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November 9, 2017

VIA ELECTRONIC MAIL

British Columbia Utilities Commission
6th Floor, 900 Howe Street
Vancouver, B.C.
V6Z 2N3

Attention: Patrick Wruck, Commission Secretary and Manager, Regulatory Support

Dear Sirs/Mesdames:

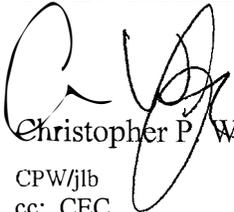
Re: FortisBC Inc. 2016 Long Term Electric Resource Plan and Long Term Demand Side Management Plan ~ Project No. 3698896

We are counsel to the Commercial Energy Consumers Association of British Columbia (the "CEC"). Attached please find the CEC's Final Submissions with respect to the above-noted matter.

If you have any questions regarding the foregoing, please do not hesitate to contact the undersigned.

Yours truly,

OWEN BIRD LAW CORPORATION



Christopher P. Weafer

CPW/jlb
cc: CEC
cc: FBC
cc: Registered Interveners

**COMMERCIAL ENERGY CONSUMERS
ASSOCIATION OF BRITISH COLUMBIA**

FINAL SUBMISSIONS

**FortisBC Inc.
2016 Long Term Electric Resource Plan and Long Term Demand Side Management Plan
Project No. 3698896**

November 9, 2017

Commercial Energy Consumers Association of British Columbia

**FortisBC Inc. 2016 Long Term Electric Resource Plan and
Long Tem Demand Side Management Plan
Project No. 3698896**

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**COMMERCIAL ENERGY CONSUMERS ASSOCIATION
OF BRITISH COLUMBIA**

FINAL SUBMISSIONS

**FortisBC Inc. 2016 Long Term Electric Resource Plan and Long Tem Demand Side
Management Plan
Project No. 3698896**

The Commercial Energy Consumers Association of BC (the “CEC”) represents the interests of ratepayers consuming energy under Commercial tariffs in applications before the BC Utilities Commission (“BCUC” or “Commission”). The CEC has participated in the proceeding relating to FortisBC Inc (“FBC”) Long Term Electric Resource Plan (“LTERP”) and 2016 Demand Side Management Plan.

The CEC provides the following submissions regarding the above proceeding.

A. SUMMARY

1. The CEC does not recommend approval of the LTERP as submitted.
2. The CEC finds that FBC has provided a resource plan that will unnecessarily increase costs to ratepayers beyond that necessary to provide secure, reliable energy to customers.
3. The CEC recommends that the Commission deny part of FBC’s LTERP and requests FBC to resubmit its plan using Portfolio A1, which minimizes the cost of the portfolio by eliminating the self-sufficiency requirement and relying more heavily on market energy.
4. To the extent that the Commission wishes to minimize the reliance on market energy, the CEC recommends that the Commission request FBC to include PPA Tranche 2 energy.
5. The CEC also recommends that the Commission request FBC to reconsider its Load Forecast and to resubmit in a manner that more accurately reflects historical load increases.

B. SUBMISSIONS

Legal and Regulatory Framework

6. FBC is seeking acceptance of its Long Term Resource Plan under Section 44.1(6)(a) of the *Utilities Commission Act* (the “UCA”).¹ FBC notes that it is not seeking any specific approvals for any potential resource acquisitions or other projects identified within the LTERP.²

¹ FBC Final Argument page 2

² FBC Final Argument page 2

7. Section 44(1) of the UCA provides the Commission jurisdiction with respect to its approval of the Long Term Resource Plan.
8. Section 44.1(2) of the UCA requires a public utility such as FBC to file a long term resource plan in the form and at the times the Commission requires. A long term resource plan filed pursuant to this provision must include several specific items as outlined below.

(2) Subject to subsection (4), a public utility must file with the commission, in the form and at the times the commission requires, a long-term resource plan including all of the following:

- (a) an estimate of the demand for energy the public utility would expect to serve if the public utility does not take new demand-side measures during the period addressed by the plan;
- (b) a plan of how the public utility intends to reduce the demand referred to in paragraph (a) by taking cost-effective demand-side measures;
- (c) an estimate of the demand for energy that the public utility expects to serve after it has taken cost-effective demand-side measures;
- (d) a description of the facilities that the public utility intends to construct or extend in order to serve the estimated demand referred to in paragraph (c);
- (e) information regarding the energy purchases from other persons that the public utility intends to make in order to serve the estimated demand referred to in paragraph (c);
- (f) an explanation of why the demand for energy to be served by the facilities referred to in paragraph (d) and the purchases referred to in paragraph (e) are not planned to be replaced by demand-side measures;
- (g) any other information required by the Commission.

9. The above are considered the ‘minimum elements of a resource plan’ that must be included for the plan to be considered as ‘adequate’.³
10. The CEC submits that FBC has met the adequacy obligations established under Section 44.1(2) of the UCA.
11. Under Section 44(1) (6) and (7) of the UCA, the Commission has the authority to reject all or part of the Long Term Resource Plan.

³ FBC Final Argument page 5

“(6) After reviewing a long-term resource plan filed under subsection (2), the commission must:

- (a) accept the plan, if the commission determines that carrying out the plan would be in the public interest, or
- (b) reject the plan.

(7) The commission may accept or reject, under subsection (6), a part of a public utility's plan, and, if the commission rejects a part of a plan:

- (a) the public utility may resubmit the part within a time specified by the commission, and
- (b) the commission may accept or reject, under subsection (6), the part resubmitted under paragraph (a) of this subsection.”

12. In addition to being adequate, a long term resource plan must also be in the public interest to be accepted under Section 44.1(6)(a) of the UCA. As pointed out in FBC’s Final Argument.

In order for an LTRP to accepted by the Panel, the plan must also meet section 44.1(8) of the UCA, ensuring that the plan is in the public interest. While it is possible that the Panel or other stakeholders may disagree with individual assumptions and may prefer an alternative action plan, the test is whether the plan as filed meets the public interest.⁴

13. Under Section 44(1)(8)(a) and (b) the Commission must consider BC’s energy objectives and the extent to which the plan is consistent with the applicable requirements under sections 6 and 19 of the *Clean Energy Act* (the “CEA”).

14. Under Section 44(8)(d) the Commission must consider the interests of persons in British Columbia who receive or may receive service from the public utility.

“(8) In determining under subsection (6) whether to accept a long-term resource plan, the commission must consider:

- (a) the applicable of British Columbia's energy objectives;
- (b) the extent to which the plan is consistent with the applicable requirements under sections 6 and 19 of the CEA;
- (c) whether the plan shows that the public utility intends to pursue adequate, cost-effective demand-side measures; and
- (d) the interests of persons in British Columbia who receive or may receive service from the public utility.”

⁴ FBC Final Argument page 6, FEU 2014 LTRP Decision, p. 11 (italics in original).

15. The CEC submits that the proposed LTERP and does not sufficiently consider the interests of persons in British Columbia who receive or may receive service from the public utility.
16. FBC outlines its views of how it has met the interests of FBC's Present and Future Rate Payers at pages 58-60 of its Final Argument.
17. The CEC submits that FBC's list is aimed towards a review of its internal processes in developing the LTERP.
18. It is appropriate for the Commission to consider what the interests of the persons in British Columbia who receive or may receive service from the public utility are, and whether these interests are met, rather than the process which was undertaken by FBC.
19. The CEC submits that a consideration of the interests of persons in British Columbia who receive or may receive service from the public utility would weigh heavily towards ensuring the lowest appropriate cost of energy supply to enable the most affordable energy for its customers.
20. FBC has not minimized the costs of energy for ratepayers.
21. FBC has unreasonably established a criterion of 'self-sufficiency' (discussed below) which is not included in Section 44.1(8) and has prioritized this criterion over that of the explicitly established Section 44.1(8)(d) the interests of persons in British Columbia who receive or may receive service from the public utility.
22. This prioritization is inappropriate and should not be accepted by the Commission.
23. The CEC submits that FBC can meet its obligations under sections (8)(a)(b) and (c) more cost-effectively than it has done and has such, does not adequately consider the interests of ratepayers. In not doing so, the LTERP does not meet the public interest test as outlined in Section 44.1(8) and should be rejected by the Commission in part for this reason.
24. FBC has developed an alternative portfolio, Portfolio A1, which meets all the public interest criteria outlined in Section 44.1(8).
25. The CEC recommends that the Commission reject the appropriate part of the LTERP under Section 44.1(7) as provided by FBC as not meeting Section 44.1(8)(d) of the UCA.

26. FBC notes that the UCA is silent on what occurs if a long term plan is rejected.⁵ Section 44.1(7)(a) states that:

“(7) (a) the public utility may resubmit the part within a time specified by the commission.”

27. The CEC recommends that the Commission request that FBC resubmit its LTERP within a time period of 3 months.

Self Sufficiency

28. In its final argument, FBC states that the Commission must consider the extent to which the LTERP is consistent with the requirements in sections 6 and 19 of the CEA; section 6 of the CEA states that, in planning, a utility must *consider* BC’s energy objective to achieve electricity self-sufficiency.⁶ [emphasis added] FBC also states that the LTERP is consistent with and supports this objective.⁷
29. FBC further states that ‘The objective of “electricity self-sufficiency” is described in section 6(2) of the CEA as holding “the rights to an amount of electricity that meets the electricity supply obligations solely from electricity generating facilities within the Province”.’⁸
30. The CEC notes that by definition, section 6(2) of the CEA applies specifically to BC Hydro and does not apply to FBC.^{9 10}
31. FBC has not been directed to achieve self-sufficiency, and FBC has confirmed that “The self-sufficiency objective is a consideration, rather than a requirement, for FBC.”¹¹
32. Conversely, the UCA Section 44.1(8)(d) is specific in establishing a requirement to consider the interests of ratepayers.
33. In response to CEC IR 1.21.1 FBC stated that “If FBC is able to continue to purchase market power cost-effectively, securely and reliably beyond 2025, then it may consider extending the self-sufficiency target further out in time.”¹²

⁵ FBC Final Argument page 61

⁶ FBC Final Argument, page 54

⁷ FBC Final Argument, page 54

⁸ FBC Final Argument, paragraph 168, page 54

⁹ BC *Clean Energy Act*, section 1(1)

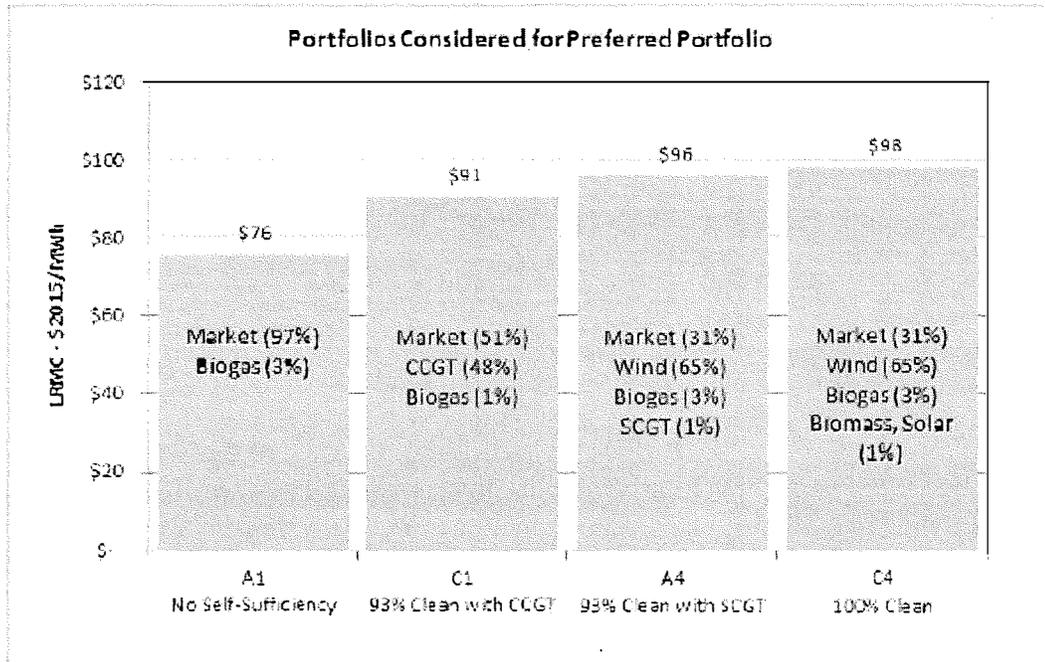
¹⁰ BC *Hydro and Power Authority Act*

¹¹ Exhibit B-5, CEC 1.1.1

¹² Exhibit B-5, CEC 1.21.1

- 34. Ratepayer interests would weigh heavily in adoption of this direction, if self-sufficiency is to be considered a desirable objective at some point in the future. The CEC submits that FBC has not established that self-sufficiency is to be considered a desirable objective at all.
- 35. FBC provides the following Portfolios it considered in Figure 9-7, reproduced below:

Figure 9-7: Portfolios Considered for Preferred Portfolio



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- 36. The above four portfolios all include high level DSM and power from renewable PPA.
- 37. Portfolios C1, A4, and C4 include market purchases until 2025 and incremental supply-side resources are not required until 2026. Market purchases are selected because they are lower cost than the PPA Tranche 1 Energy for the first few years of the planning horizon.
- 38. For portfolio A1, with no self-sufficiency, market purchases are selected through the 20 years because market power is lower cost than the other resource options.¹⁴
- 39. FBC stated that the LRMC of Portfolio A1 (No self-sufficiency) is \$76 per MWh¹⁵ corrected to \$75 in the Errata posted by FBC in September.¹⁶

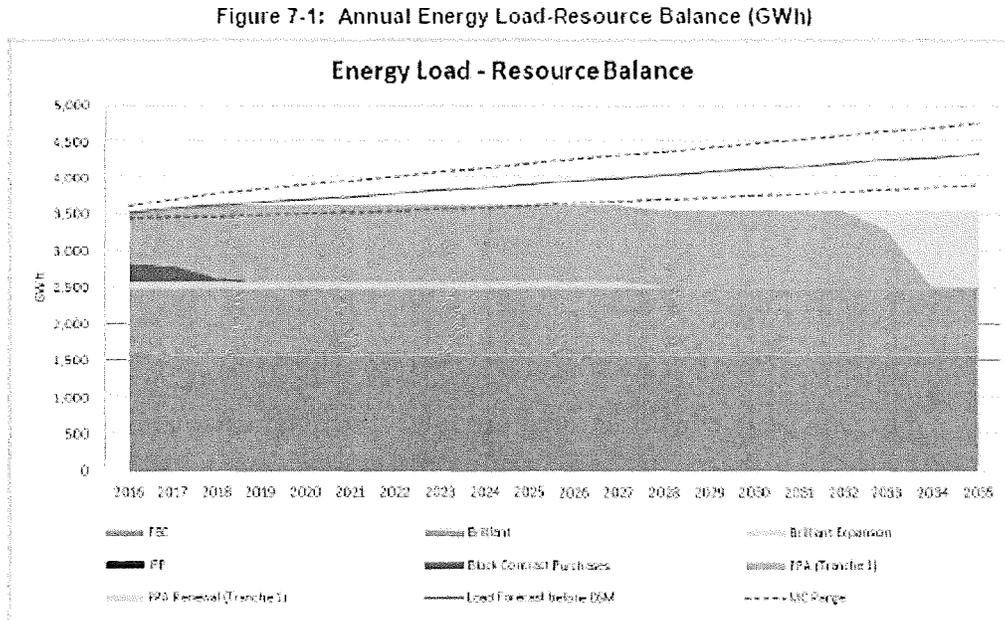
¹³ Exhibit B-1, page 125

¹⁴ Exhibit B-1, page 125

¹⁵ Exhibit B-5, CEC 1.23.5

¹⁶ Exhibit B-1-1 2016 LTERP Errata, 9.3.6 page 125

- 40. FBC stated that its preferred portfolio A4 has an LRMC of \$97 per MWh, as corrected in the errata.¹⁷
- 41. In the LTERP application, FBC states “Figure 7-1 shows that, even if the PPA is renewed, there are gaps starting in 2019 based on the reference case forecast increasing to about 900 GWh by 2035.”¹⁸
- 42. Figure 7-1 is reproduced below:



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- 43. Based on the figures supplied by FBC, the CEC calculates that the cost to ratepayers of not pursuing the Portfolio A1, (High DSM and No Self-Sufficiency) could be very high – almost twenty million dollars in 2035 alone depending on the cost of other planned resources.
- 44. $900 \text{ GWh} = 900,000 \text{ MWh}$ $900,000 \text{ MWh} \times (\$97 \text{ per MWh} - \$75 \text{ per MWh}) = \$19,800,000$ in 2035.
- 45. As noted, FBC’s stated goal of self-sufficiency is voluntary and that FBC is not required or obligated to achieve self-sufficiency.
- 46. The CEC submits that FBC’s pursuit of self-sufficiency will result in additional, unnecessary costs to FBC ratepayers.

¹⁷ Exhibit B-1-1 LTERP – Errata sec 9.3.6 page 127

¹⁸ Exhibit B-1, page 93

¹⁹ Exhibit B-1, page 92 Note: Figure 7-1 was updated in Exhibit B-2, BCUC 1.24.1

47. The CEC submits that the Commission should deny FBC's objective of self-sufficiency and recommend that FBC resubmit its LTERP using Portfolio A1.

Access To Market Power

48. In the LTERP application, FBC states:

“Due to the risks of relying on market power indefinitely into the future (as discussed in Section 5.5 and 8.2.4), FBC believes that self-sufficiency at some point in the planning horizon is a more prudent approach to resource planning.”²⁰

49. FBC also states that relying on market purchases over the long term can be risky in terms of price and supply availability. There are market price forecasts for future electricity prices, but there is no guarantee that market prices will remain at these levels given the degree of price volatility and uncertainty in the marketplace. There is also no guarantee that FBC will be able to access market supply reliably, especially if there is no access to long term firm transmission (as discussed in Section 5.5). Therefore, FBC does not believe that market supply can be relied on as a long term resource option.²¹
50. The North American market power has been a very reliable source of electricity for FBC.
51. In response to CEC IR 2.33.1, FBC assumes that the market will be available 99.84 percent of the time and that transmission to the market will be available 99.45% of the time.²²
52. FBC has confirmed that an imbalance agreement is in place with BC Hydro that sets out the terms under which FBC will settle with BC Hydro due to unexpected conditions or circumstances.²³ FBC believes that the probability of failing to be able to receive imbalance energy due to a lack of supply of the BC Hydro system is extremely low.²⁴
53. FBC has confirmed that if at any time, FBC did not have sufficient resources in place to meet overall customer needs, then inadvertent power flow from BC Hydro would occur automatically and that electrical service to FBC customers would not be affected in any way.²⁵ FBC also confirmed that the only consequence in such a case is a financial penalty.²⁶

²⁰ Exhibit B-1 page 120

²¹ Ibid

²² Exhibit B-14, CEC 2.33.1

²³ Exhibit B-14, CEC 2.33.2

²⁴ Exhibit B-14, CEC 2.33.3

²⁵ Exhibit B-14, CEC 2.34.3 2.34.4

²⁶ Exhibit B-14, CEC 2.34.5

54. In response to BCOAPO IR 1.25.2, FBC disclosed details of the Capacity and Energy Purchase and Sale Agreement (“CEPSA”) with Powerex, and states that, with regard to firm transmission of power from the US, FBC has been able to mitigate the risk by entering into the CEPSA.²⁷
55. In its application for approval of the CEPSA, FBC states “Under the Agreement, Powerex will be responsible for obtaining transmission capacity to deliver to the BC/US border to the degree it is necessary. FBC expects that Powerex will determine any transmission requirements to fulfill FBC’s energy purchases as part of its market activities to support the optimisation of the BC Hydro system. As such it is expected that Powerex will be able to deliver energy purchases to the BC/US border or to the Kootenay Interconnection with a higher degree of certainty than FBC could achieve under its existing market arrangements, at comparable or lower cost.”²⁸
56. FBC confirms that the CEPSA is in effect until 2018, and can be renewed on mutual agreement annually thereafter until 2025.²⁹
57. Historically, FBC’s access to market power has been very reliable and not at all uncertain.
58. FBC has not presented compelling evidence that demonstrates that access to market power will be uncertain or unreliable over the term of the LTERP.
59. FBC has entered into the CEPSA to secure access to market power, including transmission to the border, at comparable or lower cost.
60. The CEC submits that the uncertainty of access to market power in the LTERP is overstated, and this uncertainty does not justify FBC’s objective of self-sufficiency.
61. The CEC submits that the CEPSA should be extended to maximize FBC’s access to market power.
62. The CEC recommends that the Commission dismiss FBC’s concerns with regard to access to market power.
63. The CEC reiterates its recommendation that the Commission should direct FBC to utilize the A1 Portfolio for its Long-Term Resource Plan.

²⁷ Exhibit B-3, BCOAPO 1.25.2

²⁸ FBC Application for Approval of CEPSA, page 13, Acquired via BCUC Order E-10-15, Appendix A, page 11

²⁹ Exhibit B-14, CEC 2.35.1

Load Forecasts

64. Under Section 44.1(2)(a) of the UCA FBC is required to provide its estimate of the demand for energy FBC expects to serve over the planning horizon if no new Demand Side Management measures are taken.³⁰
65. FBC's load forecasts (gross and net of losses) anticipate a compound annual growth rate of 1.1% over 20 years.³¹ FBC reviews its methodology in Section 3 and Appendix E of the Application.
66. FBC's Actual Growth Rates data (%) shows that the actual growth rate averaged 0.14% for the ten years between 2006 and 2015; and was 0.75% over the twenty years between 1996 and 2015.³²
67. The CEC submits that it is likely that FBC's load forecast is over-stated given the significantly lower rates historically.
68. In its Final Argument, FBC points out that forecasts are tried to actual each year and states that "any perceived historical over-estimation of resource requirements in long term forecasts does not have a cumulative effect and would not impact FBC's customers."³³
69. The CEC disagrees with FBC's position.
70. The CEC submits that over forecasting of load during the LTERP process can lead to a planned requirement for more resources than necessary, increasing costs to ratepayers. FBC acknowledges that:

"Resources are planned to meet forecast load requirements. Therefore, if actual load requirements are consistently less than forecast on an annual basis over the planning horizon, it is possible that an over acquisition of supply may occur for a period of time."³⁴
71. FBC goes on to argue that exposure to consistent over-forecasting would be limited to each individual load forecast and there would be no cumulative effect. They also note that the flexibility of the PPA provides some latitude to adjust supply side resources.³⁵

³⁰ FBC Final Argument, page 13

³¹ FBC Final Argument, page 13

³² Exhibit B-5, CEC 1.5.1 and 1.5.2

³³ FBC Final Argument, page 13

³⁴ Exhibit B-14, CEC 2.37.5,

³⁵ Exhibit B-14, CEC 2.37.5

72. The CEC submits that using a compound growth rate of 1.1% is over stated based on historical growth and can ultimately lead to a plan for oversupply of resources, especially where the utility is relying upon non-flexible resources.
73. The CEC recommends that the Commission request FBC to revise and lower its load forecast to more closely reflect actual historical levels when resubmitting a new LTERP.

Load Resource Balance with Tranche 2 Power

74. In the LTERP application, FBC stated that the energy cost under the PPA for Tranche 2 power is \$129.70 per MWh, which is tied to BC Hydro's proxy for long run marginal cost that was used in BC Hydro's 2010 Residential Inclining Block Rate Re-pricing Application.³⁶
75. FBC further states that "Based on the supply-side resource options presented in Section 8.2, FBC expects that it would be able to build or contract for new energy resources at a lower cost than the PPA Tranche 2 Energy cost."³⁷
76. However, FBC also stated that BC Hydro's LRMC was recently updated to \$85 / MWh.³⁸ FBC has assumed this \$85 per MWh value is adjusted for inflation and so does not increase in real terms.³⁹
77. In response to Commission IR 1.24.1, FBC produced an updated version of Figure 7-1 Annual Energy Load Resource Balance ("LRB") which includes Tranche 2 energy at \$85 / MWh.⁴⁰ (before DSM) This graph indicates that under the base case scenario, FBC's LRB can be met with PPA Tranche 2 energy through to 2033, and further if the PPA is renewed.

³⁶ Exhibit B-1, page 77

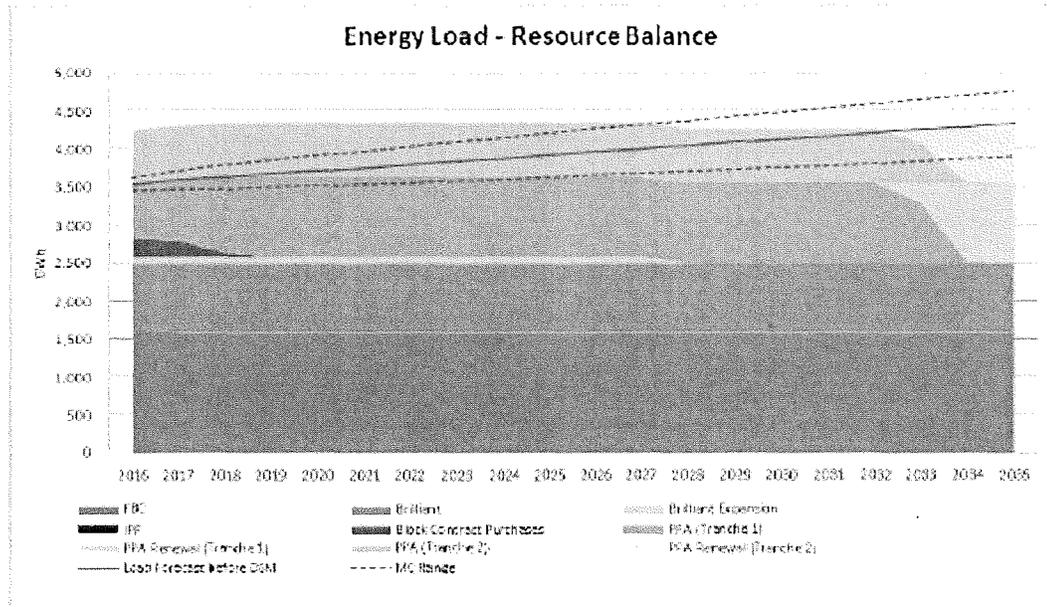
³⁷ Exhibit B-1 LTERP filing sec 7.1 page 93

³⁸ Exhibit B-1, page 49

³⁹ Exhibit B-1, page 49

⁴⁰ Exhibit B-2, BCUC 1.24.1

Figure 1: Annual Energy Load-Resource Balance with PPA Tranche 2



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78. FBC states that, with regard to the updated LRB graph, “FBC’s portfolio analysis indicates that, even if the PPA Tranche 2 energy price was \$85 per MWh, only minimal amounts of PPA Tranche 2 energy would be required based on the forecast costs and load profile attributes of the other DSM and supply-side resource options.”⁴²
79. FBC confirms that energy purchases under RS3808 (PPA) are 98 percent clean and that FBC retains the environmental attributes of energy purchased under the PPA.⁴³
80. The CEC notes that FBC also points out that use of the PPA energy can provide some flexibility in addressing the risk of over-forecasting.⁴⁴ The CEC submits that this is an important consideration for long term planning.
81. FBC should maximize the use of firm PPA energy in the preparation of its LRB, especially in light of the updated PPA Tranche 2 energy price of \$85 / MWh to the extent that lower cost energy, such as market power purchases are either not available, not cost-effective or not appropriate for any other reason.
82. The CEC submits that FBC should use market power purchases when available to lower overall costs.

⁴¹ Exhibit B-2, BCUC 1.24.1

⁴² Exhibit B-2, BCUC 1.24.1

⁴³ Exhibit B-2, BCUC 1.24.3

⁴⁴ Exhibit B-14, CEC 2.37.5

83. The CEC recommends that, to the extent the Commission does not wish to rely on market energy, the Commission recommend that FBC maximize the use of PPA Tranche 2 energy wherever it is the most cost-effective option.

Market Pricing

84. In the LTERP application, FBC states that the range of unit energy cost for market purchases in the base case is about \$42 per MWh to about \$67 per MWh, including transmission costs and losses from Mid-C to the FBC system. On a levelized basis over the twenty-year planning horizon (using a 6 percent Discount Rate), the unit cost of market energy is about \$51 per MWh. Overall, this is significantly lower than the unit costs of the other supply-side resource options listed in Table 8-1 which have levelized energy unit cost ranges of \$77 per MWh to \$217 per MWh.⁴⁵
85. Regional market electricity prices continue to be highly correlated with regional natural gas prices. This is largely because natural-gas fired power plants are often the marginal generating unit for generating electricity. Natural gas prices continue to remain low relative to historical values prior to the shale gas surge after 2008.⁴⁶
86. Due to the Pacific Northwest's proximity to natural gas producing regions in the WCSB and the U.S. Rocky Mountain region along with low natural gas prices, gas-fired power plants have become a low-cost alternative for power generation. Gas-fired generation is expected to make up the capacity shortfall caused by coal retirements, intermittent resources, and load growth. This will further strengthen the interdependency between natural gas and electricity prices in the Pacific Northwest region.⁴⁷
87. Natural gas future prices are forecast to remain steady near current pricing for the next ten years.⁴⁸
88. FBC believes that market purchases, at current price levels, are more cost effective than other supply-side resource options and so should not be ruled out in favour of self-sufficiency, at least in the short to medium term.⁴⁹
89. The CEC agrees with FBC that market power purchases are more cost effective than other supply side resource options.
90. The CEC submits that FBC should maximize the use of market power to keep costs down for the benefit of ratepayers.

⁴⁵ Exhibit B-1, page 111

⁴⁶ Exhibit B-1, page 32

⁴⁷ Exhibit B-1, page 36

⁴⁸ Exhibit B-14, CEC 2.36.8

⁴⁹ Ibid

C. LT DSM PLAN

Amendments to *DSM Regulation* – March 2017

91. The *DSM Regulation* was amended pursuant to B.C. Reg. 117/2017, effective March 24, 2017. The new amendments to the *DSM Regulation* were not passed or in effect until well after the LTERP was filed on November 30, 2016.⁵⁰ They note that the amendments to the *DSM Regulation* provide substantive new requirements in respect of the long term resource plans.
92. FBC submits that the Commission's review of the LTERP should be based on the pre-amendment version of the *DSM Regulation*, as it read at the time the LTERP was filed. They note that there are no IRs directed to the amendments or their substantive requirements.⁵¹
93. The CEC submits that the amendment to the *DSM Regulation* took place within the time period of the proceedings for the LTERP. The CEC also notes that the amended *DSM Regulation* will be in effect during the period covered by the LTERP.
94. The CEC submits that the Commission is entitled to and should weigh all the evidence before it and to make a determination on the matter.

Proposed DSM Plan

95. Section 44.1(8)(c) provides that the Commission must also consider, for the purposes of accepting a long term resource plan under s. 44.1(6), "whether the plan shows that the public utility intends to pursue adequate, cost-effective demand-side measures".⁵²
96. The High DSM scenario is FBC's preferred option for the LT DSM Plan.
97. The incremental cost for ramping up to the High scenario of \$104 per MWh is similar to the LRMC for clean or renewable B.C. energy of \$100 per MWh, discussed in Section 9.4.1. Thus, it includes the majority of cost-effective DSM from an LRMC perspective.⁵³ (cost revised in Errata filing to \$98 per MWh).⁵⁴
98. The "High" scenario involves an initial DSM target of 66 percent load growth offset and then, beginning in 2021, a ramp up to an 80 percent load growth offset target; accordingly, over the

⁵⁰ FBC Final Argument, page 7

⁵¹ FBC Final Argument, page 9

⁵² FBC Final Argument page 7

⁵³ Exhibit B-1, page 100

⁵⁴ Exhibit B-1-1, Table 3.1, page 14

20 year planning horizon of the LTERP, the High scenario averages a 77 percent load growth offset annually.⁵⁵

99. The incremental cost of each DSM scenario increases as higher cost DSM resources are required to achieve a higher percentage of load growth offset.⁵⁶
100. For the purposes of the requirement in section 44.1(2)(b) of the UCA, FBC submits that the LT DSM Plan is clearly sufficient to satisfy the adequacy standard employed by the Commission.⁵⁷
101. FBC has calculated the avoided electricity cost of the LT DSM Plan portfolio using:
 - A deferred capital expenditure (“DCE”) value of \$79.85/kW-yr, consistent with the updated DCE value developed for and approved in respect of FBC’s 2017 DSM Plan, as its avoided capacity cost; and
 - A LRMC of \$100.45/MWh for acquiring electricity generated from clean or renewable resources in BC.
102. Prior to 2014, FBC did not submit levelized DSM costs on a plan basis.⁵⁸ For the three years for which data has been provided, it appears that actual expenses were considerably higher than planned, though FBC has provided some factors which affect the comparisons.⁵⁹
103. The CEC supports the selection of the High DSM scenario.
104. The CEC submits that a higher degree of planning be undertaken to ensure that the DSM program achieves its targets in a cost-efficient manner.
105. The CEC recommends that the Commission request FBC to provide clear and complete reporting of planned targets vs. actual program achievements, along with planned vs. actual costs.

Average Versus Marginal Line Losses

106. BCSEA, pursuant to the report of its consultant EFG, suggests that marginal loss values should be used instead in DSM cost effectiveness analysis to better reflect the capacity benefits of DSM measures during times of peak demand.⁶⁰

⁵⁵ FBC Final Argument, page 19

⁵⁶ FBC Final Argument pages 19-20

⁵⁷ FBC Final Argument page 21

⁵⁸ Exhibit B-14, CEC 2.40.1

⁵⁹ Exhibit B-14, CEC 2.40.3

⁶⁰ FBC Final Argument, page 25

107. As noted in FBC's Final Argument, BC SEA acknowledged that use of marginal rather than average line losses "is not typical industry practice in other jurisdictions".⁶¹
108. FBC states that it has sufficient capacity over the planning horizon so there is little practical benefit to be expected from adjusting the line loss calculations in a manner that is purported to provide increased capacity benefits for DSM measures in the cost effectiveness analysis.⁶²
109. The CEC has reviewed the evidence and agrees with FBC that the evidence does not show that the use of marginal line losses is an industry best practice and that implementation of this technique would entail unnecessary technical analyses and regulatory burden.
110. The CEC finds that the use of average line losses is appropriate when evaluating the effectiveness of energy DSM, as DSM to save energy is being employed all year and not just at times of peak demand.

Alternative Portfolios, Resource Options, LRM Estimates, Selection of Preferred Portfolios

111. The Commission has issued Resource Planning Guidelines which require "the development of alternative resource portfolios, with each portfolio consisting of a different combination of supply and DSM resources. These alternative portfolios would then be evaluated against the utility's stated resource planning objectives and a preferred resource portfolio selected".⁶³
112. FBC states that based on current market price forecasts and PPA rate scenarios, market purchases and PPA power are the lowest cost resources available to FBC in the short to medium term.⁶⁴ The CEC agrees. (Please see discussions on availability and pricing of market power, and PPA Tranche 2 above).
113. FBC has used a LRM of \$100.45/MWh for acquiring electricity generated from clean or renewable resources in BC.⁶⁵ This creates a condition where portfolios include resource options with high unit energy costs relative to market or PPA power, as shown in the table provided in response to CEC IR 1.23.1.⁶⁶ The Unit Energy Costs ("UECs") are for those resources contained in portfolios B1, B2, A4 and B4.

⁶¹ FBC Final Argument, page 25

⁶² FBC Final Argument, page 26

⁶³ FBC Final Argument, page 11

⁶⁴ FBC Final Argument, page 30

⁶⁵ FBC Final Argument page 57

⁶⁶ FBC Final Argument page 39

Resource Type	Resource Name	Portfolio			
		B1	B2	A1	B4
DSM	Base DSM		\$88		
	High DSM			\$104	
	Max DSM				\$114
PPA	PPA Tranche 1 ⁷	\$50	\$50	\$50	\$50
New Resources	Biogas1	\$77	\$77	\$77	\$77
	Biogas2		\$101		
	Biogas3	\$88	\$88	\$88	
	Biogas4	\$100	\$100		
	Wind2				\$119
	Wind3		\$113	\$113	
	Wind4	\$111			
	Wind6	\$145			
	RoR2	\$150	\$150		
	RoR4	\$136			
	Biomass1	\$118			
	Biomass3	\$188			
	SCGT1		N/A	N/A	
SCGT2				N/A	
Market	Market	\$50	\$50	\$50	\$50

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114. It is unclear how many of these power generation projects exist or are planned, or whether the developed magnitude of each resource will be available when required. FBC indicates that “Each of the viable resource options identified is considered available, but not developed.”⁶⁸
115. The CEC submits that using a high LRMC for electricity acquisitions when designing and evaluating portfolios adds to the price of electricity to ratepayers.
116. The lowest cost portfolio that can achieve High DSM is Portfolio A1, at \$76 per MWh, composed mostly of market power. Self-sufficiency is not an aspect of this portfolio.⁶⁹
117. A lower cost portfolio using the Base Level of DSM, and no self-sufficiency is available at \$72/MWh.

⁶⁷ Exhibit B-5, CEC 1.23.1

⁶⁸ Exhibit B-5 CEC IR 1.23.3

⁶⁹ Exhibit B-5, CEC 1.23.5

Table 1: No Self-Sufficiency, Varying Levels of DSM

Portfolio	LRMC
Base DSM, No Self-Sufficiency	\$72 per MWh
High DSM, No Self-Sufficiency (Portfolio A1)	\$76 per MWh
Max DSM, No Self-Sufficiency	\$80 per MWh

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118. The CEC submits that there are benefits to be derived from the use of higher levels of DSM, and that the cost differential between \$72/MWh and \$76/MW is relatively small.
119. As such, the CEC submits that the preferred portfolio is Portfolio A1.
120. FBC, through its portfolio analysis, selected Portfolio A4, which has an LRMC of \$97 per MWh, as corrected in the errata.⁷¹ This portfolio also includes a High DSM level.
121. Portfolio A4 will require the construction of a Single Cycle Gas Turbine (“SCGT”) plant, which may take 14 to 32 months to construct.⁷² Design, environmental approvals, stakeholder engagement and consultation with First Nations will require additional time.
122. The CEC does not recommend the construction of new gas-fired power generation when significantly lower priced market energy and PPA Tranche 2 energy are available.
123. The CEC submits that FBC has over-relied on new renewable energy sources when reviewing resource options and performing portfolio analysis. FBC is unable to say when these resources will be available or in fact whether they will be available when required.
124. The CEC submits that FBC should also have included fuller analysis of PPA power (Tranche 1 and 2), which is 100% clean, in its portfolio design. Optimizing the use of market power when available will also keep electricity costs to ratepayers down.
125. The CEC recommends that the Commission request FBC to resubmit its LTERP, and alter its Preferred Portfolio to Portfolio A1.

Distributed Generation and Net Metering

126. FBC did not include power supply from Distributed Generation or purchases from Self-Generating customers as resource options to be considered in the portfolio analysis.⁷³

⁷⁰ Exhibit B-5, CEC 1.23.5

⁷¹ Exhibit B-1-1 LTERP – Errata sec 9.3.6 page 127

⁷² Exhibit B-5, CEC 1.26.2

⁷³ FBC Final Argument, page 30

127. Under FBC's current net metering program, customers that produce their own generation and are inter-connected to FBC's system receive full retail value for energy transfers to FBC. Also, because NM customers can reduce their energy consumption charges to zero or even negative and because FBC's volumetric rates include recovery of fixed costs, these customers are effectively subsidized by the rest of FBC's ratepayers for a portion of their contribution to the fixed costs of the utility system they use and rely upon.⁷⁴
128. The CEC is not opposed to DG and / or NM provided that none of the costs should be borne by ratepayers in general, be they capital costs, system costs or shortfall costs unless this would qualify as more cost-effective supply, which at this time the CEC submits it does not.

Self-Generator Supply

129. Supply from larger, industrial self-generator customers, was also not included in the portfolio analysis because FBC does not have any information at present regarding available energy, capacity, timing or cost of this supply.⁷⁵
130. FBC states it would consider opportunities to purchase from self-generator customers in the future if the cost is lower than the alternatives, and the supply is otherwise consistent with the Company's planning objectives and BC energy and environmental policies.⁷⁶
131. The CEC supports FBC's position that the company would consider opportunities to purchase from self-generator customers, through the normal energy purchase agreements, provided that none of the costs should be borne by ratepayers in general, be they capital costs, system costs or shortfall costs.

Solar Generation and Community Solar Pilot Project ("CSPP")

132. The CSPP is a pilot project being undertaken in response to customer demand and which will provide FBC with first-hand knowledge and experience regarding community solar generation within its system.⁷⁷
133. The CEC submits that a utility should not financially support the development of power generation technologies that are being developed in the commercial or industrial marketplace. Nor should the utility oppose such a project. An exception would be a project that would produce a significant benefit to ratepayers.
134. The CEC supports FBC's investigation of this pilot project, provided that none of the costs should be borne by ratepayers in general, be they capital costs, system costs or shortfall costs.

⁷⁴ FBC Final Argument, page 31

⁷⁵ FBC Final Argument, page 33

⁷⁶ FBC Final Argument, page 33

⁷⁷ FBC Final Argument, page 34

Fuel Switching

135. FBC states that electrification/fuel-switching programs or initiatives would not be part of FBC's DSM expenditure schedules, given the amendment to the *Greenhouse Gas Reduction (Clean Energy) Regulation*, and so fuel-switching need not be considered for the specific purposes of FBC's LT DSM Plan. Fuel-switching has nonetheless been considered in the LTERP as a potential future load driver and the load forecasting and portfolio analysis has addressed its potential proliferation over the course of the planning horizon.⁷⁸
136. The CEC agrees with FBC's position.

Eligibility of Self-Generation Customers for DSM Programs and Incentives

137. In its decision regarding FBC's Self-Generation Policy Stage I Application, the Commission encouraged FBC to address DSM programs for self-generation customers as part of its next resource plan.⁷⁹
138. FBC provided its intended approach to the eligibility of self-generator customers for DSM programs and incentives in Section 5.2 of the LT DSM Plan. In particular, self-generator customers will be eligible for DSM incentives (subject to other program qualification criteria and terms and conditions) in proportion to the share of potential energy savings FBC derives from the DSM measure being implemented.⁸⁰
139. The CEC agrees with FBC's position.

Transmission System Reinforcements

140. The LTERP also addresses anticipated transmission system reinforcement projects. At present, only two additional transmission system reinforcement projects have been identified within the 20 year planning horizon. These are The Grand Forks Terminal Transformer addition, anticipated in the 2018-2020 timeframe and The Kelowna Bulk Transformer Capacity Addition, anticipated in the 2019-2020 timeframe.⁸¹
141. The CEC agrees that these projects should proceed.

Why New Supply Resources are not being Replaced with DSM

142. FBC states that there is no legislative provision that specifies the level of DSM spending or savings FBC must pursue in a long term resource plan or otherwise. Section 44.1(8) of the

⁷⁸ FBC Final Argument, page 25

⁷⁹ FBC Final Argument, page 21

⁸⁰ FBC Final Argument, page 21

⁸¹ FBC Final Argument, page 40

UCA requires consideration of whether the plan “shows that the public utility intends to pursue adequate, cost-effective demand-side measures”. “Adequate” in this context refers, pursuant to the *DSM Regulation*, to the inclusion of specific types of DSM programs and measures, but not to the overall level of DSM being pursued.⁸²

143. The CEC submits that FBC should meet all legal requirements to provide ‘adequate DSM measures’ and more provided that such measures are cost effective and provide benefit to ratepayers.
144. The CEC submits that DSM should replace new supply resources to the extent it is feasible and cost-effective to do so.

Timing of FBC’s Next Long-Term Resource Plan

145. FBC will fully review the 2025 self-sufficiency target in its next long term resource plan, which it expects to file in 2021.⁸³
146. The CEC supports a full review of FBC’s self-sufficiency target in the next Long-Term Resource Plan to be filed in 2021, or before.

Adequacy of the Action Plan

147. The action plan describes the activities that FBC intends to pursue over the next four years based on the discussion and conclusions provided in this LTERP and LT DSM Plan. It includes actions relating to monitoring the planning environment and strategies for optimizing short-term resource requirements as well as future DSM spending requirements.
 1. Continue to monitor the energy planning environment.
 2. Monitor potential load drivers to determine if a particular load scenario is emerging.
 3. Continue to assess the potential requirements and timing for new resource options within B.C.
 4. Continue to optimize the PPA and market purchases in the short term.
 5. Complete final phase of BC CPR.
 6. Prepare submission of next long term electric resource plan and long term DSM plan.⁸⁴
148. The CEC has no issues with FBC’s proposed Action Plan.

⁸² FBC Final Argument, page 42

⁸³ Exhibit B-5, CEC 1.24.2.1

⁸⁴ Exhibit B-1, page 140

Rescinding RS 90

149. As an ancillary matter, FBC is also seeking in this proceeding the Commission's consent to rescind RS 90 pursuant to section 61(2) of the UCA. RS 90 was introduced in 1990 through Commission Order G-47-89. Its original purpose was to describe and provide terms and conditions in respect of each of the Company's specific energy conservation programs. That purpose is now redundant as the DSM terms and conditions are provided under individual programs where they have greater customer visibility and mandatory sign-off. FBC is the only utility in BC with a DSM specific tariff schedule and such a tariff schedule is virtually unknown in other North American jurisdictions.⁸⁵
150. The CEC has no objections to RS 90 being rescinded.

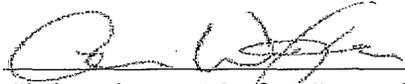
D. CONCLUSION

151. The CEC recommends that the Commission reject the FBC LTERP as not being in the public interest for the reasons outlined above.

ALL OF WHICH IS RESPECTFULLY SUBMITTED

David Craig

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⁸⁵ FBC Final Argument, page 64