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October 5, 2016

British Columbia Utilities Commission
Sixth Floor
900 Howe Street
Vancouver, B.C.
V6Z 2N3

Attention: Ms. Laurel Ross, Acting Commission Secretary and Director

Dear Ms. Ross:

Re: FortisBC Inc. (FBC)

Project No. 3698889

Application for Acceptance of Demand Side Management (DSM) Expenditures for 2017 (the Application)

Response to the British Columbia Utilities Commission (BCUC or the Commission) Information Request (IR) No. 1

On August 8, FBC filed the Application referenced above. In accordance with Commission Order G-135-16 setting out the Regulatory Timetable for the review of the Application, FBC respectfully submits the attached response to BCUC IR No. 1.

If further information is required, please contact Joyce Martin, Manager Regulatory Affairs at (250) 368-0319.

Sincerely,

FORTISBC INC.

Original signed:

Diane Roy

Attachments

cc (email only): Registered Parties



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1 **A. REVIEW OF DSM PORTFOLIO**

2 **1.0 Reference: REVIEW OF DSM PORTFOLIO**

3 **Exhibit B-1, pp. 7, 9, Appendix A, pp. A2, A6, Appendix B, p. 5;**
4 **Decision dated December 3, 2014 accompanying Order G-186-14 on**
5 **the FortisBC Energy Inc. Application for Approval of Demand Side**
6 **Management Expenditures for 2015 and 2016 (FBC 2015-16 DSM**
7 **Decision), p. 11**

8 **Compliance with previous directives**

9 In the Application FortisBC Inc. (FBC) requests acceptance of a 2017 DSM Plan with a
10 cost of \$7.6 million and projected energy savings of 26 GWh (page 9, Table 4-1). On
11 page 7 of the Application (Table 2-2) FBC addresses Commission directive 3 (avoided
12 capacity and LRMC estimate), 5 (TRC discount rate assumptions) and 9 (fuel switching)
13 from the FBC 2015-16 DSM Decision.

14 The British Columbia Utilities Commission (Commission) states on page 11 of the FBC
15 2015-16 DSM Decision:

16 ... FBC indicated in its 2012 LTRP that a 'medium' DSM funding scenario of \$9
17 million was recommended. ... The Panel encourages FBC to make supplemental
18 DSM expenditure requests to the Commission as opportunities arise to bring
19 DSM planned energy savings and expenditures (in particular for the residential
20 and industrial customer class) back up to those levels accepted in the 2012
21 LTRP.

22 On page 5 of the FBC 2015 DSM Annual Report (attached as Appendix B to the
23 Application), FBC refers to the BC Conservation Potential Review (CPR) when
24 responding to Directive 13 and 14 of the FBC 2015-16 DSM Decision. FBC provides the
25 2017 residential and commercial DSM budgets in Appendix A of the Application on
26 pages A2 and A6.

27 1.1 As this DSM expenditure schedule application is for 2017 only, does FBC
28 consider it reasonable to address Directives 3, 5, and 9 of the FBC 2015-16 DSM
29 Decision in the next FBC Long Term Resource Plan (LTRP) rather than in the
30 Application? If no, please explain why not.

31
32 **Response:**

33 Each of Directives 3, 5 and 9 directed FBC to address the requirements in the next DSM
34 expenditure request, and therefore FBC has provided a response to those directives as part of
35 this Application.



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1 FBC has addressed the directives where possible in the current DSM expenditure request, (i.e.
2 updating the Deferred Capital Expenditure (DCE) value and Discount Rate) and intends to
3 respond further to any outstanding directives in the Long Term DSM Plan (LT DSM Plan), to be
4 filed as part of the Long Term Electric Resource Plan (LTERP) on or before November 30,
5 2016, and future DSM filings.

6
7

8

9 1.2 Does FBC consider that the update of the BC CPR study prevented FBC from
10 bringing planned 2017 DSM energy savings and expenditures (in particular for
11 the residential and industrial customer class) back up to those levels accepted in
12 the 2012 LTRP? If yes, please explain why. If no, please explain why FBC's 2017
13 DSM spending request is below \$9 million.

14

15 **Response:**

16 No. The 2012 Long Term Resource Plan (2012 LTRP)¹ "medium" DSM funding scenario of \$9
17 million was a high-level or "ballpark" figure that assumed FBC would pay 40% of the incremental
18 cost of all measures and a 30% (of incentive costs) proxy for program administration costs.
19 However, when the Company undertook its detailed DSM plan budgeting process the incentive
20 amount was set on a measure by measure basis, and the program administration budget was
21 based on the prior year's actual costs, escalated if needed.

22 FBC's 2017 DSM expenditure request of \$7.6 million is approximately 85% of the 2012 LTRP
23 medium DSM funding scenario, and the Company believes this level of expenditures is
24 sufficient to cost-effectively carry out its planned DSM programs for 2017.

25

26

27

28 1.3 Please provide and compare the 2017 DSM program funding levels for
29 residential heat pumps, lighting, new home programs and municipal water
30 handling programs with actual 2013 spending levels for these programs. If the
31 proposed 2017 funding levels are below 2013 levels for any of these programs,
32 please explain why.

33

34 **Response:**

¹ FBC 2012-2013 Revenue Requirements Application and Review of the 2012 Integrated System Plan, Exhibit B-1-2, Integrated System Plan Volume 2, 2012 Long Term DSM Plan, Table 2.5, p. 11

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1 Please refer to the following table for the requested information.

Program	2013 Actual (\$000s)	2017 Plan (\$000s)
Residential heat pumps	515	298
Lighting	404	190
New home	736	151
Municipal Water	80	25

2

3 The proposed 2017 funding levels for the four programs are all below the 2013 actual spending
4 levels for the following reasons:

5 • Heat Pumps – the lack of concurrent (stacked) LiveSmartBC and/or ecoENERGY
6 program offers that were available in 2013 means the 2017 FBC Heat Pump program is
7 a stand-alone offer with lower rebate levels and lower expected participation;

8 • Lighting – FBC eliminated mail-in coupons due to administrative cost, and switched to in-
9 store, point-of-sale rebates during short-term (1-2 month) seasonal campaigns. The
10 program now targets specialty bulbs after government regulations prohibited traditional
11 40-100W lamps;

12 • New Home – declining participation since new home builders are adapting to the more
13 stringent energy performance requirements introduced by the 2014 BC Building Code
14 (BCBC) and the program requirement that homes be ENERGY STAR certified, and the
15 current Residential Conservation Rate (RCR) Tier 2 sends a strong price signal to not
16 build an electrically heated home; and

17 • Municipal Water infrastructure – the 2017 DSM Plan budget is a function of the
18 anticipated projects, which are fewer in number and magnitude compared to 2013
19 actuals.

20

21

22

23 1.4 Please discuss the advantages and disadvantages of increasing the 2017 DSM
24 expenditure schedule to \$9 million to allow FBC to increase its funding of existing
25 cost-effective DSM programs if opportunities arise. For identified disadvantages
26 (such as increased risk of DSM underspend) please identify any mitigating
27 mechanisms that could be adopted.

28



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1 **Response:**

2 FBC designed the 2017 DSM Plan, with a budget of \$7.6 million, based on the Company's
3 previous experience and the opportunities identified in the 2013 Conservation Potential Review
4 (CPR) Update. FBC believes this level of expenditures is sufficient to fund the anticipated
5 participation in its 2017 DSM Plan programs. However, if opportunities arise that require
6 additional funding of cost-effective DSM programs there are available mechanisms, including
7 intra-sector transfers and supplementary expenditure applications, that are available to the
8 Company.

9
10

11

12 1.4.1 Does FBC have any existing DSM programs whose budget could not be
13 cost-effectively scaled up by 20% during 2017? If yes, please explain.

14

15 **Response:**

16 Theoretically speaking, and using a simplifying assumption that all of the additional budget is
17 directed into incentives, all programs will remain cost-effective. This is because on a Total
18 Resource Cost (TRC) test basis incentives are considered a transfer payment.

19 However, when measuring cost-effectiveness based on the secondary Utility Cost Test (UCT),
20 which incorporates only the Company's portion of cost (incentive + program administration), the
21 residential Water Heating program UCT (2017 Plan value is 1.1) would likely drop below unity
22 (i.e. fail).

23



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1 **3.0 Reference: REVIEW OF DSM PORTFOLIO**

2 **Exhibit B-1, Appendix B, p. 2**

3 **DSM underspend**

4 FBC states on page 2 of the 2015 DSM Annual Report that actual 2015 DSM spending
5 was \$3.5 million compared to \$7.3 million budgeted.

6 3.1 Please quantify the financial benefit to the FBC shareholder from the 2015 DSM
7 budget underspend. Please provide supporting calculations.

8
9 **Response:**

10 The benefit that the shareholders earned as result of the underspend in the 2015 DSM plan is
11 negligible and is estimated at \$0.07 million. A high level calculation has been provided below.



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Shareholder Impact of DSM Capital Difference between Approved & Actual in Year 2015

		<u>\$millions</u>	<u>Reference</u>
Approved Pre Tax DSM Expenditure 2015	A	7.4	RRA 2015 Compliance Filing
Less Taxes	B	(1.9)	RRA 2015 Compliance Filing
	A+B=C	<u>5.47</u>	
Actual Pre Tax DSM Expenditure 2015	D	3.5	Annual Report Filing 2015
Less Taxes	E	(0.9)	Annual Report Filing 2015
	D+E=F	<u>2.6</u>	
Difference between Approved & Actual	C-D=G	<u>2.9</u>	
Mid Year Rate Base	H=Gx50%	1.4	
<u>Debt Component Saving:</u>			
Approved Debt Component	J	60.00%	
Effective Short Term Debt Rate	K	2.63%	RRA 2015 Compliance Filing
Actual Corporate Tax Rate	L	26.00%	
Debt Component Savings	P=HJK(1-L)	0.02	
<u>Equity Component Saving:</u>			
Approved Equity Component	M	40.00%	
Approved Return on Equity	N	9.15%	
Equity Component Savings	Q=HMN	0.05	
Net Savings by shareholders	P+Q	<u>0.07</u>	

- 1
- 2
- 3
- 4
- 5 3.2 Please provide a comparison of actual to planned DSM spending for each of the
- 6 last five years, including the five year average.
- 7



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1 **Response:**

2 Please refer to the below table.

Comparison of Actual to Planned DSM Spending 2011 to 2015						
	2011 (\$000s)	2012 (\$000s)	2013 (\$000s)	2014 (\$000s)	2015 (\$000s)	5 yr avg (\$000s)
DSM Actual	5,918	7,300	6,855	3,473	3,531	5,415
DSM Planned	7,842	7,731	7,878	3,001	7,292	6,749

3

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5

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1 **4.0 Reference: REVIEW OF DSM PORTFOLIO**

2 **Exhibit B-1, p. 4; FBC 2015-16 DSM Decision, pp. 13, 14; FortisBC**
3 **Energy Inc. Multi-Year PBR Plan for 2014 through 2018 Decision (FEI**
4 **2014 PBR Decision), p. 267**

5 **Fuel switching**

6 FBC states on page 4 of the Application that “The BC CPR will examine the fuel
7 switching potential and its cost-effectiveness. FBC does not have a fuel switching
8 program at this time.”

9 The Commission states on pages 13 and 14 of the FBC 2015-16 DSM Decision:

10 ... [FBC] is currently investigating programs that would encourage or support the
11 use of electric vehicles and programs that would incent conversion from propane
12 or oil heating to electricity where natural gas is not available. ... The Commission
13 Panel is concerned that FBC excludes customers from eligibility for FBC DSM
14 incentives where they are switching from gas to electricity. The Panel considers
15 that this approach acts contrary to BC’s energy objective to encourage the
16 switching from one kind of energy source or use to another that decreases GHG
17 emissions in BC.

18 The Commission states on page 267 of the FEI 2014 PBR Decision that FortisBC
19 Energy Utilities “permit switching from another fuel source to natural gas for the
20 ENERGY STAR® Water Heater Program and the EnerChoice Fireplace Program.”

21 4.1 Does FBC exclude from eligibility space and water heating DSM program
22 customers who currently do not heat primarily with electricity? If yes, please
23 explain why and whether the approach is consistent with similar programs
24 offered by FEI.

25
26 **Response:**

27 Yes, FBC requires participants of space and water heating DSM programs to be primarily
28 electrically heated. FBC’s DSM program is fundamentally a resource acquisition strategy and
29 the benefits in the governing TRC test are predicated on valuing the electricity savings using the
30 Long Run Marginal Cost (LRMC) and DCE as avoided costs.

31 In contrast, fuel switching is inherently a load building program, increasing power purchase
32 costs and (incrementally) transmission and distribution infrastructure needs and costs, thereby
33 negating benefits in the TRC test.

34 The Commission has permitted FEI customers to access hot water and fireplace DSM
35 programs, provided the appliances are ENERGY STAR or EnerChoice respectively, and the

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1 customer has changed fuel of their own volition². The Commission has also permitted FEI
 2 customers to access “Switch and Shrink” offers for space heating; however, that program was
 3 determined to be a load building program and not a demand side measure, with the result that
 4 the costs of the program were allocated to O&M budgets³.

5 FBC understands encouraging fuel switching to reduce greenhouse gas emissions is one of
 6 British Columbia’s energy objectives pursuant to s. 2(h) of the *Clean Energy Act*; however such
 7 expenditures are load building activities as noted above and not a DSM program focused on
 8 resource acquisition.

9
10

11

12 4.2 Please describe the results of FBC’s investigation into DSM programs for
 13 conversion from propane or oil. If this investigation excluded areas where natural
 14 gas is available, please explain why.

15

16 **Response:**

17 In its preliminary investigation, FBC estimated the Annual Energy Cost to heat a typical existing
 18 detached dwelling with various fossil fuels, as shown in the table below.

19 FBC estimates the annual space heating fuel cost, using propane and oil, to be \$2,574 and
 20 \$2,190 respectively. Converting to a central Air Source Heat Pump (ASHP) system could
 21 reduce average annual heating cost by approximately half, down to \$1,125.

22 For natural gas customers, the customers’ cash flow is negative because the annual heating
 23 cost for ASHPs is higher than for natural gas furnaces, whether a high-efficiency model or older
 24 less efficient furnace is being used.

Fuel Type	Heating Type	System Efficiency*		Fuel Usage		Electricity Usage		Annual Cost
Natural Gas	Natural Gas Furnace - Mid Efficiency (70%)	50%	72	GJ	441	kWh	\$883	
	Natural Gas Furnace - High Efficiency (92%)	85%	43	GJ	441	kWh	\$604	
Electric Resistance	Electric Furnace	70%	0	GJ	14,535	kWh	\$2,319	
	Electric Baseboard	100%	0	GJ	10,909	kWh	\$1,741	

² BCUC Order G-36-09 (2008 EEC Programs) p. 18

³ BCUC Order G-44-12 (FEU 2012-13 RRA) p. 162



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Fuel Type	Heating Type	System Efficiency*		Fuel Usage		Electricity Usage		Annual Cost
Heat Pump	Central Air Source Heat Pump	140%	0	GJ	7,047	kWh	\$1,125	
	Ductless Air Source Heat Pump	250%	0	GJ	4,989	kWh	\$796	
	Ground Source Heat Pump	350%	0	GJ	2,818	kWh	\$450	
Other Fuel	Fuel Oil Furnace	50%	72	GJ	441	kWh	\$2,190	
	Propane Furnace	50%	72	GJ	441	kWh	\$2,574	

1 **Note: the System [seasonal] Efficiency has been discounted, compared to the heating appliance rating,*
2 *to account for duct losses in forced air systems that heat unintended areas such as crawlspaces and*
3 *unfinished basement areas.*

4 As noted in response to BCUC IR 1.4.1, fuel switching is a load building activity as opposed to
5 DSM. FBC plans to conduct further investigation into fuel switching when the results of the BC
6 CPR additional scope services become available later in 2016.

7
8

9

10 4.2.1 Please compare the incentives available from FEI/FBC/LiveSmart to an
11 illustrative FBC customer with propane appliances in an area where
12 natural gas is available wanting to (i) switch to natural gas or (ii) switch
13 to electricity.

14

15 **Response:**

16 FBC does not have a fuel switching program and thus does not offer an incentive to switch to
17 electricity.

18 FEI offers are outlined as follows:

19 • Propane to natural gas heating system conversions qualify for the “Switch N Shrink”
20 program – currently a time limited offer of a \$1,700 rebate ending December 31, 2016.
21 Outside this promotional period, this program provides a \$1,000 rebate to support the
22 conversion of oil and propane to natural gas;

23 • FEI piped propane customers may take advantage of the ENERGY STAR water heater
24 program that supports the upgrade to ESTAR over the 0.62EF minimum efficiency
25 standards water heater. These rebates are not dependent on converting to natural gas
26 and are in place for customers who want to switch to natural gas or remain a propane
27 customer.



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- 1 ESTAR Water heater rebates consist of the following rebates for upgrading to an
2 ENERGY STAR rated water heater:
- 3 ○ \$200 for 0.67 EF storage tank water heater;
 - 4 ○ \$400 for >0.80 EF tankless non-condensing water heater;
 - 5 ○ \$500 for >0.90 tankless condensing storage tank water heater; and
 - 6 ○ \$1,000 for condensing storage tank water heater
- 7 • Finally there is a \$300 FortisBC incentive for eligible EnerChoice fireplaces. This is
8 available for propane to natural gas conversions.

9
10

11
12 4.2.2 Does FBC consider that, to support BC's fuel switching objective, the
13 incentives offered to a customer using propane or oil to switch to
14 electricity should be the same or greater than the incentives to switch to
15 natural gas? Please explain.

16
17 **Response:**

18 Absent the BC CPR findings on fuel switching and a FBC decision on whether to proceed with a
19 fuel switching program, the Company does not have an opinion on the magnitude of such an
20 incentive.

21



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1 **5.0 Reference: REVIEW OF DSM PORTFOLIO**

2 **FBC 2015-16 DSM Decision, pp. 15, 17; Exhibit B-1, Appendix A, pp.**
 3 **A2, A6, A16**

4 **Effectiveness of the portfolio**

5 The Commission states on page 15 of the FBC 2015-16 DSM Decision: “FBC states that
 6 it actively seeks opportunities for DSM activities that increase public awareness, such as
 7 through the Community Energy Diets, to help increase program participation and energy
 8 savings.”

9 The Commission states on page 17 of the FBC 2015-16 DSM Decision: “... 2009
 10 benchmarking study found that on average incentives were 76 percent of total DSM
 11 costs. FBC 2015 and 2016 DSM budgets include incentives at 74 percent of total DSM
 12 costs.”

13 In Appendix A of the Application FBC provides a summary table of the 2017 DSM Plan
 14 on page A16 and the 2016 and 2017 residential and commercial DSM budgets on pages
 15 A2 and A6.

16 5.1 Please update Table A6-1 on page A16 of Appendix A to the Application by
 17 replacing the last 5 columns with DSM incentives as a percentage of DSM
 18 program costs for each year from 2013 to 2017 (actual where available, plan
 19 where not). Please explain any significant changes over time.

20
 21 **Response:**

22 Please refer to the modified Table A6-1 below.

Incentives as a % of Program Direct Costs					
Program Area	2017 Plan	2016 Approved	2015 Actual	2014 Actual	2013 Actual
<i>Residential</i>					
Home Improvement	81%	76%	31%	52%	59%
Watersavers	81%		16%		
Rental	81%			91%	0%
Appliances	81%	76%	33%		
Lighting	81%	76%	85%	84%	84%
Heat Pumps	81%	76%	76%	66%	81%
New Home Program	81%	76%	34%	74%	86%
Low Income Housing	81%	76%	34%	82%	78%
Residential Total	81%	76%	50%	72%	76%

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Incentives as a % of Program Direct Costs					
Program Area	2017 Plan	2016 Approved	2015 Actual	2014 Actual	2013 Actual
Commercial					
Lighting	74%	71%	55%	57%	66%
Building Improvement	74%	71%	32%	39%	55%
Municipal (WWTP)	74%	71%	68%	-69%	77%
Commercial Total	74%	71%	46%	48%	63%
Industrial					
Industrial Efficiency	70%	76%	65%	70%	81%
Industrial Total	70%	76%	65%	70%	81%
Programs Total	77%	74%	49%	63%	72%
Total (including Portfolio area)	61%	60%	36%	50%	56%

1

2 In 2014 and 2015 total spending was below 2013 Actual. Incentives are a variable cost as
 3 compared to the other largely fixed program costs, including staffing costs. A result of the lower
 4 2014 and 2015 expenditures was that incentives were a smaller proportion (percentage) of
 5 program costs than in the previous year when the DSM program expenditure was higher.

6 For planning purposes, the direct program administration costs are allocated as a percentage of
 7 the incentive expenditure which leads to a consistent percentage across each sector for the
 8 2016 Approved and the 2017 Plan expenditures.

9

10

11

12 5.2 For each program, please provide an overview of the key methods used to
 13 market the DSM program, including whether social media is used.

14

15 **Response:**

16 The following table outlines the key marketing methods/channels used to promote the DSM
 17 programs in 2016, including social media channels.

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Program	Marketing Channels	Social Media
Home Improvement (HERO)	<ul style="list-style-type: none"> • Direct mail • Face-to-face <ul style="list-style-type: none"> ○ Trade shows ○ Home shows ○ Trades and building contractors ○ Trades and building organizations ○ Community presentations ○ City council and municipal staff presentations • Newspaper • Trade magazine • Radio • Brochures • Web page • Conserver newsletter • Bill inserts • Powerlines newsletter • Local governments' newsletters, Facebook pages, etc. 	<ul style="list-style-type: none"> • Custom digital referral platform <ul style="list-style-type: none"> ○ Google Display Ads ○ Facebook ○ Google AdWords ○ Digital ads • Twitter • LinkedIn • Instagram • Google AdWords • Digital ads • E-newsletters (e.g. The Conserver)
Heat Pumps	<ul style="list-style-type: none"> • Direct mail • Face-to-face <ul style="list-style-type: none"> ○ Trade shows ○ Home shows ○ Trades and building contractors ○ Trades and building organizations ○ Community presentations ○ City council and municipal staff presentations • Newspaper • Trade magazine • Radio • Brochures • Web page • Conserver newsletter • Bill inserts • Powerlines newsletter • Local governments' newsletters, Facebook pages, etc. 	<ul style="list-style-type: none"> • Custom digital referral platform <ul style="list-style-type: none"> ○ Google Display Ads ○ Facebook ○ Google AdWords ○ Digital ads • Twitter • LinkedIn • Instagram • Google AdWords • Digital ads • E-newsletters (e.g. The Conserver)
New Home	<ul style="list-style-type: none"> • Face-to-face <ul style="list-style-type: none"> ○ Trade shows ○ Home shows ○ Trades and building contractors ○ Trades and building organizations ○ Community presentations ○ City council and municipal staff presentations • Brochures • Trade magazine • Web page 	

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Program	Marketing Channels	Social Media
Appliances	<ul style="list-style-type: none"> • Face-to-face <ul style="list-style-type: none"> ○ Trade shows ○ Home shows ○ Trades and building contractors ○ Trades and building organizations ○ Community presentations ○ City council and municipal staff presentations ○ Retail store staff (training) • Brochures • Web page • In-store signage 	<ul style="list-style-type: none"> • Twitter • LinkedIn • Instagram • Google AdWords • Digital ads • E-newsletters (e.g. The Conserver)
Residential Lighting	<ul style="list-style-type: none"> • Face-to-face <ul style="list-style-type: none"> ○ Trade shows ○ Home shows ○ Trades and building organizations ○ Community presentations ○ City council and municipal staff presentations ○ Retail store staff (training) • Brochures • Web page • In-store signage 	<ul style="list-style-type: none"> • Twitter • LinkedIn • Instagram • Google AdWords • Digital ads • E-newsletters (e.g. The Conserver)
Water Heating	<ul style="list-style-type: none"> • Face-to-face <ul style="list-style-type: none"> ○ Trade shows ○ Home shows ○ Trades and building organizations ○ Community presentations ○ City council and municipal staff presentations • Brochures • Web page 	
Low-Income and Rentals	<ul style="list-style-type: none"> • Face-to-face <ul style="list-style-type: none"> ○ Community and social services organization presentations ○ City council and municipal staff presentations • Direct mail via BC Ministry of Social Development and Social Innovation • Direct mail to social service organizations • Brochures/posters • Web page • Bill inserts • Powerlines newsletter • Local governments' newsletters, Facebook pages, etc. 	<ul style="list-style-type: none"> • Community Partners <ul style="list-style-type: none"> ○ Facebook ○ Twitter ○ E-newletters • Twitter • LinkedIn • Instagram • Google AdWords • Digital ads • E-newsletters (e.g. The Conserver)

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Program	Marketing Channels	Social Media
Commercial Lighting Commercial Product Rebate	<ul style="list-style-type: none"> • Face-to-face <ul style="list-style-type: none"> ○ Business organizations (Chambers of Commerce, Wholesalers Customer Appreciations) ○ Trade shows ○ Trades and building organizations ○ City council and municipal staff presentations • Brochures • Trade magazines • Web page • In-store signage (at wholesalers' businesses) 	<ul style="list-style-type: none"> • Twitter • LinkedIn • Instagram • Google AdWords • Digital ads
Commercial Lighting Business Direct Install	<ul style="list-style-type: none"> • Face-to-face <ul style="list-style-type: none"> ○ Sales calls ○ Business organizations (Chambers of Commerce, Wholesalers' Customer Appreciations) ○ Trade shows ○ Trades and building organizations ○ City council and municipal staff presentations • Brochures • Web page 	<ul style="list-style-type: none"> • Twitter • LinkedIn • Instagram • Google AdWords • Digital ads
Custom Building Improvement (Commercial, Institutional and Industrial)	<ul style="list-style-type: none"> • Face-to-face <ul style="list-style-type: none"> ○ Sales calls ○ Business organizations (Chambers of Commerce, Wholesalers' Customer Appreciations) ○ Trade shows ○ Trades and building organizations ○ City council and municipal staff presentations • Brochures • Web page 	

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5.3 Please provide in table form a comparison of FBC's accepted 2016 and planned 2017 DSM budget for residential home improvement, residential new home DSM programs, and commercial building improvement programs. Where the budget has been reduced, please explain why and whether the budget reduction could result in missed DSM opportunities that would be more expensive to address at a later time.

Response:

The requested table has been provided below. A column for the 2016 Projected expenditures has been added to provide context for the explanations that follow.

1 Program		Expenditure (\$000s)			
		2016 Accepted	2016 Projected	2017 Plan	% Change - 2016 approved to 2017 plan
2	Home Improvement	\$884	\$328	\$348	-61%
3	New Home	\$390	\$49	\$151	-61%
4	Commercial Building Improvement	\$976	n/a ⁴	\$784	-20%

1

2 The change in the Home Improvement plan is caused by lower than expected program
 3 performance from the Home Energy Rebate Offer (HERO) program. The 2016 accepted
 4 expenditure (filed in August 2014) was based on prior results. In previous years, there was more
 5 activity when FBC had its own home renovation program coupled with concurrent (stacked)
 6 LiveSmart and ecoENERGY rebate programs and their associated province-wide marketing. In
 7 mid 2014, the HERO program was implemented in collaboration with FEI and BC Hydro to
 8 support energy saving home improvements. Lower HERO participation and results are due to
 9 more stringent participant requirements and lack of concurrent provincial or federal offers. The
 10 reduced 2016 Projected and 2017 Plan expenditures are representative of actual 2015 results
 11 of the HERO program. A complete list of changes is provided in response to BCSEA IR 1.15.2.

12 Reduced participation in the New Home program is reflective of: (i) new home builders adapting
 13 to the more stringent energy performance requirements introduced by the 2014 BCBC, and the
 14 program's requirement that new homes be ENERGY STAR certified, and (ii) FBC's RCR Tier 2
 15 that is deterring the market away from an electrically heated home.

16 Of note, the total commercial expenditures plan budget for 2017 is up 22% compared to 2016
 17 Projected.

18 The costs of a DSM retrofit will not be likely to change much over time, despite inflationary
 19 pressures. For example, the incremental costs of new technology, e.g. LED lighting, have fallen
 20 considerably over the past few years.

21 New Homes that are not ENERGY STAR qualified will likely cost more to retrofit to that standard
 22 at a later date. The limiting factor to participation in this program is enrolling builders who are
 23 reluctant to participate due to the extra effort, e.g. supervising sub-trades to ensure airtightness
 24 requirements are met, and the incremental costs involved.

25

26

⁴ Please refer to the response to BCSEA IR 1.1.1 for an explanation as to why FBC is unable to provide a disaggregation of Commercial sector 2016 projected savings and costs.

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1 5.4 Please describe the FBC Community Energy Diet DSM program and identify the
 2 annual budget allocated to this initiative from 2014 to 2017. If there has been any
 3 year-over-year decrease in funding levels of this initiative, please explain why.

4
 5 **Response:**

6 The FBC Community Energy Diet DSM program was a community-based marketing campaign
 7 designed to provide personalized information about energy efficiency, energy efficient
 8 technology and building practices, and utility, provincial and federal government incentive
 9 programs. Discounted and subsidized NRCAN energy assessments and local government
 10 endorsements were key elements of the campaign.

11 The annual budget for the 2014 Energy Diet was \$440 thousand and included NRCAN and
 12 Columbia Basin Trust grants of \$91 thousand. The costs were split between FBC and FortisBC
 13 Energy.

14 Due to changes in budget, the reallocation of resources, the end of the LiveSmart and
 15 ecoENERGY programs and FBC's collaboration with BC Hydro to offer a coordinated residential
 16 retrofit program across the province, the campaign was not continued.

17
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19
 20 5.5 For each customer class, please estimate (for actual 2013, 2014, 2015 and
 21 planned 2016, 2017) the percentage of customer class MWh energy savings
 22 FBC expects to achieve from lighting programs.

23
 24 **Response:**

25 The percentage of customer class MWh energy savings from lighting programs is shown by
 26 sector in the table below:

Program Area	Lighting MWh Savings as % of Total Customer Class MWh Savings				
	2013	2014	2015	2016	2017
	Actual	Actual	Actual	Approved	Plan
Residential	20%	39%	73%	25%	42%
Commercial	70%	64%	70%	60%	78%
Industrial	0%	4%	17%	29%	29%
Total Programs	37%	47%	67%	41%	60%

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1
2 5.5.1 Does FBC consider there has been a shift in focus away from achieving
3 deeper DSM energy savings/avoiding missed opportunities, towards
4 programs with easier to achieve DSM savings? If yes, please explain
5 why.

6
7 **Response:**

8 As the bar is raised for energy efficiency programs by improving technology and building codes,
9 it is imperative that FBC continue to seek out and support new opportunities for energy savings.
10 As an example, LED lighting products are one new technology that customers in virtually all rate
11 classes have embraced, which is reflected in the robust activity levels in FBC programs with
12 offers for that technology.

13 FBC is shifting focus towards achieving deeper DSM energy savings, not away from it. The
14 following examples illustrate this shift:

- 15 • As shown in response to BCUC IR 1.5.5, 60% of FBC's planned savings for 2017 are
16 from lighting. FBC understands that in other jurisdictions lighting can make up 90% or
17 more of savings targets. Energy savings from lighting can be relatively easy to achieve
18 compared to other measures so FBC targets are more ambitious in terms of non-lighting
19 energy savings. For example, in the direct install program for low income customers that
20 commenced in late 2015, only 53% of the savings are from lighting measures;
- 21 • In the residential sector FBC has shifted from stand-alone FBC programs to participation
22 in province-wide retrofit and new construction programs that have stringent standards
23 and encourage deeper energy savings. For example, the Home Renovation Rebate
24 (formerly Home Energy Retrofit) program requires that all insulation upgrades be
25 installed by a certified contractor and offers a bonus for completing three or more
26 measures; and
- 27 • In the commercial and industrial sector, FBC has increased the incentives in the 2017
28 Plan to encourage customers to install more expensive non-lighting conservation
29 measures. In addition, FBC has expanded the list of prescribed product rebates to
30 include more non-lighting products (e.g, compressors, irrigation and pool pumps) and
31 engaged with a program implementer to work directly with non-lighting contractors
32 (along with lighting contractors) to encourage other measures.

33
34 FBC will continue to adapt programs to foster opportunities for deeper energy savings.

35
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2 5.5.2 Please provide, in table form for each year from 2013 (actual) to 2017
3 (plan), a resource view breakdown of FBC’s DSM costs (in dollars and
4 % of total spend), including labour, consultants and DSM incentives.
5 Please also provide for each year the number of FBC DSM full time
6 equivalents (FTEs).

7
8 **Response:**

9 The requested table is provided below.

	2013 Actual		2014 Actual		2015 Actual		2016 Plan		2017 Plan	
	(\$000s)	% of Total Spend	(\$000s)	% of Total Spend	(\$000s)	% of Total Spend	(\$000s)	% of Total Spend	(\$000s)	% of Total Spend
1 Labour	1,936	27%	1,465	42%	1,642	46%	1,662	22%	1,845	24%
2 Consultants	395	5%	305	9%	390	11%	280	4%	295	4%
3 Incentives	3,561	49%	1,968	57%	1,278	36%	4,520	60%	4,363	57%
4 Total Spend ¹	7,197		3,473		3,531		7,532		7,610	

10
11 ¹Total Spend excludes recoveries that reduce total spend, so % of Total Spend may add up to over
12 100%.

13 The number of FBC DSM FTEs over the period requested is as follows:

2013	2014	2015	2016	2017P
15.0	11.1	13.1	13.7	14.5

15
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18
19 5.5.2.1 Please describe any significant changes from 2013 to date in
20 FBC’s capacity/capability to undertake DSM.

21
22 **Response:**

23 FBC’s internal capacity to undertake DSM has been enhanced by the integration of the
24 Conservation & Energy Management (C&EM) departments, formerly PowerSense (electric) and
25 Energy Efficiency and Conservation (natural gas), under a single director.

26 However, DSM uptake is highly dependent upon customer take-up, market forces, partner
27 funding and other factors, such as codes and standards that raise the baseline technologies
28 against which the efficient measures are compared and reduce the measure savings.
29 Reductions in partner funding, or co-offers, in the residential market (e.g., LiveSmartBC) have

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1 reduced total incentives available to the customer and impacted their willingness to undertake
2 DSM.

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6 5.6 Please identify FBC's 2016 and 2017 DSM budget for (i) codes and standard
7 development, and (ii) codes and standard enforcement, and explain the
8 consultative process FBC entered with various levels of government in
9 developing this budget. If FBC does not have a codes and standard development
10 budget please explain why not.

11

12 **Response:**

13 As shown in Table A4-1, Supporting Initiative Expenditures, on page A10 of Appendix A to the
14 Application (Exhibit B-1), FBC has budgeted \$25 thousand in each of the 2016 and 2017
15 budget years for Codes and Standards purposes.

16 In the past, the Codes and Standards budget was used to support pertinent CSA installation
17 standards for heat pumps, both air-source and ground-source, to ensure proper installation of
18 those measures. FBC has also contributed to the provincial Energy Efficiency Standards
19 Compliance Officer, when the position was contracted out. Enforcement activities have since
20 been internalized by BC's Ministry of Energy and Mines (MEM) staff.

21 FBC has a standing bi-monthly call with MEM staff to discuss various DSM related matters,
22 including provincial energy efficiency standards.

23

24

25

26 5.7 Please provide an update on the DSM committee's involvement and activities
27 leading up to filing this application.

28

29 **Response:**

30 The DSM Advisory Committee (DSMAC) has been inactive for some time, and was not involved
31 in the preparation of the Application.

32 As FortisBC continues to integrate its electric and gas divisions, including the Conservation and
33 Energy Management (C&EM) department, it is considering if and how the DSMAC's activities
34 could be integrated into the FEI Advisory Group as several members of the DSMAC also serve
35 on that committee.



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- 1 DSMAC members are also represented on the BC CPR Technical Advisory Committee (TAC),
- 2 and FBC's LTERP Advisory Group, providing other channels through which FBC can obtain
- 3 stakeholder feedback on its DSM planning and activities.

- 4

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1 **6.0 Reference: REVIEW OF DSM PORTFOLIO**
 2 **FBC 2015-16 DSM Decision, pp. 10, 20; Exhibit B-1, Appendix A, p.**
 3 **A2**
 4 **Portfolio balance**

5 The FBC 2015-16 DSM Decision compares DSM expenditures by customer class in
 6 Table 5 on page 20. FBC provides the 2016 and 2017 residential DSM budget on page
 7 A2 in Appendix A of the Application.

8 6.1 Please update Table 5 on page 20 of the FBC 2015-16 DSM Decision to show
 9 actual results for 2012, 2013, 2014 and 2015, expected for 2016 and planned for
 10 2017. Please explain any significant differences for 2017.

11
 12 **Response:**

13 The following table shows DSM spending for each customer class as a percentage of customer
 14 class revenues. The best representation of DSM costs as a percentage of revenues is the total
 15 including wholesale customers. This value was 2.4%⁵ in 2012 and is 2.2% in the 2017 Plan.

	Sector	2012	2013	2014	2015	2016	2017
	DSM expenditures as % of revenues	Actual	Actual	Actual	Actual	Projected	Forecast
1	Residential	1.6%	2.4%	1.0%	0.6%	1.9%	1.5%
2	Commercial	4.1%	3.0%	1.1%	1.5%	2.8%	3.5%
3	Industrial	0.6%	1.5%	0.6%	0.8%	0.6%	0.9%
4	Total	2.8%	3.1%	1.3%	1.3%	2.5%	2.5%
5	Total (including wholesale)	2.4%	2.4%	1.1%	1.1%	2.2%	2.2%

16
 17 The values shown in the above table have the following limitations:

- 18 • In 2013, FBC acquired the City of Kelowna’s electric utility assets which caused a shift in
 19 revenue from the Wholesale customer class to the other customer classes;
- 20 • DSM expenditures expressed as a percentage of revenue for each customer class
 21 shown on lines 1, 2 and 3, do not include the revenues from Wholesale customers.
 22 However, line 5 shows total DSM program expenditures as a percent of total electricity
 23 revenues, including Wholesale, which is the best representation of DSM costs as a

⁵ The 2.4% for 2012 ‘Total (including wholesale)’ is an updated value, compared to the 2.8% contained in the 2015-16 DSM Expenditures Application Decision and Order G-186-14.



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1 percentage of revenues. This value was 2.4% in 2012 and is 2.2% in the 2017 Plan;
2 and

- 3 • Expenditures on planning, evaluation, and supporting initiatives are not included in DSM
4 expenditures shown above.

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8 6.2 Please explain why FBC has reduced the residential DSM budget for 2017 from
9 2016. Specifically, is this a result of a lack of cost-effective DSM opportunities for
10 the residential customer class?
11

11

12 **Response:**

13 As explained in the Application and Appendix A (Exhibit B-1), DSM programs in the Residential
14 sector focus on the opportunities identified in the 2013 CPR Update. Residential savings targets
15 for 2017 have decreased due to provincial and/or federal regulations that are phasing out less
16 efficient baseline products, BCBC amendments that have raised the baseline prescriptive
17 requirements for new home construction, and the end of multi-layer offers, such as the
18 LiveSmartBC program.

19 Draft results from the BC CPR study indicate that robust economic potential remains in the FBC
20 service area for Residential customers, which (assuming the results are confirmed in the final
21 CPR report) will be explored in the LT DSM Plan, to be filed along with the CPR Base Services
22 Report (that includes the final economic potential results), on or before November 30, 2016 as
23 part of the LTERP.

24

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1 **7.0 Reference: REVIEW OF DSM PORTFOLIO**

2 **Exhibit B-1, Appendix A, pp. A9, A16, Appendix B, Attachment A, p.**
3 **1**

4 **Industrial DSM program**

5 On page A9 of Appendix A of the Application, FBC states “the Industrial incentive rate
6 has been increased to a nominal \$0.15 per kWh saved for qualifying projects.” On page
7 A16 of Appendix A of the Application, FBC states that the 2017 levelized cost of the
8 industrial programs is \$22 per MWh. Page 1 of Attachment A to Appendix B of the
9 Application (DSM programs cost and savings summary report) shows actual 2015
10 industrial levelized DSM cost of 5.7¢/kWh.

11 7.1 Please reconcile the 15¢/kWh incentive and 2.2¢/kWh levelized cost of the
12 industrial programs as reported for 2017.

13
14 **Response:**

15 An Industrial customer is eligible for an incentive of 15¢/kWh for the annual energy savings of a
16 qualified project, subject to the program’s terms and conditions including Measurement &
17 Verification protocols.

18 FBC estimates that the levelized cost of its Industrial program is 2.2¢/kWh for 2017. This is
19 calculated by taking the FBC costs of the Industrial program (customer incentive payments plus
20 program administration costs) divided by the discounted energy savings over the measure’s life.

21
22

23

24 7.2 Please explain the difference in industrial levelized cost of DSM from Actual 2015
25 to Plan 2017.

26

27 **Response:**

28 The two figures are not directly comparable as they are calculated on a different basis. The
29 Actual 2015 Industrial levelized cost of DSM is calculated on a TRC basis; it includes program
30 administration costs and incremental cost of energy conservation measures, including the
31 customer portion of costs.

32 The Plan 2017 Industrial levelized cost of DSM is calculated on a utility cost basis; it includes
33 customer incentive and program administration costs but not the customer portion of the
34 incremental cost of the energy conservation measures. This makes the plan levelized costs
35 more readily comparable to supply-side options.

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7.2.1 Please provide (in table form) for (i) the industrial customer class and (ii) the program total average for all customer segments: 2017 DSM levelized cost, 2017 DSM budget as a percentage of revenues, and 2015 rate impact measure (RIM) result.

Response:

The following table provides the 2017 DSM levelized cost, 2017 DSM budget as a percentage of sector revenues, and 2015 Rate Impact Measure (RIM) result for major customer classes.

Source	2017 DSM Plan	2017 DSM Plan DSM	2015 Annual DSM Report
Program Area	Levelized Cost (\$/MWh)	Expenditures as Percent of Sector Revenues	Ratepayer Impact (RIM) Test
Residential	32.3	1.5%	1.00
Commercial	34.1	3.5%	0.98
Industrial	22.0	0.9%	0.96
Total (including Portfolio area)	43.8	2.2%	0.93

7.2.2 Please explain whether an increase in the industrial DSM budget would be expected to (i) increase rates for other customers; (ii) improve the balance of program spending between FBC's customer classes; and (iii) improve the cost-effectiveness of FBC's DSM portfolio.

Response:

- (i) Yes, increasing the Industrial DSM budget would be expected to increase rates for other customers, insofar as any increase in DSM expenditures has a rate impact;
- (ii) Yes, please refer to the response to BCUC IR 1.6.1 which sets out DSM spend as a percent of sector sales;
- (iii) No, please refer to the response to ICG IR 1.3.2 where the aggregate B/C ratios for 2011-15 indicate the lowest TRC is 1.3 for the Industrial sector compared to the portfolio average of 1.6. Thus, additional Industrial DSM activity would tend to reduce the overall cost-effectiveness of the FBC DSM portfolio.



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7.2.3 Does FBC consider that more could be done to identify additional cost-effective DSM programs for its industrial customers? Please explain why/why not.

Response:

The province wide, dual-fuel BC CPR currently underway is identifying cost-effective measures and estimating the economic potential for each of the customer classes, including Industrial.

The FBC CPR report, which is the FBC specific report extracted from the BC CPR, will inform the Company's LT DSM Plan, to be filed as part of the LTERP on or before November 30, 2016, and future DSM expenditure filings.

The Industrial Efficiency program in the 2017 DSM Plan is generic enough to accommodate a wide range of customer projects, thus not limiting participation. FBC's key account managers actively work with major customers, through the Partners-in-Efficiency (PiE) initiative and with ongoing interactions, to identify and bring forward qualifying projects.

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1 **B. REVIEW OF INDIVIDUAL PROGRAMS**

2 **8.0 Reference: REVIEW OF INDIVIDUAL PROGRAMS**

3 **Exhibit B-1, Appendix A, pp. A7, A16, Appendix B, p. 2**

4 **Program details and comparatives**

5 On page A16 of Appendix A of the Application, Table A6-1 shows the cost-effectiveness
6 of proposed programs for 2017.

7 On page 2 of Appendix B of the Application, Table 1-1 shows the DSM portfolio results
8 for 2015.

9 8.1 Please update Table A6-1 to include the “Partners in Efficiency program” under
10 Commercial Sector Programs as described under section A2.3 on page A7 of
11 Appendix A to the Application.

12
13 **Response:**

14 PiE is not in itself a DSM program with a separate budget and energy savings, and therefore no
15 update to Table A6-1 can be provided. PiE is best described as a marketing approach by which
16 FBC engages its key accounts (Large Commercial, Industrial, institutional and local
17 governments) to participate in its DSM programs.

18 PiE activities include obtaining a signed Memorandum of Understanding (MOU) to commit the
19 key account customer to an annual review of its capital plan, identifying projects with energy
20 savings potential, providing an estimate of the available FBC incentive and the customer
21 proceeding with identified DSM projects that are economic and funded in their capital plan.

22 FBC staff resources that undertake PiE activities, are embedded in the relevant Commercial
23 and Industrial DSM programs, where relevant project costs and savings land.

24
25

26
27 8.2 Please present a table showing all of the programs in Table A6-1 and in Table 1-
28 1 on page 2 of Appendix B of the Application, and present the TRC, UCT in
29 ¢/kWh, and expenditure for Actual 2015, projected Actual 2016 (replace with
30 Planned 2016 if projected actuals cannot be produced with reasonable efforts),
31 and planned 2017 for each of the listed programs.

32



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1 **Response:**

- 2 The following table contains the requested information. Note that 2016 Plan figures have been
3 used in place of Projected 2016.



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Program/ Portfolio areas	2015 Actual Spend (\$000s)	Benefit/Cost Tests		Levelized Cost ¹ (¢/kWh)	Levelized Cost (\$/MWh)	2016 Plan Cost (\$000s)	Benefit/Cost Tests		Levelised Cost (\$/MWh)	2017 Plan Cost (\$000s)	Benefit/Cost Tests		Levelised Cost (\$/MWh)
		TRC	UCT				TRC	UCT			TRC	UCT	
Residential													
Home Improvement	199	1.7	1.7	7.1	70.9	884	2.0	4.4	27.2	348	1.7	2.6	44.5
Heat Pumps	182	1.5	4.3	7.9	78.8	302	1.4	6.3	18.9	298	1.5	2.6	53.1
New Home	111	1.1	5.1	10.2	101.9	390	1.7	4.1	29.4	151	1.4	3.3	42.1
Lighting	198	5.3	26.5	2.1	21.4	189	2.8	6.7	17.2	190	2.2	21.3	5.6
Appliances	71	1.2	1.5	17.9	179.0	96	1.4	2.9	40.4	133	1.3	1.6	74.8
Water Heating	2	1.5	3.2	10.8	107.8	430	1.7	2.0	59.2	30	1.5	1.1	110.3
Low Income & Rentals	287	1.3	0.9	9.7	97.0	952	2.5	3.3	48.0	1,367	3.4	3.3	54.5
Behavioural	0	0.0	0.0	0.0	0.0	106	5.3	5.3	21.3	200	3.7	3.7	29.9
Subtotal	1,050	2.9	7.0	4.0	39.9	3,348	2.0	4.1	30.7	2,718	2.5	4.4	32.3
Commercial													
Com Lighting	735	2.0	5.7	6.0	60.3	1,519	6.4	3.1	37.2	2,322	2.2	3.6	37.9
Building Improvement	543	1.6	4.3	8.3	83.1	842	3.2	8.4	13.7	784	2.3	6.4	20.8
Computers	0					55	3.8	5.3	21.0				
Municipal	36	2.3	5.5	5.0	50.3	79	3.4	5.7	19.7				
Irrigation	9	0.0	0.0	0.0	0.0	69	2.2	4.4	27.8	25	3.6	3.1	36.3
Subtotal	1,324	1.8	5.2	6.7	67.4	2,564	2.5	4.7	25.7	3,131	2.2	4.0	34.1
Industrial													
Industrial	226	2.0	6.2	5.7	57.0	209	3.4	5.7	19.7	309	1.9	5.1	22.0
Subtotal	226	2.0	6.2	5.7	57.0	209	3.4	5.7	19.7	309	1.9	5.1	22.0
Program Total	2,600	2.0	6.2	5.7	57.0	6,122	2.2	4.4	27.8	6,158	2.3	4.2	32.6
Portfolio													
Supporting Initiatives	585					675	0.0	0.0	0.0	674			
Planning & Evaluation	346					735	0.0	0.0	0.0	777			
Total (including Portfolio area)	3,531	2.0	4.4	6.0	60.3	7,530	2.0	3.5	34.4	7,610	2.0	3.1	43.8

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2 ¹ In the 2015 Annual Report, Table 1-1, the Levelized Costs are presented in ¢/kWh. For comparison purposes, these have been restated in \$/MWh to match plan
 3 presentation. It should be noted that for 2015 Actuals, the Levelized Costs are calculated from the TRC perspective, whereas for the 2016 and 2017
 4 Plans, they are calculated from the UCT (utility) perspective, so they are not directly comparable.

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8.2.1 For programs that lack continuity across 2015 to 2017, please explain.

Response:

The programs that lack continuity across 2015 to 2017, with explanations, are as follows:

Program	Explanation
Behavioural	FBC, in partnership with FortisBC Energy, will be investing in a Customer Engagement Tool, which will increase planned savings.
Computers	There are no server farms expected to be built within the region. If a qualified upgrade or new server farm is undertaken, the savings will be processed in the Building Improvement Program (as a custom project).
Municipal (WWTP)	The previously separate program is now included in the Building Improvement Program (same terms and conditions and application process).

8.2.2 For programs that are offered in 2015 but not in 2017, please explain why each of those programs have been discontinued.

Response:

Please refer to the response to BCUC IR 1.8.2.1.

8.2.3 For programs that have planned expenditures in 2017 lower than in 2016, please explain.

Response:

The following table provides explanations for changes in 2017 planned expenditures compared to 2016.

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Program	Explanation
Home Improvement	<ul style="list-style-type: none"> • The reduction reflects the actual 2015 and 2016 results of the Home Renovation Rebate program (previously called, Home Energy Rebate Offer); • Home retrofit activity has declined reflecting lower customer rebates resulting from the end of multi-layer offers, such as the LiveSmart BC program; and • More stringent participant requirements.
Heat Pumps	<ul style="list-style-type: none"> • The plan reduction reflects the actual 2015 and 2016 results of the Heat Pump Rebate program.
New Home	<ul style="list-style-type: none"> • The reduction reflects the actual 2015 and 2016 results of the New Home program; • More stringent participant requirements (ENERGY STAR rating); and • BCBC change raised baselines, which consequently reduces the amount of energy savings eligible for rebates.
Water Heating	<ul style="list-style-type: none"> • The reduction reflects the actual 2015 and 2016 results; and • New technology and limited product availability in marketplace.
Building Improvement	<ul style="list-style-type: none"> • The reduction reflects the actual 2015 and 2016 results.
Computers	<ul style="list-style-type: none"> • No anticipated computer server farms in marketplace (if one does enter marketplace, rebates can be offered through custom Building Improvement program).
Municipal	<ul style="list-style-type: none"> • Rebates to be offered through custom Building Improvement program.
Irrigation	<ul style="list-style-type: none"> • The reduction reflects the actual 2015 and 2016 results.

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8.2.4 For programs with a TRC score in 2017 that differs from the TRC score in 2016 (if 2016 data is not available, use 2015) by more than +/-25%, please explain the increase/decrease in cost-effectiveness of the program.

Response:

10 Fundamentally, the TRC, which is expressed as a Benefit/Cost (B/C) ratio and not a “score”, is
 11 an outcome of the actual projects that are recorded within the programs, whereas the TRC Plan
 12 figures are a forecast based on measure TRC values obtained from the 2013 CPR Update and
 13 other reliable sources.

14 The TRC increased across the portfolio due to the 2017 Plan DCE value of \$79.85/kW-yr
 15 compared to the 2015 results that used the previous DCE value of \$35.60/kW-yr.

16 The following table explains why the planned TRC in 2017 differs by more than 25% of the
 17 realized 2015 TRC for the programs listed:



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Program	Explanation
Lighting	<ul style="list-style-type: none">• Greater savings with LED lighting; and• Lower costs through point-of-sale rebate delivery
Low Income	<ul style="list-style-type: none">• 2017 direct installation approach (Energy Conservation Assistance Program) realizes greater savings than 2015 self-installed Energy Savings Kits (ESK) which may only partially be installed
Building Improvement	<ul style="list-style-type: none">• The BIP plan savings increased from 1.6 to 2.9 GWh thereby dividing the program administration fixed costs over a larger base of activity

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1 **9.0 Reference: DSM UNDER THE TARIFF**

2 **FBC Electricity Tariff,⁶ Sheet 42 – Sheet 43E**

3 **Rate Schedule 90 (RS 90) and Rate Schedule 91 (RS 91)**

4 FBC offers DSM services under RS 90 – Demand-Side Management Services and RS
5 91 – On-Bill Financing Pilot Program.

6 9.1 Please explain whether the DSM services offered under RS 90 and RS 91 can
7 be offered as one of the DSM programs in FBC’s DSM portfolio rather than as a
8 rate under the FBC Electricity Tariff.

9
10 **Response:**

11 Over time the DSM services offered under Rate Schedule (RS) 90 have been essentially made
12 redundant by the specific DSM programs in FBC’s DSM portfolio, and the original purpose of
13 RS 90 – to present individual program incentive offers – is no longer relevant. The On Bill
14 Financing (OBF) program, enabled by RS 91, is now closed to new entrants.

15 FBC intends to submit a revised RS 90, and apply to formally close RS 91 to new entrants, as
16 part of its LT DSM Plan to be filed as part of the LTERP on or before November 30, 2016.

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19
20 9.1.1 If yes, please explain whether FBC intends to offer DSM programs in
21 place of the DSM services offered under RS 90 and 91, and provide an
22 estimate of the timing for FBC to make adjustment to its DSM portfolio
23 and Tariff to reflect the changes.

24
25 **Response:**

26 Please refer to the response to BCUC IR 1.9.1.

27
28

29
30 9.1.2 Based on the current status of RS 90 and RS 91, please explain
31 whether any changes or updates to RS 90 and RS 91 is required.

32

⁶ <https://www.fortisbc.com/About/RegulatoryAffairs/ElecUtility/Documents/FortisBCElectricTariff.pdf>



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- 1 **Response:**
- 2 Please refer to the response to BCUC IR 1.9.1.
- 3

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1 **10.0 Reference: DSM UNDER THE TARIFF**
 2 **FBC Electricity Tariff, Sheet 42 – Sheet 43; FBC 2015-16 DSM**
 3 **Decision, pp. 28, 29**
 4 **RS 90 - Demand-Side Management Services**

5 The FBC Electricity Tariff on Sheet 42 states that the RS 90 is applicable “[t]o all
 6 Customers in all areas served by the Company and its municipal wholesale Customers.”
 7 It also states “Incentives are targeted to Customers but may also be provided to trade
 8 allies who provide or install the Measures.”

9 The Commission states on pages 28 to 29 of the FBC 2015-16 DSM Decision:

10 FBC submits that, while Celgar is eligible for DSM incentives, only projects that
 11 reduce the load required to be served by FBC will be eligible for DSM incentives.
 12 ... Should RS 90 not be addressed in the Celgar complaint, the Commission
 13 Panel believes such a review could form part of the next DSM application or Rate
 14 Design application – whichever comes first.

15 10.1 Please provide an update on the performance of the RS 90 – Demand-Side
 16 Management and Services, including information on program uptake and cost-
 17 effectiveness for each year since program inception to date.

18
 19 **Response:**

20 Please refer to the response to BCUC IR 1.9.1. The Company intends to submit a revised RS
 21 90 as part of its LT DSM Plan, to be filed with the LTERP on or before November 30, 2016.

22 FBC does not track program uptake in the form of number of customer participants, however
 23 key performance metrics, including cost-effectiveness results (i.e. B/C ratios) are filed with the
 24 Commission in the Company’s annual DSM Reports. Annual DSM Reports dating back to 2007
 25 can be found on FBC’s website.

26 A summary table of the actual cost-effectiveness results (i.e. B/C ratio) for the DSM program in
 27 each year from 2000 to 2015 is provided below. B/C ratio information is not available prior to
 28 2000. Note the B/C ratios are not fully comparable year to year since the avoided costs, namely
 29 LRMC, has changed over time.

Benefit/Cost Ratio	
2000	1.6
2001	1.6
2002	1.6
2003	1.6

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Benefit/Cost Ratio	
2004	1.5
2005	1.6
2006	1.8
2007	1.9
2008	1.8
2009	1.7
2010	2.0
2011	1.6
2012	1.6
2013	1.6
2014	1.6
2015	2.0

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10.2 Please elaborate on FBC's considerations in determining the allocation of funds to parties who have applied for funding under RS 90. For example, whether FBC has a preference towards applicants who are FBC customers as opposed to trade allies who are not FBC customers.

Response:

FBC's preference and general practice is to pay incentives to its customers to better influence their decisions to undertake DSM projects.

The Company recognizes the important role that trade allies perform in supplying FBC's DSM program offers to customers. Therefore, FBC provides funding through various methods including training subsidies, hosting trade ally workshops or events, maintaining a rotating "find a contractor" listing on FBC's website, and providing prizes to motivate trade allies to increase their DSM activities (i.e. "spiffs").

For direct-install programs, such as ECAP and BDI, the Company issues an RFP and provides the DSM funding to the successful implementer and/or its trade allies who are installing the measures.



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1 10.3 Please explain whether partial service customers are treated differently from full
2 service customers in considering eligibility to access DSM funding under RS 90
3 and/or the number of initiatives that would be funded.

4
5 **Response:**

6 The Company requires the appropriate reduction in the load served by FBC from any customer,
7 whether they are full or partial service, when they apply for DSM funding. The underlying
8 economics (i.e. DSM benefits) are predicated on a load reduction (i.e. reduced power purchases
9 valued at the accepted LRMC). To provide DSM funding without the commensurate load
10 reduction served by FBC would unfairly shift those costs to other ratepayers.

11 As noted in the response to BCUC IR 1.9.1, FBC intends to submit a revised RS 90 as part of
12 its LT DSM Plan. The proposed revision to RS 90 intends to clarify and codify the DSM funding
13 eligibility rules for partial service customers.

14
15

16
17 10.4 Please explain whether there has been any dispute(s) concerning RS 90. If yes,
18 please elaborate on the issue and the outcome of the dispute(s).

19
20 **Response:**

21 The Company is aware of one previous dispute in which Zellstoff-Celgar Limited Partnership
22 (Celgar) filed a complaint with the Commission on August 28, 2014 requesting that FBC be
23 directed to provide on a retroactive basis the DSM incentives that Celgar would have received
24 for a Wood Chip Screening Project. The matter was resolved pursuant to Order G-16-15. The
25 Commission determined that Celgar was not eligible for retroactive financial incentives pursuant
26 to RS 90 for the Project.

27 There have been no disputes under RS 91.

28



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1 **11.0 Reference: DSM UNDER THE TARIFF**

2 **FBC Electricity Tariff, Sheet 43A – Sheet 43E**

3 **RS 91- On-Bill Financing Pilot Program**

4 11.1 Please provide a history of enrolment, cost-effectiveness for each year since
5 program inception to date, and an update on the current status of the On-Bill
6 Financing Pilot Program.

7
8 **Response:**

9 There were only two participants in this program and all associated OBF costs and savings
10 were incorporated within Home Improvement results and are thus not available separately.

11 The OBF program is closed to new participants and the Company intends to apply to close RS
12 91 in its LT DSM Plan to be filed as part of the LTERP on or before November 30, 2016.

13
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16 11.1.1 Please elaborate on the anticipated activities in 2017 for this program.

17
18 **Response:**

19 There are no anticipated 2017 activities for this program. Please refer to the response to BCUC
20 IR 1.11.1.

21

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1 **12.0 Reference: REVIEW OF INDIVIDUAL PROGRAMS**

2 **Exhibit B-1, Appendix A, p. A10**

3 **Supporting initiative**

4 On page A10 of Appendix A of the Application, FBC states “Staff labour was embedded
5 in the component budgets in 2016, but is shown as a separate line item in 2017.” Table
6 A4-1 on page A10 of Appendix A of the Application shows the supporting initiative
7 expenditures.

8 12.1 Please explain why staff labour is shown as a separate line item rather than
9 being embedded in the component budgets as done in 2016.

10

11 **Response:**

12 In 2017, the method of budgeting was modified to more directly allocate labour dollars to the
13 supporting programs. This was not the case in previous years when all non-incentive costs were
14 allocated as a percentage of incentive dollars.

15

16

17

18 12.1.1 Please update Table A4-1 with the labour cost allocated to each
19 component to each supporting initiative.

20

21 **Response:**

22 Table A4-1 has not been updated because the time spent on different components is not easily
23 projected in advance and thus the labour estimate is only available at the Program Area level.

24

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1 **C. EVALUATION, MEASUREMENT & VERIFICATION**

2 **13.0 Reference: EVALUATION, MEASUREMENT AND VERIFICATION (EM&V)**
3 **FBC 2015-16 DSM Decision, pp. 17, 31; Exhibit B-1, Appendix A, p.**
4 **A13**

5 **Third-party resource**

6 On page 31 of the FBC 2015-16 DSM Decision, the panel states “The Panel encourages
7 FBC to use third party, rather than in-house, resources for EM&V where possible.”

8 On page 17 of the Application, FBC states that “The consultant designs and typically
9 undertakes any market research (participant and trade ally surveys), conducts process
10 and savings impact analysis, and prepares the [Monitoring & Evaluation (M&E)] report...
11 FBC itself also maintains qualified [Planning & Evaluation (P&E)] staff with core EM&V
12 capacity to: ensure individual projects are subject to assessment/evaluation by
13 professional engineering staff; conduct program research, e.g. participant surveys, for
14 minor studies...”

15 On page A13 of Appendix A of the Application, Table A5-1 shows that the budget for
16 staffing (including training) is \$395,000 in 2016 versus \$440,000 in 2017. FBC states
17 that “The increase in the 2017 staffing costs now includes an allowance for the Director
18 of C&EM who is allocated between FBC and FEI”.

19 13.1 Please elaborate on the need for more funding on internal staff and training for
20 EM&V than the amount approved for the years 2015 and 2016.

21
22 **Response:**

23 Table A5-1 includes \$440 thousand in staffing costs for Planning & Evaluation as a whole,
24 including EM&V labour and the C&EM Director allocation. The 2017 Plan staffing costs for
25 EM&V only are \$189,000 as shown in Appendix A to the Application (Exhibit B-1), Table A5-2
26 and are based on 2015 Actual staffing costs plus forecast salary increases of approximately
27 \$4,500.

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31 13.2 Please elaborate on the role of the Director of C&EM, and explain whether this
32 resource is in addition to existing resources from 2016.
33



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1 **Response:**

2 The Director of C&EM provides strategic oversight, guidance and management of the
3 Company's Conservation and Energy Management programs. The Director of C&EM role was
4 integrated in November 2014, and since then the Director has had responsibility for both the
5 FBC electric and FEI natural gas DSM portfolios.

6 FBC's 2015-16 DSM Plan was filed in August of 2014 and, as such, it did not include a provision
7 to co-fund a shared Director with FEI. The 2017 DSM Plan is the first opportunity to make such
8 a provision.

9
10

11

12 13.3 Please specify the incremental additional budget for EM&V internal staffing and
13 training for 2017 that is included in the 2017 planned expenditure.

14

15 **Response:**

16 The incremental budget for EM&V staffing over 2016 Plan are forecast salary increases of
17 approximately \$4,500.

18

19

20

21 13.4 Please elaborate on the difference between the role of the third-party consultant
22 and P&E staff, and identify any areas of overlap between the work performed by
23 FBC staff and third-party consultants.

24

25 **Response:**

26 The Company's P&E staff are responsible for overall planning and budgeting, tracking and
27 reporting program costs and savings, reviewing projects using measurement and verification
28 protocols and managing evaluation studies. The evaluation studies themselves, shown in
29 Table A5-2, are conducted by third party consultants.

30 The nature of these studies is described in the 2015 Annual DSM Report filed as Appendix B to
31 the Application (Exhibit B-1), on page 20, Section 7.2:

32 Primary types of Evaluation, Measurement and Verification (EM&V) activities
33 include: Process evaluations, where surveys and interviews of participants and
34 trade allies are used to assess customer satisfaction and program success;



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1 Impact evaluations, to measure the achieved energy savings attributable from
2 the program including [participant] free-ridership and spillover⁷ impacts.
3 Secondary evaluation findings of market effects may be revealed through
4 interview of market players, such as trade allies.

5 FBC believes it has the correct mix of internal staff capacity to oversee EM&V
6 activities, and delegates the evaluation studies to independent consultants who
7 specialize in such work.

8

⁷ Free-ridership refers to participants who would have participated in the absence of the program and spillover refers to additional reductions in energy consumption or demand that are due to program influences that are not directly associated with program participation, (as per National Renewable Energy Laboratory, <http://www.nrel.gov/docs/fy14osti/62678.pdf>).