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Febraury 28, 2018

Commercial Energy Consumers Association of British Columbia
c/o Owen Bird Law Corporation
P.O. Box 49130
Three Bentall Centre
2900 – 595 Burrard Street
Vancouver, BC
V7X 1J5

Attention: Mr. Christopher P. Weafer

Dear Mr. Weafer:

Re: FortisBC Inc. (FBC)

Project No. 1598934

Application for Approval of 2018 Demand-Side Management (DSM) Expenditures (the Application)

Response to the Commercial Energy Consumers Association of British Columbia (CEC) Information Request (IR) No. 1

On November 15, 2017, FBC filed the Application referenced above. In accordance with the British Columbia Utilities Commission Order G-21-18 setting out the Regulatory Timetable for the review of the Application, FBC respectfully submits the attached response to CEC IR No. 1.

If further information is required, please contact Sarah Wagner at (250) 469-6081.

Sincerely,

FORTISBC INC.

Original signed:

Diane Roy

Attachment

cc (email only): Commission Secretary
Registered Parties

1. Reference: Exhibit B-2, BCUC 1.1 Attachment 1.1 Page 11

Table 3-1: 2017 Approved and 2018 DSM Plan Expenditures & Savings

	Program Area	2017 Approved		2018 Plan			2018/17 Difference	
		Savings	Cost	Savings	Cost	TRC[12]	Cost	% Diff
		MWh	($000s)	MWh	($000s)	B/C Ratio	($000s)	
1	**Sector**							
2	Residential	10,493	2,718	7,132	2,486	1.4	-231.6	-9%
3	Commercial	13,666	3,131	19,165	3,473	2.0	341.6	11%
4	Industrial	1,556	309	1,188	496	2.8	187.2	61%
5	**Program subtotal**	**25,715**	**6,158**	**27,486**	**6,456**	**1.8**	**297.2**	**5%**
6	Supporting Initiatives		674		742		67.9	10%
7	Portfolio		777		743		-34.2	-4%
8	**Total**		**7,610**		**7,940**	**1.6**	**330.8**	**4%**

Program expenditures are proposed to increase overall by 5 percent, or $0.3 million, and Program area plan costs have shifted in response to market conditions. Residential funding has declined by 9 percent or $0.2 million, offset by an 11 percent increase ($0.3 million) in Commercial funding, to reflect the levels of activity in these sectors in 2017. The significant increase in the Industrial sector shown in Table 3-1, above, reflects a higher incentive rate and a re-allocation of staff resources to that program. Supporting Initiatives includes an increase in C&S funding to comply with the March 2017 Amendment to the DSM Regulation.

FBC's planned DSM expenditures for 2018 are provided in more detail by program area/sector in the 2018 DSM Plan (Appendix A).

1.1 Please elaborate on the market conditions and 'levels of activity' that are reflected in the shift in program area costs.

Response:

Please refer to the response to BCUC IR 2.6.1 for a discussion of the market conditions that contributed to a shift in program area plan costs. The referenced "levels of activity" were September 2017 year to date program results as outlined in Table A1-2 of Appendix A to the 2018 DSM Plan.

1.2 Please provide the TRC from the 2017 'Approved' for all rate groups.

Response:

The TRC ratios for the 2017 Approved Plan are found in the 2017 DSM Plan application, at page 9, Section 4.1, Table 4-1, the relevant section of which, is reproduced below.

2017 Approved	
Program Area	**TRC B/C Ratio**
Residential	2.5
Commercial	2.2
Industrial	1.9
Subtotal Programs	**2.3**
Total (including Portfolio spend)	2.0

1.3 Please provide the required spending that would bring the TRC measure to 1 for each rate class.

Response:

FBC has not undertaken the redesign of the 2018 DSM portfolio that is required to respond to this question. The Company's response to BCUC IR 2.4.1 explained the reasons for filing a 2018 expenditure schedule similar to the accepted 2017 expenditure schedule, which included the need for a timely acceptance as a result of the extended regulatory process for review of the 2016 LTERP and LT DSM Plan in order to continue offering its existing DSM programs without any market disruption.

The time that would be required to construct an alternative DSM portfolio with a TRC of 1 for each rate class would prevent the timely acceptance of the Application. Presumably such a redesigned DSM plan, which FBC does not agree should be implemented, would also require a further regulatory review of similar detail to the present proceeding. Furthermore, the increased delay in acceptance of an expenditure schedule for 2018 would mean that FBC would in many cases be unable to make the necessary adjustments to implement material changes to its programs and measures during the year, reducing the likelihood of meeting the target expenditures or savings.

For this reason, FBC respectfully declines to provide the requested information. Please also refer to the response to BCUC IR 2.2.1.

1.4 On what basis does FBC consider $7.9 million to be the appropriate level of spending for the 2018 Plan?

Response:

The 2018 DSM Plan budget was escalated from the 2017 DSM Expenditure Plan to align with the expenditure level contemplated in the 2016 LTERP and LT DSM Plan pro-forma budget for 2018. The LTERP budget figure for 2018 was based on maintaining a DSM energy savings target of 66 percent load growth offset for three years - to optimize usage of Tranche 1 energy from the Power Purchase Agreement with BC Hydro under Rate Schedule 3808 - before escalating the energy savings target to an 80 percent load growth offset target. Indeed, as demonstrated in the response to BCUC IR 2.3.1, projected energy savings for 2018 are equivalent to 100 percent of forecast growth in gross load (pre-DSM).

2. Reference: Exhibit B-2, BCUC 1.1 Attachment 1.1 page 15 and page A5 and A20

4.1.4.1 Inclusion of Non-Energy Benefits (NEBs)

Section 4(1.1)(c) of the DSM Regulation requires the Commission to allow the inclusion of NEBs, the amount of which may be determined either by the Commission based on evidence from the utility or by using a deemed 15 percent increase to the benefits side of the mTRC calculation. FBC uses the latter approach in its mTRC calculations.

Two measures in the 2018 DSM Plan require the mTRC test in order to be considered cost effective under the DSM Regulation. These are the Residential Heat Pump and Customer Engagement Tool, which total $0.3 million, or 4.2 percent of the expenditure portfolio, and therefore are within the specified budgetary limit.

Table A8-1: 2018 DSM Plan Benefit/Cost Tests

Sector	Program	Benefit/Cost Ratios, 2018				
		TRC	mTRC	UCT	PCT	RIM
Residential		1.4	1.7	3.8	1.9	0.9
Commercial		2.0	2.2	4.4	4.5	0.7
Industrial		2.1	2.3	3.0	6.0	0.8
Subtotal		1.8	2.0	4.1	3.4	0.8
Total		**1.6**	**1.8**	**3.3**	**3.4**	**0.7**
Residential	Home Improvement	1.1	1.2	5.0	1.5	0.8
	Heat Pumps	0.9	1.0	1.7	2.3	0.5
	New Home	1.3	1.5	3.9	2.2	0.7
	Lighting	1.8	2.1	21.2	1.4	1.3
	Appliances	2.1	2.2	4.5	1.2	1.9
	Water Heating	1.8	2.0	2.2	8.3	0.8
	Low Income	2.0	2.5	2.3	14.7	0.8
	Rentals	3.4	3.9	5.9	7.5	0.9
	Behavioural	0.7	0.8	4.3	0.9	0.8
Total		**1.6**	**1.9**	**5.3**	**1.9**	**1.0**
Commercial	Lighting	2.3	2.6	6.3	4.6	0.7
	Building Improvement	2.0	2.3	4.7	4.4	0.7
	Irrigation	1.7	1.9	4.2	4.0	0.6
Total		**2.2**	**2.5**	**5.7**	**4.5**	**0.7**
Industrial	**Industrial**	**2.3**	**2.6**	**3.7**	**6.0**	**0.8**
Total		**2.3**	**2.6**	**3.7**	**6.0**	**0.8**

Table A2-1: Residential Program Expenditures & Savings

	Program	2017 Approved Savings, system MWh	2017 Approved Cost ($000s)	2018 Plan Savings, system MWh	2018 Plan Cost ($000s)	TRC, net B/C ratio
1	**Home Renovation**					
2	Home Renovation	364	206	1,203	300	1.1
3	Heat Pumps	781	253	395	167	0.9
4	Lighting	2,735	153	3,337	202	1.8
5	Appliances	126	71	215	159	2.1
6	Water Heating	17	28	38	25	1.8
7	**New Home**					
8	New Home	126	52	169	76	1.3
9	**Income Qualified & Rentals**					
10	Low Income	3,247	1,265	1,229	731	2.0
11	Rentals	0	0	306	53	3.4
12	**Customer Engagement Tools**	3,097	200	240	165	0.7
13	**Non-program specific expenses**		491		610	
14	**Total**	**10,493**	**2,718**	**7,132**	**2,486**	**1.4**

2.1 Please confirm or otherwise explain that the line item labelled 'Behavioural' in Table A8-1 is the same as the Customer Engagement Tools line item in Table A2-1.

Response:

Confirmed.

2.2 Please confirm that the line item labelled 'Behavioural' would not be considered cost effective even under the modified TRC, as its mTRC is 0.8.

Response:

Confirmed.

2.3 Please discuss uncertainties in the behavioural costs and benefits and relate those uncertainties to the relative impact on the mTRC calculation.

Response:

FBC does not consider behavioural costs and benefits to necessarily be more, or less, uncertain than the costs and benefits achieved in other DSM programs included in the 2018 DSM Plan (please refer to the response to BCUC IR 2.4.7.1 which discusses the uncertainties related to the mTRC calculation generally). FBC calculated the mTRC of the Customer Engagement Tools using the same method as it would for any other DSM program.

3. Reference: Exhibit B-2, BCUC 1.1 Attachment 1.1 pages 17 and 18

5.2 Net-to-Gross Ratio: Spill-Over and Free Riders

Historically, FBC calculated the net-to-gross (NTG) ratio by adjusting the benefits downward for the presumed presence of free riders[23]. Additionally, FBC has included known spill-over[24] effects in the NTG ratio, which is a recognized approach used by other utilities including BC Hydro. Spill-over is the conceptual opposite of free riders, thus including both effects presents a more complete and balanced view of program impacts.

FBC will continue to evaluate and quantify free-rider and spill-over effects on a program-by-program basis. Where adequate estimates are developed or acquired based on the results of an evaluation, free rider and spill-over effects will be accounted for in the NTG ratio, as appropriate.

Table 5-1 below lists the free-ridership and spill-over rates currently used by FBC.

Table 5-1: FBC Program Free-Rider and Spill-Over Rates

Program Area	Free-rider	Spill-over	Source of Justification
Residential			
Home Improvement Program	20%		LiveSmart, BC Hydro, Apr 2012
Heat Pumps - rebates	44%	20%	Research Into Action, 2017
Heat Pumps - loans	15%	20%	Research Into Action, 2017
Heat Pump Water Heaters	0%		
Lighting	36%	77%	Evergreen Economics, 2014
Appliances	57%	39%	Evergreen Economics, 2014
New Home Program	20%		per BC Hydro (Cooper and Habart, 2014)
Rental (in-suite)	0%		Dunsky Consulting, 2016
Commercial			
Commercial Lighting	31%	9%	Evergreen Economics, 2013
Sm Business Direct Install	31%		Evergreen Economics, 2013
Building & Process Improvement	30%		Sampson Research, 2012
Custom Lighting	34%		Evergreen Economics, 2013
Building Improvement New	25%		Sampson Research, 2011
Industrial			
Industrial Efficiency	12%		Sampson Research, 2013
Low Income Housing			
Energy Savings Kit	0%		as per BC Hydro
Energy Conservation Assistance Program	0%		as per BC Hydro

3.1 Are the Spillover the Free-Ridership rates based on Canadian, American or other data.

Response:

Canadian data is used in all FBC commissioned studies. The Free Ridership and Spillover rates were determined by impact studies, undertaken by third party Monitoring & Evaluation consultants, that included interviewing FBC program participants and BC trade allies.

FBC understands that BC Hydro has used a Midwest American state for a baseline market effect calculation.

Please also refer to the response to BCUC IR 2.5.3.

3.2 If not Canadian, please confirm that FBC has no reason to believe there is a significant difference between Canadian data and the source information.

Response:

Please refer to the response to CEC IR 1.3.1.

3.3 Please explain whether or not the absence of a 'spillover' rate in Table 5-1 above can be interpreted as there being no 'spillover' or simply an absence of available information.

Response:

The absence of a spillover rate in Table 5-1 indicates that spillover was not assessed as part of the evaluation study, whereas free-ridership was included in all of the above evaluations. Please also refer to the response to BCUC IR 2.5.3 for further discussion of the spillover rates and a correction to Table 5-1.

3.4 Please provide the same explanation for the absence of 'free ridership' rates as requested in 3.3 above.

Response:

Table 5-1 is not missing any free-ridership rates. A free-rider rate of 0 percent (zero) indicates that the analysis determined there are no free-rider participants. Please also refer to the response to BCUC IR 2.5.3 for a further discussion on the free-ridership rates and a correction to Table 5-1.

4. Reference: Exhibit B-2, Attachment 1.1 page A3 and A4

A1.3 *2017 DSM PLAN RESULTS*

Based on its 2017 results as at the end of September, FBC believes that it can achieve its proposed 2018 DSM Plan, including the 5 percent increase in program expenditures. Table A1-2 shows the actual results up to September 2017 compared to the targets in the 2017 DSM Plan.

Table A1-2: September 2017 Results Compared to 2017 DSM Plan

Program Area	2017 Approved Spend ($000s)	2017 Actual Spend YTD ($000s)	Actual Spend YTD as a % of Approved ($000s)	2017 Approved Savings MWh	2017 Actual Savings YTD MWh	Actual Savings YTD as a % of Approved MWh
Residential	2,718	1,253	46%	10,493	7,997	76%
Commercial	3,131	2,992	96%	13,666	12,160	89%
Industrial	309	65	21%	1,556	0	0%
Subtotal	**6,158**	**4,310**	**70%**	**25,715**	**20,157**	**78%**
Supporting Initiatives	674	257	38%			
Portfolio	777	756	97%			
Total	**7,610**	**5,323**	**70%**			

Interim results from September 2017 show that FBC has achieved 70% of the expenditures and 78% of the savings planned for 2017. Program expenditures in the residential and industrial sectors as of September align with historical trends where expenditures are highest in the last quarter of the year. Energy savings in the industrial sector as of September are also following past trends. Due to the longer timeframe for industrial project implementation, savings realization is generally late in the year. FBC anticipates that it will meet its 2017 goals and therefore, considers the proposed 5 percent increase in program expenditures in 2018 is achievable.

The following sections provide further detail on each of the program areas contained in FBC's 2018 DSM Plan.

4.1 What factors contribute to situations in which FBC is unable to meet its spending targets? Please discuss and consider the differences in the rate classes.

Response:

Please see response to BCUC IR 2.4.7.1.

4.2 What factors contribute to situations in which FBC is unable to meet its benefits targets? Please discuss and consider the differences in the rate classes with regard to performance.

Response:

Please refer to the response to BCUC IR 2.4.7.1. In addition, benefits targets may be impacted when project(s) are subjected to measurement and verification and/or an impact evaluation study indicates a higher free-rider rate than initially assumed, resulting in a discounting of the gross energy savings anticipated.

4.3 Please calculate the benefits that could be achieved for customer classes by increasing the cost and savings targets by 5% for 2018.

Response:

FBC is unclear what is being asked in this question, since the question itself defines the benefits (savings) to increase by 5 percent. FBC notes, however, that there is no clear linear (or other) relationship between additional spending, and incremental savings (benefits). Thus another five percent increase in expenditures may not yield incremental savings or benefits.

5. Reference: Exhibit B-2, BCUC 1.1 Attachment 1.1 page A5 and A6

Table A2-1: Residential Program Expenditures & Savings

	Program	2017 Approved		2018 Plan		
		Savings, system MWh	Cost ($000s)	Savings, system MWh	Cost ($000s)	TRC, net B/C ratio
1	**Home Renovation**					
2	Home Renovation	364	206	1,203	300	1.1
3	Heat Pumps	781	253	395	167	0.9
4	Lighting	2,735	153	3,337	202	1.8
5	Appliances	126	71	215	159	2.1
6	Water Heating	17	28	38	25	1.8
7	**New Home**					
8	New Home	126	52	169	76	1.3
9	**Income Qualified & Rentals**					
10	Low Income	3,247	1,265	1,229	731	2.0
11	Rentals	0	0	306	53	3.4
12	**Customer Engagement Tools**	3,097	200	240	165	0.7
13	**Non-program specific expenses**		491		610	
14	**Total**	**10,493**	**2,718**	**7,132**	**2,486**	**1.4**

A2.1 *HOME RENOVATION*

The main components of the Home Renovation program are building envelope improvements (insulation and air sealing). Program delivery will be primarily through continuation of the Home Renovation Rebate (HRR) partnership with FortisBC Energy Inc. (FEI) and BC Hydro. The program encourages customers to focus on the appropriate measure sequence up to obtaining a "whole home" EnerGuide rating. Heating/cooling systems (for example, heat pumps) are promoted where applicable but tabulated under a separate plan line item. ENERGY STAR® appliances and lighting are marketed separately, as described below.

To improve participation, First Nations that undertake energy-efficiency improvements to multiple on-reserve homes will be able to apply for HRR rebates via a "bulk" application process.

The BC Home Energy Coach hotline, funded by the Ministry of Energy, Mines and Petroleum Resources, is a tool FBC is promoting through marketing and outreach channels. This centralized hotline and website offers free advice on how to save energy during all stages of a home improvement project, including information on available rebates.

5.1 Why are the Home Renovations Savings expected to more than triple when the incremental cost has only increased by about 50%?

Response:

The 2018 DSM Plan includes ductless heat pumps in the Home Renovation category, which increased the incentive expenditures and savings (they achieve a high amount of savings for the incentive amount). FBC is also forecasting an increase in the number of ductless heat pump incentives for 2018.

6. Reference: Exhibit B-2, BCUC 1.1 Attachment 1.1 page A5 and A8

Table A2-1: Residential Program Expenditures & Savings

	Program	2017 Approved		2018 Plan		
		Savings, system MWh	Cost ($000s)	Savings, system MWh	Cost ($000s)	TRC, net B/C ratio
1	**Home Renovation**					
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13	**Non-program specific expenses**		491		610	
14	**Total**	**10,493**	**2,718**	**7,132**	**2,486**	**1.4**

A2.2 *HEAT PUMPS*

With its temperate winters and hot summers, the FBC service area is an ideal climate for air source heat pumps (ASHP). Further, the 2012 Residential End Use Survey (REUS) data shows that 38 percent of FBC customers have electric heat, indicating a large potential market for the program. The program will continue with incentives for owners to upgrade electric heating systems to either central split (forced-air) or ductless mini-split (for customers with electric baseboard heating) air source heat pumps.

The incentive value for a forced air central ASHP was doubled in the 2017 DSM Plan (and continues in 2018) and both central and ductless ASHP configurations are eligible for the HRR bonus offer to attract more comprehensive retrofits. In spite of FBC's increased rebate values, participation numbers continued to decline throughout 2017. An insight report was conducted in summer 2017 that identified customers' knowledge (or lack thereof) and interest in heat pump technology. It also uncovered barriers for adoption, such as the preference to switch to a lower cost fuel i.e. natural gas and customer aversion to Tier 2 of the Residential Conservation Rate.

In response to declining participation, the 2018 budget was reduced to ensure participation numbers could be met in the interim while tools to increase the number of customers participating in the program are developed. In 2018, a communications campaign targeting customers with electricity as their primary heating source will leverage perceived strengths of heat pump technology. This is intended to set the stage for increased participation in subsequent years.

As an alternative to direct financial incentives, FBC will also continue to offer heat pump loans for qualifying customers at a below market interest[3] rate.

Heat pump incentives and tune-up rebates have been maintained for 2018. FBC is also partnering with the BC Ministry of Energy and Mines and BC Hydro to perform a study on ASHP installation practices in the province in an effort to improve their performance.

6.1 As noted in Table A2-1 Heat pumps have a TRC of 0.9. Please discuss whether or not FBC would consider discontinuing Heat Pumps as a residential program in the future given the declining enrollment and low TRC.

Response:

Heat Pumps are an important measure to offer to electric heat customers due to the magnitude of energy savings possible. Hence, FBC is not considering discontinuing this program. The TRC value of 0.9 rises to 1.0 using the mTRC cost effectiveness test. FBC notes its 2018 DSM Plan expenditure schedule is cost-effective at the portfolio level.

As indicated in the 2018 DSM Plan excerpt above, an insight report that surveyed high-usage customers uncovered barriers to adoption – including unfamiliarity with the technology and its non-energy benefits. FBC will be launching a communications plan in 2018 that will address the barriers identified and work towards increasing enrollment in the Heat pumps program.

6.2 Please discuss the expected costs and benefits of a 2018 communications campaign to increase ‘heat pump’ program participation.

Response:

A communications campaign budget of $20,000 has been allocated for heat pump technology in 2018. The 2018 campaign will be designed to build awareness among customers with electrically heated homes and FBC expects that awareness to translate into increased participation in the heat pump program in 2019. Participation forecasts and energy savings will be represented in the 2019 Multi-Year DSM Expenditure Schedule planned to be filed in 2018.

7. Reference: Exhibit B-1, BCUC 1.1 Attachment 1.1 page A5 and page A7

Table A2-1: Residential Program Expenditures & Savings

	Program	2017 Approved		2018 Plan		
		Savings, system MWh	Cost ($000s)	Savings, system MWh	Cost ($000s)	TRC, net B/C ratio
1	**Home Renovation**					
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14	**Total**	**10,493**	**2,718**	**7,132**	**2,486**	**1.4**

A2.5 *WATER HEATING*

Approximately 50 percent of FBC customers' water heaters are heated with electricity. To encourage efficient water heating, FBC will continue to offer rebates for the installation of heat pump water heaters (HPWH) for customers with electrically heated hot water.

To build capacity, FBC provided product samples to qualifying trade allies to increase experience and familiarity with HPWH technology. In addition, to improve HPWH product availability, FBC will continue discussions with manufacturers and distributors. To build awareness for customers, the heat pump communications campaign highlighted in Section A2.2 will also include messaging that includes HPWHs. The technology barriers are similar and both can be addressed in communications and outreach. In 2018, FBC will conclude its field study, in collaboration with BC Hydro and NRCan, on the suitability of ducted integrated HPWH and non-integrated[5] HPWH in the BC climate.

Low flow showerheads will be distributed via Energy Saving Kits and other channels.

7.1 Why are the Water Heating savings expected to double when the cost is expected to decrease? Please explain.

<u>Response:</u>

The 2018 DSM Plan no longer includes the heat pump water heater professional offer that was provided in 2017. This was a top-up for water heater installers to install their own heat pump water heater to gain experience with the technology. FBC is also forecasting a doubling in the number of incentives for heat pump water heaters due to observed interest and participation in the program. Together these changes result in a forecast savings increase with a lower total program incentive.

8. Reference: Exhibit B-2, BCUC 1.1 Attachment 1.1 pages A5 and A8

Table A2-1: Residential Program Expenditures & Savings

	Program	2017 Approved Savings, system MWh	2017 Approved Cost ($000s)	2018 Plan Savings, system MWh	2018 Plan Cost ($000s)	TRC, net B/C ratio
1	**Home Renovation**					
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14	**Total**	**10,493**	**2,718**	**7,132**	**2,486**	**1.4**

A2.6 *APPLIANCES*

FBC will continue to provide rebate offers for top tier ENERGY STAR clothes washers and dryers, and refrigerators and collaborate on these offers with FEI where appliances result in gas-fired water heating savings. In response to recent innovations in dryer technology, the rebate structure was divided into three tiers with higher incentives for the most efficient models on the market, such as heat-pump dryers.

8.1 The Appliances Program has a TRC of 2.1. and represents less than 10% of the total spending. Could FBC increase its programming related to Appliances? Please explain why or why not.

Response:

FBC does not believe that programming related to appliances should be increased from the proposed levels. Adjustments have been made, by doubling program expenditures, to address what the Company believes is the potential for this program. FBC currently offers comprehensive rebates for refrigerators, washers and dryers with a tiered rebate structure that provides higher incentives for more efficient models. Program participation and market potential will continue to be monitored to determine if further changes are warranted in the future.

9. Reference: Exhibit B-2, BCUC 1.1 Attachment 1.1 pages A5 and A9

Table A2-1: Residential Program Expenditures & Savings

	Program	2017 Approved		2018 Plan		
		Savings, system MWh	Cost ($000s)	Savings, system MWh	Cost ($000s)	TRC, net B/C ratio
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10	Low Income	3,247	1,265	1,229	731	2.0
11	Rentals	0	0	306	53	3.4
12	**Customer Engagement Tools**	3,097	200	240	165	0.7
13	**Non-program specific expenses**		491		610	
14	**Total**	**10,493**	**2,718**	**7,132**	**2,486**	**1.4**

A2.9 *CUSTOMER ENGAGEMENT TOOLS*

FBC's messaging to residential customers encourages the adoption of energy-efficient behaviours (for example, the use of clotheslines) and will continue using a variety of communication channels, both on-line and print (e.g. bill inserts). Activities may include the distribution of product samples at community events.

In addition to providing customers with access to the Customer Information Portal (CIP) to view near real-time energy usage of their residential and small commercial (single phase) AMI meters, FBC will explore and promote mobile/web apps to enable customers to better manage their energy usage.

In collaboration with FEI, FBC plans to select a service provider to implement a residential customer engagement tool (CET) in 2018. The funding envelope will include a digital platform that will engage customers by providing basic energy literacy information, behaviour change tools, access to rebates, conservation tips and offers, home energy reports, an online calculator, community challenges and other tools currently under consideration.

9.1 Why are the customer engagement savings expected to drop from 3097 MWh to 240 MWh with less than a 25% reduction in spending? Please explain and provide quantification where possible.

Response:

The savings from customer engagement tools are expected to decrease from the 2017 DSM Plan of 3097 MWh to 240 MWh in 2018 due to a delay in the implementation of the customer engagement portal and home energy reports from 2017, resulting in some expenditures being shifted to 2018 and all savings shifting to 2019. Please also refer to the response to BCUC IR 2.8.3.

10. Reference: Exhibit B-2, BCUC 1.1 Attachment 1.1 page A5

Table A2-1: Residential Program Expenditures & Savings

	Program	2017 Approved		2018 Plan		
		Savings, system MWh	Cost ($000s)	Savings, system MWh	Cost ($000s)	TRC, net B/C ratio
1	**Home Renovation**					
2	Home Renovation	364	206	1,203	300	1.1
3	Heat Pumps	781	253	395	167	0.9
4	Lighting	2,735	153	3,337	202	1.8
5	Appliances	126	71	215	159	2.1
6	Water Heating	17	28	38	25	1.8
7	**New Home**					
8	New Home	126	52	169	76	1.3
9	**Income Qualified & Rentals**					
10	Low Income	3,247	1,265	1,229	731	2.0
11	Rentals	0	0	306	53	3.4
12	**Customer Engagement Tools**	3,097	200	240	165	0.7
13	**Non-program specific expenses**		491		610	
14	**Total**	**10,493**	**2,718**	**7,132**	**2,486**	**1.4**

10.1 Please identify the Non-program specific expenses and provide quantification for major elements.

Response:

The "Non-Program Specific Expenses" line item has been included for each program area. These planned expenditures represent costs outside of program design and incentives that are attributable to that program area. These expenditures represent items such as labour, training, travel, and consulting services that support the overall program area. The expenses are broken out below for the residential sector.

Non-Program Specific Expenses	
Labour	$544,622
Travel, Supplies, Vehicles, Training	$65,769
Total	**$610,391**

11. Reference: Exhibit B-2, BCUC 1.1 Attachment 1.1 page A10

Table A3-1: Commercial Program Expenditures & Savings

	Program	2017 Approved		2018 Plan		
		Savings, system MWh	Cost ($000s)	Savings, system MWh	Cost ($000s)	TRC, net B/C ratio
1	Lighting	10,592	1,976	13,620	1,750	2.3
2	Building Improvement	2,931	362	5,290	988	2.0
3	Irrigation	144	25	255	32	1.7
4	Non-program specific expenses		769		703	
5	**Total**	**13,666**	**3,131**	**19,165**	**3,473**	**2.0**

A3.1 *COMMERCIAL LIGHTING PROGRAM – NEW AND RETROFIT*

Program assistance and financial incentives to install high efficiency lighting and lighting controls will continue to be offered for existing and new commercial customers. Program assistance will include a free walkthrough energy assessment of the customer's premises and a co-funded detailed assessment, as requested.

MURB programs are managed in the Commercial sector to reflect best practices. Common area measure savings and costs are attributed to the Commercial sector, however the costs and savings from in-suite measures will continue to be attributed to the Residential sector.

Lighting incentives for retrofit and new construction projects may be accessed through several channels including:

- point-of-sale retrofit product rebates at authorized distributors;
- prescriptive CPR rebates through the DSM online portal; and
- custom rebates for larger, more complex, new construction or retrofits through the Custom Business Efficiency offer.

The transformation of street lighting to LED type luminaries continues in FBC's service area, with the conversion of street lights in the City of Kelowna slated for 2018.

11.1 Does the residential DSM assessment benefit from the common area measures, or vice versa in any way? Or are they entirely discrete? Please explain.

Response:

FBC provides walkthrough and co-funded detailed energy assessments for commercial customers, including Multi-Unit Residential Building (MURB) common or commercial spaces. FBC does not provide residential DSM assessments of in-suite spaces under MURB programs.

FBC's DSM offerings for MURB common spaces are distinct and separate to in-suite, separately metered residential spaces. Energy savings from common area energy efficiency opportunities, with the exception of some HVAC measures, would generally not result in in-suite savings.

For condominiums and strata buildings, the assessment is limited to common areas, as additional permission is required to access residential in-suite spaces. In-suite customers are eligible for residential DSM offerings such as energy efficient appliance and retail lighting rebates. No in-suite energy assessments are available from FBC under MURB programs.

FBC and FEI jointly offer the Rental Apartment Efficiency Program (RAP) to rental apartment customers. The RAP program provides rental apartment owners a free energy assessment of the building and several in-suite energy efficiency measures such as LED lightings and low-flow showerheads.

11.2 Why does FBC expect an increase in savings for the Commercial Lighting Program when it is reducing costs? Please explain and provide quantification if available.

Response:

Please refer to the responses to BCUC IR 2.10.2.

11.3 With a 2.3 and 2.0 TRC for Lighting and Building Improvement please explain what additional programming could achieve at TRC levels of 1.5 and 1.0.

Response:

Keeping all other assumptions the same, increasing the customer participation by 55 percent and 100 percent would achieve TRC levels of 1.5 and 1.0 for Lighting and Building Improvement, respectively. FBC believes it is unlikely to achieve this level of expenditure for these programs in 2018 as activity for commercial lighting is already relatively high compared to previous years, and FBC has already increased the budget for building improvement threefold for 2018, over 2017. In addition, increasing program participation by these amounts would require an even larger percentage increase in incentives, thus increasing overall DSM costs.

The proposed 2018 DSM Plan represents a cost-effective and achievable portfolio of measures based on a balanced consideration of the factors identified above. The TRC Benefit/Cost ratios are (and should be) an outcome, not a driver, of the programs and measures included in the portfolio. Please also refer to the response to CEC IR 1.1.3 which explains FBC's concerns with material revisions to the 2018 DSM Expenditure Schedule

12. Reference: Exhibit B-2, BCUC 1.1 Attachment 1.1 page A10 and A11

Table A3-1: Commercial Program Expenditures & Savings

	Program	2017 Approved		2018 Plan		
		Savings, system MWh	Cost ($000s)	Savings, system MWh	Cost ($000s)	TRC, net B/C ratio
1	Lighting	10,592	1,976	13,620	1,750	2.3
2	Building Improvement	2,931	362	5,290	988	2.0
3	Irrigation	144	25	255	32	1.7
4	Non-program specific expenses		769		703	
5	**Total**	**13,666**	**3,131**	**19,165**	**3,473**	**2.0**

A3.3 *KEY ACCOUNTS*

Formerly known as "Partners in Efficiency", FBC's Technical Advisors act as key account representatives to sizeable institutional, commercial and industrial customers. In addition to the incentives offered in the form of rebates and energy assessments, FBC representatives work closely with qualifying customers to help determine the economics for energy efficiency upgrades to new and existing facilities and street lighting.

FBC also co-sponsors in-house energy specialists for the City of Kelowna and the University of British Columbia Okanagan to help build institutional capacity to complete energy efficiency retrofit projects within their organizations.

12.1 Are the costs related to Key Accounts identified as 'Non-program specific expenses'?

Response:

Yes, key account labour and other associated expenses are included in non-program specific expenses.

12.1.1 If yes, do these account for all the expenditures, or are there other expenditures included in this line item?

Response:

There are expenditures, other than key account labour, included in the non-program specific expenses line item. Please refer to the response to CEC IR 1.12.2 for details regarding a correction to the non-program specific expenses and a quantification of these expenses.

12.2 Please identify the Non-program specific expenses and provide quantification if they are not the Key Account expenditures.

Response:

In the development of the 2018 DSM Plan, FBC incorrectly apportioned the share of non-program specific expenses between the industrial and commercial portfolio. While the total estimate of non-program specific expenses shared between the commercial and industrial portfolios is correct, the allocation between the commercial and industrial portfolio is not and has been corrected below and in the Errata being filed concurrent with these IR responses. Please also refer to the response to ICG IR 1.6.1.

The "Non-Program Specific Expenses" represent items such as labour, training, travel, marketing collateral and consulting services that support the overall program area. The expenses are broken out below for the commercial sector.

Non-Program Specific Expenses	
Labour	$734
Travel, Supplies, Vehicles, Training	$88
Total	**$822**