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November 15, 2018

B.C. Sustainable Energy Association
c/o William J. Andrews, Barrister & Solicitor
1958 Parkside Lane
North Vancouver, B.C.
V7G 1X5

Attention: Mr. William J. Andrews

Dear Mr. Andrews:

Re: FortisBC Energy Inc. (FEI)
Project No. 1598946
2017 Long Term Gas Resource Plan (LTGRP) (the Application)
Response to the B.C. Sustainable Energy Association and Sierra Club of British Columbia (BCSEA) Information Request (IR) No. 3

On December 14, 2017, FEI filed the Application referenced above. In accordance with British Columbia Utilities Commission Order G-132-18 setting out the Regulatory Timetable for the review of the Application, FEI respectfully submits the attached response to BCSEA IR No. 3.

If further information is required, please contact Ken Ross at (604) 576-7343.

Sincerely,

FORTISBC ENERGY INC.

Original signed:

Diane Roy

Attachments

cc (email only): Commission Secretary
Registered Parties

FortisBC Energy Inc. (FEI or the Company) 2017 Long Term Gas Resource Plan (LTGRP) (the Application)	Submission Date: November 15, 2018
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1 **64.0 Topic: ICG Evidence**

2 **Reference: Exhibit B-11, FEI Rebuttal Evidence, cover letter, p.2; ICF Report,**
3 **page 22; Exhibit A-9, BCUC IR 3.81.1**

4 FEI submits as rebuttal evidence the following point:

5 “2. ICF also finds that, among natural gas utilities, exploring the potential for DSM
6 to be used for infrastructure deferral is an emerging practice with an uncertain
7 track record. Any pathway proposed at this early point could change based on
8 the outcomes of the various examination activities. For this reason, FEI is
9 currently uncertain whether and when its ongoing activities and the further
10 activities identified by ICF would lead to a definitive understanding of the pathway
11 for determining if DSM could be used to defer infrastructure projects. As such,
12 FEI currently cannot “submit to the BCUC a proposal and timeline for conducting
13 the analyses that will allow it to fairly consider DSM alternatives to infrastructure
14 investments in the early stages of any project development”¹ as proposed by Mr.
15 Grevatt. However, FEI will report on the progress it has made on its activities
16 when filing the next LTGRP.” [underline added]

17 64.1 Is FEI’s objection to submitting a “proposal and timeframe for conducting the
18 analyses that will allow it to fairly consider DSM alternatives to infrastructure
19 investments in the early stages of any project development” that FEI cannot
20 commit in advance that the outcome of its analysis will necessarily be favourable
21 to the concept of considering DSM alternatives to infrastructure investments?
22

23 **Response:**

24 FEI cannot commit in advance that the outcome of the analyses will necessarily be favourable
25 to the concept of considering DSM alternatives to infrastructure investments. However, FEI
26 does not for this reason object to submitting a proposal and timeframe for conducting the
27 analyses. In fact, FEI objects to this approach because the prospects for and potential pathways
28 to DSM infrastructure deferral are currently uncertain and thus do not lend themselves to a
29 predetermined proposal and timeframe. As FEI performs the analyses, results and insights are
30 likely to cause the proposal and timeframe for further analyses to evolve. Ratepayers would
31 thus not benefit from FEI expending resources to prepare a proposal and timeframe now when
32 this proposal and timeframe are likely to evolve. FEI believes that the time and resources
33 required to develop, submit and manage such a plan under these circumstances would not
34 provide value to FEI customers, stakeholders or FEI itself and FEI’s efforts would be better
35 directed to the activities it already has under way with respect to investigating the ability to
36 analyze the impact of DSM on peak demand and the need for capacity related infrastructure.



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64.2 FEI says it will report on the progress it has made on its activities when filing the next LTGRP. Please confirm the year in which FEI expects to file the next LTGRP.

Response:

Subject to any other direction from the BCUC, FEI expects to file the next LTGRP no later than 2022.

64.3 Would FEI disagree with submitting an annual report on the progress of its activities (toward an analytical framework for considering DSM alternatives to infrastructure investments in the early stages of any project development)?

Response:

This response also addresses BCSEA IR 3.64.4.
FEI does not believe that, at this time, submitting an annual report on the progress of its activities toward an analytical framework for considering DSM infrastructure deferral would provide net value to FEI ratepayers. FEI also disagrees that a defined timeline for successive progress reports would provide any incremental benefits for prioritizing FEI's exploratory research into this topic.

FEI has already started performing components of the exploratory research. Within its existing regulatory framework, FEI is already incented to conduct activities that support FEI's ability to provide cost-effective service to its customers. Considering DSM investments as a potential alternative to infrastructure investments represents one such activity. In the response to BCSEA IR 3.64.2, FEI indicates when, at the latest, it expects to file the next LTGRP. By committing to include an update on the progress of its exploratory research in the next LTGRP, FEI has thus already given itself a reporting deadline. As such, the additional administrative burden of preparing successive progress reports would divert resources and provide little or no benefit to customers.



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64.4 Further to FEI's anticipated response to BCUC IR 81.1, would FEI agree that a defined timeline for progress reports would help ensure that the research is prioritized?

8 **Response:**

9 Please refer to the response to BCSEA IR 3.64.3.

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13 64.5 Please elaborate regarding FEI's "ongoing activities and the further activities
14 identified by ICF." Are FEI's ongoing activities being conducted by ICF? Do FEI's
15 ongoing activities in this area go beyond providing the rebuttal evidence? Does
16 FEI anticipate that ICF will carry out the further activities referred to?
17

18 **Response:**

19 FEI's ongoing activities include advancing its knowledge and understanding of natural gas
20 equipment daily, hourly and sub-hourly load shapes as information becomes available, further
21 exploring its trial end-use peak demand forecast method, completing and analyzing its
22 advanced meter pilot, exploring other potential peak measuring and monitoring solutions and
23 monitoring industry advancements in understanding the impact of DSM on peak demand. Each
24 of these items has been discussed in the 2017 LTGRP and various round 1 and round 2 IR
25 responses. FEI will also review the list of uncertainties and issues identified by ICF in Section 7
26 of its Exhibit B-11 report to determine what further action is appropriate. As explained by ICF in
27 its report, these uncertainties are numerous, complex and changing, so that identifying a
28 specific action plan and timeline would provide little benefit to FEI, its customers or its
29 stakeholders. As noted in the responses to BCUC IRs 3.75.5.1 and 3.78.1.2, FEI may also,
30 over time, be able to reduce risks inherent in such exploratory activities by taking advantage of
31 the research and pilot programs being developed by other utilities. FEI has not at present
32 contracted with any third party to conduct studies on any of the additional uncertainties identified
33 by ICF. FEI's preparation and submission of rebuttal evidence is not considered an ongoing
34 activity.

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64.6 Has ICF ever been under contract to conduct an analysis where “pathway[s] proposed at...[an]...early point could change based on the outcomes of the various examination activities?” If yes, how did ICF address the uncertainty in its contract Scope of Work?

9 **Response:**

10 FEI consulted with ICF to provide the following response.

11 FEI interprets this question to mean whether Mr. Sloan and Mr. Dikeos of ICF have been under
12 contract to conduct an analysis where pathways proposed at an early point could change based
13 on the outcomes of the various examination activities. ICF has been in existence since 1969,
14 currently has over 6,000 employees and more than \$1 billion in annual revenue. With respect to
15 Mr. Sloan and Mr. Dikeos, yes, many engagements conducted for ICF by Mr. Sloan and Mr.
16 Dikeos have included analysis where the pathways proposed at an early point in the analysis
17 have been changed based on the outcomes of the initial analysis. Projects of this nature
18 represent a significant share of the projects conducted by Mr. Sloan and Mr. Dikeos. The
19 uncertainty in this type of project is generally addressed in the contract scope of work either by:

- 20 1. Structuring the project as a time and materials project, where changes in the direction,
21 level of effort, and timeframe associated with the project are expected and accepted by
22 the client, and the scope of work is defined as the project proceeds. This type of project
23 can include a cap on total project costs that can be increased by joint agreement if
24 necessary.
- 25 2. Structuring the project as a fixed price project with an explicit agreement to revisit the
26 scope and cost of the project based on certain milestones, with an agreement between
27 ICF and the client that the cost, scope and timeline of the project is likely to change
28 based in the initial project findings.

29
30 Item 2 above is akin to preparing a defined project plan and timeline for exploratory research
31 into DSM infrastructure deferral while recognizing that elements of this plan and timeline may
32 change at specific milestones as the project plan is realized. For considering DSM infrastructure
33 deferral, FEI is not bidding on a contract but rather conducting exploratory research to support
34 cost-effective service delivery to FEI’s customers. As explained in the responses to BCSEA IRs
35 3.64.1 and 3.64.3, FEI believes that such an approach causes additional resource burdens



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- 1 without materially benefitting FEI's ratepayers. For this reason, FEI favors a flexible approach
- 2 for its own activities that is more akin to item 1 than item 2 above.

3

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1 **65.0 Topic: Cost Effectiveness of DSM Alternatives to Gas Infrastructure**

2 **Reference: Exhibit B-11, FEI Rebuttal Evidence**

3 ICF says that “natural gas DSM would be even less cost-effective in most other
4 jurisdictions where the comparative cost of gas infrastructure is much lower than in New
5 York.” [p.10]

6 65.1 What cost-effectiveness test does ICF assume in making this assertion?
7

8 **Response:**

9 FEI consulted with ICF to provide the following response.

10 This response also addresses BCSEA IR 3.65.2.

11 The referenced statement addresses the cost effectiveness of DSM for the deferral of gas
12 infrastructure, rather than a statement regarding the cost effectiveness of DSM in general. The
13 full statement from the ICF rebuttal evidence is:

14 Although natural gas DSM is part of the Con Edison's portfolio of non-pipelines
15 solutions and may help defer the need for new pipeline capacity, Con Edison's
16 situation is somewhat unique and natural gas DSM would be even less cost-
17 effective in most other jurisdictions where the comparative cost of gas
18 infrastructure is much lower than in New York.

19
20 Generally, this statement will be true for all cost-effectiveness tests based on economic
21 components, including customer bill savings, reduced energy procurement costs as well as
22 avoided infrastructure costs given the relatively high cost structure of the Con Edison service
23 territory. This is also likely to be true for cost benefit tests considering environmental benefits of
24 DSM, given the relatively high value of environmental benefits considered in the Con Edison
25 DSM cost effectiveness tests.

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29 65.2 Does the cost-effectiveness test that ICF assumes in making this assertion
30 include the full spectrum of benefits provided by DSM, such as customer bill
31 savings, environmental benefits, reduced energy procurement costs, etc., in
32 addition to avoided infrastructure costs?
33



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- 1 **Response:**
- 2 Please refer to the response to BCSEA IR 3.65.1.
- 3

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1 **66.0 Topic: October 2018 Supply Interruption**

2 **Reference: Exhibit B-11, FEI Rebuttal Evidence,**

3 A service alert on FEI's website states:

4 "Natural gas supply will be limited this winter, please reduce your use

5 October 22, 2018 2:05 p.m.

6 Natural gas system will be challenged in times of high demand this winter

7 Due to gas supply constraints as a result of Enbridge's natural gas transmission
8 pipeline rupture, FortisBC customers should know that that our regional natural
9 gas supply, including the entire province, will be limited to 50 to 80 per cent of
10 normal levels. This means that the natural gas system will be challenged in times
11 of high demand throughout the winter. As such, FortisBC is asking all of its
12 customers to be conscious of their natural gas use and conserve energy
13 wherever possible.

14 On Friday, October 19, Enbridge released a statement announcing that they
15 expect their ruptured 36-inch natural gas transmission line to be repaired and in
16 service by mid-November. However, both the 36 and 30-inch transmission lines
17 will only be running at 80 per cent capacity and are not expected to return to
18 maximum operating pressure throughout the winter.

19 We are actively working to make more gas available for our customers. For
20 example, we've worked with TransCanada to maximize output of the Southern
21 Crossing pipeline that feeds into the Interior from Alberta and are actively
22 working with industrial customers to optimize their energy use – keeping them
23 running while minimizing system impacts. We are also working on securing
24 additional natural gas in the open marketplace to best support the province's gas
25 supply.

26 We appreciate the efforts that have been made by our customers to conserve
27 natural gas and encourage them to continue to limit their natural gas use
28 wherever possible to ensure all British Columbians are able to access natural
29 gas for essential uses."

30 [\[https://www.fortisbc.com/NaturalGas/Alerts/Pages/Service-Alert.aspx\]](https://www.fortisbc.com/NaturalGas/Alerts/Pages/Service-Alert.aspx), accessed
31 October 30, 2018]

32 An earlier service alert, dated October 10, 2018, 7:53 p.m., states in part:

33 "FortisBC asks customers to continue reducing natural gas use following
34 Enbridge pipeline rupture



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1 October 10, 2018, 7:53 p.m.

2 We're very thankful to our customers who've been helping today to reduce their
3 use of natural gas, resulting in a reduction of about 20 per cent province-wide.
4 This means we have more time to keep gas flowing through the system for
5 essential uses.

6 However, we still need more customers to reduce their natural gas usage as
7 much as possible for now, as we continue to work with Enbridge and confirm the
8 impact on the system. We're asking all of our natural gas customers across the
9 province to turn off their thermostats and to reduce their use of all other natural
10 gas appliances." [underline added]

11 66.1 Has FEI provided a report or reports to the BCUC regarding the implications for
12 FEI of the October 9, 2018 supply interruption event? If so, please provide
13 copies. If not, please explain how and when FEI will report to the Commission.
14

15 **Response:**

16 FEI has kept the BCUC apprised of potential implications of this unexpected event and FEI's
17 planned actions through various avenues including meetings, telephone conversations, and
18 correspondence as information has unfolded. Given the reduced capacity of the Enbridge
19 pipelines now back in service, there will continue to be supply constraints that could impact
20 FEI's customers over the 2018/19 winter season. FEI will continue to keep the BCUC updated
21 and informed about the continuing situation. There are many factors that independently and
22 collectively can contribute to supply constraints under this circumstance such as weather,
23 demand, and gas supply portfolio resource options available on a given day, none of which can
24 be predicted with any certainty. Reporting requirements on the impacts of this incident have
25 been requested by the BCUC in Order L-29-18.

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29 66.2 Has the 20 percent province-wide reduction in system use, reported on October
30 10, 2018, been maintained subsequently?
31

32 **Response:**

33 This response also addresses BCSEA IRs 3.66.3, 3.66.5, and 3.67.1. FEI respectfully declines
34 to respond to these IRs. FEI's October 10 service alert addresses a temporary and previously
35 unknown gas supply constraint that, to date, has occurred outside FEI's system capacity

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1 planning design day conditions and whose cause lies upstream from FEI's own infrastructure.
2 In contrast, FEI's Rebuttal Evidence (Exhibit B-11) which is the subject of this round of IRs
3 addresses the potential for FEI to use pre-planned DSM initiatives to permanently impact
4 customer demand in order to defer infrastructure upgrades (not gas supply arrangements) that
5 are forecast to be required on FEI's own system to meet peak demand conditions (as outlined in
6 Section 6 of Exhibit B-1). Additionally, FEI is still conducting ongoing case management of the
7 incident so FEI's analysis of the incident is evolving. At this time, drawing conclusions from the
8 incident is not possible.

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12 66.3 Is FEI able to estimate how much of the post-incident province-wide reduction in
13 gas use is a result of curtailment and how much is a result of voluntary actions by
14 customers?
15

16 **Response:**

17 Please refer to the response to BCSEA IR 3.66.2.

18
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21 66.4 Please explain the difference between curtailment of firm service and
22 interruptibility agreements. [Reference to BCUC IR 3.77.1 regarding the
23 feasibility of interruptibility agreements.]
24

25 **Response:**

26 Customers electing to receive service under an interruptible rate schedule (e.g., Rate Schedule
27 7) pay a lower rate for service in exchange for accepting that their service may be interrupted or
28 curtailed under various circumstances. When contracting with FEI under interruptible rate
29 schedules, based on the FEI Tariff (both FEI's General Terms and Conditions and the terms
30 and conditions specified in each rate schedule) a customer accepts that FEI has the right, under
31 certain circumstances, to restrict or curtail service. As such, FEI may, for any length of time,
32 discontinue, interrupt or reduce (curtail) the delivery of natural gas for a variety of reasons as
33 specified in the tariff, including if FEI determines that it does not have capacity to accommodate
34 that customer's request for service. It is common for interruptible customers to be curtailed



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1 during peak periods (often during the colder days of winter). Many customers that elect service
2 under an interruptible rate schedule have backup energy systems.

3 FEI's ability to restrict or curtail firm service, which is a higher value and higher priority service,
4 is more limited. One of the circumstances in which both interruptible and firm service can be
5 restricted, interrupted or curtailed is when there is a shortage of gas coming onto FEI's system.

6

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9 On page 16, ICF states:

10 "Hence, a successful geo-targeted DSM program would need to be approved
11 and put into motion approximately three to five years before the expected in-
12 service date of the targeted facility investment." [underline added]

13 66.5 Does the quick response by customers to FEI's request for usage reductions in
14 October 2018 provide any insights into the feasibility of a shorter lead time than
15 three to five years for implementing certain DSM measures that would defer
16 infrastructure investments?
17

18 **Response:**

19 Please refer to the response to BCSEA IR 3.66.2.

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23 66.6 Is FEI satisfied that the 2017 LTGRP adequately addresses the possibility of a
24 contingency such as the October 2018 supply interruption? In what ways, if any,
25 should the 2017 LTGRP be modified in response to lessons learned from the
26 October 2018 supply interruption?
27

28 **Response:**

29 This response also addresses BCSEA IR 3.66.6.1. FEI respectfully declines to respond to
30 these IRs because they raise issues that are beyond the scope of the current round of
31 information requests. Furthermore, FEI filed the 2017 LTGRP (Exhibit B-1) on December 14,
32 2017. Section 5 of the 2017 LTGRP describes FEI's long term gas supply portfolio planning and



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1 price risk management considerations. FEI's 2017 LTGRP has been subject to two rounds of
2 IRs that, pursuant to BCUC Order G-33-18, concluded on June 22, 2018. In contrast, the
3 present third round of IRs addresses FEI's Rebuttal Evidence (Exhibit B-11, filed by FEI in the
4 2017 LTGRP proceeding on October 11, 2018), which addresses the topics of DSM
5 infrastructure deferral and BC CPR forecast market potential energy savings trajectories.

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7

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9 66.6.1 Alternatively, please confirm that FEI intends to examine the long term
10 planning implications of the October 2018 supply interruption and briefly
11 explain the process by which the outcome will be brought to the
12 Commission.

13

14 **Response:**

15 Please refer to the response to BCSEA IR 3.66.6.

16

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1 **67.0 Topic: October 2018 Supply Interruption**

2 **Reference: Exhibit B-11, FEI Rebuttal Evidence, ICF Report, p.12**

3 ICF describes “System Outage Risk” as it relates to the use of gas DSM for
4 infrastructure deferral and says that “Insufficient infrastructure could lead to a system
5 shut down during the coldest part of the winter, leaving residential and commercial
6 customers without heat during extremely cold weather.” [p.12]

7 67.1 Please explain how this hypothetical situation is different from the current
8 situation in which FEI’s customers are being asked to curtail their usage due to
9 an infrastructure failure.

10

11 **Response:**

12 Please refer to the response to BCSEA IR 3.66.2.

13

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1 **68.0 Topic: Navigant Evidence**

2 **Reference: Exhibit B-11, FEI Rebuttal Evidence, Navigant Report**

3 On page 2, Navigant states:

4 “As described in the BC CPR, “Market potential is a subset of economic potential
5 that considers the likely rate of DSM acquisition, given factors like the rate of
6 equipment turnover (a function of a measure’s lifetime), simulated incentive
7 levels, consumer willingness to adopt efficient technologies, and the likely rate at
8 which marketing activities can facilitate technology adoption. The adoption of
9 DSM measures can be broken down into calculation of the “equilibrium” market
10 share and calculation of the dynamic approach to equilibrium market share
11 [reflecting barriers to market adoption], as discussed in more detail below.”4”

12 On page 2, Navigant cites FEI’s response to BCSEA IR 1.18.3 in part as follows:

13 “...Beyond the first year of the CPR, the market dynamics (e.g., equipment
14 turnover, new construction and customer willingness to adopt) forecast by the
15 CPR model drove the levels of annual market potential.”

16 Navigant says that calibration to historical performance affects the dynamic approach to
17 equilibrium market share but not the equilibrium market share, and that “together these
18 two components of the simulation act as the final determinant of the market potential.”
19 [p.3] Navigant further says that “Calibration influences the starting point for the model
20 (i.e. 2016), but does not dictate the long-run market equilibrium.” [p.9]

21 68.1 Please confirm that, in effect, market potential results from equilibrium market
22 share adjusted downward by the rate of change between the starting point and
23 the equilibrium market share. If not confirmed, please explain.
24

25 **Response:**

26 FEI consulted with Navigant to provide the following response.

27 This response also addresses BCSEA IRs 3.68.2 and 3.68.3. FEI interprets this question to
28 mean whether market potential results in a given year equal the starting point plus the
29 applicable rate of change up to a maximum total of the equilibrium market share. Confirmed, in
30 the BC CPR, market potential is a function of the following components:

- 31 1. The measure adoption level at which the forecast starts (the starting point for the model),
32 which is calibrated to historical performance;
- 33 2. The dynamic approach to equilibrium market share (the rate at which the market
34 potential approaches the equilibrium market share), which does not depend on historical

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1 performance aside from where this dynamic approach starts (as dictated by 1. above);
2 and

3 3. The equilibrium market share, which does not depend on historical performance.

4
5 Calibration of the model to historical performance influences both the starting measure adoption
6 level and also the starting point of the evolving rate at which the market potential approaches
7 the equilibrium market share. As noted on page 4 of Navigant's report in Exhibit B-11, 1. above
8 is important because "Calibrating the initial starting point for the model to historic program
9 performance also acknowledges it is more realistic to assume conditions like customer
10 awareness and acceptance of efficient technologies take time to change, rather than assuming
11 the market could immediately shift and transform overnight with greater investments in
12 incentives and marketing [...]". This grounds the starting point for 2. in local market conditions
13 before simulated market dynamics drive the annual levels of market potential. Relatively
14 speaking, a market with lower historical performance would thus, all other things being equal,
15 generally take longer to reach the equilibrium market share than a market with higher historical
16 performance. Depending on items 1 and 2 above, the market potential may or may not reach
17 the equilibrium market share within the analysis time horizon. This means that, if FEI had
18 achieved greater savings in its historical programs and the BC CPR had used such savings as a
19 basis for calibration, forecast market potential energy savings could be higher than in the
20 present analysis by the end of the forecast horizon. That said, it is important to remember that
21 the evolving rate for approaching the equilibrium market share over time after the starting point
22 is ultimately influenced by other factors outside of the historical performance, and may be
23 accelerated through other model inputs, aside from the historical performance.

24

25

26

27 68.2 Is Navigant saying that calibration of the model to historical performance had no
28 impact whatsoever beyond the first year of the CPR? Or that it had an impact
29 that Navigant considers to be small?
30

31 **Response:**

32 Please refer to the response to BCSEA IR 3.68.1.

33

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1 68.3 What is the directional effect of historical performance on market potential? If
2 historical performance is relatively weak, does this result in a reduced market
3 potential, other things being equal? If FEI had achieved more savings, or savings
4 at less cost, in recent years, would the Market Potential savings be greater?
5

6 **Response:**

7 Please refer to the response to BCSEA IR 3.68.1.