warm winter. Considering these high installation rates and the fact that it is very likely that the participants, who had to spend a certain amount of money to purchase the products, will install them ultimately, all of the savings associated with the rebates were claimed.

Comments from participants on the LED and Auto Heater Timer Rebate Program received during the phone surveys were very positive and a sample of the comments is below.

- Good and effective program. Savings are real and significant.
- Like the program design, really easy to participate.

- Been bragging to friends about the program. Love it!
- Excellent program, told many friends about it.
- Like the program being done by the utilities.

3.3.2 Low Cost Energy Efficient Products Program Observations

The simplified kit was easy to distribute and gave utility staff more time to engage with the recipient on electricity efficiency. Many of the recipients heard about the inCharge program for the first time when they received a kit. This is an opportunity to promote the inCharge program and increase brand awareness.

Telephone surveys showed that some participants did not recall receiving a kit and that there was some confusion with how to install and use the smart power bar. The telephone surveys also showed that the installation rates for the LED bulbs was slightly lower than 2015 (92% in 2015 as compared with 72% in 2016), higher for the smart power bars (84% in 2015 and 89% in 2016) and much lower for the automotive heater timers (98% in 2015 to 46% in 2016). An average installation rate of 85% was used for these products. This assumption will continue to be tested in follow-up evaluations. The kits were given for free to participants without validating their need for the products. Therefore it is important to apply the installation rates obtained from the participant surveys.

Comments from participants on the Low Cost Energy Efficient Products Program during the phone surveys were very positive and a sample of the comments is below.

- They are excellent products.
- Excellent program, keep it going.
- Good way to raise awareness.
- Keep the information coming. Helps to keep energy efficiency in the forefront.
- Very appreciative inCharge came out to Haines Junction. Not many organizations will travel there.

4 Results and Recommendations

LED and Automotive Heater Timer Rebate Program Recommendations

Recommendations for the rebate program are to continue to increase the communications efforts, particularly enhancement of instore advertising at the point of purchase. The goal is to increase participation, particularly among customers that are not already considering the purchase of LED's.

Also recommend is to provide a higher level of feedback to retail staff and managers on how their store is contributing to the program, which products participants are purchasing and share positive comments from participants to encourage their continued support as well as assist with stocking decisions.

4.1 Low Cost Energy Efficient Products Program Recommendations

To help increase awareness around the program and reach an audience that may not already be interested in electricity conservation, information regarding the inCharge program in general should be added to the kits. As the events where the kits are distributed are an opportunity to discuss the products and electricity conservation in general, care should be taken to ensure these events provide the time and space needed to engage with participants in a meaningful way. This is also intended to increase installation rates and reduce the number of participants that do not recall receiving an energy saving kit.

Installation rates of the automotive heater timers were lower in 2016 as compared to 2015. This trend and the cause of the low installation rates will be monitored closely to see if this was influenced by the warmer than average winter or if it is because of another barrier to installation. The 2017 evaluation could include a follow-up with 2015 participants to check if they had used their timer the following year. A reminder note to the 2015 kit recipients reminding them of the benefits of their automotive heater timers could also be sent. Also, the information included in the kits should be updated with more information on how to use the products, particularly the smart power bars, to ensure all participants are aware of their proper use and benefits.

4.2 Evaluation Summary and Evaluation Recommendations

Overall, this interim evaluation has shown that the inCharge Programs were well received by Yukoners, participation met or exceeded most KPIs (as shown in Tables 3 and 4 above) and were cost effective (as shown in Table 2). The linkages between activities, outputs, short-term outcomes, intermediate outcomes and long-term outcomes as laid out in the program logic models (Appendix B), are clear, well defined and reasonable.

The following short-term outcomes were achieved:

- Energy efficient products identified and endorsed;
- Energy efficient products available in stores;
- Retail staff educated about energy efficient products and provided in-store customer support;
- Customers educated about energy efficient products
- Customers convinced to buy and install energy efficient products; and
- The initial cost hurdle was alleviated.

The intermediate outcomes that were achieved include effective communication through advertising and word of mouth and participant purchase and installation of eligible energy efficient products was achieved.

The long-term outcomes that were achieved include high customer satisfaction with the programs and products, and cost effective, long-term energy and demand savings.

Overall, the program rationale is sound and the results to date support the reasonableness of the claimed cost effectiveness, and the energy and demand savings.

The US Department of Energy, Uniform Methods Project (UMP) has been recently completed and presents updated protocols for DSM program evaluation. The inCharge program will continue to work to ensure that the program evaluation is aligned with the new UMP methods.

In the Program Projections excel workbook that was developed to model the cost effectiveness of the inCharge program, one installation rate is applied to all five years. While this simple approach works for the current program, it would be an improvement if future projections or evaluation models could apply a separate installation rate to each year.

The program administrators should start to look for cost effective ways to measure the free ridership and spillover assumptions. This may be from surveys completed by other utilities with larger programs or through a short survey in the Yukon.

Appendix A: TRM Example – Standard LEDs > 9W

Energy Conservation Measure - Justification of the Incentive Level

ECM61

Inputs - Measure Considerations	
Measure Name:	Standard LEDs (>9 W)
Incentive Amount:	$7.00
Measure/Project Cost:	$7.61
Gross Consumption Savings:	40 kWh/yr
Transport and distribution losses:	8.3%
Gross Cons. Savings w/ T&D Losses:	43 kWh/yr
Gross Demand Savings:	.01 kW
Gross Demand Savings w/ T&D losses:	.010 kW
Participant's Savings on Year 1:	$5.74
Measure Lifetime:	20 yr

Inputs - Program Considerations		
Program Cost (% of Incentive):	192%	
Suggested Program Cost (% of Incentive):	192%	-->not us
Forecasted Freeridership:	10%	
Forecasted Participant Spillover:	0%	
Forecasted Non-participant Spillover:	10%	
Forecasted Rebound Effects:	0%	

Outputs with Program Costs	
PC - Benefit/Cost Ratio	10.64
PC - Net Present Value	$73.39
PC - Levelized Cost	$0.0174/kWh
Simple Payback w/ Incentive (yr)	0.1 yr
RIM - Benefit/Cost Ratio	*1.28*
RIM - Net Present Value	*$26.88*
RIM - Levelized Cost	*$0.1975/kWh*
TRC - Benefit/Cost Ratio	5.76
TRC - Net Present Value	$100.27
TRC - Levelized Cost	$0.0441/kWh
PAC - Benefit/Cost Ratio	*5.93*
PAC - Net Present Value	*$100.88*
PAC - Levelized Cost	*$0.0428/kWh*
RIM-YECL - Benefit/Cost Ratio	*0.65*
RIM-YECL - Net Present Value	*-$24.06*
RIM-YECL - Levelized Cost	*$0.1537/kWh*
RIM-YEC - Benefit/Cost Ratio	*1.93*
RIM-YEC - Net Present Value	*$63.55*
RIM-YEC - Levelized Cost	*$0.1322/kWh*

Reference Data from Other Jurisdictions:

Additional Discussions:

Detailed Calculation of the Cost-effectiveness Tests

Values Used in All Cost-effectiveness Tests		
Incremental Cost in Year 1	$7.61	
Incentive Amount in Year 1	$7.00	
Assumed Program Administration Costs in Year 1	$13.47	
Assumed Net-to-gross Ratio	100%	NTG = 1 - Freeridership + P. Spillover + N.-p. Spillover - Rebound

Participant Cost Test (PC) *Cumulative Present Value of Cashflows w/ PC Discount Rates*	*With Program Costs*	*W/o Program Costs*
Present Value of Participant's Avoided Energy Cost for 20 years	$74.01	$74.01
Discounted Cumulative Gross Energy Savings for 20 years	439 kWh	439 kWh
PC - Present Value of Benefits	$81.01	$81.01
PC - Present Value of Costs	$7.61	$7.61
PC - Benefit/Cost Ratio	10.64	10.64
PC - Net Present Value	$73.39	$73.39
PC - Levelized Cost	$0.0174/kWh	$0.0174/kWh
Simple Payback with Incentive	0.1 yr	0.1 yr

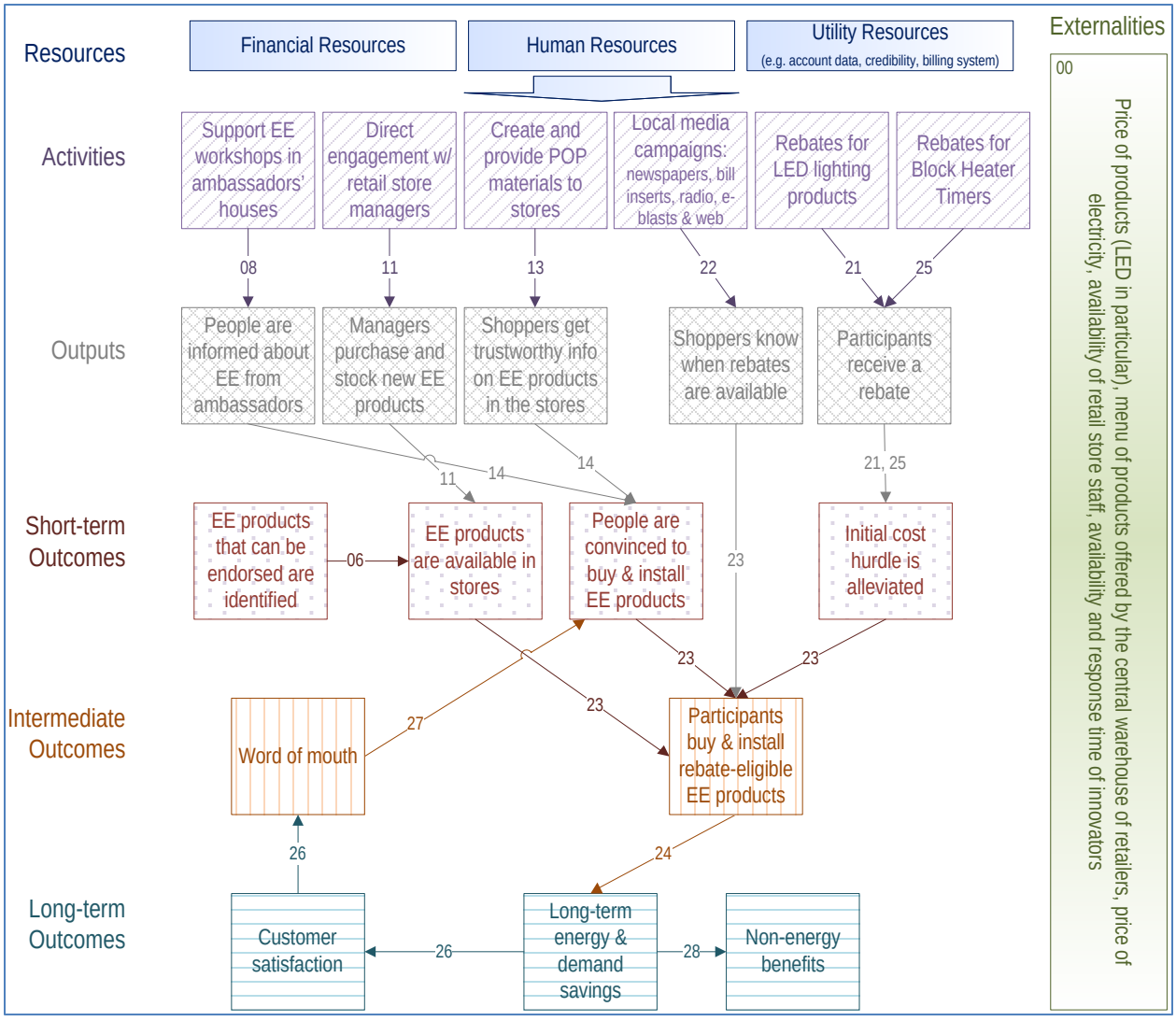
Ratepayer Impact Measure Test (RIM) *Cumulative Present Value of Cashflows w/ RIM Discount Rate*	*With Program Costs*	*W/o Program Costs*
Present Value of Avoided Energy Costs for 20 years	$121.35	$121.35
Present Value of Avoided Capacity Costs for 20 years	$0.00	$0.00
Present Value of Lost Revenues for 20 years	$74.01	$74.01
Discounted Cumulative Net Energy Savings for 20 years	478 kWh	478 kWh
RIM - Present Value of Benefits	$121.35	$121.35
RIM - Present Value of Costs	$94.48	$81.01
RIM - Benefit/Cost Ratio	1.3	1.5
RIM - Net Present Value	$26.88	$40.35
RIM - Levelized Cost	$0.1975/kWh	$0.1693/kWh

Total Resource Cost Test (TRC) *Cumulative Present Value of Cashflows w/ TRC Discount Rate*	*With Program Costs*	*W/o Program Costs*
Present Value of Avoided Energy Costs for 20 years	$121.35	$121.35
Present Value of Avoided Capacity Costs for 20 years	$0.00	$0.00
Discounted Cumulative Net Energy Savings for 20 years	478 kWh	478 kWh
TRC - Present Value of Benefits	$121.35	$121.35
TRC - Present Value of Costs	$21.09	$7.61
TRC - Benefit/Cost Ratio	5.76	15.9
TRC - Net Present Value	$100.27	$113.74
TRC - Levelized Cost	$0.0441/kWh	$0.0159/kWh

Program Administrator Cost Test (PAC) *Cumulative Present Value of Cashflows w/ PAC Discount Rate*	*With Program Costs*	*W/o Program Costs*
Present Value of Avoided Energy Costs for 20 years	$121.35	$121.35
Present Value of Avoided Capacity Costs for 20 years	$0.00	$0.00
Discounted Cumulative Net Energy Savings for 20 years	478 kWh	478 kWh
PAC - Present Value of Benefits	$121.35	$121.35
PAC - Present Value of Costs	$20.47	$7.00
PAC - Benefit/Cost Ratio	5.9	17.3
PAC - Net Present Value	$100.88	$114.35
PAC - Levelized Cost	$0.0428/kWh	$0.0146/kWh

Appendix B: Program Logic Models

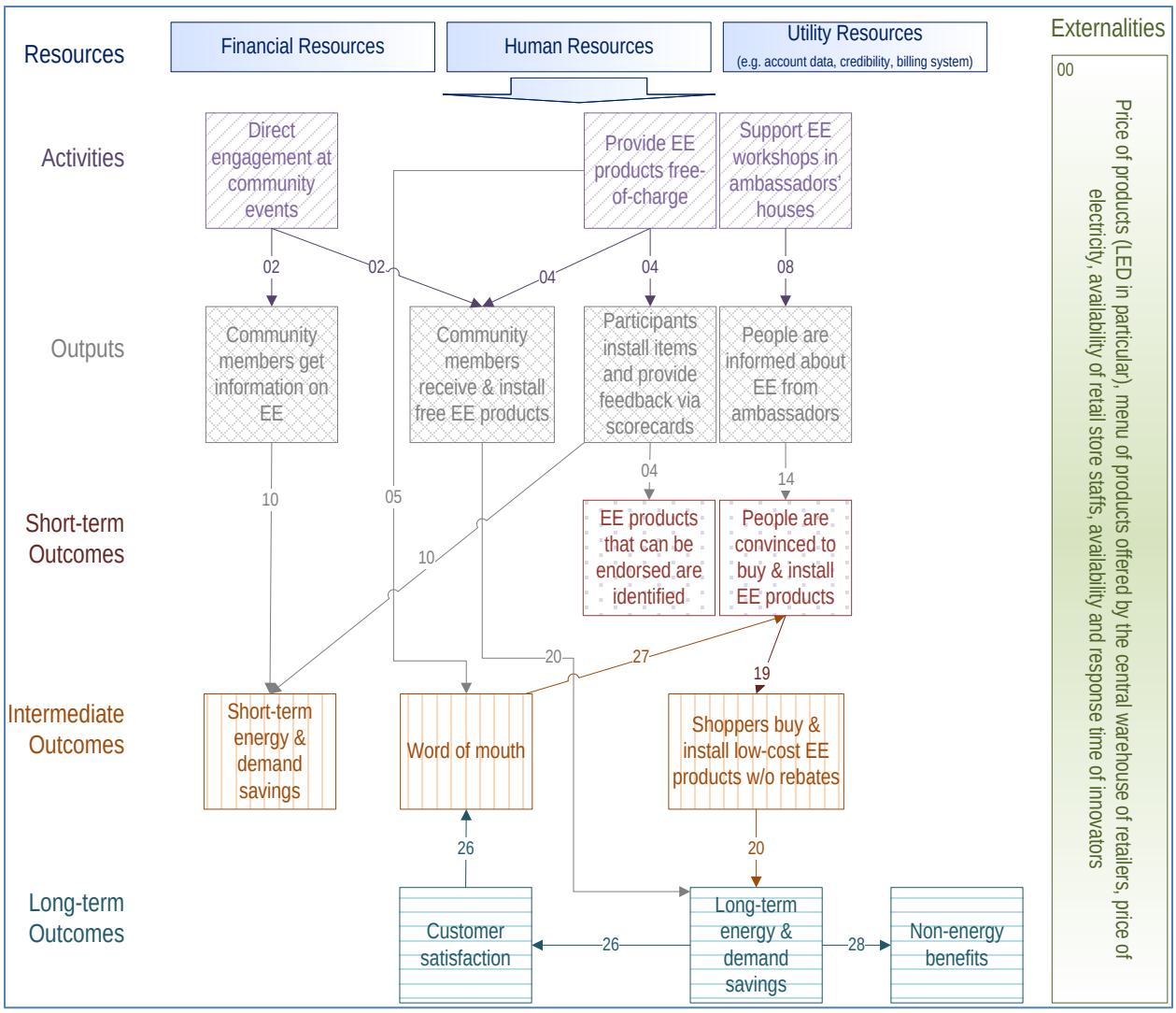
Figure B1: Logic Model for the Residential LED Lights and Automotive Heater Timer Rebate Program



Link #	Narrative
00	The program effectiveness and impact will be influenced by the following externalities: price of products (LED technologies, in particular), menu of products offered by the central warehouse of retailers, price of electricity, and availability of retail store staff to address any questions. The program administrator should monitor these externalities and adapt the implementation approach based on them.

Link #	Narrative
08	The Utilities will support EE workshops in the homes of EE community network members or nearby community venues with approximately ten friends and relatives. The Utilities will send facilitator(s), provide communication materials and low-cost EE products to give away, and perhaps provide food and beverages. The Utilities' skilled facilitator(s) will have a few key messages regarding low-cost EE products, LED lighting products, and automotive heater timers. The facilitator will encourage the participants to share tips and information on electricity conservation. The facilitator will seek to eliminate potential sources of confusion and false beliefs in the communities by presenting hard facts.
11	The Utilities will establish partnerships with Yukon retail store managers and establish two-way communication. The Utilities will suggest new products to stock; perhaps by providing the results of the low-cost EE product piloting, by revealing in advance what products will be eligible for the LED lighting rebate and automotive heater timer rebate, or by indicating what POP materials will be created and offered to the shops.
13	The Utilities will design and procure educational Point Of Purchase (POP) materials for Yukon retail managers to display in their stores. These materials might include (but not be limited to): brochures, presentation boxes, posters, and displays stands.
14	Yukon shoppers will be informed on EE products through the community direct engagement, and through the POP materials. This will cause them to buy and install these products.
21	The Utilities will provide a flat amount of money per unit to Yukon shoppers after they purchase LED lighting lamps or fixtures selected from a prescriptive list of eligible products. The initial-cost hurdle will be alleviated which will contribute to the items being purchased and installed.
22	The "rebate" period will be extensively advertised through a media campaign through local radio, local newspapers, co-op advertisement with retailers and in stores, and electricity bill inserts. Consequently, shoppers will know when the rebates are going to be available.
23	Participating Yukon shoppers (i.e. participants) will buy and install LED lighting products or automotive heater timers and receive a rebate because these products will be available in the stores, because they were made aware of the benefits of these products, because they know when the rebate is available, and because the initial cost hurdle was alleviated by the rebate.
24	The LED lighting product installs and automotive heater timer installs will yield long-term electricity and demand savings.
25	The Utilities will provide a flat amount of money per unit to Yukon shoppers for the purchase of automotive heater timers (i.e. outdoor) selected from a prescriptive list of eligible products. The initial-cost hurdle will be alleviated and/or the rebate will make the purchase of an automotive heater timer much more enticing. This will contribute to the purchase and installation of these items.
26	Shoppers who bought low-cost EE products, LED lighting products or automotive heater timers will be satisfied by the products that they bought. They will tell their friends and relatives. This will generate word-of-mouth advertisement.
27	With time, word-of-mouth will become an important information channel that will cause Yukon residents to buy and install EE products.
28	Shoppers will perceive new non-energy benefits and/or the less maintenance related to the energy efficient products when they're compared with the baseline systems. For example, the Utilities will seek to make sure that participants will perceive that their new LED products last longer, are less sensitive to power quality issues, are more reliable, cast better light (color rendering, intensity, and visual acuity), and easier and less hazardous to dispose of than CFLs. The Utilities will seek to make sure that participants will perceive that automotive heater timers are reliable and that the use of a timer does not have negative impact on their car.

Figure B2: Logic Model for Residential Low Cost Energy Efficient Products Program



Link #	Narrative
00	The program effectiveness and impact will be influenced by the following externalities: price of products (LED technologies, in particular), menu of products offered by the central warehouse of retailers, price of electricity, and availability of retail store staff. The program administrator should monitor these externalities and adapt the implementation approach based on them.
02	The Utilities will carry out outreach activities in community events (e.g. sport events, cultural events, town hall meetings, etc.), engage with organization and people who have a natural interest in electricity conservation; hook individuals with a continuous stream of free low-cost EE products or contests; do personalized follow-ups; and promote the idea of supporting an EE workshop at their home or a at local venue.

Link #	Narrative
06	Low-cost EE products will be used by program participants. Participants will be provided with simple scorecards that will give them the opportunity to provide feedback on the various products. The Utilities will collect all of the scorecards, aggregate and analyze the results, and use the results on consumer satisfaction to improve the products that are distributed by the program in subsequent years.
05	It is expected that the volunteers and EE community network members will like the low-cost EE products and will tell their friends and relatives. This will feed the word of mouth feedback loop.
08	The Utilities will support EE workshops in the homes of EE community network members or nearby community venues with approximately ten friends and relatives. The Utilities will send facilitator(s), provide communication materials and low-cost EE products to give away, and perhaps provide food and beverages. The Utilities' skilled facilitator(s) will have a few key messages regarding low-cost EE products, LED lighting products and automotive heater timers. The facilitator will encourage the participants to share tips and information on electricity conservation. The facilitator will also seek to eliminate potential sources of confusion and false beliefs in the communities by presenting hard facts.
10	The information and tips provided to residents of the Yukon as part of the Utilities direct community engagement activities will influence their behavior and cause them to use less electricity and reduce their peak demand. However, quantifying "behavior-based" electricity and demand savings is challenging and perhaps cost-prohibitive for a small jurisdiction like the Yukon. Moreover, the persistence of "behavior-based" conservation measures is notoriously bad. It is commonly believed to be less than one year by DSM experts. Consequently, the short-term benefits of behavior-based conservation measures will not be quantified. They are considered to be outcomes that are "nice-to-have" yet not necessary to make the program viable.
14	Yukon shoppers will be informed on EE products through the community direct engagement. This will cause them to buy and install these products.
19	Yukon shoppers will buy and install low-cost EE products (even in the absence of rebate) because these products will be available in the stores, and because they were made aware of the benefits of these products. The low-cost EE products may have a certain price increment; however it is assumed that the price increment (if any) is too small to constitute the most important purchase barrier.
20	The free and purchased low-cost EE product installs will yield long-term electricity and demand savings.
26	Shoppers who received low-cost EE products or purchased LED lighting products or automotive heater timers will be satisfied by the products that they bought. As a result, they will tell their friends and relatives about their experience with these products. This will generate word-of-mouth advertisement.
27	With time, word-of-mouth will become an important information channel that will cause Yukon residents to buy and install EE products without any support from the Utilities.
28	Program participants will perceive non-energy benefits, including improved comfort and reduced maintenance, as a result of the products they installed. For example, the Utilities will seek to make sure that participants will perceive that their new LED products last longer, are less sensitive to power quality issues, are more reliable, cast better light (color rendering, intensity, and visual acuity), and are easier and less hazardous to dispose of than CFLs. The Utilities will seek to make sure that participants will perceive that automotive heater timers are reliable and that the use of a timer does not have any negative impacts on their vehicles.

Appendix C: LED Rebates by Bulb Type

	2014		2015								2016					
Type	**Q4**		**Q1**		**Q2**		**Q3**		**Q4**		**Q1**		**Q2**		**Q3**	
Candelabra LEDs (Up to 6 W)	52	2%	61	3%	7	1%	7	8%	57	3%	29	3%	24	1%	2	0%
Standard LEDs (Up to 9 W)	300	10%	365	20%	220	24%	13	14%	658	33%	302	33%	2689	65%	1843	84%
Standard LEDs (>9 W)	2258	78%	1219	66%	623	67%	64	70%	908	45%	383	41%	1107	27%	259	12%
Reflector LEDs (Up to 9 W)	264	9%	172	9%	59	6%	3	3%	313	16%	196	21%	289	7%	87	4%
Reflector LEDs (>9 W)	24	1%	23	1%	12	1%	2	2%	41	2%	11	1%	11	0%	1	0%
Recessed LED Fixtures	0	0%	2	0%	8	1%	2	2%	40	2%	6	1%	11	0%	0	0%
Total	2898	100%	1842	100%	929	100%	91	100%	2017	100%	927	100%	4131	100%	2192	100%