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October 14, 2016

BY EMAIL

British Columbia Utilities Commission
6th Floor, 900 Howe Street
Vancouver, BC V6Z 2N3

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

Dear Sirs/Mesdames:

**Re: FortisBC Inc. Application for Acceptance of Demand Side
Management Expenditures for 2017**

Please find enclosed the Final Argument of FortisBC Inc., dated October 14, 2016, with respect to the above noted matter.

Yours truly,

FARRIS, VAUGHAN, WILLS & MURPHY LLP

Per: Original signed by:

Nicholas T. Hooge

NTH/bd

Enclosure

c.c.: Registered Interveners
Client

BRITISH COLUMBIA UTILITIES COMMISSION

IN THE MATTER OF
the *Utilities Commission Act*, R.S.B.C. 1996, chapter 473

and

FortisBC Inc. Application for Acceptance of
Demand Side Management Expenditures for 2017

FINAL ARGUMENT OF FORTISBC INC.
October 14, 2016

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A. INTRODUCTION

1. On August 8, 2016, FortisBC Inc. (**FBC** or the **Company**) filed an application with the British Columbia Utilities Commission (**BCUC** or the **Commission**) for acceptance of its schedule of Demand Side Management (**DSM**) expenditures for 2017 (the **Application**).

2. In the Application, FBC seeks the Commission's acceptance, pursuant to s. 44.2 of the *Utilities Commission Act*, R.S.B.C. 1996, c. 473 (the *UCA*), of the detailed statement of DSM expenditures contained in Appendix A of the Application: the 2017 DSM Plan. Specifically, FBC is seeking acceptance of anticipated expenditures of up to \$7.6 million for 2017,¹ as set out in Table A6-1 of the 2017 DSM Plan, which is reproduced below:

Table A6-1: Summary Table of 2017 DSM Plan

Program/ Portfolio areas	Savings (MWh)	Cost (\$000s)	Benefit/Cost Tests				Levelised Cost (\$/MWh)
			TRC	UCT	PCT	RIM	
Residential							
Home Improvement	364	348	1.7	2.6	7.3	0.8	44.5
Heat Pumps	781	298	1.5	2.6	4.6	0.8	53.1
New Home	126	151	1.4	3.3	2.8	0.8	42.1
Lighting	2,735	190	2.2	21.3	2.8	0.9	5.6
Appliances	126	133	1.3	1.6	9.2	0.6	74.8
Water Heating	17	30	1.5	1.1	0.0	0.5	110.3
Low Income & Rentals	3,247	1,367	3.4	3.3	0	0.7	54.5
Behavioural	3,097	200	3.7	3.7	0	0.7	29.9
Subtotal	10,493	2,718	2.5	4.4	6.6	0.8	32.3
Commercial							
Com Lighting	10,592	2,322	2.2	3.6	4.9	1.0	37.9
Building Improvement	2,931	784	2.3	6.4	2.9	1.1	20.8
Irrigation	144	25	3.6	3.1	0	0.9	36.3
Subtotal	13,666	3,131	2.2	4.0	4.3	1.1	34.1
Industrial							
Industrial	1,556	309	1.9	5.1	2.6	1.1	22.0
Subtotal	1,556	309	1.9	5.1	2.6	1.1	22.0
Program Total	25,715	6,158	2.3	4.2	5.1	0.9	32.6
Portfolio							
Supporting Initiatives		674					
Planning & Evaluation		777					
Total (including Portfolio area)		7,610	2.0	3.1	3.6	0.8	43.8

¹ Exhibit B-1, p. 1, ln. 4-5 (Application)

3. FBC provides this Final Argument pursuant to Commission Order G-135-16, establishing the Regulatory Timetable for the Application. FBC submits that its 2017 DSM Plan, and the programs and expenditures outlined therein, complies with the legal framework established under s. 44.2(5) of the *UCA* and the *Demand-Side Measures Regulation*, B.C. Reg. 326/2008, as amended (the *DSM Regulation*). The Commission should, accordingly, accept the filing of the 2017 DSM Plan.

B. BACKGROUND AND RELATED COMMISSION PROCESSES

(i) 2014-2018 PBR Process and 2014 DSM Expenditure

4. The 2017 DSM Plan must be understood in the context of a number of previous and related Commission processes regarding FBC's DSM expenditures and long term planning.

5. A convenient starting point is FBC's Application for a Multi-Year Performance Based Ratemaking Plan for 2014 through 2018. In that application, which was filed July 5, 2013, FBC initially proposed DSM expenditures of approximately \$3.0 million in 2014, \$3.08 million in 2015, \$3.05 million in 2016, \$3.1 million in 2017, and \$3.15 million in 2018.² These were lower amounts than FBC's accepted levels of DSM spending in prior years.³ The change was a result of a significant decrease in the avoided cost of energy (from \$84.84/MWh in 2012 to \$56.51) used to measure the cost effectiveness of FBC's DSM programs under the provisions of the *DSM Regulation* that were then in force.⁴ However, amendments to the *DSM Regulation* passed in June 2014 and effective starting in 2015 required the avoided cost of energy for DSM to be calculated using the long-run marginal cost (**LRMC**) of acquiring electricity generated from clean or renewable resources in BC.⁵

² FBC Application for Approval of a Multi-Year Performance Based Ratemaking Plan for 2014 through 2018, Vol. 2, Appendix H1 (2014-2018 DSM Plan), p. 14

³ BCUC Decision, dated August 15, 2012, In the Matter of FortisBC Inc. 2012-2013 Revenue Requirements and Review of 2012 Integrated System Plan (**2012 RRA/ISP Decision**), p. 137 (accepting DSM expenditures of \$7.73 million in 2012 and \$7.88 million in 2013)

⁴ BCUC Decision, dated September 15, 2014, Multi-Year Performance Based Ratemaking Plan for 2014 through 2018 (**PBR Decision**), p. 241-242

⁵ Ministerial Order No. 233, dated June 4, 2014; see also PBR Decision, p. 241

6. Accordingly, FBC withdrew its DSM expenditure requests for 2015-2018. The Commission nonetheless accepted that the \$3 million expenditure proposed for 2014 was appropriate and approved it under s. 44.2 of the *UCA*. The Commission's decision noted that FBC would not be able to meaningfully impact its DSM spending in 2014 even if a higher amount was budgeted.⁶

(ii) 2015-2016 DSM Expenditure Application and Decision

7. FBC subsequently applied for acceptance of new DSM expenditure schedules for 2015 and 2016 (the **2015-2016 DSM Plan**). The application for acceptance of the 2015-2016 DSM Plan was filed on August 11, 2014. On the basis of the amended *DSM Regulation*, FBC sought Commission acceptance of DSM expenditures of up to \$7.3 million for 2015 and \$7.5 million for 2016.⁷

8. The Commission accepted the 2015-2016 DSM Plan, and the associated expenditure levels, in a Decision and Order dated December 3, 2014 (the **2015-16 DSM Decision**).⁸ The anticipated DSM expenditures of up to \$7.6 million for 2017 is therefore in-line with previously approved DSM expenditure levels.

9. The Commission's 2015-16 DSM Decision contained a number of directives requiring response or further action from FBC. FBC has addressed these directives in the Application or in previous DSM Annual Reports. To the extent further responses to the Commission's directives are necessary, FBC will provide them in the Long Term DSM Plan (**LT DSM Plan**) to be filed as part of the Company's 2016 Long Term Electric Resource Plan (**LTERP**) and/or in subsequent DSM expenditure filings with the Commission.⁹

(iii) 2015 Actual Performance

⁶ PBR Decision, p. 242

⁷ FBC Application for Approval of Demand Side Management Expenditures for 2015 and 2016, Appendix A (2015-2016 DSM Plan), p. A14

⁸ BCUC Order G-186-14

⁹ Ex. B-2, p. 2-3 (Response to BCUC IR 1.1.1)

10. The results of FBC's DSM programs for 2015 are described in the Company's 2015 DSM Annual Report, filed as Appendix B to the Application and publically available on FBC's website (along with other DSM Annual and Semi-Annual Reports dating back to 2007). A table showing the actual 2015 results in DSM spending and energy savings by program sector compared to the amounts accepted in the Commission's 2015-16 DSM Decision was provided in response to an Information Request (**IR**) from the British Columbia Public Interest Advocacy Centre *et al.* (**BCOAPO**).¹⁰ Overall, actual spending in 2015 was 48% of the budgeted amount and savings were 48% of the target.¹¹

11. There were a number of reasons for the performance of FBC's DSM programs in 2015. As explained in the 2015 DSM Annual Report and in response to intervener IRs, one of the significant factors was the stepped increase in planned DSM spending in 2015 compared to 2014 (an increase from \$3 million to \$7.3 million) and the timing of the 2015-16 DSM Decision. FBC required certainty of Commission acceptance of the increased expenditure level for 2015 before proceeding with new and re-launched DSM programs.¹² Commission acceptance of the 2015-2016 DSM Plan was received on December 3, 2014 and, as such, there was insufficient lead time to take various necessary steps to increase DSM programming to levels needed to achieve planned spending and savings targets.¹³

12. Further, as explained in response to an IR from the BC Sustainable Energy Association and Sierra Club BC (**BCSEA**), FBC believes that there were, generally, a limited amount of missed DSM opportunities in 2015 and the majority of the cost-effective potential remains.¹⁴ FBC also notes that the monetary benefit shareholders earned as a result of the under-spend on DSM in 2015 was negligible (an estimated \$70,000).¹⁵ There is effectively no financial incentive for under-spending the DSM budget.

¹⁰ Ex. B-3, p. 6 (Response to BCOAPO 1.4.1)

¹¹ Ex. B-1, App.B, p. 2 (FBC 2015 DSM Annual Report)

¹² Ex. B-4, p. 11 (Response to BCSEA IR 1.5.2)

¹³ Ex. B-1, App.B, p. 3 (2015 DSM Annual Report)

¹⁴ Ex. B-4, p. 10 (Response to BCSEA IR 1.5.1)

¹⁵ Ex. B-2, p. 7-8 (Response to BCUC IR 1.3.1)

13. The circumstances that existed in 2015 were out of the norm and were impacted by the above-described amendments to the *DSM Regulation* in June 2014, which took effect as of 2015. FBC took reasonable and appropriate steps to ramp up its DSM programs and spending for 2015, but reaching the planned spending and savings was not possible in the circumstances. FBC submits that actual DSM performance in 2015 was an anomaly and not consistent with the Company's long record of successfully meeting or exceeding savings targets while keeping spending within accepted budgets. The nature and timing of DSM expenditure requests and approvals should not have the same impact on performance in subsequent years.¹⁶

(iv) 2016 Projected Performance

14. Consistent with the above submission, FBC's projected year end DSM results for 2016 are much closer to being in line with the budgeted expenditure amount and savings target. Across all sectors, projected DSM expenditures for 2016 are approximately \$6.8 million compared to a budget of approximately \$7.5 million and projected savings are 21,160 MWh compared to a target of 27,189 MWh.¹⁷

15. The biggest variance in projected 2016 expenditures and savings compared to plan is in the Residential sector and, more specifically, the Home Improvement program.¹⁸ As explained in response to an intervener IR, this is consistent with a historical pattern of substantial year-to-year fluctuations in savings and spending on the Home Improvement program and frequent instances of substantial deltas between planned and actual results for both savings and spending in respect of this program.¹⁹

(v) 2016 LTERP, Long Term DSM Plan, and BC CPR

16. In its 2015-16 DSM Decision, the Commission encouraged FBC to file DSM expenditure schedules for subsequent years after the Commission's review and decision on FBC's next long

¹⁶ Ex. B-4, p. 11 (Response to BCSEA IR 1.5.2)

¹⁷ Ex. B-3, p. 6 (Response to BCOPA O IR 1.4.1)

¹⁸ Ex. B-3, p. 8 (Response to BCOPA O IR 1.4.2)

¹⁹ Ex. B-4, p. 35-37 (Response to BCSEA IRs 1.15.1 and 1.15.2)

term resource plan filing pursuant to s. 44.1 of the *UCA*.²⁰ At the time, the deadline for that filing was June 30, 2016.²¹ The Commission thus recognized that there could be insufficient time between a decision on the 2016 long term resource plan and the end of 2016 to obtain acceptance of a new DSM expenditure schedule. In that case, the Commission recommended that FBC “file for acceptance of a shorter DSM period (i.e. for 2017 only) in order to bridge the gap”.²²

17. The deadline for FBC’s 2016 LTERP was subsequently extended to November 30, 2016 by Commission Order G-43-16. This was in part to allow for the completion of the provincial dual-fuel Conservation Potential Review (**BC CPR**), jointly undertaken by FBC, BC Hydro and Power Authority (**BC Hydro**), and FortisBC Energy Inc. (**FEI**).

18. Further to the Commission’s recommendation, FBC filed the current Application for approval of one year of DSM expenditures for 2017 pending a review and decision on the LTERP and associated LT DSM Plan.

19. Seen in the context of the foregoing, FBC submits that a small increase in planned DSM spending for 2017 compared to 2016 is appropriate given that 2017 is effectively a “bridge” year pending the Commission’ review of the Company’s 2016 LTERP and associated LT DSM Plan.

20. The LTERP and the LT DSM Plan will also have the benefit of results from the BC CPR. The “base services” portion of the BC CPR process is nearing conclusion and its results regarding economic potential of DSM in FBC’s service territory will inform the upcoming long term planning processes.²³ The interim results of the BC CPR indicate that there is increased overall potential compared to FBC’s 2013 CPR Update; however, the final results may change and will be provided as part of the LTERP process.²⁴ In these circumstances, any decisions involving significant departures from current DSM programs or spending levels are

²⁰ 2015-16 DSM Decision, p. 33

²¹ 2012 RRA/ISP Decision, p. 149 (Directive #54)

²² 2015-16 DSM Decision, p. 33

²³ Ex. B-4, p. 17 (Response to BCSEA IR 1.8.1); Ex. B-5, p. 1 (Response to CEC IR 1.1.2)

²⁴ Ex. B-4, p. 18 (Response to BCSEA IR 1.8.1)

appropriately deferred until after the BC CPR process is completed and the LTERP and LT DSM Plan are reviewed.

C. LEGAL/REGULATORY FRAMEWORK

(i) Utilities Commission Act, s. 44.2

21. FBC's Application for acceptance of its 2017 DSM expenditures is filed pursuant to section 44.2 of the *UCA*, which provides that a utility may file "an expenditure schedule containing ... (a) a statement of the expenditures on demand-side measures the public utility has made or anticipates making during the period addressed by the utility". Pursuant to s. 44.2(2), the Commission must accept a DSM expenditure schedule before DSM expenditures made under that schedule can be included in a utility's rates.

22. Pursuant to section 44.2(3) and (4), the Commission must accept all (or a part of) the expenditure schedule if it considers the schedule, or a part of it, to be in the public interest.

23. In considering whether a DSM expenditure schedule is in the public interest, the Commission must consider the following criteria under section 44.2(5):

- (a) the applicable of the British Columbia's energy objectives;
- (b) the most recent long-term resource plan filed by the public utility under section 44.1, if any;
- (c) the extent to which the schedule is consistent with the applicable requirements under sections 6 and 19 of the *CEA* (note that neither of these provisions apply to FBC for the purposes of this filing);
- (d) if the schedule includes expenditures on demand-side measures, whether the demand-side measures are cost-effective within the meaning prescribed by regulation, if any; and
- (e) the interests of persons in British Columbia who receive or may receive service from the public utility.

24. Each of these considerations is discussed in this Final Argument.

(ii) Clean Energy Act

25. As noted above, the Commission is required to consider BC's energy objectives, as set out in the *Clean Energy Act*, S.B.C. 2010, c. 22 (the *CEA*), in reviewing FBC's 2017 DSM expenditure schedule. The energy objectives are described in s. 2 of the *CEA*. In the 2015-16 DSM Decision, the Commission stated that the most relevant objectives to FBC's 2015-2016 DSM Plan were the following:²⁵

- to take demand-side measures and to conserve energy (*CEA*, s. 2(b));
- 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 (*CEA*, s. 2(d));
- to reduce BC greenhouse gas emissions by the amounts and at the time intervals prescribed in s. 2(g)(i)-(v) of the *CEA*;
- to encourage the switching from one kind of energy source or use to another that decreases greenhouse gas emissions in British Columbia (*CEA*, s. 2(h)); and
- to encourage communities to reduce greenhouse gas emissions and use energy efficiently (*CEA*, s. 2(i)).

26. As discussed below, the programs and initiatives contemplated by FBC's 2017 DSM Plan support BC's energy objectives.

(iii) The DSM Regulation

27. Under section 44.2(5)(d) of the *UCA*, the Commission is required to consider whether the DSM expenditures proposed by FBC are cost-effective within the meaning of the *DSM Regulation*.

²⁵ 2015-16 DSM Decision, p. 1

28. Section 4(1) of the *DSM Regulation* gives the Commission a discretion to determine cost-effectiveness based on: (a) a review of each individual DSM measure; (b) a comparison of DSM measures in the portfolio; or, (c) the DSM portfolio as a whole. In previous processes, the Commission has consistently opted to review the cost-effectiveness of FBC's DSM expenditure schedules at the portfolio level.²⁶ In the 2015-16 DSM Decision, the Commission explained its approach under s. 4(1)(c):

The Commission has the option to either apply the TRC/mTRC test to each individual program, or to apply the test to the portfolio as a whole. The Commission has opted in the past to apply this test on a portfolio basis. This provides FBC with the flexibility to undertake programs that are expected to provide a net BC benefit but where energy savings are hard to measure or low in the short term, provided there are other programs in its portfolio that provide offsetting benefits and/or savings.²⁷

29. FBC submits that this approach remains appropriate for the Commission's review of the 2017 DSM Plan.

30. A combination of sections 4(1.1) and (1.5) of the *DSM Regulation* establish the tests the Commission must use in determining cost-effectiveness. In effect, at least 90% of the DSM expenditures in the portfolio must pass the total resource cost test (**TRC**). In addition, up to 10% of DSM expenditures in the portfolio are permitted to pass a modified total resource cost test (**mTRC**). The TRC is the ratio of the benefits of a DSM measure divided by the cost of the measure, including the utility's program costs.²⁸ The benefits are the "avoided costs", calculated as the present value over the measure's effective life of: (i) the energy savings, valued at the long run marginal cost (**LRMC**); and (ii) the demand savings, valued at the deferred capital expenditure (**DCE**) cost.²⁹ The mTRC modifies the TRC to include consideration of non-energy benefits to the utility and customers or, if no such benefits are factored in, allows for a 15% increase in the benefits of the expenditure portfolio.³⁰

²⁶ 2012 RRA/ISP Decision, p. 136; 2015-16 DSM Decision, p. 4

²⁷ 2015-16 DSM Decision, p. 4

²⁸ Ex. B-1, p. 13, ln. 12-13 (Application)

²⁹ Ex. B-1, p. 13, ln. 13-16 (Application)

³⁰ *DSM Regulation*, ss. 4(1.1)(b) and (c)

D. REVIEW OF FBC'S 2017 DSM EXPENDITURE PORTFOLIO

(i) The 2012 LTRP

Consistency with the 2012 LTRP

31. In assessing the 2017 DSM Plan, the Commission is required to consider FBC's most recent long-term resource plan filed under s. 44.1 of the *UCA*. The Company's most recent plan is the 2012 Long Term Resource Plan (**2012 LTRP**) approved by the Commission as part of FBC's 2012 Integrated System Plan (**ISP**) in August 2012.³¹

32. In FBC's submission, the measures in the 2017 DSM Plan are reasonably consistent with the measures assessed and the benefit/cost methodology used in the 2012 LTRP. In addition, the number and breadth of DSM measures that pass the TRC test is similar to what was projected in the 2012 LTRP and what the Commission approved for the 2015-2016 DSM Plan.³²

33. Additional points of consistency are as follows:

(a) The 2017 DSM Plan uses a LRMC, based on the cost of BC clean and renewable resources, of \$112/MWh. This is consistent with the LRMC indicated in FBC's 2012 LTRP of \$111.96/MWh (nominally \$112/MWh) for BC clean and renewable resources.³³ The same LRMC value was also approved in respect of FBC's 2015-2016 DSM Plan.³⁴ Note that the LRMC used for the 2017 DSM Plan is discussed in more detail below in section D.(iii) of this Final Argument.

(b) The 2012 LTRP was designed to achieve electricity savings to offset 50% of FBC's load growth until 2030.³⁵ The electricity savings contemplated by the 2017 DSM Plan would

³¹ BCUC Order G-110-12

³² Ex. B-1, p. 4, ln. 6-10 (Application)

³³ Ex. B-1, p. 4, ln. 11-13 (Application); Ex. B-5, p. 3-4 (Response to CEC IR 1.2.3(a))

³⁴ 2015-16 DSM Decision, p. 6

³⁵ 2012 RRA/ISP Decision, p. 126

offset 48% of FBC's forecast load growth in 2017.³⁶ In FBC's submission, this is reasonably consistent with the 2012 LTRP.

(c) The 2012 LTRP projected that electricity savings of 28 GWh would be achieved through DSM in 2017. This figure was used in the 2012 LTRP as a proxy for future DSM program savings given the uncertainty in forecasting DSM planning figures that far in the future.³⁷ The electricity savings contemplated by the 2017 DSM Plan are 25.7 GWh. Again, FBC submits that this is reasonably consistent with the 2012 LTRP.

34. The 2017 DSM budget of \$7.6 million is approximately 85% of the "medium" DSM funding scenario of \$9 million presented in the 2012 LTRP. This is reasonably consistent given that the \$9 million figure was a high-level or "ballpark" figure that, when forecast, assumed FBC would pay 40% of the incremental cost of all measures and 30% of incentive costs (as a proxy for program administration costs).³⁸ In practice, FBC's detailed DSM budgeting process considerably reduced the costs that had been assumed for planning purposes at the time the 2012 LTRP was filed.³⁹ For these reasons, the \$9 million figure used in the 2012 LTRP should not be considered a firm number for the purposes of the Company's DSM spending and is over-inflated given the basis of its calculation.

35. In addition, FBC submits that the 2017 DSM Plan is properly reviewed, for the purposes of s. 44.2(5)(b) of the *UCA*, as part of the Company's overall efforts to satisfy the objectives of the 2012 LTRP. Factoring in the 2017 DSM Plan, FBC is actually on pace to achieve a 90% load growth offset with DSM programs since the 2012 LTRP was put in place.⁴⁰ Seen in that context, the 2017 DSM Plan is clearly consistent with and furthers the objectives of the 2012 LTRP.

Adequacy of the 2012 LTRP

³⁶ Response to BCSEA IR 1.10.1 (Ex. B-4, p. 21)

³⁷ FBC 2012 ISP Application, Vol. 2 (2012 LT DSM Plan), p. 15

³⁸ Ex. B-2, p. 3 (Response to BCUC IR 1.1.2)

³⁹ *Ibid.*

⁴⁰ Ex. B-4, p. 24-25 (Response to BCSEA IR 1.10.5)

36. The 2017 DSM Plan also supports the on-going adequacy of the 2012 LTRP. Under section 44.1(8)(c) of the *UCA*, in determining whether to approve a long term resource plan, the Commission must consider whether it “shows that the public utility intends to pursue adequate, cost-effective demand-side measures”. A resource plan satisfies this requirement if it includes DSM programs that address specific issues related to low-income households, rental accommodations, and educational programs for students.⁴¹

37. While the Commission has already found these adequacy provisions to be satisfied with respect to the 2012 LTRP,⁴² the 2017 DSM Plan includes within the portfolio the necessary programs to ensure that the LTRP continues to be adequate and continues to meet the requirements of s. 44.1(8)(c) of the *UCA* and s. 3 of the *DSM Regulation*. In particular, the 2017 DSM Plan includes:

- (a) A low income DSM program as mandated by s. 3(a) of the *DSM Regulation*. This includes distribution of Energy Savings Kits and the Energy Conservation Assistance Program (**ECAP**), which is a collaboration among FBC, FEI, and BC Hydro.⁴³
- (b) A DSM program to improve the energy efficiency of rental accommodations as mandated by s. 3(b) of the *DSM Regulation*. The 2017 DSM Plan continues the direct install program, launched in 2016 in collaboration with FEI, with measures such as low flow fixtures and ENERGY STAR lighting products for rental units in multi-unit residential buildings (**MURB**) in FBC’s service territory. The program also provides no cost whole-building energy assessments for MURB properties.⁴⁴
- (c) Education programs for students enrolled in elementary and post-secondary schools. In particular, FBC has collaborated with FEI on an online education program that supports the development of energy education in BC classrooms. The online program for grades 1-9 is being pilot tested with teachers starting in November 2016; the grade 10-12

⁴¹ *DSM Regulation*, s.3

⁴² 2012 RRA/ISP Decision, p. 148

⁴³ Ex. B-1, p. 5, ln. 30-33 (Application)

⁴⁴ Ex. B-1, p. 6, ln. 4-10 (Application)

program is expected to be launched for testing in September 2017.⁴⁵ FBC also provides financial and in-kind support for curriculum based classroom instruction and broader, campus-wide behaviour change programs.⁴⁶

38. For these reasons, the proposed DSM expenditures for 2017 help to satisfy the adequacy requirements set out in the *DSM Regulation* and demonstrate that the 2012 LTRP is being carried out as envisaged.

(ii) Funding Level

39. FBC submits that its proposed DSM expenditures totalling \$7.6 million for 2017 is a reasonable level of DSM funding in all of the circumstances.

40. FBC's 2017 DSM Plan is fundamentally an extension of the Company's 2015-2016 DSM Plan.⁴⁷ For example, all 2015 Conservation and Energy Management (C&EM) programs are proposed to continue in 2017.⁴⁸ All of the 2015 Residential Program Areas are equivalent to the 2017 Residential Program Areas, with two small exceptions.⁴⁹ There are also only a limited number of individual programs that lack continuity from 2015 to 2017.⁵⁰ The small increase in the 2017 DSM budget compared to 2016 is therefore logical and appropriate.

41. FBC designed the 2017 DSM Plan and its \$7.6 million budget based on the Company's previous experience and the opportunities identified in the 2013 CPR Update.⁵¹ DSM budgeting has also taken into account changing circumstances that affect FBC's DSM programming. For example, Residential savings targets and associated spending for 2017 have decreased for a number of different reasons. Provincial and/or federal regulations are phasing out less efficient baseline products; amendments to the BC Building Code have raised the baseline requirements for new home construction, leaving fewer opportunities for effective DSM programming in this

⁴⁵ Ex. B-5, p. 18 (Response to CEC IR 1.4.1)

⁴⁶ Ex. B-1, p. 6, ln. 19-20 (Application)

⁴⁷ Ex. B-4, p. 11 (Response to BCSEA IR 1.5.2)

⁴⁸ Ex. B-3, p. 1 (Response to BCOPAO IR 1.1)

⁴⁹ Ex. B-3, p. 18 (Response to BCOPAO IR 1.10.1)

⁵⁰ Ex. B-2, p. 33 (Response to BCUC IR 1.8.2.1)

⁵¹ Ex. B-2, p. 5 (Response to BCUC IR 1.1.4)

area; and, multi-layer offers, such as the LiveSmartBC program have come to an end.⁵² FBC has provided detailed explanations for other changing circumstances that have resulted in reduced DSM spending opportunities for specific programs.⁵³

42. FBC believes that \$7.6 million is sufficient to cost-effectively fund the anticipated participation in its 2017 DSM Plan programs.⁵⁴ Furthermore, the 2017 DSM Plan includes cost-effective measures and programs for most major end-uses in principal customer sectors and rate classes that acquire, over time, the achievable conservation potential that was identified in the 2013 CPR Update.⁵⁵ The only notable end-use exception not included in the 2017 DSM Plan is residential plug-loads (i.e. consumer electronics), which FBC believes are better addressed through government regulation.⁵⁶ FBC notes that improving technologies and more stringent building code requirements are raising the bar for energy efficiency programs and, as a result, FBC continues to seek out new opportunities for energy saving and is also shifting focus towards achieving deeper DSM energy savings.⁵⁷

43. Notwithstanding the above, if opportunities arise that require additional funding for cost-effective DSM programs, FBC can make intra-sector transfers or supplementary expenditure applications.⁵⁸

44. In addition, FBC submits that the proposed budget and targeted energy savings provided in the 2017 DSM Plan are realistically achievable. The program ramp-up, market awareness, and resource issues that impacted 2015 DSM results have largely been overcome as reflected in FBC's 2016 projected results; furthermore, the spending trajectory (2016 projected spending is 90% of plan, up from 48% in 2015) demonstrates that FBC is on track to achieve its 2017 DSM Plan objectives.⁵⁹

⁵² Ex. B-2, p. 26 (Response to BCUC IR 1.6.2)

⁵³ Ex. B-2, p. 3-4, 18-19, 26 (Response to BCUC IRs 1.1.3, 1.5.3, 1.6.2)

⁵⁴ Ex. B-2, p. 3 (Response to BCUC IR 1.1.2)

⁵⁵ Ex. B-3, p. 12 (Response to BCOPAO IR 1.5.1)

⁵⁶ *Ibid.*

⁵⁷ Ex. B-2, p. 21 (Response to BCUC IR 1.5.5.1)

⁵⁸ Ex. B-2, p. 5 (Response to BCUC IR 1.1.4)

⁵⁹ Ex. B-4, p. 7-8 (Response to BCSEA IR 1.4.7)

(iii) LRMC and Other Input Assumptions

LRMC

45. A key input into cost effectiveness under the *DSM Regulation* is FBC's avoided cost of energy. As described above, following a 2014 amendment to the *DSM Regulation*, FBC's avoided electricity cost is set as the avoided capacity cost plus FBC's LRMC of acquiring electricity generated from clean or renewable resources in BC.

46. For the 2017 DSM Plan, FBC used the same \$112/MWh LRMC for BC clean or renewable resources that the Commission approved in the 2015-16 DSM Decision.⁶⁰ The LRMC is representative of the cost of energy delivered to FBC's system at the plant gate.⁶¹ The \$112 is a levelized number that does not include any adjustment for transmission or distribution losses or for required reserves.⁶² The \$112 LRMC was developed from BC Hydro's Standing Offer Program, as described in FBC's 2012 LTRP.⁶³ Also, as noted in the Application, BC Hydro's filings in its current Rate Design Application indicate that its LRMC is approximately \$106/MWh, including energy and capacity, which approximates the \$112/MWh for firm energy FBC is using.⁶⁴

47. FBC submits that the \$112/MWh LRMC value remains appropriate for the purposes of its 2017 DSM Plan. An updated LRMC is being developed for DSM purposes and will be filed with the Commission as part of the LTRP, on or before November 30, 2016.⁶⁵

Other Input Assumptions

48. The Commission's 2015-16 DSM Decision included a number of directives regarding other input assumptions in FBC's calculation of its avoided cost of energy for DSM purposes. FBC has addressed those directives as follows for the purposes of its 2017 DSM Plan:

⁶⁰ Ex. B-1, p. 4, ln. 14-15 (Application)

⁶¹ Ex. B-5, p. 3 (Response to CEC IR 1.2.3(a))

⁶² *Ibid.*

⁶³ Ex. B-5, p. 3 and fn. 1 (Response to CEC IR 1.2.3(a)); 2012 ISP Application, Vol. 2, App. B, p. 26-8 (Midgard Consulting Inc. 2011 Energy Market Assessment)

⁶⁴ Ex. B-1, p. 14, ln. 24-26 and f.n. 17 (Application)

⁶⁵ Ex. B-5, p. 2-3 (Response to CEC IR 1.2.2)

- (a) In response to Directive #3, FBC reviewed the previous DCE value (\$35.60/kW-year) and commissioned a study by EES Consulting to update it. The study, which is attached as Appendix C to the Application, produced an updated DCE value of \$79.85/kW-yr.⁶⁶ This DCE value is based on FBC's anticipated schedule and estimated costs of transmission and distribution projects related to serving system load growth over the next 20 years.⁶⁷
- (b) In response to Directive #4, FBC has provided a detailed description of and justification for the free rider and spill-over rates used for each DSM program in the 2017 DSM Plan.⁶⁸
- (c) In response to Directive #5, FBC reviewed the 8% discount rate (**DR**) used in the 2012 LTRP and other recent DSM filings. The DR was updated to 6% based on this review, which value was used for the purposes of the current Application.⁶⁹ Details regarding the 6% DR calculation have been provided in response to intervenor IRs.⁷⁰

(iv) Cost Effectiveness

49. FBC evaluated all potentially cost-effective measures to develop the 2017 DSM Plan, including cost benefit analyses for all measures, programs, and portfolios contained in the plan.⁷¹ The results of FBC's cost effectiveness analysis are provided in Table A6-1 (Appendix A of the Application), a copy of which is reproduced above at paragraph 2 of this Final Argument.

50. As shown in Table A6-1, all DSM programs included in the 2017 DSM Plan pass the TRC test. There are no measures in the 2017 DSM Plan that require the mTRC test in order to

⁶⁶ Ex. B-1, p. 23, Table 4 (Application, App.C)

⁶⁷ Ex. B-5, p. 37-38 (Response to CEC IRs 1.14.2 and 1.14.3)

⁶⁸ Ex. B-1, p. 16-17 and Table 6-1 (Application)

⁶⁹ Ex. B-1, p. 13, ln. 29-31 (Application)

⁷⁰ Ex. B-5, p. 26-27 (Response to CEC IR 1.9.2); Ex. B-6, p. 1 (Response to ICG IR 1.1.1)

⁷¹ Ex. B-2, p. 6 (Response to BCUC IR 1.2.1)

be considered cost effective.⁷² FBC also notes that the changes to the DCE value and the DR described above both act to increase the cost-effectiveness of the 2017 DSM Plan.⁷³

51. For these reasons, the 2017 DSM Plan is cost effective within the meaning of the *DSM Regulation* and, accordingly, satisfies s. 44.2(5)(d) of the *UCA*.

(v) British Columbia's Energy Objectives

The 2015-16 DSM Decision

52. In the Commission's 2015-16 DSM Decision, it determined that the BC energy objective in the *CEA* to "take demand-side measures and to conserve energy" (s. 2(b)) is best addressed in a long term resource plan.⁷⁴ Similarly, the Commission determined that "by using FBC's LRMC of acquiring electricity from clean or renewable resources in BC as an avoided energy cost, FBC's DSM proposal includes consideration of BC emission reduction targets".⁷⁵ The Commission stated that further consideration of FBC's support for this BC energy objective (i.e. s. 2(g) of the *CEA*) was also best addressed in a long term resource plan.⁷⁶

53. As a result, the BC energy objectives that were the focus of the 2015-16 DSM Decision were the following:

- Support for innovative technologies (*CEA*, s. 2(d));
- Fuel switching (*CEA*, s. 2(h));
- Community focused energy efficiency (*CEA*, s. 2(i)); and
- Coordination of DSM activities.⁷⁷

⁷² Ex. B-1, p. 14, ln. 32 (Application)

⁷³ Ex. B-1, p. 13, ln. 5-7 (Application)

⁷⁴ 2015-16 DSM Decision, p. 12

⁷⁵ 2015-16 DSM Decision, p. 13

⁷⁶ 2015-16 DSM Decision, p. 13

⁷⁷ FBC notes that this objective is not explicitly stated in the *CEA*, but will address the topic in this section of the argument to reflect the Commission's analysis in the 2015-16 DSM Decision.

54. Consistent with the 2015-16 DSM Decision, FBC will focus its submissions in this Final Argument on these particular energy objectives.

55. A table summarizing how FBC's proposed 2017 DSM Plan addresses these objectives is included in the Application.⁷⁸

Support for Innovative Technologies

56. FBC supports pilot projects for new DSM technologies. For example, as part of its Water Heating program, FBC is collaborating with BC Hydro and Natural Resources Canada (**NRCan**) to test the suitability of ducted integrated heat pump water heaters (**HPWH**) and non-integrated HPWH (condenser and compressor located outside the home) for BC's climate.⁷⁹ FBC is also taking steps to encourage the use of HPWH generally for customers with electrically heated hot water by increasing customer awareness of this technology and offering installation rebates, and by continuing discussions with manufacturers and retailers to increase product availability.⁸⁰

57. The 2017 DSM Plan also allows new measures to be incented if the benefit/cost ratio of a new DSM technology is positive.⁸¹

Fuel Switching

58. The Commission's 2015-16 DSM Decision directed FBC to provide an update on its investigation into potential fuel switching programs as part of its next DSM expenditure request.⁸² In its filings in this process, FBC has described its preliminary investigation regarding the energy cost to heat a typical existing detached dwelling with various fossil fuels and has provided the results of that investigation.⁸³

⁷⁸ Ex. B-1, p. 4, Table 2-1 (Application)

⁷⁹ Ex. B-1, App. A, p. A4, ln. 10-12 (FBC 2017 DSM Plan)

⁸⁰ *Ibid.*

⁸¹ Ex. B-1, p. 4 (Application)

⁸² 2015-16 DSM Decision, p. 14

⁸³ Ex. B-2, p. 11 (Response to BCUC IR 1.4.2)

59. In addition, the on-going BC CPR process in which FBC is participating is examining fuel switching potential and its cost effectiveness.⁸⁴ FBC plans to conduct further investigation into fuel switching when the results of the BC CPR additional scope services become available later in 2016.⁸⁵ FBC submits it is appropriate to defer any decision on whether to proceed with a fuel switching program until the BC CPR process is concluded.⁸⁶

60. Notwithstanding the above, FBC notes that the definition of “demand-side measure” in s. 1(1) of the *CEA* excludes “a rate, measure, action or program the main purpose of which is to encourage a switch from the use of one kind of energy to another such that the switch would increase greenhouse gas emissions in British Columbia”. This indicates that a fuel switching program, by definition, does not necessarily constitute a DSM measure for the purposes of the *CEA*. Even a fuel switching program that decreases emissions may not satisfy the other requirements of the statutory definition of “demand-side measure”.

61. Furthermore, fuel switching inherently involves load building that increases power purchase costs and, incrementally, transmission and distribution requirements and associated costs, thereby negating benefits under the governing TRC test.⁸⁷ Conversely, FBC’s DSM program is fundamentally a resource acquisition strategy with cost effectiveness under the TRC test predicated on valuing electricity savings using the LRMC and DCE as avoided costs.⁸⁸

62. In light of the foregoing, FBC suggests that the fuel switching energy objective provided under s. 2(h) should be of lesser significance to the Commission’s review of the expenditures proposed for the 2017 DSM Plan.

63. In any event, as set out above, FBC’s actions and position with respect to fuel switching are prudent and reasonable in all of the circumstances.

Community Focused Energy Efficiency

⁸⁴ Ex. B-1, p. 4, Table 2-1 (Application)

⁸⁵ Ex. B-2, p. 11 (Response to BCUC IR 1.4.2)

⁸⁶ Ex. B-2, p. 13 (Response to BCUC IR 1.4.2.2)

⁸⁷ Ex. B-2, p. 10 (Response to BCUC IR 1.4.1)

⁸⁸ *Ibid.*

64. FBC pursues a number of initiatives to increase public awareness of DSM activities in order to help increase program participation and increase energy efficiency in the community. These are pursuant to FBC's education programs and through its DSM supporting initiatives.

65. FBC's activities to support energy education in elementary and secondary schools in BC are described above. The online education program FBC is developing in collaboration with FEI will provide high quality, engaging resources and programs that will highlight for students the BC energy environment and encourage a bias-balanced development of energy literacy in classrooms.⁸⁹ This, in turn, promotes energy efficiency and the reduction of emissions.

66. FBC's "supporting initiatives" for DSM are described in detail in section A4 of the 2017 DSM Plan (Appendix A to the Application). These include:

- Initiatives that increase public awareness of energy efficiency and conservation programs and educate customers on the availability of DSM programs;
- Community energy planning initiatives that provide financial assistance to local governments and institutional customers to facilitate energy efficiency planning activities;
- Trades training initiatives that support the building trades and energy management training programs in order to promote the growth of energy efficiency knowledge amongst the trades; and
- Codes and standards initiatives; FBC supports codes and standards policy development and research through in-kind and financial co-funding arrangements.

67. FBC's 2017 DSM Plan includes a budget of \$674,000 for these and other DSM supporting initiatives.⁹⁰

⁸⁹ Ex. B-1, p. 6, ln. 13-15 (Application)

⁹⁰ Ex. B-1, App. A, p. A10, Table A4-1 (2017 DSM Plan)

68. In FBC's submission, these initiatives and the DSM plan generally promote the energy objective of encouraging communities to use energy efficiently and, in turn, reduce greenhouse gas emissions.

Coordination of DSM Activities

69. FBC continues to work collaboratively with other public utilities on DSM related activities. The BC CPR, a collaboration with BC Hydro and FEI, is perhaps the leading example of such initiatives. Other collaborative activities include:

- The online energy education program, being developed in collaboration with FEI;⁹¹
- The Home Renovation Rebate (**HRR**) program, formerly the Home Energy Retrofit Offer (**HERO**), which is delivered in partnership with FEI and BC Hydro;⁹²
- The HPWH pilot project, which is a collaboration with BC Hydro and NRCan;⁹³
- The ENERGY STAR appliance rebate offer, which is a collaboration with BC Hydro as well as appliance manufacturers and retailers;⁹⁴
- The ECAP, which is offered in partnership with FEI and BC Hydro;⁹⁵ and
- The Rental Apartment Program, offered in collaboration with FEI.⁹⁶

70. In addition to these collaborative DSM programs, the C&EM departments of FBC and FEI are in the process of becoming fully integrated with regard to the design, marketing and processing of the companies' program offers, particularly in the shared service territory.⁹⁷ The aim of this integration is to provide customers with "one stop" information and DSM program

⁹¹ Ex. B-1, App. A, p. A11, ln. 14-20 (2017 DSM Plan)

⁹² Ex. B-1, App. A, p. A3, ln. 2-4 (2017 DSM Plan); Ex. B-2, p. 21 (Response to BCUC IR 1.5.5.1)

⁹³ Ex. B-1, App. A, p. A4, ln. 10-12 (2017 DSM Plan)

⁹⁴ Ex. B-1, App. A, p. A4, ln. 15-16 (2017 DSM Plan)

⁹⁵ Ex. B-1, App. A, p. A4, ln. 22-23 (2017 DSM Plan)

⁹⁶ Ex. B-1, App. A, p. A5, ln. 2 (2017 DSM Plan)

⁹⁷ Ex. B-1, App. A, p. A15, ln. 3-5 (2017 DSM Plan)

access through a shared website, other marketing collateral, and personal interactions with customers.⁹⁸

(vi) The Interests of Persons in BC who Receive or may Receive FBC Service

71. The final consideration under the *UCA* is the interests of persons in British Columbia who receive or may receive service from FBC (s. 44(5)(e)).

72. FBC submits that the proposed DSM programs and expenditures in the 2017 DSM Plan support the interests of its ratepayers and potential ratepayers. The 2017 DSM Plan was developed using FBC's four guiding principles for DSM planning:

1. Customer-focused by offering a range of measure choices within programs that address the key end-uses of the principal customer rate classes;
2. Cost-effective by including only those measures that have a TRC benefit/cost ratio greater than unity (other than prescribed measures);
3. Inclusive of best practices in program design, implementation, marketing, outreach, monitoring and evaluation; and
4. Compliant with applicable provisions of the *UCA*, *CEA*, and the *DSM Regulation*.⁹⁹

73. Further, the 2017 DSM Plan is, as noted above, fundamentally an extension of the 2015-2016 DSM Plan. Close to the same DSM measures as provided for in the 2015-2016 DSM Plan will continue to apply in the 2017 DSM Plan. The UCT results are also close to the same between the 2015-2016 DSM plan and the 2017 DSM Plan, with the latter forecast to be lower.¹⁰⁰

⁹⁸ Ex. B-1, App. A, p. A15, ln. 5-7 (2017 DSM Plan)

⁹⁹ Ex. B-1, p. 11, ln. 2-14 (Application)

¹⁰⁰ See Ex. B-1, App. A, p. A16, Table A6-1 (2017 DSM Plan) and 2015-16 DSM Decision, p. 18

74. In its 2015-16 DSM Decision, the Commission conducted a review of relevant considerations under s. 44.2(5)(e) of the *UCA* and ultimately accepted the expenditures and programs contained in FBC's 2015-2016 DSM Plan.¹⁰¹ In particular:

(a) in considering the "effectiveness" of the 2015-2016 DSM Plan the Commission determined that: "on a portfolio basis, the DSM cost of energy saved appears to be reasonable";¹⁰² and

(b) in considering the "balance" of the plan, the Commission determined that the 2015-2016 DSM Plan included measures "to provide broad opportunities for customers to participate in DSM programs, in particular for 'hard to reach' customers such as low-income groups and renters".¹⁰³

75. FBC submits that the same conclusions should apply to the 2017 DSM Plan and that the 2017 DSM Plan supports the interests of persons in British Columbia who receive or may receive service from FBC.

E. REVIEW OF DSM PROGRAM SECTORS

(i) Residential Sector Budget and Savings

76. FBC's 2017 DSM Plan includes a Residential sector budget of approximately \$2.7 million and target savings of 10,493 MWh. This represents a decrease in both proposed spending and targeted energy savings compared to the plan for 2016. The following table, reproduced from page A2 of Appendix A to the Application summarizes the costs and savings for each Program Area in the Residential sector for 2016 and 2017:

¹⁰¹ 2015-2016 DSM Decision, p. 4 and 16-21

¹⁰² 2015-2016 DSM Decision, p. 18

¹⁰³ 2015-2016 DSM Decision, p. 21

Table A1-1: Residential Program Expenditures & Savings

Program Area		2016 Approved		2017 Plan		
		Savings MWh	Cost (\$000s)	Savings MWh	Cost (\$000s)	TRC B/C ratio
1	Home Improvement	3,106	884	364	348	1.7
2	Heat Pumps	1,618	302	781	298	1.5
3	New Home	1,179	390	126	151	1.4
4	Lighting	1,547	189	2,735	190	2.2
5	Appliances	288	96	126	133	1.3
6	Water Heating	948	430	17	30	1.5
7	Low Income & Rentals	3,175	952	3,247	1,367	3.4
8	Behavioural	1,048	106	3,097	200	3.7
9	Total	12,909	3,349	10,493	2,718	2.5

77. As explained above and in the Application and IR responses, the main reasons for the decrease in Residential sector budget and savings in 2017 are the same as for the projected performance of residential DSM programs in 2016; i.e.: declining opportunities for energy savings as regulations phase out less efficient baseline products and mandate higher performance levels; BC Building Code amendments that raised the baseline prescriptive requirements for new home construction; and, lower home retrofit activity reflecting the end of multi-layer offers, such as LiveSmartBC.¹⁰⁴

78. In light of these circumstances, FBC submits that the proposed residential sector budget and targeted energy savings for 2017 are reasonable and appropriate.

(ii) Commercial Sector Budget and Savings

79. FBC’s 2017 DSM Plan includes a Commercial sector budget of approximately \$3.1 million and targeted savings of 13,666 MWh. Both of these are increases over the 2016 DSM Plan. The following table, reproduced from page A6 of Appendix A to the Application summarizes the costs and savings for each Program Area in the Commercial sector for 2016 and 2017:

¹⁰⁴ See also Ex. B-3, p. 9 (Response to BCOPAO IR 1.4.3)

Table A2-1: Commercial Program Expenditures & Savings

Program Area		2016 Approved		2017 Plan		
		Savings MWh	Cost (\$000s)	Savings MWh	Cost (\$000s)	TRC B/C ratio
1	Com Lighting	7,616	1,519	10,592	2,322	2.2
2	Building Improvement	4,589	976	2,931	784	2.3
3	Irrigation	490	69	144	25	3.6
4	Total	12,695	2,564	13,666	3,131	2.2

80. The increase in the Commercial sector budget and energy savings target is due to escalating market response to program offers, as well as the attribution of costs and savings of commercial lighting measures for the common areas of MURBs to the Commercial sector.¹⁰⁵

(iii) Industrial Sector Budget and Savings

81. The 2017 DSM Plan includes an Industrial sector budget of approximately \$0.3 million and a savings target of 1,556 MWh. This represents a budget increase and roughly flat energy savings compared to the 2016 DSM Plan. The projected 2016 energy savings from Industrial DSM programs is 2,327 MWh, which is significantly higher than the 2016 and 2017 planned savings. This is due to the second portion of a major sawmill modernization project taking place in 2016; however, no similar extraordinary projects are anticipated in FBC’s service area in 2017.¹⁰⁶ The following table, reproduced from page A9 of Appendix A to the Application summarizes the costs and savings for programs in the Industrial sector for 2016 and 2017:

Table A3-1: Industrial Efficiency Expenditures & Savings

Program Area		2016 Approved		2017 Plan		
		Savings MWh	Cost (\$000s)	Savings MWh	Cost (\$000s)	TRC B/C ratio
1	Industrial	1,585	209	1,556	309	1.9
2	Total	1,585	209	1,556	309	1.9

¹⁰⁵ Ex. B-1, p. 10, ln. 17-19 (Application); Ex. B-1, App. A, p. A6, ln. 14-16 (2017 DSM Plan)

¹⁰⁶ Ex. B-1, p. 10, ln. 20-23 (Application)

82. The increased budget for the Industrial sector is partially to fund continuing facility-wide energy efficiency assessments, which were first offered starting in 2016.¹⁰⁷ In addition, FBC is seeking approval of an increase of the Industrial incentive rate to a nominal \$0.15 per kWh saved for qualifying projects, effective January 1, 2017.¹⁰⁸

F. EVALUATION, MEASUREMENT AND VERIFICATION

83. Evaluation, measurement, and verification (**EM&V**) are important aspects of managing a DSM portfolio. They are necessary to ensure that the DSM program expenditures will yield the target savings expected and that the programs are operating effectively. There are two major aspects to EM&V: Measurement & Verification (**M&V**), which involves vetting individual DSM projects; and Monitoring & Evaluation (**M&E**), which is the periodic review of DSM programs that may encompass many individual DSM projects over a multi-year span.

84. In its 2015-16 DSM Decision, the Commission directed FBC to include in its next DSM expenditure filing an update on how it ensures EM&V for its DSM activities is free of conflicts of interest.¹⁰⁹ FBC has provided this information in the Application. To summarize, FBC primarily relies on independent third party evaluation specialists to conduct independent reviews of the DSM programs it deploys.¹¹⁰ A listing of the studies FBC is proposing to have conducted of its DSM programs in 2017 and associated expenditures is provided in Table A5-2 of the 2017 DSM Plan.¹¹¹

85. Independent EM&V studies perform an important function in the refinement of FBC's DSM programming. For example, the recommendations regarding FBC's Home Improvement Program provided by Evergreen Economics in its 2015 report (the Executive Summary of which is attached as Appendix C to the Application) were addressed at the program level and factored into the savings and TRC estimates for the 2017 DSM Plan.¹¹² In particular, FBC adjusted the

¹⁰⁷ See Ex. B-6, p. 3 (Response to ICG IR 1.2.2) for further details.

¹⁰⁸ Ex. B-6, p. 4 (Response to ICG IR 1.2.7)

¹⁰⁹ 2015-16 DSM Decision, p. 31

¹¹⁰ Ex. B-1, p. 17, ln. 7-13 (Application)

¹¹¹ Ex. B-1, App. A, p. A14 (2017 DSM Plan)

¹¹² Ex. B-3, p. 19 (Response to BCOAPO IR 1.11.1)

savings proposed in the 2017 DSM Plan for lighting, programmable thermostats, and bathroom fans based on Recommendation #2 from the Evergreen Economics report.¹¹³

86. The 2017 DSM Plan budget for Planning and Evaluation (**P&E**) expenditures, which includes all EM&V activities, is \$777,000. Of this \$375,000 is budgeted for M&E activities.¹¹⁴ This represents a small increase from the 2016 DSM Plan budget and, in FBC's submission, aligns with industry general practice for spending on M&E activities, representing 4.9% of the Company's total DSM portfolio spending for 2017.¹¹⁵

87. The 2017 budget for P&E does represent an increase of approximately \$100,000 compared to 2016 projected spending in this area. However, this is primarily attributable to a reduction in the cost of independent studies in 2016 compared to plan and to a lesser extent internal salary increases.¹¹⁶

G. CONCLUSION

88. For all of the foregoing reasons, FBC submits that making the expenditures in its DSM expenditure schedule for 2017 would be in the public interest and that the Commission should accept the 2017 DSM expenditure schedule pursuant to s. 44.2(3) of the *UCA*. A draft order is attached as Appendix D to the Application.

ALL OF WHICH IS RESPECTFULLY SUBMITTED.

October 14, 2016

Original signed by:

Nicholas T. Hooge,
Counsel for FortisBC Inc.

¹¹³ *Ibid.*

¹¹⁴ Ex. B-1, App. A, p. A14, Table A5-2 (2017 DSM Plan)

¹¹⁵ Ex. B-1, App. A, p. A13, ln. 22-24 (2017 DSM Plan)

¹¹⁶ Ex. B-5, p. 22 (Response to CEC IR 1.6.1); Ex. B-2, p. 43-44 (Response to BCUC IRs 1.13.1 and 1.13.3)