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FortisBC Energy Inc.

2017 Long Term Gas Resource Plan

Decision and Order G-39-19

February 25, 2019

Before:

K. A. Keilty, Commissioner/Panel Chair

A. K. Fung, QC, Commissioner

R. D. Revel, Commissioner

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1.0 Introduction and Background

1.1 Purpose of FEI's LTGRP

Section 44.1 of the *Utilities Commission Act* (UCA) establishes the mandate of the British Columbia Utilities Commission (BCUC) to direct and review the long-term resource and conservation plans of energy utilities. FortisBC Energy Inc. (FEI) has filed the 2017 Long Term Gas Resource Plan (LTGRP) (Application) to meet the requirements under the UCA.

The purpose of the BCUC's review of FEI's 2017 LTGRP is to facilitate the cost-effective delivery of secure and reliable energy services, while addressing government policy, by:

- Facilitating the selection of cost-effective resources that yield the best overall outcome of expected impacts and risks for ratepayers over the long run;
- Aiding in the definition and assessment of market-based costs and benefits; and
- Enabling the assessment of the trade-offs between other expected impacts considering objectives such as reliability, security of supply, rate stability and risk mitigation, or specific social or environmental impacts.¹

Key to the development of a cost-effective resource plan for meeting demand for a utility's service is the consideration of multiple objectives and the trade-offs between alternatives. Further, resource plans can promote regulatory efficiency and help facilitate the review of Certificates of Public Convenience and Necessity (CPCN), revenue requirements and other applications.²

In its 2014 FEI Long Term Resource Plan (LTRP) Decision (2014 LTRP Decision), the BCUC elaborated on this purpose, stating, among other things, that resource planning and the LTRP are not simply perfunctory matters whereby utilities file template material cut and pasted from annual reports available in public records. Rather, resource planning is a process requiring utilities to consider all anticipated resources required to meet the demand for a utility's products and services. Furthermore, the 2014 LTRP Decision stated that resource planning should:

- Provide strategic direction and insight for future applications where the UCA specifically requires consideration of the LTRP: Certificate of Public Convenience and Necessity (CPCN) (section 45, UCA), Energy Supply contracts (section 71, UCA), and demand-side measures (DSM) (section 44.2, UCA);
- Provide direction on broader policy issues that may arise in other applications, such as rate design, extension policy and revenue requirement applications; and
- Identify and consider areas where there may be public interest concerns (for example, with regard to support for BC's Energy Objectives).³

FEI views long-term resource planning as a "tool for identifying long-range infrastructure requirements and resource acquisition strategies and for sharing this information with stakeholders."⁴ FEI states the 2017 LTGRP presents FEI's long term view of the demand-side and supply-side resources identified to meet expected future

¹ BCUC Resource Planning Guidelines, pp. 1-2.

² Ibid.

³ 2014 LTRP Decision, Order G-189-14, p. 5.

⁴ Exhibit B-1, p. 1.

natural gas demand and reliability requirements taking into consideration the cost to FEI's customers over the 20-year planning horizon (2017-2036).⁵

1.2 Application and Order Sought

On December 14, 2017, FEI filed its 2017 LTGRP for review by the BCUC. FEI states the 2017 LTGRP is consistent with the applicable sections of the UCA and the BCUC's Resource Planning Guidelines, and complies with directives from the BCUC arising from the acceptance of FEI's 2014 LTRP in Order G-189-14 (2014 LTRP Decision).⁶

FEI states the 2017 LTGRP:

- analyzes the external regulatory, policy and planning environment within which FEI operates;
- compares annual and peak energy demand forecasts against current resource capabilities, and evaluates the potential for demand reduction with Demand Side Management (DSM) initiatives;
- evaluates gas supply and system infrastructure options for meeting forecast customer needs under different scenarios; and
- includes an action plan that identifies the activities that FEI intends to take during the first four years of the 20-year planning horizon.

FEI submits this 2017 LTGRP will enable it to achieve the objective of providing cost-effective, secure and reliable energy for its customers.⁷

FEI requests acceptance of the 2017 LTGRP under Section 44.1(6) of the UCA and is not seeking approval of any particular elements of the plan. FEI states that any requests for approval of specific resource needs identified within this plan will be further evaluated and brought forward through a separate application to the BCUC if warranted in the future. FEI argues the LTGRP is not a substitute for the analysis done to support specific resource acquisitions or projects in the future, but rather it helps to inform the acquisition process.⁸

1.3 Legislative Framework

Section 44.1 of the UCA establishes the BCUC's framework for review and acceptance of FEI's 2017 LTGRP. Section 44.1(2) provides that FEI must file a long-term resource plan that includes 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);

⁵ Exhibit B-1, p. 1.

⁶ Ibid.

⁷ Ibid.

⁸ Ibid.

- (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; and
- (g) Any other information required by the BCUC⁹.

With respect to any other information required by the BCUC, the Panel agrees with FEI's submission¹⁰ and finds relevant "other information" to include the information that the 2014 LTRP Decision directed FEI to include in the next LTRP. An additional element of "other information" includes consideration of BCUC's Resource Planning Guidelines which provide guidance regarding information to be included in a resource plan.¹¹

Since the BCUC established a process to review FEI's 2017 LTGRP¹², sections 44.1(6) and (7) of the UCA require that after reviewing the plan, the BCUC must accept the plan, if the BCUC determines that carrying out the plan would be in the public interest, or reject the plan (in whole or in part). In determining whether the 2017 LTGRP is in the public interest, the BCUC must consider whether the following considerations under section 44.1(8) of the UCA support acceptance:

- (a) The applicability of British Columbia's (BC) energy objectives;
- (c) Whether the plan shows that FEI intends to pursue adequate, cost-effective demand-side measures; and
- (d) The interests of persons in BC who receive or may receive service from FEI.

In the Terasen Utilities 2010 LTRP Decision, the BCUC determined that section 6 and 19 of the *Clean Energy Act* (CEA) only apply to electric utilities and therefore, section 44.1(8)(b) is not relevant to FEI's section 44.1 applications.¹³ The Panel concurs with the determination of the 2010 LTRP Decision in this regard.

1.4 2014 LTRP Decision

On December 3, 2014, the BCUC issued the 2104 LTRP Decision accepting the 2014 LTRP. The 2014 LTRP Decision provided a number of directives related to information to be included in the next LTRP which the BCUC directed FEI to file on or before June 30, 2017.¹⁴ A list of these directives is included in Appendix A in this decision.

1.5 Regulatory Process

On February 7, 2018, the BCUC established a written public hearing process for the review of FEI's 2017 LTGRP.¹⁵ The regulatory timetable established outlined that further process would be determined following two rounds of information requests (IRs) and included a deadline for Intervener notice on filing intervenor evidence. The B.C. Sustainable Energy Association and Sierra Club BC (BCSEA) provided notice that it intended to file expert evidence in this proceeding regarding FEI's long-term demand-side management plan. BCSEA's filing of Intervener Evidence was followed by IRs on Intervener Evidence. FEI filed Rebuttal Evidence followed by IRs on Rebuttal Evidence, prior to the final arguments phase of the proceeding.

⁹ Exhibit B-1, p. 92.

¹⁰ FEI Final Argument, para. 8.

¹¹ BCUC Resource Planning Guidelines, pp. 1-2.

¹² Section 44.1 (5) states the commission may establish a process to review a long-term resource plan. By Order G-33-18, dated February 7, 2018, the BCUC established a written public hearing process for the review of FEI's 2017 LTGRP.

¹³ Terasen Utilities 2010 LTRP Decision, p. 16.

¹⁴ 2014 LTRP Decision, p. 46.

¹⁵ Order G-33-18.

BCSEA, British Columbia Hydro and Power Authority (BC Hydro) and Commercial Energy Consumers Association of British Columbia (CEC) registered as interveners, and Pacific Northern Gas and Mr. Ken Collier registered as interested parties in the proceeding.

FEI addressed intervener final arguments from BCSEA and CEC in its reply argument on December 20, 2018.

1.6 Approach to the Decision

Given the legislative framework outlined above, the key questions for the Panel regarding FEI's request for the BCUC to accept its 2017 LTGRP are as follows:

- Has FEI met the section 44.1(2) filing requirements?
- Do the section 44.1(8) considerations support acceptance?
- Is the 2017 LTGRP in the public interest?

The Panel considers these questions, together with FEI and Intervener submissions on these and other related topics, in Sections 2 to 4 in this decision. To address each of these questions, the Panel provides an overview of each topic and then discusses and makes determinations on specific issues raised by interveners.

The Panel takes a holistic approach to determining if the 2017 LTGRP should be accepted in the public interest by considering harmoniously all of the provisions of section 44.1 of the UCA. The Panel's overall determination on acceptance of the 2017 LTGRP is in Section 5 and its directives related to the next LTGRP are in Section 6 of this decision.

2.0 Has FEI met the section 44.1(2) filing requirements?

In this section, the Panel assesses whether FEI's 2017 LTGRP meets the filing requirements set out in section 44.1(2) of the UCA including:

1. Estimate of demand in the absence of new demand side measures - section 44.1(2)(a);
2. Energy demand taking into consideration new cost-effective demand-side measures – sections 44.1(2)(b), (c) and (f);
3. Facilities – section 44.1(2)(d);
4. Energy Purchases – section 44.1(2)(e); and
5. Other Information Required by the BCUC – section 44.1(2)(g).

Specific issues raised by interveners are addressed in each of the following Subsections.

In Subsection 2.6, the Panel considers the arguments of the parties on how the BCUC should assess whether the 2017 LTGRP meets the filing requirements and presents its overall findings on section 44.1(2).

2.1 Estimate of Demand

FEI states the forecasts of annual demand and peak demand for natural gas are key elements that underpin FEI's resource planning activities. FEI's demand forecasts are used to ensure adequate system capacity, plan gas supply resources, and provide a baseline against which to analyse the impact of proposed or potential future initiatives such as expanded energy efficiency and conservation activities or growth in natural gas sales for fuelling transportation.

FEI explains that it addresses section 44.1(2)(a) of the UCA, which requires utilities to include an estimate of the demand for energy the utility expects to serve in the absence of taking the new DSM by:

- outlining the base year customer distribution and annual demand and discussing its customer forecast which serves as the basis for both of the 2017 LTGRP's two annual demand forecast methods;
- explaining and comparing its traditional annual demand forecast method (Traditional Method) with its end-use annual demand forecast method. FEI uses the traditional method to ground its end-use annual demand forecast method (End-Use Method). FEI outlines its end-use annual demand forecast Reference Case and scenario analysis. FEI uses the End-Use Method to plan its resources across the 2017 LTGRP long term forecast horizon;
- discussing the annual demand impact of FEI's Natural Gas for Transportation (NGT) and Renewable Natural Gas (RNG) initiatives;
- outlining the total annual demand forecast; and
- discussing the impact of potential new large industrial point loads on this annual demand.¹⁶

Based upon the above points, FEI submits that the LTGRP meets the requirement set out in section 44.1(2)(a).¹⁷

Intervener Arguments

BCSEA and CEC agree that FEI has met the section 44.1(2)(a) requirement to provide an estimate of the demand before the new DSM.¹⁸

CEC also notes that FEI has done so using processes that have been previously approved by the BCUC. While CEC agrees FEI's estimate is satisfactory in meeting the requirements of the UCA, CEC submits that improvements could be made in the future and makes suggestions related to FEI Traditional and End-Use Methods and FEI's approach to weather normalization.¹⁹ These issues are considered in the next two Subsections.

2.1.1 Traditional and End-Use Scenario Demand Forecasts

In this Subsection, the Panel examines issues related to FEI's Traditional Method or End-Use Method for demand forecasting, including the implications for future LTGRP applications.

In the 2014 LTRP Decision, the BCUC expressed concerns about FEI's proposal to replace its demand forecasting method with an end-use method and directed FEI to:

- Provide a detailed analysis, in its next LTRP filing, of the relative benefits/shortcomings of FEI's particular End-Use Method as compared to other end-use methods; and
- Continue use of the Traditional Method as a parallel approach until such time as the BCUC approves a new end-use method as a substitute.²⁰

As part of addressing the first BCUC directive noted above, FEI retained Boreas Consulting Ltd. (Boreas) to review long term forecasting practices of North American gas utilities to determine whether there is a preferred method for conducting demand forecasts for use in integrated resource planning activities. Boreas states:

- 44 percent of the 30 surveyed North American entities that use long term forecasts of 10 years or more use some form of end-use modelling combined with econometric modelling. The end-use models are often used to forecast use per account, while econometric models are used to forecast growth in the number of accounts. The

¹⁶ Exhibit B-1, pp. 59-60.

¹⁷ FEI Final Argument, pp. 5-6.

¹⁸ BCSEA Final Argument, p. 9; CEC Final Argument, p. 6.

¹⁹ CEC Final Argument, p. 6.

²⁰ 2014 LTRP Decision, p. 15.

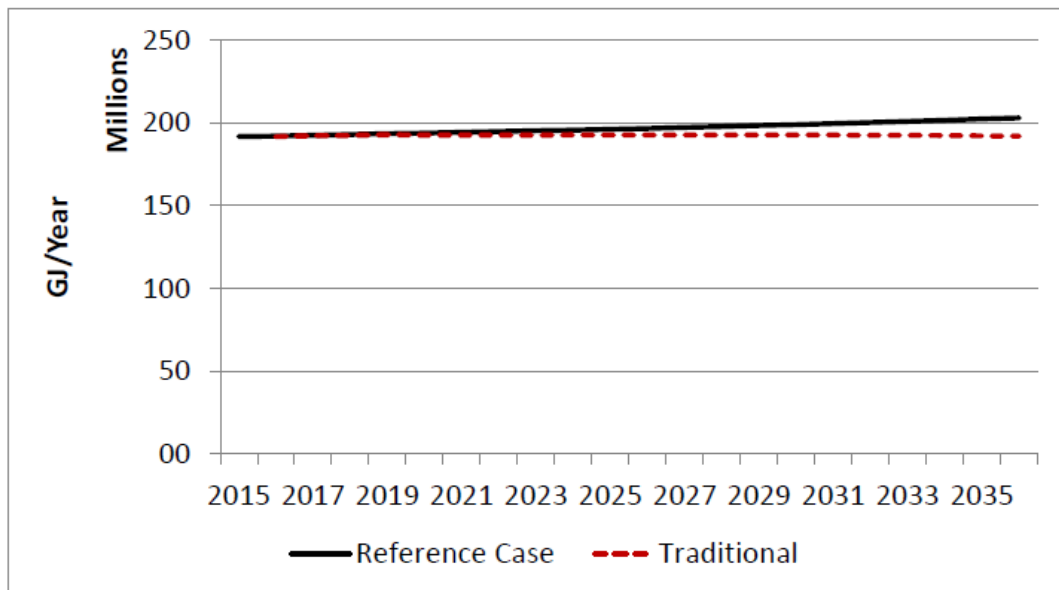
rationale being that as energy efficiency becomes more important, end-use modeling provides a much more detailed understanding of the impact of efficiency improvements on the energy use and long term forecasts, particularly in new construction and replacement of old equipment; and

- Most jurisdictions, among those investigated, with high levels of DSM activity and integrated resource plans use end-use modeling for their long-term forecasting.²¹

FEI indicates that Boreas completed its review prior to FEI updating its end-use model for the 2017 LTGRP and concluded that FEI’s end-use model compares well with other North American end-use methods.²²

FEI submits that if the results of the Traditional Method demand forecast and the End-Use Method Reference Case annual demand are reasonably aligned, then the End-Use Method provides a reasonable basis for developing alternate future scenarios.²³ FEI presents the following graphical comparison of forecasts using the traditional and end-use methodologies:

Figure 1: Comparison of Annual Demand Forecasts²⁴



FEI indicated that being “reasonably aligned” simply confirms that the End-Use Method upper bound and lower bound scenarios include both the Traditional Method and the End-Use Method Reference Case demand forecast trajectories. FEI stated:

For example, if the Traditional Annual Method forecast trajectory were to lie outside either the end-use method Upper Bound or Lower Bound scenario trajectories, FEI would need to investigate what would cause such a divergence of forecasts between the two methods and further consider the reasonableness of the forecasts. This illustrates the Traditional Annual Method’s value in providing a reasonableness check for the results of the end-use method annual demand Reference Case and alternate future scenarios.²⁵

²¹ Exhibit B-1, Appendix B-2, p. 3.

²² Exhibit B-1, p. 63.

²³ Ibid., p. 67.

²⁴ Ibid., p. 66.

²⁵ Exhibit B-2, BCUC IR 18.1.

FEI elaborated that if the forecasts were developed with identical methods then the Traditional forecast would not provide any value as a check against the End-Use forecast and the fact that multiple aspects of the data and methods are different serves to make the comparison more valuable.²⁶

Further, FEI stated it is unable to comment on how the variance between its Traditional Annual Method and the End-Use method Reference Case compares to other utilities. FEI referred to the Boreas research indicating numerous North American utilities, in fact, combine econometric and end-use methods in their long-term forecasts and do not publish the methods separately.²⁷

Intervener Arguments

CEC argues there is no evidence on the record to suggest that the end-use scenario methodology provides a superior forecast to the traditional methodology. CEC recommends that both methodologies be continued until such evidence may be gathered and assessed and that the BCUC request FEI to report on the effectiveness of the forecasting methodologies in the next LTRP.²⁸

CEC submits that the end-use scenarios do not have significant value for forecasting purposes because they have no “expectations” or probabilities attached. Further, CEC submits that FEI’s approach fails to adequately consider the likelihood of significant recessions affecting the load forecast as it only examines scenarios with greater or lesser economic strength. CEC notes that the range between the “Upper Bound” and the “Lower Bound” of the end-use scenarios is so significant as to be potentially less useful depending on how the information will be incorporated into planning.²⁹

BCSEA also notes that there is a very substantial difference between the Lower Bound and Upper Bound annual demand forecasts by the end of the planning period.³⁰

FEI Reply Argument

With respect to reporting on the effectiveness of forecasting methodologies, FEI submits it is agreeable to addressing the issue if directed by the BCUC, but cautions that the value of this reporting may be limited given that only a few years pass between each LTGRP filing. FEI also notes that the value of the End-Use Method extends beyond the Reference Case forecast because it enables FEI to examine alternate future scenarios.³¹

FEI submits that the BCUC should not direct FEI to modify its forecasting to take into account “expectations” or “probabilities” as this would cause an exponential increase in its model complexity and would not necessarily add value to the scenario analysis. FEI indicates that the scenarios simply examine what is plausible in the future enabling it to contemplate various contingencies.³²

Panel Determination

The Panel finds that FEI’s estimate of demand before new demand side measures addresses the requirements of section 44.1(2)(a) of the UCA and provides the context necessary for the Panel’s overall findings on whether the 2017 LTGRP meets the requirements section 44.1(2) of the UCA, as set out in Subsection 2.6 of this decision. The Panel agrees with all parties that the information provided by FEI through its Application and IR responses is acceptable for this purpose. However, this is not an endorsement of FEI’s methodologies for use in other filings with the BCUC. Further examination of the demand forecasts may be necessary depending on the nature of the other applications.

²⁶ Ibid., BCUC-IR 17.2.

²⁷ Ibid., BCUC IR 18.2.

²⁸ CEC Final Argument, pp. 7-8.

²⁹ Ibid., p. 6.

³⁰ BCSEA Final Argument, p. 6.

³¹ FEI Reply Argument, p. 4.

³² FEI Reply Argument, p. 3.

In the next LTGRP filing, FEI is directed to:

- **Update the information filed in this proceeding to respond to the BCUC’s directive in the 2014 LTRP Decision to provide an analysis of FEI’s End-Use Method as compared to other end-use methods, including an assessment of the of FEI’s method compared to other models that incorporate some form of end-use modelling combined with econometric modeling;**³³
- **Provide a detailed explanation of any changes to its demand forecast methodology as it evolves between now and the next LTGRP filing; and**
- **Include high level assessment of the effectiveness of the Traditional and End-Use Models compared to actual results.**

FEI is directed to continue use of its Traditional Method as a comparison to test its End-Use Method until such time as the BCUC approves a new demand forecast methodology. The Panel finds there is support for continuing both methodologies and that there is insufficient evidence at this time to conclude the FEI’s End-Use Method is acceptable on its own.

The evidence provided by Boreas, FEI’s independent consultant, indicates that many North American utilities combine the use of some form of end-use modelling with econometric modelling in their long-term forecasts³⁴ and the Panel understands from this evidence that elements of both models are useful for different reasons. FEI also notes the Traditional Method’s value in providing a reasonableness check for the results of the end-use method annual demand Reference Case and alternate future scenarios.³⁵ While FEI states that Boreas concluded that FEI’s end-use model compares well with other North American end-use methods³⁶, the Panel could not identify this conclusion in Boreas’s report. Accordingly, consistent with the findings in the 2014 LTRP, it is appropriate for FEI to continue with both methodologies until its modelling is further assessed and the BCUC approves a new demand forecast methodology.

With respect to CEC’s request that the BCUC directs FEI to report on the effectiveness of the forecasting methodologies in the next LTRP request, the Panel notes the following statement in Boreas’s report:

Most utilities perform some form of testing of the forecasts against actual data. However, because long-term forecasts are based on forecasts of many input parameters, such as weather, energy prices, economic conditions, employment levels, new construction activity, etc. a straight comparison of forecasts to actuals without any adjusting for the input parameters does not necessarily reflect the effectiveness of the forecasting model. Thus, comparison of the forecast results to actuals may be quite resource intensive.³⁷

FEI also makes the point that the results will be limited given that only a few years pass between each LTGRP filing. Acknowledging these limitations, the Panel considers that only a high level assessment of the forecast against actual results is necessary.

With respect to CEC’s submissions on whether end-use scenarios should take into account expectations or probabilities, the Panel finds the added complexity of assigning probabilities unnecessary given the purpose of the scenario analysis and finds that CEC has provided no evidence in support of its position. The Panel agrees with FEI that the scenarios simply examine what is plausible relative to the Reference Case or most likely scenario. FEI’s approach is consistent with industry practice as described by Boreas:

³³ Section 3.4 of the Application, Appendix B-2, and Appendix B-3.

³⁴ Exhibit B-1, Appendix B-2, p. 3.

³⁵ Exhibit B-2, BCUC IR 18.1.

³⁶ Exhibit B-1 p. 63.

³⁷ Exhibit B-1, Appendix B-2, p. 4.

- Most utilities run a number of forecast scenarios consisting typically of a base case or mostly likely scenario, plus a high and low case, which are based on high and low growth; and
- Some utilities also run forecast scenarios to assess the potential impact of climate change and carbon taxes.³⁸

2.1.2 Approach to Weather Normalization

In this subsection, the Panel examines CEC's issue related to FEI's approach to weather normalization given the impacts of climate change.

In the 2017 LTGRP, the Reference Case provides a baseline against which forecast demand under five different alternate future scenarios is examined. FEI stated:

- The alternatives are intended to provide insight into the impact on demand of a broader range of potential future conditions than has been examined in previous LTRPs; and
- The first step of FEI's scenario analysis is to evaluate planning environment variables and identify critical uncertainties, which included a number of economic, policy and extraneous variables.³⁹

FEI considered a number of other critical uncertainties which were ultimately rejected, one such variable being climate change. FEI considered analyzing the impact of climate change on outdoor air temperature but did not include this uncertainty because the FortisBC Inc. (FBC) 2016 Long Term Electric Resource Plan analyzed this critical uncertainty and found its impact to be immaterial.⁴⁰

Intervener Argument

CEC cites a document by Scott Madden Management Consultants which poses that global warming is diminishing the effectiveness of 30 year historical data in weather normalization, and creating a cold-bias. The author states that some utilities are shortening weather average datasets to 10 or 15 years.⁴¹ CEC suggests FEI's demand under both the traditional and end-use demand forecast methodologies is overly high due to a cold-bias that results from using biased weather normalization practices. CEC recommends that the BCUC request FEI to examine the cold-bias issue and provide an evaluation of the potential benefits of adjusting its weather normalization practices in a compliance filing.⁴²

FEI Reply Argument

FEI submits that it does not believe there is a cold bias in its annual demand forecasting weather normalization method because FEI uses the most recent 10 years of weather data for its normalization method. As such, FEI submits that the ratepayer would derive virtually no value from the BCUC directing FEI to further examine cold-bias.⁴³

Panel Determination

The Panel denies CEC's request to direct FEI to examine the cold-bias issue and provide an evaluation of the potential benefits of adjusting its weather normalization practices in a compliance filing. The Panel finds FEI's

³⁸ Ibid., Appendix B-2, p. 8.

³⁹ Ibid., Appendix B-1, pp. 1-2.

⁴⁰ Exhibit B-4, Response to CEC IR 5.1.1.

⁴¹ Exhibit B-7, Response to CEC IR 2.2.3.

⁴² CEC Final Argument, p. 7.

⁴³ FEI Reply Argument, p. 5.

approach to using the most recent 10 years reasonable at this time. The Panel addresses the issue of intervener requests for compliance filings in Section 4 of this decision.

2.2 Demand-Side Measures

In the LTGRP, FEI's discusses its long term expectations for DSM. FEI explains that since it is a natural gas utility, it does not construct its own energy generation resources. As a result, FEI's DSM analysis does not weigh the cost of DSM against the need for procuring or constructing upstream energy generation resources to meet demand growth. Instead, FEI states its DSM analysis seeks to establish an adequate cost-effective level of DSM activity and explore the extent to which the peak demand implications of such DSM activity may defer FEI's requirements for downstream infrastructure upgrades.⁴⁴

FEI's explains that the LTGRP addresses sections 44.1(2)(b), (c) and (f) of the UCA. Section 44.1(2)(a) of the UCA requires utilities to include (1) a plan to reduce forecast demand by taking cost-effective demand-side measures, (2) an estimate of the demand after these measures, and (3) an explanation of why the demand for energy to be served by new facilities and energy purchases are not planned to be replaced by demand-side measures. FEI states the 2017 LTGRP addresses the utility demand-side measures as defined by the CEA that are in its view being met through FEI's Conservation and Energy Management (C&EM) activities. FEI's LTGRP includes:

- A review of the statutory environment for demand-side measures in BC;
- An analysis of the reductions in annual demand for natural gas that FEI expects to achieve under the range of future scenarios;
- The estimated long term impact of FEI's projected C&EM activities on peak demand; and
- The plan for how FEI will move forward to try to achieve these demand reductions over the planning horizon.⁴⁵

FEI states it is not seeking approval of the pro-forma estimated expenditures listed in Section 4.2 of the LTGRP as it developed a separate C&EM expenditure schedule which was submitted in 2018 for BCUC approval.⁴⁶

The annual natural gas demand, excluding NGT, before and after estimated C&EM energy savings for all rate schedules is shown in the following figure which incorporates all cost effective DSM activity.⁴⁷

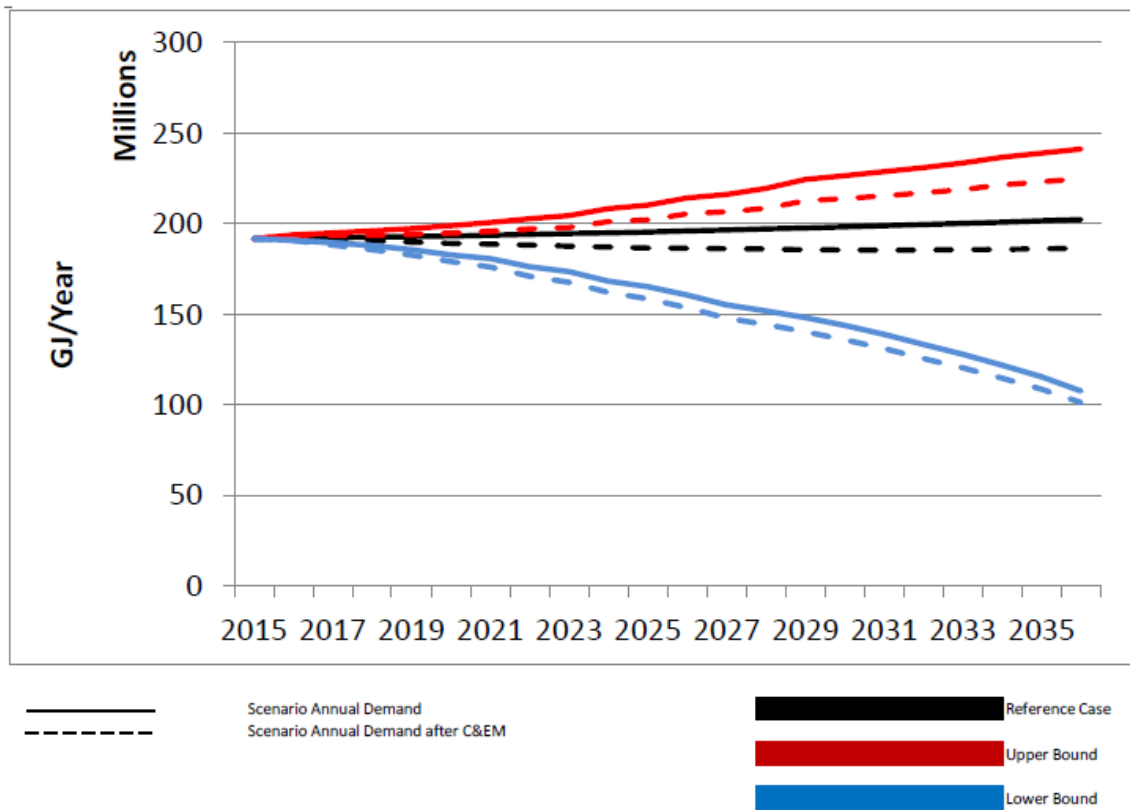
⁴⁴ Exhibit B-1, p. 93.

⁴⁵ Exhibit B-1, p. 93.

⁴⁶ Exhibit B-1, p. 93.

⁴⁷ Exhibit B-1, p. 93.

Figure 2: Natural Gas Demand Before and After Estimated C&EM Savings (Excluding NGT) – All Sectors⁴⁸



FEI states the analysis supporting the above illustration incorporates all cost effective DSM activity.⁴⁹

FEI states that its infrastructure planning continues to rely on its Traditional Peak Method⁵⁰ and this forecast intrinsically reflects the current effects of DSM programs. FEI uses this forecast as the base forecast for determining infrastructure requirements and timing for addressing capacity constraints. Reliance on this forecast therefore addresses the requirements of section 44.1(2)(f) of the UCA.⁵¹

In discussing other demand measures in the broader context of its activities beyond BC’s statutory definition of DSM, FEI outlines fuel switching and NGT initiatives and exploration of new, large industrial customer demand as examples of activities that are important for FEI.⁵²

With regard to greenhouse gas (GHG) emissions, FEI notes that although there are no specific, government-mandated GHG targets for FEI or its customers to meet, FEI does present emissions reduction estimates for each of the C&EM scenarios as well as for non-C&EM FEI activities.⁵³

FEI outlines that it addressed BCUC Directive 8⁵⁴ in the 2014 LTRP Decision in its forecast of C&EM activity, funding scenarios, and cost effectiveness test results as well as the analysis of the GHG emissions and projected delivery rate impact.⁵⁵

⁴⁸ Exhibit B-1, p. 103.

⁴⁹ Ibid., p. 93.

⁵⁰ Ibid., p. 123.

⁵¹ FEI Final Argument, p. 9; Exhibit B-1, p. 155.

⁵² Exhibit B-1, pp. 93-94.

⁵³ Ibid., p. 94.

⁵⁴ See Appendix 1 of this decision.

⁵⁵ Exhibit B-1, p. 10.

Based upon the above points, FEI submits that the LTGRP meets the requirements set out in sections 44.1(2)(b), (c) and (f).⁵⁶

Intervener Evidence

BCSEA filed intervener evidence to address the issue of whether FEI's DSM component of the LTGRP is deficient.⁵⁷ To do so, BCSEA retained Mr. James Grevatt of Energy Futures Group, Inc. (EFG), to review and analyze FEI's 2017 LTGRP to determine if there are opportunities for FEI to increase the benefits it provides to ratepayers and to BC through its DSM initiatives.

Based on its review and analysis, EFG summarizes the opportunities for FEI to improve its approach to DSM planning as follows:

- FEI's LTGRP does not include a specific plan or timeline for determining the potential to use DSM savings to defer capital infrastructure. To ensure FEI's ability to assess the viability of capacity-focused DSM alternatives in advance of the forecast date of any capacity gap, FEI should prepare a study plan and timeline.
- FEI's approach to developing its Reference Case DSM savings trajectory is inadequate. FEI relies on the BC Conservation Potential Review (CPR) by Navigant Consulting Ltd., which rejects "Maximum Achievable Savings" and instead provides savings estimates of "Market Potential." This leaves an information gap that causes the DSM savings projection in the Reference Case to be overly conservative (low) because the full scale of available savings is not considered.⁵⁸

Rebuttal Evidence

FEI filed rebuttal evidence composed of two parts, as follows:

- Report of Mr. Michael Sloan and Mr. John Dikeos, ICF responding to the evidence of EFG about the state of the industry regarding the use of non-pipeline solutions and the use of DSM to defer or reduce the need for incremental infrastructure investments.
- Report of Navigant Consulting, Inc. on DSM energy savings trajectories providing comments on BC CPR Section 5, Market Potential, May 2017 responding to the evidence of EFG.

With respect to the issues raised in the first part, FEI also submits as rebuttal evidence the following points:

- FEI is already studying activities that may enable FEI to determine if it could use DSM to defer infrastructure projects including expanding its peak demand forecast method and is also examining the technical viability of advanced metering solutions.
- FEI currently cannot prepare a study plan and timeline as proposed by EFG as ICF's evidence suggests that the potential for DSM to be used for infrastructure deferral is an emerging practice with an uncertain track record. However, FEI will undertake to report on the progress it has made when filing the next LTGRP.⁵⁹

Intervener Issues

CEC submits that FEI has met its obligations under Section 44.1 (2)(b) of the UCA subject to potential compliance filings to meet BCUC requirements for improved information. CEC submits that FEI has not adequately

⁵⁶ FEI Final Argument, p. 10.

⁵⁷ Exhibit C2-5, p. 5.

⁵⁸ Exhibit C-2-7, p. 1-2.

⁵⁹ Exhibit B-11, Cover Letter.

addressed DSM plans for its NGT business and further that the LTGRP may be deficient in not having DSM plans to support a contribution to meeting deep GHG emission reduction targets. CEC recommends that the BCUC direct FEI to file DSM or other plans for reducing GHG emissions to new targets and provide such information in a compliance filing.⁶⁰

CEC submits that, subject to providing evidence of ratepayer impacts affecting demand in a compliance filing, FEI has met its obligations under Section 44.1(2)(c) of the UCA.⁶¹

BCSEA acknowledges that the 2017 LTGRP provides an estimate of the demand for energy that FEI expects to serve after it has taken cost-effective demand-side measures and provides an explanation of why the demand for energy to be served by new facilities and energy purchases are not planned to be replaced by demand-side measures. BCSEA submits FEI's examination of the potential for DSM to reduce peak demand should be the subject of a transparent plan and timetable⁶²

FEI and Intervener arguments on issues related to the use of maximum achievable savings and DSM impacts on infrastructure requirements are considered in the following two Subsections. CEC's issue related to recommendations for compliance filings is addressed in Section 4 and its request related to DSM for NGT is addressed in Section 6.

2.2.1 Use of "Maximum Achievable Savings"

In 2015, FEI, in collaboration with BC Hydro, FBC, and Pacific Northern Gas Ltd. and Pacific Northern Gas (N.E.) Ltd. (collectively, PNG), initiated a province-wide BC CPR. This project uses a 2014-base year to determine the technical, economic and market energy savings potential for natural gas and electricity until 2035.⁶³ The BC CPR report prepared for FEI is included as Appendix C-1 to the Application. The range of potential C&EM measures, identified from the BC CPR results, informs the 2017 LTGRP C&EM analysis. In turn, the BC CPR and the 2017 LTGRP C&EM analysis informs FEI's subsequent C&EM expenditure schedule.⁶⁴

BCSEA's intervener evidence from its expert EFG explored the concept of "Maximum Achievable Savings" from DSM. EFG states that:

Unlike the BC CPR, many potential studies include an assessment of maximum achievable savings, which is generally understood to represent an upper bound to the amount of savings that programs that are designed with the intention of capturing all cost effective savings will achieve with high incentives and wide-reaching marketing and outreach campaigns. This provides regulators with better information to use in determining appropriate savings targets, based on the applicable statutes and regulations. Recent potential studies in other jurisdictions do include assessments of Maximum Achievable Potential.⁶⁵

EFG states that because the BC CPR provides savings estimates of "Market Potential" and rejects the notion of "Maximum Achievable Savings", there is an information gap that causes the DSM savings projection in FEI's Reference Case to be overly conservative because the full scale of available savings is not considered.⁶⁶

⁶⁰ CEC Final Argument, pp. 9-11.

⁶¹ Ibid., p. 12.

⁶² BCSEA Final Argument, pp. 11-12.

⁶³ Exhibit B-1, p. 98.

⁶⁴ Ibid., p. 99.

⁶⁵ Exhibit C2-7, p. 11.

⁶⁶ Exhibit C2-7, pp. 9-10.

BCSEA submits:

To be clear, Mr. Grevatt’s point regarding the difference between “Market Potential” and “Maximum Achievable” does not address whether FEI ought to plan for, or the Commission ought to require FEI to plan for, a certain amount of DSM savings. His point is that an understanding of the maximum achievable savings would place in a useful context any savings level proposed by FEI.⁶⁷

CEC submits that the BC CPR does incorporate some overly conservative assumptions and that it is preferable for FEI to increase its maximum achievable potential. CEC recommends the BCUC request that FEI develop and provide the BCUC with an option for meeting increased DSM targets.⁶⁸

In its rebuttal evidence, FEI notes that Navigant explains how the BC CPR involved a number of steps that went above and beyond a typical achievable potential forecast, to assess the “full scale of realistic market potential savings for FEI”.⁶⁹ FEI submits that Navigant provides a more detailed and thorough review of the steps that FEI actually took to estimate DSM savings than EFG, and that Navigant’s evidence should be preferred.⁷⁰

FEI notes that in the recent Decision from the BCUC in the FBC 2016 Long Term Electricity Resource Plan (LTERP) proceeding, the BCUC confirmed that while section 44.1(2)(f) of the UCA requires a utility to explain and support its preferred DSM scenario, it does not require the utility to defend against the preferences and alternative theories of interveners. FEI submits it has adequately explained its C&EM savings analysis.⁷¹

FEI also references an excerpt of the BC Hydro 2017-2019 Revenue Requirements Application Decision (BCH 17-19 RRA Decision) in support of its position that the BCUC should not make any directions in respect of the “maximum achievable savings” issue as raised by BCSEA and as supported by CEC. FEI submits the BCH 17-19 RRA Decision makes clear that the BCUC has already determined that it does not have jurisdiction to make this kind of direction.

FEI further notes that CEC’s recommendation is about how future BCUC panels should review DSM expenditure plans. FEI submits that it is not appropriate for this panel to make directions as to how future filings under section 44.2 should be reviewed by future panels⁷²

The Panel’s determination on this issue is included in the BCUC Determination in the following Subsection.

2.2.2 DSM impacts on Infrastructure Requirements

In the 2014 LTRP Decision, the BCUC directed FEU “to provide a more fulsome analysis of opportunities for DSM to be cost-effectively used to replace or defer infrastructure investments” in its next LTGRP.⁷³ The Panel notes that this directive links to section 44.1(2)(f) of the UCA which requires an explanation of why construction or extension of facilities is not planned to be replaced by DSM.

FEI addresses the potential impact of DSM as part of the 2017 LTGRP’s discussion of system requirements and options, as follows:

⁶⁷ BCSEA Final Argument, p. 18.

⁶⁸ CEC Final Argument, p. 26.

⁶⁹ FEI Final Argument, p. 21.

⁷⁰ Ibid., p. 23.

⁷¹ Ibid., p. 23, citing FBC 2016 LTERP Decision, p. 12.

⁷² FEI Reply Argument, pp 23-24.

⁷³ 2014 LTRP Decision, p. 28.

- FEI relies on the Traditional Peak Method forecast which reflects the current effects of FEI’s DSM programs. This forecast is used to determine FEI’s infrastructure requirements and timing for addressing capacity constraints, and FEI submits that relying on the Traditional Peak Method addresses the requirements of section 44.1(2)(f) of the UCA;⁷⁴
- FEI also develops an exploratory process linking peak demand forecasts to the end-use scenarios used in the annual demand forecasts.⁷⁵ FEI notes that this theoretical approach still requires validation, and therefore the results are not relied upon for calculating firm reductions in peak demand;
- FEI indicates that it is undertaking a pilot Advanced Metering Infrastructure study with hourly metering and pressure management, which it submits may lead to a better understanding of the impacts of its C&EM activities on peak demand,⁷⁶ but will not provide all information required to fully understand peak demand.⁷⁷
- FEI identifies a number of other activities that may contribute to that could help in better understanding the impacts of DSM programs on peak demand, but cannot say whether any such activities could be completed before the next LTGRP.⁷⁸

FEI states that many years will be required to establish the measurement solutions and develop the end-use method to a point where a reliable determination of the impacts of DSM on peak demand projections and capacity related infrastructure investments can be made.⁷⁹

BCSEA’s expert, EFG, states that FEI should prepare a study plan and timeline to ensure FEI assesses the viability of capacity-focused DSM alternatives in advance of the forecast date of any capacity gap.⁸⁰ EFG submits that providing evidence of DSM as an alternative to infrastructure investments is “emerging best practice”, and provides examples from other North American utilities.⁸¹ BCSEA is concerned that FEI’s open-ended timeframe would not ensure that FEI has the requisite data on the potential peak-reducing benefits of DSM in order to analyze DSM alternatives to specific capacity-related infrastructure investments. BCSEA asks the BCUC to direct FEI to accelerate its examination and development of DSM that would cost-effectively defer infrastructure investments.⁸²

CEC agrees with BCSEA that the BCUC should request FEI to develop a plan. CEC submits that deferral of infrastructure due to DSM could potentially provide significant ratepayer and GHG benefits, and should be actively pursued rather than awaiting activity in other jurisdictions.⁸³ CEC also recommends that the BCUC request FEI to develop a proposed study plan as proposed by EFG and report on the study in the next LTGRP.⁸⁴

FEI submits that ICF’s evidence outlines the very limited experience of other gas utilities in assessing the potential for DSM to defer infrastructure projects and that this should not be considered emerging best practice for natural gas utilities. FEI also notes that EFG’s evidence is based primarily on a review of electric utility industry experience while ICF points out that there are important differences between electric and gas infrastructure planning processes which reduces the value of electric utility experience for the natural gas industry.⁸⁵ FEI submits that ICF considered FEI’s experience with respect to infrastructure planning, and concludes that there are no specific major gas infrastructure projects where DSM could be used as an alternative in FEI’s service territory in the next several years.⁸⁶

FEI submits that forcing a prescriptive and structured approach and a defined timeline outside of the LTGRP process wherein FEI must report back to stakeholders and interveners on this matter will create unnecessary

⁷⁴ Exhibit B-1, p. 155.

⁷⁵ Exhibit B-1, p. 154.

⁷⁶ Exhibit B-2, Response to BCUC IR 29.1.

⁷⁷ Exhibit B-5, Response to BCUC IR 64.1.

⁷⁸ Ibid., Response to BCUC IR 64.1.1.1.

⁷⁹ Exhibit B-3, Response to BCSEA IR 23.3.1.

administrative burden for everyone involved, which could result in an outcome that simply says that more study is required. FEI submits that any BCUC directive should be general, and that FEI should be allowed to report back on its progress, which may include an update on industry progress, in the next LTGRP.⁸⁷

Panel Determination

Based on its review of the evidence, the Panel finds the 2017 LTGRP includes:

- **An estimate of the demand for energy that FEI expects to serve after it has taken cost-effective demand-side measures as required in sections 44.1(2)(b) and (c) of the UCA;**
- **An explanation of why the demand for energy to be served by new facilities and energy purchases is not planned to be replaced by demand-side measures as required by section 44.1(2)(f); and**
- **The necessary context for the Panel’s overall findings on whether the 2017 LTGRP meets the requirements in section 44.1(2) of the UCA as set out in Subsection 2.6 of this decision.**

The Panel notes this finding is generally supported by BCSEA and CEC, subject to their submissions on use of maximum achievable savings and DSM impacts on infrastructure requirements issues and CEC’s recommendations for compliance filings and information to be included in the next LTGRP.

The Panel rejects CEC’s recommendation that the BCUC should direct FEI to develop an option for meeting increased DSM targets. Consistent with the BCUC findings in the BCH 17-19 RRA Decision, the Panel agrees with FEI that the BCUC does not have jurisdiction to make this kind of direction. The Panel acknowledges BCSEA’s view that an understanding of the maximum achievable savings would place in a useful context any savings level proposed by FEI. However, in the Panel’s view, the BC CPR filed as part of the 2017 LTGRP contains supporting information that provides further context for FEI’s C&EM analysis.

The Panel agrees with FEI that the 2017 LTGRP addressed BCUC Directive 8 in the 2014 LTRP Decision. The information provided in response to this directive is useful for the Panel’s review of whether the LRGRP meets the requirements of sections 44.1(2)(b), (c) and (f) of the UCA and FEI should continue to provide this information in the next LTGRP.

The Panel directs FEI to continue to provide the following information, in the next LTRGP:

- **DSM funding scenarios, reflecting the results of the most recent CPR, that include a “reference” DSM funding scenario with “high DSM” and “low DSM” scenarios that are relative to the reference scenario;**
- **An analysis of each DSM scenario, at a portfolio level and for each DSM category (residential, low-income, commercial etc.), including:**
 - **Total Resource Cost/modified Total Resource Cost test results;**
 - **Utility Cost Test result, expressed as a ratio and \$/GJ;**
 - **Delivery rate impact;**
 - **Estimated total bill impact (including delivery and commodity), \$ and %, with residential split between high and low use gas customers; and**
 - **Estimated gas (GJ) and GHG emission reductions.**

⁸⁰ Exhibit C-7, p. 3.

⁸¹ Ibid., pp. 4-8.

⁸² BCSEA Final Argument, p. 4.

⁸³ CEC Final Argument, p. 27-28.

⁸⁴ Ibid., p. 28.

⁸⁵ FEI Final Argument, p. 25; FEI Reply Argument, p. 11.

⁸⁶ Ibid., p. 26; FEI Reply Argument, p. 11.

⁸⁷ Ibid., p. 30; FEI Reply Argument, p. 11.

The Panel dismisses CEC and BCSEA’s recommendation for the BCUC to direct that FEI develop a plan and timetable for DSM to reduce peak demand in the next LTGRP. Since there are no specific major gas infrastructure projects where DSM could be used as an alternative in the next several years, it is more appropriate for FEI to provide an update on its progress in the next LTGRP. Instead, **the Panel directs FEI to provide an update of its analysis of opportunities for DSM to be used to cost-effectively replace or defer infrastructure investments in its next LTGRP.**

2.3 Facilities

In the 2017 LTGRP, FEI discusses:

- FEI’s approach to system capacity planning, describing the method for determining peak demand forecasts and infrastructure project alternatives to address forecasted capacity constraints;
- the capacity of FEI’s natural gas transmission infrastructure to meet current and forecast peak demand for each of FEI’s major transmission service regions; and
- other major system projects, not driven by system capacity considerations, that FEI currently anticipates may result in CPCN applications during the planning horizon.⁸⁸

FEI submits that the LTGRP meets the requirement set out in section 44.1(2)(d) of the UCA to include a description of the facilities that FEI intends to construct or extend in order to serve the estimated demand after planned demand-side measures have been taken.⁸⁹

BCSEA and CEC agree that FEI has met these requirements.⁹⁰

2.4 Energy Purchases

In the 2017 LTGRP, FEI discusses:

- Background information on FEI’s gas supply portfolio planning instruments and regulatory requirements for gas supply planning in the LTGRP;
- Relevant regional developments, FEI’s supply portfolio planning, and long term planning strategies; and
- FEI’s long term approach to Price Risk Management.⁹¹

FEI submits that the LTGRP meets the requirement in section 44.1(2)(e) to provide information regarding the energy purchases from other persons that the public utility intends to make in order to serve the estimated demand.⁹²

BCSEA and CEC agree that FEI has met these requirements.⁹³

⁸⁸ Section 6 of the Application.

⁸⁹ FEI Final Argument, p. 10.

⁹⁰ BCSEA Final Argument, p. 12; CEC Final Argument, p. 14.

⁹¹ Section 5 of the Application.

⁹² FEI Final Argument, p. 11.

⁹³ BCSEA Final Argument, p. 12; CEC Final Argument, p. 16.

2.5 Other Information Required by the BCUC

2.5.1 Previous BCUC Directives

In the BCUC's acceptance of the FEU 2014 LTRP, the BCUC provided a number of directives and suggestions for FEI to integrate into future resource plans. FEI presents these directives and suggestions, along with FEI's actions in response, in Table 1-5 of the LTGRP. As described in Table 1-5 of the LTGRP, FEI submits it has followed the directions in the current LTGRP and submits that it has met the requirement in section 44.1(2)(g).⁹⁴

BCSEA and CEC agree that FEI has met these requirements.⁹⁵

The Panel summarizes its directives of information to be included in the next LTGRP in Section 6.

2.5.2 Resource Planning Guidelines

In preparing the LTGRP, FEI submits it has adhered to the BCUC's planning guidelines where relevant and applicable to the Company's operating context. FEI presents Table 1-4 of the LTGRP which sets out the resource planning guidelines, and describes where they are addressed in the LTRGP.⁹⁶

BCSEA does not disagree with FEI's assertion that the 2017 LTRP is consistent with the elements of the BCUC's resource planning guidelines that are applicable.⁹⁷

2.6 Overall Findings on Section 44.1(2) Requirements

In this section, the Panel considers the arguments of the parties on how the BCUC should assess whether the 2017 LTGRP meets the 44.1(2) filing requirements and presents our overall findings on section 44.1(2).

As the starting point, the Panel notes that the BCUC discussed the concepts of adequacy and quality of a long term resource plan in the 2014 LTRP Decision, in which the BCUC stated:

Adequacy refers to compliance with the minimum elements of a resource plan, in accordance with section 44.1(2). Adequacy is an objective measure that suggests all of the basic elements have been filed. Quality of the resource plan is a measure that requires the discretion of the Commission, and is exercised within the legislative framework that allows discretion, such as the public interest aspects of section 44.1(6) of the UCA. Acceptance of the LTRP requires, among other things, the element of adequacy, a Commission determination that the LTRP is in the public interest, and that the LTRP addresses the directives of the previous LTRP order.⁹⁸

FEI submits the LTGRP meets the filing (or "adequacy") requirements set out in section 44.1(2) of the UCA.⁹⁹ Citing the Terasen Utilities 2010 LTRP Decision and the 2014 LTRP Decision, FEI submits that if the BCUC has concerns with the "quality" of the plan, as opposed to its "adequacy" in meeting legislative requirements, the appropriate response is for the BCUC to issue directions for future plan filings.¹⁰⁰

⁹⁴ FEI Final Argument, p. 11.

⁹⁵ BCSEA Final Argument, p. 12; CEC Final Argument, p. 16.

⁹⁶ FEI Final Argument, p. 11.

⁹⁷ BCSEA Final Argument, p. 12; CEC Final Argument, p. 16.

⁹⁸ FEU 2014 LTRP Decision, p. 10.

⁹⁹ FEI Final Argument, p. 5.

¹⁰⁰ FEI Final Argument, p. 15.

CEC agrees with FEI that where information has certain gaps it is reasonable for the BCUC to request additional information in future plan filings. However, CEC submits that:

- The public interest test goes beyond meeting the simple provision of information to meet adequacy requirements and should consider the manner and extent to which they are met on the whole;
- Public interest considerations include an overall evaluation of the appropriateness of the directions being advanced, the quality of the decision-making being presented and the validity and value of the information provided to support the decisions and directions being presented;
- An LTRP should provide a reasonable and well considered plan for resource requirements that supports the public interest and rate payer interests; and
- An LTRP should be based on well-founded information and decision-making.¹⁰¹

BCSEA submits that:

- FEI's emphasis on a "stark separation" between the requirements of section 44.1(2) and the public interest considerations in section 44.1(6) and section 44.1(8) "goes too far";
- The public interest test for the BCUC's acceptance or rejection of all or a part of a long-term resource plan filed under section 44.1 is the overarching lens through which the BCUC must review the plan in relation to the various provisions of section 44.1; and
- A broad view of the public interest test is supported by the description of the intent of the resource planning process.

Regarding FEI's assertion that the response for BCUC concerns with the "quality" of the plan is for the BCUC to issue directions for future plan filings, BCSEA submits this is overstated:

In each of those two decisions the Commission Panel chose to act on its concerns by issuing directions for future plan filings while accepting for filing the plan in question. BCSEA-SCBC submit, however, that if the Commission had concerns that amounted to a long term resource plan not being in the public interest then the appropriate response would be to reject the plan as required by s.44.1(6)(b).¹⁰²

Panel Determination

The Panel finds the 2017 LTGRP meets the filing requirements of section 44.1(2) for the purpose of providing context for the Panel's determination of whether the 2017 LTGRP is in the public interest, as set out in Section 5 of this decision. The Panel agrees with CEC and BCSEA that in reviewing whether the filing requirements of section 44.1(2) are met, the Panel should not be applying the "adequacy test" using a mechanistic checklist approach as such a narrow approach would not be consistent with the purpose of the Panel's review of the 2017 LTGRP as set out in Section 1 of this decision. Rather, the Panel agrees that its review of the LTGRP should be based on a holistic overall evaluation of the acceptability of the plan considering harmoniously all of the provisions of section 44.1 of the UCA, and not simply the filing requirements set out in section 44.1(2).

¹⁰¹ CEC Final Argument, p. 3.

¹⁰² BCSEA Final Argument, p. 7.

With respect to addressing “quality” or information gaps through BCUC requests to include additional information in future plan filings, the Panel agrees with BCSEA that if the Panel has concerns that result in a finding that the LTGRP is not in the public interest, then our response should be to reject the plan in whole or in part.

3.0 Do the section 44.1(8) considerations support acceptance?

As discussed in Subsection 1.3, section 44.1(8) of the UCA sets out certain things that the Panel must consider in determining whether to accept FEI 2017 LTGRP. The Panel must consider:

- (a) The applicability of British Columbia's energy objectives;
- (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.

These considerations are addressed in Subsections 3.1 to 3.3. The Panel's overall findings on section 44.1(8) considerations are included in Subsection 3.4.

3.1 British Columbia's Energy Objectives

The Panel must consider the applicability of BC's energy objectives in reviewing the 2017 LTGRP. Section 2 of the CEA sets out BC's energy objectives and FEI states the most relevant objectives to this proceeding include:

- To take demand-side measures and to conserve energy;
- To use and foster the development in British Columbia's innovative technologies that support energy conservation and efficiency and the use of clean or renewable resources;
- To reduce BC greenhouse gas (GHG) emissions;
- To encourage switching from one kind of energy source or use to another that decreases GHG emissions in British Columbia;
- To encourage communities to reduce GHG and use energy efficiently;
- To reduce waste by encouraging use of waste heat, biogas and biomass; and
- To encourage economic development and the creation and retention of jobs.

FEI summarizes the energy objectives relevant to FEI's operations, and the sections of the LTGRP that FEI submits address the respective objectives.¹⁰³ FEI submits that a consideration of these objectives supports the acceptance of the LTGRP.¹⁰⁴

¹⁰³ Exhibit B-1, pp. 7-8; pp. 207-209.

¹⁰⁴ FEI Final Argument, p. 12.

Intervener Arguments

BCSEA submits that it does not disagree with FEI's paraphrasing of the objectives but notes certain phrases with respect to fostering the use of clean or renewable resources, the inclusion of specific reduction targets and encouraging the creation and retention of jobs are not included. BCSEA does not disagree that FEI's DSM activities and NGT and RNG initiatives are the key initiatives in the plan that contribute to advancing BC's energy and GHG emission goals. BCSEA commends FEI for the analysis in "Appendix E, Potential GHG Emissions Reduction Pathways" and acknowledges the specific initiatives FEI is working on with other entities to reduce carbon emissions from the natural gas stream.¹⁰⁵ BCSEA concludes that the 2017 LTGRP does foster the applicable BC energy objectives to a certain extent, but that much more could be done.¹⁰⁶

CEC agrees with FEI that the consideration of the applicable energy objectives supports the acceptance of the LTGRP subject to FEI meeting any BCUC compliance filing requirements arising from CEC's request for the BCUC to direct FEI to file DSM or other plans for reducing GHG emissions to new targets.¹⁰⁷

The following Subsection contains further discussion of how the LTGRP addresses the energy objective respecting GHG targets, which was the main focus of intervener submissions related to BC's energy objectives.

3.1.1 Reduction in GHG Emissions

In the 2014 LTRP Decision, the BCUC directed FEI to provide:

- (i) an analysis of the GHG targets as set out in British Columbia's energy objectives and an estimate of the portion of the required reduction that the Company believes it can reasonably attain over time; and
- (ii) an outline of the impact of the implementation of new initiatives on the demand forecast and GHG emission reductions.¹⁰⁸

Section 2(g) of the CEA provides the BC energy objective "to reduce BC greenhouse gas emissions", and outlines future GHG emissions reductions targets for 2020 and 2050. FEI provides a calculation that, using a base year of 2014, estimates a province-wide reduction of 29.3 million metric tons of CO₂e (MtCO₂e) by 2036 is required to keep pace with BC's 2050 GHG target. FEI provides a forecast of the emissions reduction from its RNG, C&EM and NGT programs as projected in the 2017 LTGRP.¹⁰⁹

Additionally, FEI provides analysis of the potential emissions reductions pathways from emerging initiatives and technologies that extend beyond the analysis in the body of the 2017 LTGRP.¹¹⁰ FEI notes that aspects of this examination of emerging initiatives and technologies remain speculative at this time.¹¹¹ The analysis indicates potential domestic GHG emissions reduction from such initiatives and technologies in the range of 1.5 to 7.4 MtCO₂e, in addition to international GHG reduction of 1.9 to 14.4 MtCO₂e.¹¹² FEI submits that the size of the potential opportunity outlined supports investments into further analysis and development of these pathways, and FEI will continue monitoring and support emerging initiatives and technologies where appropriate.¹¹³

¹⁰⁵ BCSEA Final Argument, pp. 14-15.

¹⁰⁶ BCSEA Final Argument, p. 16.

¹⁰⁷ CEC Final Argument, p. 20.

¹⁰⁸ FEU 2014 LTGRP Decision, p. 42.

¹⁰⁹ Exhibit B-1, p. 201-206.

¹¹⁰ *Ibid.*, Appendix E.

¹¹¹ *Ibid.*, Appendix E, p. 1.

¹¹² *Ibid.*, Appendix E, p. 7.

¹¹³ *Ibid.*, Appendix E, p. 9.

FEI submits that its DSM activities and NGT and RNG initiatives are key initiatives through which FEI contributes to advancing BC's energy and GHG emission goals. FEI further notes it continuously examines and, where applicable, supports potential programs, technologies and initiatives that will contribute to BC's energy and GHG emissions goals.¹¹⁴

Intervener Arguments

BCSEA

BCSEA states that FEI should, and will, play a significant role in helping to reduce GHG emissions and reducing the consumption of conventional natural gas by FEI customers is a high priority and a major prerequisite for BC to achieve its climate action commitments. BCSEA submits the following:

- Policy support for substantial GHG emissions reductions remains high in BC. In the year since FEI filed the 2017 LTGRP, the Government of BC has raised the carbon tax, re-affirmed legislated GHG reduction goals, added a 2030 GHG reduction target, and issued a new climate action plan on December 6, 2018;¹¹⁵
- To achieve the objectives and commitments of the new BC climate action plan, FEI will have to considerably expand and deepen its GHG-reduction and energy conservation and efficiency actions;¹¹⁶
- The considerable "expensive 'locked in' infrastructure" that is paid for by customers through their ongoing delivery rates creates pressure for continued or increased natural gas throughput at the same time as action on climate change requires reductions in the use of fossil fuels;¹¹⁷
- The possibility of a very large increase in throughput of natural gas is concerning, given the resulting GHG emissions. BCSEA cites the potential Woodfibre LNG Export Project as an example of this dilemma;¹¹⁸ and
- A wholesale switch of shipping to LNG may not reduce GHGs enough to align with the stringent GHG reduction needs to mitigate global warming.¹¹⁹

With respect to future LTGRP filings, BCSEA submits FEI's NGT program should be scrutinized for GHG reductions effectiveness¹²⁰ and the directive on GHG targets from the 2014 LTGRP should be restated in the next LTGRP.¹²¹

CEC

CEC submits that the LTGRP may be deficient in not having DSM plans to support a contribution to meeting deep GHG emission reduction targets and recommends that the BCUC requests that FEI submit DSM or other plans for reducing GHG emissions to new targets and provide such information in a compliance filing.¹²²

¹¹⁴ FEI Final Argument, p. 13.

¹¹⁵ BCSEA Final Argument, p. 3.

¹¹⁶ *Ibid.*, p. 16.

¹¹⁷ *Ibid.*, p. 3.

¹¹⁸ BCSEA Final Argument, pp. 3-4.

¹¹⁹ *Ibid.*, p. 9.

¹²⁰ *Ibid.*, p. 5.

¹²¹ *Ibid.*, p. 13.

¹²² CEC Final Argument, p. 11.

CEC argues that FEI’s scenarios are not sufficiently broad enough to incorporate the possibility of actions that could result in deep GHG emission reduction. CEC notes that FEI submits that its scenario analysis is sufficiently broad to simulate the outcomes of such actions, even if FEI is not certain as to how they would become implemented. CEC disagrees and recommends that the BCUC consider asking FEI for plans to meet a future 60 percent GHG reduction target.¹²³

FEI Reply Argument

FEI submits that many of BCSEA’s submissions are in the nature of general comments, including matters of climate change and related environmental issues. Since these arguments do not specifically address the legal requirements under section 44.1 of the UCA, FEI states it does not provide a reply.¹²⁴ With respect to BCSEA’s submission “that much more could be done”, FEI argues this should be rejected as it is made without reference to any supporting evidence in the proceeding.¹²⁵

FEI submits that a BCUC directive on GHG targets is not necessary because it has conducted this analysis in the past and intends to continue similar analysis in the future.¹²⁶

FEI submits that section 44.1 of the UCA does not require FEI to include with its filing a plan to support a contribution to meeting “deep GHG emission reduction targets”. FEI also submits that plans regarding GHG reductions concern matters of corporate strategy and utility management that are beyond the scope of the BCUC’s jurisdiction.¹²⁷

Panel Determination

In the next LTGRP, the Panel directs FEI to address the implications for FEI’s long-term resource and conservation planning of the 2018 CleanBC plan released by the Government of BC on December 6, 2018 and to provide an update on its analysis of GHG targets. In particular, the Panel expects that FEI should address the long term impacts to FEI of:

- **Initiatives targeting more energy efficient buildings, in terms of gas demand and FEI’s DSM activities;**
- **Requirements for 15 percent of natural gas consumption to be from renewable gas;**
- **Industrial electrification, with respect to demand for natural gas;**
- **How 2018 CleanBC’s plans for clean transportation affect FEI’s forecast for its NGT programs; and**
- **Other initiatives to be developed by the Government of BC over the next 18 to 24 months.**

The Panel agrees with FEI that section 44.1 of the UCA does not give the BCUC jurisdiction to direct FEI to file a plan to support a contribution to meeting “deep GHG emission reduction targets.” The Panel also agrees that certain comments and arguments made by BCSEA and CEC do touch on matters in the nature of corporate strategy and utility management that are beyond the scope of the BCUC’s jurisdiction. However, section 44.1 does give the BCUC discretion to request that a public utility file information to enable the BCUC to assess whether a LTRP is in the public interest especially given that it must consider BC’s energy objectives.

FEI does specifically address certain comments made by interveners because it argues these comments do not address the legal requirements under section 44.1 of the UCA. The Panel interprets the interveners’ view that “more can be done” to be related to their expectations regarding the continuing policy support for targeting GHG emissions reductions. The Panel agrees with the views of BCSEA and CEC that there will be considerable impacts on FEI’s resource and conservation planning for BC to achieve the objectives and commitments set out

¹²³ Ibid., p. 29.

¹²⁴ FEI Reply Argument, p. 12.

¹²⁵ Ibid., p. 15.

¹²⁶ Ibid., p. 14.

¹²⁷ Ibid., p. 8.

in the new BC climate action plan. The Panel notes the purpose of the LTGRP set out in Section 1.1 of this decision. Since the consideration of multiple objectives and the trade-offs between alternatives is key to the development of a cost-effective resource plan for meeting demand for a utility's service, the Panel considers BCSEA's comments related to the trade-off between lower customer delivery rates that result from increased gas throughput and steps that may be necessary to achieve its climate action commitments to be important context for the Panel in its consideration of BC's energy objectives.

The Panel finds that FEI's 2017 LTGRP addresses the 2014 LTRP Decision directives regarding GHG reduction and sufficiently considers BC's Energy Objectives¹²⁸ for the purpose of providing context for the Panel's overall determination of whether section 44.1(8) considerations support acceptance of the 2017 LTGRP, as set out in Section 3.2 of this decision. The Panel acknowledges the 2018 CleanBC plan was issued after the close of the evidentiary record in this proceeding and that FEI will need to understand and plan for its implications in filing future plans. Procedural fairness, though, dictates that the Panel base its decision on whether to accept the 2017 LTGRP on the evidence filed and tested in this proceeding only. **Accordingly, the Panel directs FEI to address the implications of the 2018 Clean BC plan in the next LTGRP filing.**

Further, the Panel dismisses CEC's request that the BCUC direct FEI to:

- **submit DSM or other plans for reducing GHG emissions to new targets and provide such information in a compliance filing; and**
- **file a plan to meet a future 60 percent GHG reduction target.**

The Panel also finds FEI's Lower Bound Scenario does consider the possibility of actions that could result in accelerated non-price carbon policy actions.¹²⁹ The Panel agrees with FEI that its scenario analysis is sufficiently broad and that CEC's requests go beyond the BCUC's jurisdiction. The Panel's findings on whether compliance filings are an appropriate outcome of a Section 44.1 review are set out in Section 4 of this decision.

3.2 Adequate and Cost-Effective DSM - 44.1(8)(c)

The two aspects of section 44.1(8)(c) of the UCA – “adequacy” and “cost-effectiveness” of DSM – are defined by sections 3 and 4 respectively of the DSM Regulation (B.C. Reg. 117/2017).

Section 3 of the DSM Regulation outlines the DSM measures that are required for a plan to be “adequate” for the purposes of section 44.1(8)(c) of the UCA. FEI submits that the existing C&EM portfolio meets the adequacy requirements that were in place at the time of the FEI Multi-Year Performance Based Ratemaking Plan for the years 2014 through 2018. FEI notes that new adequacy requirements (added with the March 24, 2017 revision to the DSM Regulation) will be addressed in the expenditure schedule filed after the 2017 LTGRP.¹³⁰ FEI submits that in general, many measures in the 2017 LTGRP are applicable to the adequacy requirements but the final adequacy implications depend on specific program packaging and delivery, which are determined during program design.¹³¹

FEI notes that the 2017 LTGRP does not forecast measures to address DSM Regulation requirements 3(1)(c), (d) and (e).¹³² However, FEI submits that the LTGRP demonstrates that it intends to pursue adequate, cost-effective demand-side measures, and that demonstration of FEI's intent should be the central consideration for the BCUC.¹³³

¹²⁸ As at the date of the close of the evidentiary record on November 15, 2018

¹²⁹ Exhibit B1, pp. 71-72.

¹³⁰ FEI's Application for Acceptance of 2019-2022 Demand Side Management Expenditures Plan was filed with the BCUC on June 22, 2018.

¹³¹ Exhibit B-1, pp. 96-97.

¹³² Exhibit B-5, Response to BCUC IR 59.1.

¹³³ FEI Final Argument, pp. 14-15.

The process for determining “cost-effectiveness” for the purposes of section 44.1(8)(c) of the UCA is set out in section 4 of the DSM Regulation. The Total Resource Cost (TRC) test is the primary cost-effectiveness test used by the BCUC, and represents the ratio that results when the value of the benefits of DSM activity (as measured by avoided energy and capacity costs as applicable) is divided by the sum of the utility and customer costs for that DSM activity. The portfolio level TRC benefit-to-cost ratio for the Reference case is 2.2 for the period covered by the 2017 LTGRP; for the Upper Bound and Lower Bound scenarios the estimated TRC ratio is also positive.

Pursuant to section 4(1.5) of the DSM Regulation, FEI can apply the modified Total Resource Cost (mTRC) test for up to 40 percent of the total portfolio expenditures. For the avoided energy cost, the mTRC prescribes the use of BC Hydro’s value for the long run marginal cost of electricity. The mTRC also includes an adder for non-energy benefits. In its C&EM analysis, FEI assumes that all residential programs require the mTRC, noting that typically most residential DSM programs require the use of the mTRC to be cost-effective.¹³⁴ FEI notes that an unanticipated outcome of this assumption is that in certain years, the 40 percent mTRC cap is exceeded, primarily affecting the Upper Bound scenario. FEI submits that manually iterating individual measures to stay within the mTRC cap is labour-intensive and more akin to program design than long-term forecasting.¹³⁵

Intervener Arguments

BCSEA submits that the 2017 LTGRP meets the UCA section 44.1(8)(c) requirements. BCSEA notes that FEI’s 2019-2022 DSM expenditure schedule filing contained much more detail than the LTGRP regarding the DSM Regulation’s adequacy requirements.¹³⁶

CEC recommends that the BCUC accept FEI’s LTGRP as providing adequate cost effective demand side measures. However, CEC submits it is appropriate for the BCUC to assess whether the plan demonstrates FEI’s intention to pursue “the capability to deliver” adequate, cost-effective demand side measures.¹³⁷

FEI Reply Argument

FEI submits that CEC’s proposal to consider capacity to deliver would amount to re-writing the legislative requirements under section 44.1 and that the BCUC should not accept this suggestion. FEI further notes that this would involve a requirement that is impossible to properly consider, as it is unclear how FEI, or any company, could demonstrate a capability to deliver something 20 years in the future.¹³⁸

Panel Determination

The Panel finds that for the purposes of this LTGRP, FEI has demonstrated that it intends to pursue adequate, cost-effective demand-side measures, pursuant to section 44.1(8)(c) of the UCA, and sections 3 and 4 of the DSM Regulation. The Panel recognizes that in the development of expenditure schedules filed under section 44.2 of the UCA, FEI undertakes more detailed program design, including the implementation of programs that will address the adequacy requirements of section 3 of the DSM Regulation in practice, and more refined cost-effectiveness testing calculations than are feasible for the 20 year outlook of a long term resource plan where cost estimates are necessarily much more speculative and prone to changes. It is therefore appropriate that the level of detail provided in the respective filings is different.

¹³⁴ Exhibit B-2, Response to BCUC IR 26.1.

¹³⁵ Ibid., Response to BCUC IR 26.2.

¹³⁶ BCSEA Final Argument, p. 16.

¹³⁷ CEC Final Argument, pp. 22, 26.

¹³⁸ FEI Reply Argument, p. 6.

3.3 The Interests of Customers - 44.1(8)(d)

FEI provides a list of some of the aspects of the LTGRP that demonstrate that the plan is in the interests of persons in BC who receive or may receive service from FEI, summarized as follows:

- Incorporating an end-use annual demand forecast method, which captures and analyzes the impact of shifting trends in customer behavior, energy choice and energy consumption;
- An intent to maintain a strong focus on DSM activities to meet customer needs and to keep energy costs low;
- Alignment with British Columbia’s energy objectives;
- Meeting current and future customer demand through prudent gas supply portfolio planning and price risk management strategies;
- Continuing planning efforts that will optimize operation of FEI’s system as a whole, addressing growth in peak demand, and managing aging infrastructure; and
- The detailed and thorough stakeholder engagement process in the development of the LTGRP.¹³⁹

Intervener Arguments

CEC agrees with FEI’s view of meeting the interests of persons who receive or may receive service.¹⁴⁰

BCSEA submits that the 2017 LTGRP serves FEI’s current and future customers only to a limited extent, and that FEI will have to considerably expand and deepen its GHG-reduction and energy conservation and efficiency actions in order to achieve the objectives and commitments of the new BC climate action plan.¹⁴¹

The Panel has already addressed BCSEA’s submission in this regard earlier in Subsection 3.1.1.

3.4 Overall Findings on Section 44.1(8) Considerations

FEI submits the section 44.1(8) considerations support acceptance¹⁴² and that the 2017 LTGRP:

- Is aligned with and supports BC’s energy objectives,¹⁴³
- Demonstrates that FEI intends to pursue adequate, cost-effective demand-side measures;¹⁴⁴ and
- Is in the interests of persons in BC who receive or may receive service from FEI.¹⁴⁵

¹³⁹ Ibid., pp. 18-19.

¹⁴⁰ CEC Final Argument, p. 24.

¹⁴¹ BCSEA Final Argument, p. 16.

¹⁴² Ibid., p. 12.

¹⁴³ Ibid., p. 14.

¹⁴⁴ Ibid., p. 14.

¹⁴⁵ Ibid., p. 19.

CEC submits that FEI has adequately addressed the BCUC considerations under Section 44.1(8) of the UCA subject to FEI meeting BCUC compliance filing requirements.¹⁴⁶ In Subsection 3.1.1, the Panel dismisses CEC's recommendations for compliance filings related to Section 44.1(8) considerations.

BCSEA submits the 2017 LTGRP meets the UCA section 44.1(8) considerations to a limited extent as more will need to be done to address BC energy objectives. The Panel reiterates that it has addressed BCSEA's concerns in Subsection 3.1.1 above.

Panel Determination

Based on the totality of the evidence and consideration of the issues raised by the parties, the Panel finds that the UCA section 44.1(8) considerations support acceptance of the 2017 LTGRP as being in the public interest, as further discussed in Section 5 of this decision.

4.0 Intervener Recommendations for Compliance Filings

CEC makes a number of recommendations for the BCUC to direct that FEI provide further information or analysis in a compliance filing. Overall, CEC recommends that the BCUC accept the 2017 LTGRP "subject to the requests and compliance filings outlined" in its submissions.¹⁴⁷ CEC's specific requests for compliance filings are for FEI to:

- Examine the cold-bias issue and provide an evaluation of the potential benefits of adjusting its weather normalization practices;¹⁴⁸
- Submit DSM or other plans for reducing GHG emissions to new targets;¹⁴⁹
- Provide a statistical assessment of the historical Use per Customer (UPC) over 20 years; and¹⁵⁰
- Provide evidence of ratepayer impacts affecting demand in a compliance filing.¹⁵¹

FEI Reply Argument

FEI submits that compliance filings are not an appropriate outcome in a section 44.1 proceeding. FEI submits that section 44.1 of the UCA does not contemplate compliance filings resulting from a proceeding and none should be ordered. If the BCUC determines that further information is required in a future plan, FEI's position is that the BCUC should issue a direction under section 44.1(2)(g) that the next LTRP include the desired information.¹⁵² FEI further points to the Independent Review of the British Columbia Utilities Commission Final Report, dated November 14, 2014 (Independent Review Report).¹⁵³ FEI submits that the compliance filings suggested by CEC do not meet the threshold requirement of being "necessary and useful" as recommended in the Independent Review Report and submits that CEC's recommendations for compliance filings should be rejected.¹⁵⁴

¹⁴⁶ Ibid., p. 24.

¹⁴⁷ Ibid., p. 31.

¹⁴⁸ Ibid., p. 7.

¹⁴⁹ Ibid., p. 11.

¹⁵⁰ BCSEA Final Argument, p. 8.

¹⁵¹ Ibid., p. 12.

¹⁵² FEI Reply Argument, p. 2.

¹⁵³ The British Columbia Utilities Commission, Final Report (November 2014), retrieved from https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/electricity-alternative-energy/electricity/bcuc_review_final_report_nov_14_final.pdf.

¹⁵⁴ FEI Reply Argument, p. 3.

Regarding CEC's request for a statistical assessment of the historical use per customer (UPC) over 20 years, FEI refers to its explanation in the response to CEC IR 2.14.1. FEI outlined that peak UPC data prepared in a manner consistent with the current processes is not available for the Coastal Transmission System and Interior Transmission System prior to 2002 and for the Vancouver Island Transmission System prior to 2007. For this reason, FEI believes that providing the suggested 20-year assessment would require significant effort in relation to the additional value that such an assessment would provide. Nevertheless, FEI could examine peak UPC values across a period longer than 10 years and back to the above noted cut-off years and is agreeable to doing so as part of its next LTGRP if the BCUC makes such a direction.¹⁵⁵

FEI submits that the suggested evidence of ratepayer impacts affecting demand analysis would cause an exponential increase in model complexity and that this direction should not be made. FEI further submits that rate impact considerations are more appropriately dealt with in other proceedings that specifically address DSM expenditures and rate impacts.¹⁵⁶

Panel Determination

The Panel finds that, generally, compliance filings are not an appropriate outcome of a Section 44.1 review. In the BCUC Determination under Section 2.6 of this Decision, the Panel discusses addressing "quality" or information gaps through BCUC requests to include additional information in future plan filings. The Panel views the request for a compliance filing as a similar issue. If the information to be included in the proposed compliance filing is not needed to determine if the LTRP is in the public interest then a request to include the additional information in future filings is reasonable. If the information is needed to address concerns that could result in the LTGRP under review not being in the public interest, then the Panel's response would be to reject the plan in whole or in part consistent with sections 44.1(6) and 44.1(7) of the UCA.

The Panel earlier dismissed CEC's requests for compliance filing regarding approach to weather normalization in Subsection 2.1.2 and plans for reducing GHG emissions in Subsection 3.1.1. Since the Panel finds that compliance filings are generally not an appropriate outcome for a section 44.1 proceeding, **the Panel similarly dismisses CEC's recommendations for a statistical assessment of the historical UPC over 20 years and for ratepayer impacts affecting demand.**

5.0 Is the 2017 LTGRP in the public interest?

FEI submits that the LTGRP meets the requirements under the UCA and should be accepted as filed pursuant to section 44.1(6)(a) of the UCA. FEI states that carrying out the plan is in the public interest for the following reasons:

- The LTGRP meets all of the filing requirements set out in section 44.1(2) of the Act; complies with all applicable directives from previous orders; and follows, where applicable, the BCUC's Resource Planning Guidelines; and
- All of the considerations in section 44.1(8) support acceptance of the LTGRP.

FEI submits the LTGRP is in the interests of FEI's customers and states:

The plan is the result of a detailed and thorough stakeholder engagement process. It includes a detailed discussion of FEI's long term vision to be B.C.'s trusted energy provider for safe, reliable and cost-effective natural gas delivery services, and a healthy, growing contributor to B.C.'s economy and to the well-being of B.C.'s communities. Finally, the LTGRP includes an Action Plan

¹⁵⁵ Ibid., p. 5.

¹⁵⁶ Ibid., p. 10.

to pursue various activities over the next four years based on the information and issues discussed in the LTGRP. The Action Plan demonstrates FEI's intention to serve customers' needs for safe, reliable and cost-effective energy.¹⁵⁷

While noting its comments and recommendations, BCSEA does not object to BCUC's acceptance of FEI's 2017 LRGRP.¹⁵⁸

CEC recommends the BCUC accept FEI's LTGRP subject to its requests and compliance filings.

In reply, FEI states it appreciates the thoughtful contributions that CEC and BCSEA have made in this proceeding, and the support for the LTGRP expressed in their submissions. FEI submits that the fact that CEC recommends and BCSEA does not oppose acceptance of the LTGRP further demonstrates the requirements of section 44.1(2) of the UCA are met and the plan is in the public interest and should be accepted by the BCUC.¹⁵⁹

Panel Determination

The Panel accepts the FEI 2017 LTGRP to be in the public interest pursuant to subsection 44.1(6) of the UCA.

Subsection 44.1(6) of the UCA gives the Panel the discretion to accept the LTRP, if the Panel determines that to carry it out would be in the public interest, provided in the BCUC's determination, the Panel has considered BC's energy objectives, the extent to which the plan shows FEI intends to pursue adequate, cost-effective DSM and the interests of persons in BC who receive or may receive service from FEI.

While the Panel's decision to accept the 2017 LTGRP is based on our findings on the specific items listed in subsections 44.1(2), including other information required by the BCUC, and 44.1(8), the Panel does not consider this to be a legal framework that provides an exhaustive checklist for determining the public interest. In Section 2, the Panel agrees with interveners' submissions that the BCUC's review of the LTGRP should include an overall evaluation of the acceptability of the plan harmoniously considering all of the provisions of section 44.1 of the UCA and not simply the filing requirements set out in section 44.1(2). The Panel also considers the purpose of the resource and conservation planning process as discussed in Subsection 1. 1 and recognize that there are multiple objectives and trade-offs between the various possible alternatives.

The Panel acknowledges FEI's comment that the 2017 LTGRP filing does not seek any specific approvals for any of the projects or plans detailed within it and any requests for approval of specific resource needs will be further evaluated and brought forward at the appropriate time for approval under the appropriate sections of the UCA.¹⁶⁰ The Panel agrees with FEI that the LTGRP is a high-level planning tool and guide, separate and apart from the future approval processes related to specific programs.¹⁶¹

6.0 The Next LTGRP Filing

In Subsection 6.1, the Panel summarizes the directives in other sections of its decision regarding information to be included in the next LTGRP filing. In Subsection 6.2, the Panel addresses intervenor requests for information not already addressed elsewhere in the decision. Finally, the Panel's determination on the date of filing the next LTGRP is in Subsection 6.3.

¹⁵⁷ FEI Final Argument, p. 38.

¹⁵⁸ BCSEA Final Argument, p. 21.

¹⁵⁹ FEI Reply Argument, p. 1.

¹⁶⁰ FEI Final Argument, p. 1.

¹⁶¹ *Ibid.*, pp. 4-5.

6.1 BCUC Directives

Based on its review of the 2017 LTGRP, the Panel finds FEI has complied with previous BCUC directives from the 2014 LTRP Decision (as presented in Appendix A of this decision) related to information to be included in the 2017 LTGRP. All parties agree FEI has met the requirements.

The following is a summary of directives in other sections on the decision regarding information to be included in the next LTGRP filing:

Directive	Page
<p>1. In the next LTGRP filing, FEI is directed to:</p> <ul style="list-style-type: none"> • Update the information filed in this proceeding to respond to the BCUC’s directive in the 2014 LTRP Decision to provide an analysis of FEI’s End-Use Method as compared to other end-use methods, including an assessment of the of FEI’s method compared to other models that incorporate some form of end-use modelling combined with econometric modeling;¹⁶² • Provide a detailed explanation of any changes to its demand forecast methodology as it evolves between now and the next LTGRP filing; and • Include high level assessment of the effectiveness of the Traditional and End-Use Models compared to actual results. 	8
<p>2. FEI is directed to continue use of its Traditional Method as a comparison to test its End-Use Method until such time as the BCUC approves a new demand forecast methodology.</p>	8
<p>3. The Panel directs FEI to continue to provide the following information, in the next LTGRP:</p> <ul style="list-style-type: none"> • DSM funding scenarios, reflecting the results of the most recent CPR, that include a “reference” DSM funding scenario with “high DSM” and “low DSM” scenarios that are relative to the reference scenario; • An analysis of each DSM scenario, at a portfolio level and for each DSM category (residential, low-income, commercial etc.), including: <ul style="list-style-type: none"> ○ Total Resource Cost/modified Total Resource Cost test results; ○ Utility Cost Test result, expressed as a ratio and \$/GJ; ○ Delivery rate impact; ○ Estimated total bill impact (including delivery and commodity), \$ and %, with residential split between high and low use gas customers; and ○ Estimated gas (GJ) and GHG emission reductions. 	16
<p>4. The Panel directs FEI to provide an update of its analysis of opportunities for DSM to be used to cost-effectively replace or defer infrastructure investments in its next LTGRP.</p>	17
<p>5. In the next LTGRP, the Panel directs FEI to address the implications for FEI’s long-term resource and conservation planning of the 2018 CleanBC plan released by the Government of BC on December 6, 2018 and to provide an update on its analysis of GHG targets. In particular, the Panel expects that FEI should address the long term impacts to FEI of:</p> <ul style="list-style-type: none"> • Initiatives targeting more energy efficient buildings, in terms of gas 	23 – 24

¹⁶² Section 3.4 of the Application, Appendix B-2, and Appendix B-3.

	<p>demand and FEI’s DSM activities;</p> <ul style="list-style-type: none"> • Requirements for 15 percent of natural gas consumption to be from renewable gas; • Industrial electrification, with respect to demand for natural gas; • How 2018 CleanBC’s plans for clean transportation affect FEI’s forecast for its NGT programs; and • Other initiatives to be developed by the Government of BC over the next 18 to 24 months. 	
6.	The Panel directs FEI to address security of supply concerns in its next LTGRP.	31
7.	The Panel directs FEI to file its next LTGRP on or before March 31, 2022.	32

6.2 Other Intervener Requests

6.2.1 DSM Plan for NGT

In the LTGRP, FEI outlines forecasted demand from natural gas for transportation. FEI’s C&EM analysis estimates the level of C&EM activity from a portfolio of “program areas”: residential, low income, commercial, innovative technologies, industrial, conservation education and outreach and enabling activities.¹⁶³

CEC submits that FEI has not put in place DSM for its NGT service and should plan to do so at the request of the BCUC.¹⁶⁴

In reply, FEI submits that the BCUC does not have jurisdiction to direct FEI to put in place DSM for its NGT service. FEI notes that in the BCH 17-19 RRA Decision, at p. 73, the BCUC determined as follows:

The Panel agrees with BC Hydro that section 44.2 of the UCA does not provide the Commission with the authority to direct BC Hydro to file a DSM expenditure schedule, make additions to a DSM expenditure schedule, or change the design of a particular DSM program. However, the Panel notes that, under subsection 44.2(2), BC Hydro would not be able to recover DSM costs in final rates unless these costs have been accepted by the Commission under section 44.2.

FEI submits that while the BCH 17-19 RRA Decision is made with respect to section 44.2 of the UCA, the reasoning applies with even greater force in the context of section 44.1, which addresses long term resource planning and not specific expenditure schedules under which specific programs are brought to the BCUC. FEI submits that if the BCUC does not have jurisdiction under section 44.2 to require additions to a DSM program, then it also does not have such jurisdiction under section 44.1.¹⁶⁵

FEI also notes that aside from whether the BCUC has jurisdiction to make such a direction, it would not be appropriate due to the significant burden to prepare a plan that may not represent prudent effort and further in light of that fact that FEI lacks sufficient market share to be able to effectively implement cost effective DSM for NGT, and because NGT technology is relatively new, meaning it is unlikely that efficiency improvements are currently available.¹⁶⁶

¹⁶³ Exhibit B-1, pp. 97-98.

¹⁶⁴ CEC Final Argument, p. 24.

¹⁶⁵ FEI Reply Argument, p. 7.

¹⁶⁶ Ibid., pp. 7-8.

Panel Determination

The Panel dismisses CEC’s recommendation that BCUC request FEI to provide a DSM plan for its NGT service. The Panel agrees with the previous BCUC finding cited, that BCUC does not have jurisdiction under section 44.2 to require additions to a DSM program, applies similarly to a review under section 44.1 of the UCA.

6.2.2 Threats to Supply

In the 2014 LTRP Decision, the BCUC ordered the following directive:

If, in the next LTRP, the FEU provide a demand forecast that includes the possibility of there being insufficient supply for both NGT BC customers and non-BC LNG export customers, then the Panel directs the FEU to address how it will insure compliance with section 44.1(8)(d) of the UCA.

FEI submits that with the exception of a scenario of an unforeseen and temporary interruption in supply due to circumstances upstream of FEI’s system, there is a low probability of a scenario arising where all system demands could not be met under normal operating circumstances. FEI states current overall distribution capabilities are sufficient to meet peak demand requirements of customers served by the Coastal Transmission System (CTS) and Vancouver Island transmission system (VITS), including year round liquefaction at volumes approved for Phase 1A of the Tilbury LNG facility. FEI notes that in order for demand to exceed FEI’s current overall distribution capabilities, the High Growth Scenario would have to be realized.¹⁶⁷

CEC notes that the Enbridge pipeline rupture in October 2018 did result in the loss of natural gas service and that FEI has consequently applied for an expedited process to allow amendments to Rate Schedule 46. CEC submits that it would be useful for FEI to address the issue of how FEI can respond to exceptional circumstances such as upstream interruptions as well as the possibility of internal issues in its next LTGRP. CEC recommends that the BCUC request FEI to provide an overview of how it can respond to both internal and external threats to supply in its next LTGRP.¹⁶⁸

BCSEA also expresses concern about security of supply, noting that the unexpected rupture of the Enbridge pipeline on October 19, 2018 upstream of the FEI system is a reminder that unforeseen supply interruptions do occur from time to time.¹⁶⁹

In reply, FEI believes that it can examine this issue and provide an evaluation and is agreeable to doing so as part of its next LTGRP, if directed to do so by the BCUC.¹⁷⁰

Panel Determination

The Panel directs FEI to address security of supply concerns in its next LTGRP. Panel agrees with all parties on this particular matter.

6.3 Filing Date for the Next LTGRP

Section 44.2(2) of the UCA provides that a utility must file a long term resource plan “in the form and at the times the commission requires.”

¹⁶⁷ FEI Reply Argument, pp. 34-35.

¹⁶⁸ CEC Final Argument, p. 30.

¹⁶⁹ BCSEA Final Argument, pp. 20-21.

¹⁷⁰ FEI Reply Argument, p. 12.

BCSEA suggest a filing date for the next LTGRP in 2021 for three reasons:

- The policy environment will likely change quickly in the next few years;
- Issuance of a decision on the next LTGRP before FEI files a DSM expenditure schedule to follow the 2019-2022 schedule is desirable; and
- There is an extremely wide divergence between the Upper Bound, Reference and Lower Bound forecasts of annual demand starting in about 2021.¹⁷¹

FEI does not agree that a 2021 filing date for the next plan is appropriate. FEI submits that a 2021 filing will be less than two years from the decision on the 2017 LTGRP, which is not enough time to allow for the proper development of the next LTGRP. FEI recognizes the value of the BCUC being able to consider an updated LTGRP when considering whether to accept the next DSM expenditure schedule. However, FEI also notes that the value of such an updated LTGRP rests on its proper development based on updated input analyses and studies. FEI prefers a 2022 filing date, which it further notes will avoid resource conflicts with FBC's next LTERP which is due December 1, 2021.

Panel Determination

The Panel directs FEI to file its next LTGRP on or before March 31, 2022. Filing of the LTGRP early in 2022 allows the LTGRP to precede the next DSM expenditure schedule filing and ensures the 2022 LTGRP will inform the DSM filing scheduled for 2022. This timing will also enable FEI to incorporate in that plan initiatives flowing from the implications of the 2018 CleanBC Plan.

DATED at the City of Vancouver, in the Province of British Columbia, this day of MONTH 20xx.

Original Signed by:
K. A. Keilty
Panel Chair / Commissioner

Original Signed by:
A. K. Fung, QC
Commissioner

Original Signed by:
R. D. Revel
Commissioner

¹⁷¹ BCSEA Final Argument, p. 13.



ORDER NUMBER
G-39-19

IN THE MATTER OF
the *Utilities Commission Act*, RSBC 1996, Chapter 473

and

FortisBC Energy Inc.
2017 Long Term Gas Resource Plan

BEFORE:

K. A. Keilty, Commissioner/Panel Chair
A. K. Fung, QC, Commissioner
R. D. Revel, Commissioner

on February 25, 2019

ORDER

WHEREAS:

- A. On December 14, 2017, FortisBC Energy Inc. (FEI) filed its 2017 Long Term Gas Resource Plan (LTGRP) pursuant to section 44.1 of the *Utilities Commission Act*, for acceptance by the British Columbia Utilities Commission (BCUC). FEI is not seeking approval of any particular elements identified within the LTGRP;
- B. By Order G-33-18 dated February 7, 2018, the BCUC established a written hearing process to review the LTGRP;
- C. BC Sustainable Energy Association and Sierra Club BC (BCSEA), British Columbia Hydro and Power Authority (BC Hydro) and Commercial Energy Consumers Association of British Columbia (CEC) registered as interveners;
- D. The BCUC and interveners submitted two rounds of information requests (IRs) to FEI on the LTGRP, to which FEI provided responses;
- E. On August 9, 2018, BCSEA filed intervener evidence. The BCUC, FEI and CEC submitted IRs on the intervener evidence;
- F. On October 11, 2018, FEI filed rebuttal evidence to BCSEA's evidence. The BCUC and interveners submitted IRs on FEI's rebuttal evidence;
- G. On November 22, 2018, FEI filed its final argument. On December 6, 2018, BCSEA and CEC filed final arguments, and on December 20, 2018, FEI filed its reply argument; and
- H. The BCUC has reviewed the LTGRP and the evidence submitted in the proceeding and considers that acceptance of the LTGRP is warranted.

NOW THEREFORE for the reasons set out in the Decision accompanying this order:

1. The BCUC accepts the FEI 2017 LTGRP as being in the public interest, pursuant to subsection 44.1(6) of the *Utilities Commission Act*.
2. The BCUC directs FEI to comply with all determinations and directives as set out in the Decision.

DATED at the City of Vancouver, in the Province of British Columbia, this 25th day of February 2019.

BY ORDER

Original Signed by:

K. A. Keilty
Commissioner

BCUC Directives in the 2014 LTRP Decision regarding the Next LTRP Filing¹⁷²

	BCUC Directives
5.	<p>Therefore, the Commission Panel directs the FEU, to:</p> <ul style="list-style-type: none"> • in its next LTRP filing, provide a detailed analysis of the relative benefits/shortcomings of their particular End-Use Method as compared to other end-use methods; and • continue use of the Traditional Method as a parallel approach until such time as the Commission approves a new end-use method as a substitute
8.	<p>The Panel therefore directs the FEU to include, in its next LTRP, the following information:</p> <ul style="list-style-type: none"> • The development of DSM funding scenarios, reflecting the results of the most recent CPR. At a minimum, this should include a ‘reference’ DSM funding scenario with ‘high DSM’ and ‘low DSM’ scenarios that are relative to the reference scenario; • Analysis of each DSM scenario, at a portfolio level and for each DSM category (residential, low-income, commercial etc.), including: <ul style="list-style-type: none"> ○ Total Resource Cost/modified Total Resource Cost test results; ○ Utility Cost Test result, expressed as a ratio and \$/GJ; ○ Delivery rate impact; ○ Estimated total bill impact (including delivery and commodity), \$ and %, with residential split between high and low use gas customers; and ○ Estimated gas (GJ) and GHG emission reductions.
9.	<p>Accordingly, in the next LTRP the FEU are directed to provide a more fulsome analysis of opportunities for DSM to be cost-effectively used to replace or defer infrastructure investments.</p>
11.	<p>To ensure regulatory efficiency in the review of CPCN applications, the Panel directs that the FEU include in their next LTRP, a contingency plan(s) that outlines the impact(s) to FEU’s System Resource Needs and Alternatives based on potential changes in supply, demand, market conditions and significant new developments in the industry that were not identified in the LTRP as being associated with the Reference Case or most-likely forecast.</p>
12.	<p>The Panel therefore directs FEU to include in the next LTRP a description of its long term vision for price risk management and provides broad principles which can be used to inform the PRMP.</p>

¹⁷² 2014 LTRP Decision, Summary of Directives, pp. 47-49.

15.	The Panel determines that the FEU provided sufficient information in the LTRP to meet the 2010 LTRP requirements to provide: (i) an analysis of the GHG targets as set out in British Columbia’s energy objectives and an estimate of the portion of the required reduction that the Company believes it can reasonably attain over time; and (ii) an outline of the impact of the implementation of new initiatives on the demand forecast and GHG emission reductions. The Panel directs the FEU to also provide this GHG related information in the next LTRP.
17.	If, in the next LTRP, the FEU provides a demand forecast that includes the possibility of there being insufficient supply for both NGT BC customers and non-BC LNG export customers, then the Panel directs the FEU to address how it will insure compliance with section 44.1(8)(d) of the UCA.

IN THE MATTER OF
the *Utilities Commission Act*, RSBC 1996, Chapter 473

and

FortisBC Energy Inc.
2017 Long Term Gas Resource Plan

EXHIBIT LIST

Exhibit No.	Description
<i>COMMISSION DOCUMENTS</i>	
A-1	Letter dated February 7, 2018 - Appointing the Panel for the review of FortisBC Energy Inc. 2017 Long Term Gas Resource Plan
A-2	Letter dated February 7, 2018 – Commission Order G-33-18 establishing a Regulatory Timetable with Public Notice
A-3	Letter dated March 16, 2018 – Commission Information Request No. 1 to FEI
A-4	Letter dated May 29, 2018 – Commission Information Request No. 2 to FEI
A-5	Letter dated June 6, 2018 – Commission request submissions regarding Intervener Evidence
A-6	Letter dated July 12, 2018 – Commission response regarding BCSEA request to reply to FEI’s response regarding BCSEA proposed Expert Evidence
A-7	Letter dated July 18, 2018 – Commission Order G-132-18 and Reasons for Decision including a Regulatory Timetable
A-8	Letter dated August 29, 2018 – Commission Information Request No. 1 to BCSEA-SCBC regarding Intervener Evidence
A-9	Letter dated October 29, 2018 – Commission Information Request No. 3 to FEI

APPLICANT DOCUMENTS

- B-1 **FORTISBC ENERGY INC. (FEI)** Letter dated December 14, 2017 - 2017 Long Term Gas Resource Plan
- B-1-1 Letter dated May 3, 2018 – FEI Submitting errata to the application
- B-2 Letter dated May 3, 2018 – FEI Submitting responses to BCUC Information Request No.1
- B-3 Letter dated May 3, 2018 – FEI Submitting responses to BCSEA Information Request No.1
- B-3-1 Letter dated June 22, 2018 – FEI Submitting erratum response to BCSEA Information Request No. 1.36.1
- B-4 Letter dated May 3, 2018 – FEI Submitting responses to CEC Information Request No.1
- B-5 Letter dated June 22, 2018 – FEI Submitting response to BCUC Information Request No. 2
- B-6 Letter dated June 22, 2018 – FEI Submitting response to BCSEA Information Request No. 2
- B-6-1 Letter dated July 4, 2018 – FEI Submitting erratum response to BCSEA Information Request No. 2.47.1
- B-7 Letter dated June 22, 2018 – FEI Submitting response to CEC Information Request No. 2
- B-8 Letter dated July 6, 2018 – FEI Submitting response regarding BCSEA proposed Expert Evidence
- B-9 Letter dated August 30, 2018 – FEI Submitting Information Request No. 1 to BCSEA on Expert Evidence
- B-10 Letter dated September 17, 2018 – FEI Submitting Notice of Intent to File Rebuttal Evidence
- B-11 Letter dated October 11, 2018 – FEI Submitting Rebuttal Evidence
- B-12 Letter dated November 15, 2018 – FEI Submitting Response to BCUC Information Request No. 3
- B-13 Letter dated November 15, 2018 – FEI Submitting Response to BCSEA Information Request No. 3
- B-14 Letter dated November 15, 2018 – FEI Submitting Response to CEC Information Request No. 3

INTERVENER DOCUMENTS

- C1-1 **BC HYDRO AND POWER AUTHORITY (BCH)** Letter dated February 27, 2018 – Request to Intervene by Fred James
- C2-1 **BC SUSTAINABLE ENERGY ASSOCIATION AND SIERRA CLUB BC (BCSEA)** Letter dated March 6, 2018 – Request to Intervene by William Andrews
- C2-2 Letter dated April 6, 2018 – BCSEA Submitting Information Request No. 1 to FEI
- C2-3 Letter dated May 29, 2018 – BCSEA Submitting Information Request No. 2 to FEI
- C2-4 Letter dated May 30, 2018 – BCSEA Submitting Notice of Evidence
- C2-5 Letter dated June 28, 2018 – BCSEA Submitting Response regarding Expert Evidence
- C2-6 Letter dated July 9, 2018 – BCSEA Submitting request to reply to FEI’s response regarding BCSEA proposed Expert Evidence
- C2-7 Letter dated August 9, 2018 – BCSEA Submitting Intervener Evidence
- C2-8 Letter dated September 13, 2018 – BCSEA Submitting Responses to BCUC Information Request No. 1 regarding Intervener Evidence
- C2-9 Letter dated September 13, 2018 – BCSEA Submitting Responses to CEC Information Request No. 1 regarding Intervener Evidence
- C2-10 Letter dated September 13, 2018 – BCSEA Submitting Responses to FEI Information Request No. 1 regarding Expert Evidence
- C2-11 Letter dated October 31, 2018 – BCSEA Submitting Information Request No. 3 to FEI
- C3-1 **COMMERCIAL ENERGY CONSUMERS ASSOCIATION OF BRITISH COLUMBIA (CEC)** Letter dated March 9, 2018 – Request to Intervene by Christopher Weafer
- C3-2 Letter dated April 6, 2018 – CEC Submitting Information Request No. 1 to FEI
- C3-3 Letter dated May 29, 2018 – CEC Submitting Information Request No. 2 to FEI
- C3-4 Letter dated August 30, 2018 – CEC Submitting Information Request No. 1 regarding Intervener Evidence
- C3-5 Letter dated November 1, 2018 – CEC Submitting Information Request on Rebuttal Evidence to FEI

INTERESTED PARTY DOCUMENTS

- D-1 **PACIFIC NORTHERN GAS (PNG)** Letter dated February 23, 2018 – Request for Interested Party Status by Verlon Otto

- D-2 **COLLIER, KEN (COLLIER)** Letter dated February 26, 2018 – Request for Interested Party Status