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February 28, 2018

British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, B.C.
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Attention: Mr. Patrick Wruck, Commission Secretary and Manager, Regulatory Support

Dear Mr. Wruck:

Re: FortisBC Inc. (FBC)

Project No. 1598934

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

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

On November 15, 2017, FBC filed the Application referenced above. On December 22, 2017, in accordance with Commission Order G-176-17, FBC submitted its response to BCUC IR No. 1 (Exhibit B-2), and in accordance with Commission Order G-21-18, on February 28, 2018, FBC is submitting its responses to BCUC IR No. 2 and Intervener IR No. 1.

During the course of responding to IRs, FBC determined a few corrections are required to the Attachment 1.1 provided in response to BCUC IR No. 1. The following outlines the corrections made as part of this Errata.

IR Reference:	Affected Pages (Exhibit B-2)	Reason for Correction
BCUC IR 2.13.1	Attachment 1.1 to BCUC IR 1.1.1, Table 2-1, page 5	Correction to Appendix A reference from Section A5 to Section A6.
CEC IR 1.12.1 and ICG IR 1.6.1	Attachment 1.1 to BCUC IR 1.1.1: <ul style="list-style-type: none">• Table 3-1, page 11• Appendix A:<ul style="list-style-type: none">○ Table A1-1, page A3○ Table A3-1, page A10○ Table A4-1, page A13○ Table A8-1, page A20	Correction to allocation of share of non-program specific expenses between industrial and commercial portfolio.

IR Reference:	Affected Pages (Exhibit B-2)	Reason for Correction
BCUC IR 2.5.3	Attachment 1.1 to BCUC IR 1.1.1, Table 5-1, page 18	Table 5-1 omitted the spillover rate for Building & Process Improvement and the rates for Commercial Lighting & Custom Lighting were reversed, and the Customer Lighting was completed by Sampson Research.

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

Sincerely,

FORTISBC INC.

Original signed:

Diane Roy

Attachment

cc (email only): Registered Parties



FORTISBC INC.

**Application for Acceptance of Demand
Side Management Expenditures for 2018**

**Attachment 1.1
Supporting Information and Commentary**

December 22, 2017

1 **2.2 CONSISTENCY WITH BRITISH COLUMBIA ENERGY OBJECTIVES**

2 British Columbia’s energy objectives are set out in section 2 of the CEA. A summary of how
 3 FBC’s proposed 2018 DSM Plan supports the applicable of these energy objectives is provided
 4 in the table below.

5 **Table 2-1: BC’s Energy Objectives Met by FBC DSM Activity**

Energy Objective	FBC 2018 DSM Plan
(b) to take demand-side measures and to conserve energy...	FBC’s DSM proposals are designed to implement cost-effective (as defined by the DSM Regulation) demand-side measures. See Section 3.
(d) to use and foster the development in British Columbia of innovative technologies that support energy conservation and efficiency and the use of clean or renewable resources;	FBC supports pilot projects for new DSM technologies, and the 2018 DSM Plan includes provision for Innovative Technology projects. See Appendix A, Section A6 .
(h) to encourage the switching from one kind of energy source or use to another that decreases greenhouse gas emissions in British Columbia;	The BC Conservation Potential Review (CPR) report on fuel switching potential is not yet finalized. If or when FBC elects to pursue such measures it will file an application pursuant to s. 18 of the CEA and s. 4 of the Greenhouse Gas Reduction (Clean Energy) Regulation ⁷ .
(i) to encourage communities to reduce greenhouse gas emissions and use energy efficiently;	Local government & institutional strategic energy planning, and Community Education & Outreach, are enabled through supporting initiatives. Provision for, and further development of, the BC Step Code will be included within Program areas. See Sections 2.4.4 and 2.4.5 and Appendix A, section A5.5.

6 **2.3 CONSISTENCY WITH LONG TERM RESOURCE PLAN**

7 Under section 44.2 of the UCA, in determining whether to accept an expenditure schedule filed
 8 by a utility, the Commission must consider the utility’s most recent long-term resource plan filed
 9 under section 44.1 of the Act. For FBC, the current 2016 LTERP was filed on November 30,
 10 2016 and currently awaits a decision from the BCUC. The DSM measures included in the 2018
 11 DSM Plan are consistent with the measures assessed and the benefit/cost methodology used in
 12 the 2016 LTERP. More specifically, the measures included within programs in the 2018 DSM
 13 Plan pass the Total Resource Cost (TRC) test⁸ and address the key end-uses of the principal
 14 customer rate classes - consistent with the 2016 LTERP (and approved for the 2017 DSM
 15 Plan).

⁷ Greenhouse Gas Reduction (Clean Energy) Regulation, B.C. Reg. 102/2012, as amended

⁸ The TRC test is the ratio of the benefits of a DSM measure divided by the DSM measure’s cost, including the utility’s program costs. The TRC is further described in Section 5.1.2.

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

Program Area	2017 Approved		2018 Plan		2018/17 Difference		
	Savings MWh	Cost (\$000s)	Savings MWh	Cost (\$000s)	TRC ¹² B/C Ratio	Cost (\$000s)	% Diff
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	3,592	2.0	460.9	15%
4 Industrial	1,556	309	1,188	377	2.0	67.8	22%
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%

2
 3 Program expenditures are proposed to increase overall by 5 percent, or \$0.3 million, and
 4 Program area plan costs have shifted in response to market conditions. Residential funding has
 5 declined by 9 percent or \$0.2 million, offset by an 11 percent increase (\$0.3 million) in
 6 Commercial funding, to reflect the levels of activity in these sectors in 2017. The significant
 7 increase in the Industrial sector shown in Table 3-1, above, reflects a higher incentive rate and a
 8 re-allocation of staff resources to that program. Supporting Initiatives includes an increase in
 9 C&S funding to comply with the March 2017 Amendment to the DSM Regulation.

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

12 **3.2 DSM PROGRAMS**

13 The DSM programs listed in the 2018 DSM Plan are largely continuations, or enhancements, of
 14 existing programs included in the 2017 DSM Plan for which expenditures have previously been
 15 accepted by the Commission.

16 Further details for each program can be found in the 2018 DSM Plan (Appendix A).

17 **3.3 DSM GUIDING PRINCIPLES**

18 The 2016 LT DSM Plan was developed using the following guiding principles¹³:

- 19 1. The DSM Plan will be customer-focused by offering a range of measure choices within
 20 programs that address the key end-uses of the principal customer rate classes;

¹² Total Resource Cost (TRC) based on net savings and costs, adjusted by program NTGR (net to gross ratio).

¹³ 2016 LTERP and LT DSM Plan, Volume 2, Section 2.1, pg. 6.

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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 (preliminary)
Heat Pumps - loans	15%	20%	Research Into Action, 2017 (preliminary)
Heat Pump Water Heaters	0%		
Watersavers & HPWH/shw			Gross savings adjusted based on City Green follow-up surveys
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	34%		Evergreen Economics, 2013
Sm Business Direct Install	31%		Evergreen Economics, 2013
Building & Process Improvement	30%	12%	Sampson Research, 2012
Custom Lighting	31%	9%	Sampson Research, 2009
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

2



APPENDIX A

2018 Demand-Side Management (DSM) Plan

December 22, 2017

FortisBC Inc.

1 **Table A1-1: 2017 Approved and 2018 DSM Plan Expenditures & Savings**

		2017 Approved		2018 Plan			2018/17 Difference	
		Savings MWh	Cost (\$000s)	Savings MWh	Cost (\$000s)	TRC ¹ B/C Ratio	Cost (\$000s)	% Diff
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	3,592	2.0	460.9	15%
4	Industrial	1,556	309	1,188	377	2.0	67.8	22%
5	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%

2

3 **THE LRMC AND COST EFFECTIVENESS RESULTS**

4 **A1.2** The 2017 DSM Plan used the Long Run Marginal Cost (LRMC) of \$112 per MWh for clean or
5 renewable BC resources as set out in FBC's 2012 Long Term Resource Plan (2012 LTRP) and
6 an updated Deferred Capital Expenditure (DCE) factor value of \$79.85 per kW-yr. The
7 Commission accepted FBC's 2017 DSM Plan based on those assumptions pursuant to Order
8 G-9-17.

9 The proposed 2018 DSM Plan uses the updated LRMC value of \$100 per MWh filed as part of
10 the Company's 2016 LTERP² and continues to use the approved DCE factor of \$79.85 per kW-
11 yr. Based on the 2016 LTERP LRMC value of \$100 per MWh, the 2018 DSM Plan achieves a
12 TRC Benefit/Cost ratio of 1.6 at the portfolio level.

13 Alternative Benefit/Cost ratios – including the utility cost test (UCT), ratepayer impact measure
14 test (RIM), and participant cost test (PCT) – by program, sector and portfolio level are shown for
15 **A1.3** information purposes in the Summary Table A6-1, below.

16 **2017 DSM PLAN RESULTS**

17 Based on its 2017 results as at the end of September, FBC believes that it can achieve its
18 proposed 2018 DSM Plan, including the 5 percent increase in program expenditures. Table A1-
19 2 shows the actual results up to September 2017 compared to the targets in the 2017 DSM
20 Plan.

¹ Total Resource Cost (TRC) based on net savings and costs, adjusted by program NTGR (net to gross ratio).

² 2016 LTERP and LT DSM Plan, Volume 1, Section 9.3.1, pg. 119.

A3 COMMERCIAL PROGRAM AREA

Program offers for the Commercial sector, including the Irrigation and Street Lighting rate class customers, will be focused on the economic opportunities in Lighting and Building Process Improvements (non-lighting processes, such as Heating, Ventilation, Air Conditioning (HVAC), refrigeration, pumps and fans, etc.)

Customers are reached through two key program offers: the Custom Business Efficiency Program (CBEP) and Commercial Product Rebates (CPR).

The following Table A3-1 outlines the list of Commercial programs, plan costs and savings, and the Benefit/Cost ratio on a Total Resource Cost basis. A description of each program and the primary delivery mechanisms follows.

Table A3-1: Commercial Program Expenditures & Savings

Program		2017 Approved		2018 Plan		TRC, net B/C ratio
		Savings, system MWh	Cost (\$000s)	Savings, system MWh	Cost (\$000s)	
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		822	
5	Total	13,666	3,131	19,165	3,592	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

A4 INDUSTRIAL PROGRAM AREA

The following tables outline the proposed Industrial program, plan costs and savings, and the Benefit/Cost ratio on a TRC basis. A description of the Industrial Efficiency program and the primary delivery mechanisms follows.

Table A4-1: Industrial Efficiency Expenditures & Savings

Program		2017 Approved		2018 Plan		
		Savings, system MWh	Cost (\$000s)	Savings, system MWh	Cost (\$000s)	TRC, net B/C ratio
1	Industrial	1,556	242	1,188	305	2.3
2	Non-program specific expenses		67		72	
3	Total	1,556	309	1,188	377	2.0

INDUSTRIAL EFFICIENCY

A4.1

FBC will continue to offer program assistance and financial incentives for industrial customers to achieve increased efficiency in their processes, buildings and/or systems. Program assistance includes co-funded facility-wide energy efficiency assessments and detailed, system-specific feasibility studies to qualifying industrial customers.

The 2018 Industrial budget increase is partly to fund such energy efficiency assessments; additionally, staff resourcing has been increased and the Industrial incentive rate has been increased up to a nominal \$0.25 per kWh saved for qualifying projects. Due to the time lag between identifying potential projects, and the customers' capital funding cycle, the energy savings won't materialize in 2018 but are anticipated in subsequent plan years.

FBC will offer custom rebates through the Custom Business Efficiency program offer to support energy efficiency for various industrial end-uses, including, but not limited to: industrial process optimization, lighting, heating, ventilation and air conditioning, pumps, fans, compressed air, hydraulics and other motor systems. Prescriptive product rebates (for example, variable-speed air compressors and lighting products) will also be offered through the DSM online rebate portal.

1 **A8 APPENDIX A**

2 The following table provides the governing (TRC, mTRC) Benefit/Cost ratios for the 2018 DSM
3 Plan, at the Program, Sector and Portfolio levels; as well as the auxiliary B/C ratios under the
4 California Standard Practice manual.

5 **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		2.0	2.3	3.0	6.0	0.8
Subtotal		1.8	2.0	4.1	3.4	0.8
Total		1.6	1.8	3.2	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

6