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British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC V6Z 2N3

Attention: Mr. Patrick Wruck, Commission Secretary

Dear Sirs/Mesdames:

Re: FortisBC Energy Inc. 2017 Long Term Gas Resource Plan ~ Project No. 1598946

We enclose for filing in the above proceeding the Final Argument of FortisBC Energy Inc, dated November 22, 2018.

Yours truly,

FASKEN MARTINEAU DuMOULIN LLP

[Original signed by]

David Curtis
Personal Law Corporation

DHC

Encl.

BRITISH COLUMBIA UTILITIES COMMISSION

IN THE MATTER OF the *Utilities Commission Act,*
R.S.B.C. 1996, Chapter 473 (the "*Act*")

FORTISBC ENERGY INC.
2017 LONG TERM GAS RESOURCE PLAN

Project No.1598946

Final Argument of FortisBC Energy Inc.

November 22, 2019

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PART ONE: INTRODUCTION

A. Overview

1. Pursuant to section 44.1(6)(a) of the *Utilities Commission Act,* R.S.B.C. 1996, c. 473 ("UCA"), FortisBC Energy Inc. ("FEI") respectfully requests that the British Columbia Utilities Commission ("BCUC") accept FEI's 2017 Long Term Gas Resource Plan ("LTGRP").

2. The LTGRP provides a long term vision of how FEI will meet future demand and reliability requirements at the lowest reasonable cost to customers over the next 20 years.[1] It is the product of a robust internal planning process, coordinated with an extensive and detailed customer and stakeholder consultation process. The result is a thoughtful, detailed plan that demonstrates FEI's 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.[2]

3. For the reasons explained in this final argument, FEI submits that the LTGRP complies with all legislative requirements, is in the public interest, and should be accepted.

B. Order Sought

4. This LTGRP filing does not seek any specific approvals for any of the projects or plans detailed within it. FEI only seeks to have the plan accepted at this time. Any requests for approval of specific resource needs (if required under the UCA) that have been identified within the plan will be further evaluated and brought forward at the appropriate time for approval under the appropriate sections of the UCA.

C. Contents of Final Argument

5. FEI's final argument addresses the following topics:

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1 B-1, p. ES-1.

2 B-1, p. ES-10.

(a) **Part Two** discusses the legal framework for the review and acceptance of the LTGRP.

(b) **Part Three** explains how the LTGRP meets the legislative requirements under section 44.1(2) of the UCA.

(c) **Part Four** explains how the considerations required under section 44.1(8) of the UCA support acceptance of the LTGRP.

(d) **Part Five** addresses issues raised in the proceeding by the BCUC and interveners.

(e) **Part Six** is the conclusion to this final argument.

PART TWO: LEGAL FRAMEWORK

6. This section sets out the legal framework for the review and acceptance of a long term resource plan filed under section 44.1 of the UCA.

7. Section 44.1(2) of the UCA provides that a public utility must file with the BCUC a long term resource plan that meets the seven requirements set out as 44.1(2)(a) through (g).[3]

8. Section 44.1(2)(g) requires that "any other information required by the BCUC" be included with a long term resource plan. For this LTGRP, the relevant "other information" was directed by the BCUC in Order G-189-14, which was the order in which the BCUC accepted the FEU's 2014 Long Term Resource Plan (LTRP).

9. The BCUC's Resource Planning Guidelines ("Guidelines") are also relevant to the review of a long term resource plan, to the extent applicable. Certain items in the Guidelines are only relevant to vertically integrated utilities, and are not applicable to this LTGRP.[4] Not all Guidelines must be considered for a plan to be accepted.[5] The Guidelines should be applied in a way that reflects the unique circumstances of each particular utility.

10. Pursuant to section 44.1(8), the BCUC must also consider:

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[3] All section references are to the UCA unless stated otherwise.

[4] FEU 2014 LTRP Decision, p. 6.

[5] See Terasen Utilities 2010 LTRP Decision, p. 14.

(a) the applicable of British Columbia's energy objectives;

(b) the extent to which the plan is consistent with the applicable requirements under sections 6 and 19 of the *Clean Energy Act*;

(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.

11. In the FEU 2014 LTRP Decision, the BCUC noted that while interveners and the utility may disagree on certain assumptions and action plans, consensus among interested parties on what the plan should contain is not the test. The BCUC stated:

> However, in order for an LTRP to be accepted by the Panel, the plan must also meet section 44.1(8) of the UCA, ensuring that the plan is in the public interest. While it is possible that the Panel or other stakeholders may disagree with individual assumptions and may prefer an alternative action plan, the test is whether the plan as filed meets the public interest.[6]

12. The review process under section 44.1 of the UCA is described in the FEU 2014 LTRP Decision as follows:

> As previously outlined in the legislative framework, in addition to compliance with other sections of the UCA, the FEU's application for a Long Term Resource Plan must meet the following criteria:
>
> • **Adequacy**: The Panel must not accept a resource plan without meeting the minimum requirements as listed in section 44.1(2) of the UCA.
>
> • **Public Interest**: A resource plan must meet the test of being in the public interest, as provided in section 44.1(6).
>
> • **RP Guidelines**: While these are guidelines only, they are written in the context of applicable legislation, regulation and policy.
>
> • **Previous LTRP Directives**: the FEU 2010 LTRP provided directives to the FEU respecting their current Application.

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[6] FEU 2014 LTRP Decision, p. 11.

> While providing directions to the FEU for their next resource plan, the Commission, from the FEU 2010 LTRP, discussed adequacy and quality of a long term resource plan, viewing them as two separate issues. 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.[7]

13. Having considered these items, pursuant to section 44.1(6) the BCUC must accept the plan if it determines that carrying out the plan would be in the public interest. The BCUC has described its role in this regard as follows:

> The BCUC Panel acknowledges the FEU's submissions that the BCUC does not have unfettered discretion to create the FEU's strategic plan…
>
> The Panel will neither craft a utility's strategic plan, nor its LTRP. The role of the Panel is to determine whether an LTRP, developed by the FEU, is in the public interest. To that end, section 44.1(2)(g) provides opportunity for a panel to request information that is relevant to its analysis and deliberations respecting LTRPs. Further, in the BC Hydro Court of Appeal Decision the court notes that it is generally not the role of the BCUC to manage the affairs of the utility. This BCUC Panel agrees, and reiterates the distinction between the BCUC creating a strategic plan or even an LTRP versus requesting strategic information to allow the Panel to make an informed decision on the determination of whether an LTRP is in the public interest.[8]

14. The BCUC has previously found that "acceptance" does not commit the BCUC to approve any future applications contemplated in the plan. The LTGRP is a high level planning process separate and apart from future approval processes related to the programs and

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[7] FEU 2014 LTRP Decision, pp. 9-10.

[8] FEU 2014 LTRP Decision, p. 8.

initiatives discussed in the plan. FEI may decide in its discretion and after further analysis to not move forward with some initiatives outlined in the plan.[9]

15. 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.[10]

16. The remainder of this submission addresses these requirements in the order described above.

PART THREE: SECTION 44.1(2) "ADEQUACY" REQUIREMENTS ARE MET

17. This section explains why the LTGRP meets the filing (or "adequacy") requirements set out in section 44.1(2) of the UCA. For ease of reference, Table 1-2 of the LTGRP summarizes where the specific requirements under section 44.1(2) are met in the plan.[11] Specific issues raised in the proceeding by the BCUC and interveners regarding the various topics listed under 44.1(2) are addressed in Part Five.

A. Estimate of Demand - 44.1(2)(a)

18. Section 44.1(2)(a) of the UCA requires that a long term resource plan include:

> (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;

19. FEI submits that the requirement set out in section 44.1(2)(a) is met in section 3.4, and specifically sections 3.4.8 and 3.4.9 of the LTGRP. In particular:

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[9] Terasen Utilities 2010 LTRP Decision, p. 20-21.

[10] Terasen Utilities 2010 LTRP Decision, p. 23.; FEU 2014 Long LTRP, p. 10.

[11] B-1, LTGRP, p. 6.

(a) Sections 3.2 and 3.3 outline FEI's base year customer distribution and annual demand and explain FEI's customer forecast which serves as the basis for both of the LTGRP's two annual demand forecast methods.[12]

(b) Sections 3.4.1 to 3.4.5 explain and compare FEI's traditional annual demand forecast method (Traditional Annual Method) with its end-use annual demand forecast method and outline FEI's end-use annual demand forecast scenario analysis.[13]

(c) Sections 3.4.6 and 3.4.7 discuss the annual demand impact of FEI's NGT and RNG initiatives.[14]

(d) Section 3.4.8 outlines FEI's total annual demand forecast.[15]

(e) Section 3.4.9 discusses the impact of potential new large industrial point loads on this annual demand.[16]

20. FEI submits that the LTGRP meets the requirement set out in section 44.1(2)(a).

B. DSM - 44.1(2)(b), (c) and (f)

21. Sections 44.1(2)(b), (c) and (f) of the UCA require that a long term resource plan include:

> (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;
>
> …
>
> (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;

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[12] B-1, p. 60.

[13] B-1, pp. 63-79.

[14] B-1, pp. 79-88.

[15] B-1, p. 88.

[16] B-1, p. 89.

22. Section 4.2 of the LTGRP addresses all of these requirements.

(a) Section 44.1(2)(b)

23. As explained in section 4.2.1.2, when the 2017 LTGRP was filed, FEI's existing Conservation and Energy Management (C&EM) portfolio was the demand-side measures plan approved by the BCUC via its decision on FEI's 2014-2019 Performance Based Ratemaking Plan, and it met the adequacy requirements that were in place at the time of approval.[17]

24. At the time of filing the LTGRP, FEI was still in the process of preparing its DSM Expenditure Plan covering the period from 2019 to 2022. On June 22, 2018, FEI filed its 2019 to 2022 DSM Expenditure Plan, which was, in part, informed by the 2017 LTGRP, for acceptance pursuant to section 44.2 of the UCA (the "DSM Expenditure Filing"). As described in FEI's DSM Expenditure Filing, FEI's proposed DSM expenditure schedule is consistent with British Columbia's energy objectives, meets the adequacy and cost-effectiveness requirements of the Demand-Side Measures Regulation, and responds to government policy encouraging an increase in DSM program incentives and support.[18]

25. In sections 4.2.1.2.1 to 4.2.1.2.6, FEI summarizes its current approved C&EM portfolio which includes the following programs;

(a) Residential program area;

(b) Low Income program area;

(c) Commercial program area

(d) Innovative technologies program area;

(e) Industrial program area; and

(f) Conservation education and outreach and enabling activities.[19]

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[17] B-1, p. 96.

[18] B-1, p. 1 from FEI's 2019-2022 DSM Expenditures Plan.

[19] B-1, pp 97-98.

26. As explained in section 4.2.1.2, many measures are applicable to the adequacy requirements from the DSM Regulation, but their adequacy implications depend on their specific program packaging and delivery (including marketing) which is determined during program design.[20]

27. As explained in section 4.2.4, FEI's long term plan for implementing DSM activities is to continue to perform residential, commercial, industrial, low income, innovative technologies, conservation education and outreach as well as enabling DSM activities. The measures analyzed in the BC CPR and the LTGRP C&EM analysis will inform these activities. In addition, FEI will continue monitoring the cost effectiveness of its C&EM activities and identifying any new measures that can be included in its activities. Over the 2017 LTGRP planning horizon, FEI will operationalize these activities via successive C&EM expenditure schedules. Across these future expenditure schedules, FEI's specific program offers will likely change to suit the evolving marketplace, legislative provisions (including future adequacy requirements), end-use technologies, and FEI customer needs. During the 2017 LTGRP planning horizon, FEI will update its long term C&EM analysis via successive future LTGRPs.[21]

28. FEI submits that these sections of the LTGRP demonstrate that FEI has a plan of how it intends to reduce customer demand by taking cost-effective demand-side measures. FEI submits that the requirement in section 44.1(2)(b) is met.

(b) Section 44.1(2)(c)

29. As explained in section 4.2.1.3, in 2015, FEI, in collaboration with other utilities, initiated a province wide conservation potential review (CPR). The project used a 2014 base year to determine the technical, economic, and market energy savings potential for natural gas and electricity until 2035. The CPR examines available energy efficiency technologies, the inventory of energy equipment in FEI's service areas, and determined the conservation potential that exists. The CPR was used by FEI to inform the 2019-2022 DSM Expenditure

[20] B-1, p. 97.

[21] B-1, p. 123.

Filing. The CPR is at Appendix C-1 of the LTGRP. The program area cost effectiveness test results are found in Appendix C-2.[22]

30. The range of potential C&EM measures from the CPR informs FEI's LTGRP C&EM forecast. In sections 4.2.2 and 4.2.2.1 FEI explains how it processed the CPR results in order to apply them to its multi-scenario end-use demand forecast.[23] The long term C&EM analysis results are provided in section 4.2.3 and 4.2.3.1 of the LTGRP.[24] Within the context of the LTGRP long term forecast methods, the C&EM analysis results indicate the outcome of pursuing all cost effective energy savings potential. Accordingly, the LTGRP provides an estimate of the demand for energy that FEI expects to serve after it has taken cost-effective demand-side measures, and meets the requirements of section 44.1(2)(c) of the UCA.

(c) Section 44.1(2)(f)

31. Sections 6.2.1.3 and 6.3 provide FEI's explanation of why the demand for energy to be served by the facilities referred to in paragraph 44.1(2)(d) and the purchases referred to in paragraph 44.1(2)(e) are not planned to be replaced by demand-side measures. In particular, FEI states:

> Since the exploratory end-use method is not based on metered FEI customer data, the Traditional Peak Method forecast which intrinsically reflects the current effects of DSM programs remains FEI's base forecast for determining infrastructure requirements and timing for addressing capacity constraints. By relying on the Traditional Peak Method, Section 6.3 thus addresses the requirements of section 44.1(2)(f) of the UCA. FEI will continue monitoring potential metering solutions that may allow FEI to field-validate the projections of the exploratory end-use peak demand forecast method and to better serve its customers.[25]

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[22] B-1, pp. 98-99.

[23] B-1, p. 99.

[24] B-1, p. 102.

[25] B-1, p. 155.

(d) Conclusion

32. FEI submits that the LTGRP meets the requirements set out in sections 44.1(2)(b), (c) and (f).

C. Facilities - 44.1(2)(d)

33. Section 44.1(2)(d) of the UCA requires that a long term resource plan include:

> (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);

34. FEI has addressed this requirement in section 6 of the LTGRP. In particular:

(a) Section 6.2 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.[26]

(b) Section 6.3 discusses 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 – Vancouver Island, Coastal and Interior. Forecasts resulting from FEI's Traditional Peak Method forecast as well as the exploratory regional peak demand forecasts for each end-use scenario are presented and discussed. Consideration is also given to potential future new LNG and CNG and industrial loads that are not captured in the Core and Firm Transportation demand forecast. Forecast capacity constraints and significant projects impacting FEI's transmission laterals and Distribution System networks are described in Sections 6.3.4 and 6.3.5, respectively.[27]

(c) Section 6.4 provides a description of other major system projects, not driven by system capacity considerations, that FEI currently anticipates may result in CPCN applications in the during the planning horizon.[28]

35. FEI submits that the LTGRP meets the requirement set out in section 44.1(2)(d).

D. Energy Purchases - 44.1(2)(e)

36. Section 44.1(2)(e) of the UCA requires that a long term resource plan include:

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[26] B-1, p. 150.

[27] B-1, p. 155.

[28] B-1, p. 185.

(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);

37. FEI has addressed this requirement in section 5 of the LTGRP. In particular:

(a) Section 5.1 provides background information on FEI's gas supply portfolio planning instruments and regulatory requirements for gas supply planning in the LTGRP.[29]

(b) Sections 5.2 to 5.4 discuss relevant regional developments, FEI's supply portfolio planning, and long term planning strategies.[30]

(c) Section 5.5 outlines FEI's long term approach to Price Risk Management.[31]

38. FEI submits that the LTGRP meets the requirement in section 44.1(2)(e).

E. Other Information Required by the BCUC - 44.1(2)(g)

39. 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. These directives and suggestions, along with FEI's actions in response, are set out in Table 1-5 of the LTGRP.[32] As described in Table 1-5 of the LTGRP, FEI has followed the directions in the current LTGRP. FEI submits that it has met the requirement in section 44.1(2)(g).

F. Resource Planning Guidelines

40. In 2003, the BCUC issued resource planning guidelines which outline a process to assist in the development of resource plans to be filed with the BCUC. The guidelines do not distinguish between utilities that provide generation, transmission or distribution services; therefore, some items (such as supply-side portfolio analysis) apply more readily to integrated electric utilities than to FEI.

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[29] B-1, p. 133.

[30] B-1, p. 136.

[31] B-1, p. 142.

[32] B-1, p. 10.

41. In preparing the LTGRP, FEI has adhered to the BCUC's planning guidelines where relevant and applicable to the Company's operating context. Table 1-4 of the LTGRP sets out the resource planning guidelines, and describes where they are addressed in the LTRGP.[33]

PART FOUR: SECTION 44.1(8) CONSIDERATIONS SUPPORT ACCEPTANCE

42. This section addresses the items that the BCUC must consider under sections 44.1(8)(a), (b), (c) and (d) of the UCA.

A. British Columbia's Energy Objectives - 44.1(8)(a)

43. Section 44.1(8)(a) of the UCA provides that in considering whether to accept a long term resource plan the BCUC must consider the applicable of British Columbia's energy objectives.

44. British Columbia's energy objectives are set out in section 2 of the *Clean Energy Act*, S.B.C. 2010, c. 22. The objectives relevant to the LTGRP are:

(a) taking demand-side measures to conserve energy;

(b) fostering the development in B.C. of innovative technologies that support energy conservation and efficiency;

(c) reducing GHG emissions;

(d) encouraging switching from one kind of energy to another that decreases provincial GHG emissions;

(e) encouraging communities to reduce GHG emissions and use energy efficiently;

(f) reducing waste by encouraging the use of waste heat, biogas and biomass; and

(g) encouraging economic development.[34]

45. FEI submits that a consideration of these objectives supports the acceptance of the LTGRP.

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[33] B-1, p. 9.

[34] B-1, Table 1-3 on p. 7. See also the *Clean Energy Act*, sections 2(b), 2(d), 2(g), 2(h), 2(i), 2(j) and 2(k).

46. FEI's DSM activities, NGT and RNG initiatives are key initiatives through which FEI contributes to advancing BC's energy and GHG emission goals. FEI continuously examines and, where applicable, supports potential programs, technologies and initiatives that will contribute to BC's energy and GHG emissions goals.[35]

47. In Table 1-3, FEI summarizes the energy objectives relevant to FEI's operations and sections of the LTGRP that address the various objectives.[36]

48. Section 8.3 quantifies the extent to which FEI's RNG, C&EM, and NGT activities can reduce GHG emissions under alternate future scenarios. As explained in that section, the combined impact of FEI's forecast RNG and C&EM emissions reductions results in 2036 Reference Case emissions declining by three percent in relation to the 2015 base year. The Upper Bound scenario changes this figure to 16 percent growth. The Lower Bound scenario displays a 47 percent decline. In the Reference Case, forecast 2036 NGT emissions reductions amount to 2.3 million metric tonnes. This figure changes to 14.9 million metric tonnes in the Upper Bound and 0.2 million metric tonnes in the Lower Bound scenarios, respectively[37]

49. In section 8.5, FEI provides a discussion of how the LTGRP addresses and supports the various other British Columbia's energy objectives in addition to reduction of GHG emissions. For example:

(a) **Energy Objective 2(d)**: FEI's existing C&EM programs contain an innovative technologies component. Technology evaluation results from this component have informed the BC CPR and thus the 2017 LTGRP DSM analysis. As such, the 2017 LTGRP DSM analysis contains some innovative technologies, such as smart learning thermostats.[38]

(b) **Energy Objective 2(h):** FEI's NGT initiatives and components of the Connect to Gas marketing efforts are each an example of fuel switching initiatives that move

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[35] B-1, p. 5.

[36] B-1, pp. 7-8.

[37] B-1, p. 205.

[38] B-1, p. 208.

customers from higher to lower GHG-emitting fuels and are ongoing initiatives that have been considered in the development of the 2017 LTGRP.[39]

50. FEI submits that sections 8.2, 8.3, 8.4 and 8.5 demonstrate that the LTGRP is aligned with and supports British Columbia's energy objectives. This consideration demonstrates that the LTGRP is in the public interest.

B. Section 44.1(8)(b)

51. Section 44.1(8)(b) of the UCA requires the BCUC to consider:

> (b) the extent to which the plan is consistent with the applicable requirements under sections 6 and 19 of the Clean Energy Act,

52. In the Terasen Utilities 2010 LTRP Decision, the BCUC determined that section 6 and 19 of the *Clean Energy Act* only apply to electric utilities and accordingly are not relevant to FEI's section 44.1 applications.[40]

C. FEI Intends to Pursue Adequate, Cost-Effective DSM - 44.1(8)(c)

53. Section 44.1(8)(c) of the UCA requires the BCUC to consider:

> (c) whether the plan shows that the public utility intends to pursue adequate, cost-effective demand-side measures,

54. Section 3 of the *Demand-Side Measures Regulation*, B.C. Reg. 326/2008 ("DSM Regulation") provides that a public utility's plan portfolio is adequate for the purposes of section 44.1(8)(c) of the Act if the plan portfolio includes the six measures enumerated as (a) through (f). Section 4 of the DSM Regulation prescribes how cost effectiveness of DSM is to be considered.

55. FEI submits that the LTGRP demonstrates that it intends to pursue adequate, cost-effective demand-side measures.

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[39] B-1, p. 208; B-6, BCSEA 2.55.1.

[40] Terasen Utilities 2010 LTRP Decision, p. 16.

56. Section 44.1(8)(c) requires the plan to show that it *intends* to pursue adequate, cost-effective demand-side measures. The section does not require FEI to actually prepare and submit a detailed plan covering the 20 year planning horizon for how it will roll out specific, optimized DSM programs that meet the adequacy and cost-effectiveness requirements of the DSM Regulation. This was recognized by the BCUC in the 2010 Terasen Utilities LTRP Decision. In that decision the BCUC commented on the level of detail necessary to meet the requirement as follows:

> **The Terasen 2010 LTRP provides little detail to assist in the assessment of whether the EEC measures it will undertake in the future are adequate and cost effective. This is because there is much work to be completed in advance of the formal EEC funding request which will accompany 2012 RRA to be filed later this year.** The BCUC Panel understands that this program is in the initial stages and limited results are available to permit a comprehensive assessment of the program to date. **However, we are satisfied sufficient information has been presented to support the view that Terasen intends to pursue adequate, cost effective demand-side measures**. Firstly, the Company has indicated that when the required analytical work for future EEC funding has been completed it will include measures for low income housing, rental accommodations and student education in its service area which are the key requirements for program adequacy. Secondly, while the cost effectiveness of planned EEC measures cannot be validated, the fact that only "acceptance" of the LTRP is sought will require Terasen to address this when a detailed funding request is filed. Accordingly, the BCUC Panel sees no reason to reject Terasen's EEC measures due to a failure to be adequate or cost effective.[41] [Emphasis added.]

57. Accordingly, since 2010 the BCUC has recognized that a long term resource plan is a long range forecasting document intended to provide directional information about how the public utility intends to pursue adequate, cost-effective DSM. The BCUC has further recognized that the detailed description and assessment of adequacy and cost-effectiveness are properly addressed when individual measures and programs are designed and put forward to the BCUC as part of section 44.2 expenditure schedule applications. Accordingly, the central consideration for the BCUC should be whether the plan *demonstrates* FEI's *intention* to pursue adequate, cost-effective demand-side measures. Details of the adequacy and cost-

[41] Terasen Utilities 2010 Long Term Resource Plan Decision, p. 18.

effectiveness components of a DSM plan are to be addressed in section 44.2 expenditure schedule applications from time to time.

58. As explained in section 4.2.1.1, FEI's C&EM initiative is a portfolio of efficiency and conservation programs and activities that meets the province's DSM definition in the Clean Energy Act, and helps customers reduce their natural gas consumption. FEI's C&EM initiative has a range of other customer and societal benefits, such as reducing GHG emissions and water consumption, enhancing human health and comfort, creating jobs, and encouraging a culture of conservation throughout BC.[42]

59. In Section 4.2 of the LTGRP, FEI outlines the adequacy initiatives of FEI's current C&EM portfolio (Section 4.2.1.2), confirming that its C&EM analysis includes measures that can be used for adequacy purposes (Section 4.2.1.2), and addressing how its long term plan for implementing C&EM activities will address adequacy in the future (Section 4.2.4). FEI states:

> The 2017 LTGRP C&EM analysis contains measures that are included in FEI's existing portfolio but also adds new measures. In general, many measures are applicable to adequacy situations **but their adequacy implications depend on their specific program packaging and delivery (including marketing) which is determined during program design**. Sections 4.2.1.2.1 to 4.2.1.2.6 below summarize FEI's current C&EM portfolio. Over the 2017 LTGRP's planning horizon, FEI's specific program offers will likely change to suit the evolving marketplace, legislative provisions (including future adequacy requirements) and FEI customer needs.[43] [Emphasis added.]

60. Section 4.2.4 provides FEI's long term plan for implementing C&EM activities:

> FEI submits C&EM expenditure schedules to request BCUC approval for its short or medium term C&EM funding envelopes. Based on the results of the BC CPR and the 2017 LTGRP C&EM analysis (and in light of BC provincial energy goals), FEI will develop its next C&EM expenditure schedule for the period beyond 2018. FEI will submit this expenditure schedule to the Commission in 2018 after submission of the 2017 LTGRP.

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[42] B-1, p. 94.

[43] B-1, p. 96-97.

> **In the long term, based on the 2017 LTGRP C&EM analysis, FEI projects that it will continue to perform residential, commercial, industrial, low income, innovative technologies, conservation education and outreach as well as enabling C&EM activities**. The measures analyzed in the BC CPR and the LTGRP C&EM analysis will inform these activities. In addition, FEI will continue monitoring the cost effectiveness of its C&EM activities and identifying any new measures that can be included in its activities. Over the 2017 LTGRP planning horizon, FEI will operationalize these activities via successive C&EM expenditure schedules. Across these future expenditure schedules, FEI's specific program offers will likely change to suit the evolving marketplace, legislative provisions (**including future adequacy requirements**), end-use technologies, and FEI customer needs. During the 2017 LTGRP planning horizon, FEI will update its long term C&EM analysis via successive future LTGRPs.[44] [Emphasis added.]

61. In summary:

(a) FEI's DSM analysis contains many energy saving measures that can be applied to adequacy requirements but deploying them relates to program design which (in alignment with the BC CPR) is not contemplated in the LTGRP.

(b) In alignment with the BC CPR, the LTGRP DSM analysis does not quantify non-program administrative expenditures (quantifying these is much more practical in program design).

(c) FEI will submit successive DSM expenditure plans that will implement FEI's long term DSM plan; these schedules will meet all applicable adequacy requirements at the time of roll-out.

(d) The 2017 LTGRP DSM analysis expressly states that FEI intends to continue running programs that meet the adequacy requirement of the DSM Regulation.

62. FEI submits that the above referenced sections of the LTGRP demonstrate that FEI intends to pursue adequate, cost-effective demand-side measures over the planning horizon addressed in the LTGRP.

63. FEI addresses specific issues that have been raised with respect to the adequacy requirement in section 5 below.

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[44] B-1, p. 123.

64. FEI submits that the consideration of section 44.1(8)(c) of the UCA supports acceptance of the LTGRP.

D. The Interests of Customers - 44.1(8)(d)

65. Section 44.1(8)(d) of the UCA requires the BCUC to consider:

> (d) the interests of persons in British Columbia who receive or may receive service from the public utility.

66. The following is a non-exhaustive list of some of the key aspects of the LTGRP that demonstrate that the plan is in the interests of persons in British Columbia who receive or may receive service from FEI:

(a) The plan incorporates the use of an end-use annual demand forecast method, which captures and analyzes the impact of shifting trends in customer behavior, energy choice and energy consumption that the Utility has begun to observe. The approach has been applied to a range of potential future demand scenarios so that FEI can ensure that it has the appropriate resources in place to meet current and future customer demand across the range of future demand scenarios.[45]

(b) The plan demonstrates that FEI intends to maintain a strong focus on demand-side management activities to meet customer needs and to keep energy costs low. FEI's intention to pursue adequate and cost-effective demand-side measures, as described in section 4.2.4 of the LTGRP, is in the interests of FEI's current and future customers.[46]

(c) The alignment of the LTGRP with British Columbia's energy objectives, as described in section 8.5 of the LTGRP demonstrates that the plan is in the interests of FEI's current and future customers.[47]

(d) The plan demonstrates that FEI will continue to meet current and future customer demand through prudent gas supply portfolio planning and price risk management strategies. FEI's effective gas portfolio planning and price risk management strategies on both a short and long term basis will enable FEI to

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[45] B-1, LTGRP, Section 3.

[46] B-1, LTGRP, section 4.

[47] B-1, p. 207.

secure cost-effective, reliable gas supply while also reducing rate volatility for customers.[48]

(e) The plan demonstrates that FEI has, and will continue to undertake planning efforts that will optimize operation of FEI's system as a whole, address growth in peak demand, and manage aging infrastructure. These efforts will help to ensure that FEI is able to provide safe and reliable service to current and future customers.[49]

(f) Finally, the LTGRP is the result of a detailed and thorough stakeholder engagement process including through the Resource Planning Advisory Group, community engagement workshops, dialogue and engagement with First Nations, and the BC CPR Technical Advisory Committee.[50]

67. This list, which is not intended to be exhaustive, demonstrates a number of ways in which the LTGRP is in the interests of persons in British Columbia who receive or may receive service from FEI. FEI submits that the consideration in section 44.1(8)(d) supports acceptance of the LTGRP. This consideration demonstrates that the LTGRP is in the public interest.

PART FIVE: ISSUES RAISED IN THE PROCEEDING

68. The LTGRP engages the interests and concerns of various stakeholders, as demonstrated by the thorough and thoughtful questions that the BCUC, CEC and BCSEA have raised in this proceeding through three rounds of information requests. In this section, FEI addresses a number of issues raised by the BCUC and interveners. FEI has focussed on what it believes are the key concerns and questions arising out of the proceeding. FEI will speak to further issues raised by interveners in its reply submissions.

A. Adequacy Under the DSM Regulation

69. In the BCUC IR 1.24 series[51], FEI was asked to comment on whether the LTGRP C&EM analysis contained all adequacy measures required under section 3 of the DSM Regulation. As noted in FEI's responses, within the C&EM analysis framework, the Reference

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[48] B-1, LTGRP, section 5.

[49] B-1, LTGRP, section 6.

[50] B-1, LTGRP, section 7.

[51] B-2, BCUC IR 1.24 series.

Case, Upper Bound and Lower Bound C&EM scenarios contain all adequacy measures that result in specific energy savings. In the table included with the response to BCUC IR 1.24.1, FEI set out C&EM measures that, once operationalized during program design, will contribute to meeting adequacy requirements.

70. The table did not include specific items that address the requirements of 3(1)(c), (d) and (e) of the DSM Regulation. FEI explained that this is due to the 2017 LTGRP C&EM energy savings forecast and expenditure estimates specifically excluding non-incentive expenditures that support or enable C&EM programs at the portfolio level, such as Conservation Education Outreach expenditures.[52] However, as noted in Section 4.2.4 of the Application, FEI will conduct C&EM activities to meet the applicable adequacy requirements and will operationalize these across the 2017 LTGRP planning horizon via successive DSM expenditure schedules which will address program packaging and delivery.[53] This evidence demonstrates FEI's intention to pursue adequate, cost-effective demand-side measures.

71. FEI explained in the response to BCUC 2.59.1 that it is theoretically possible to make an exception to its analysis approach and include forecast values for items 3(1)(c), (d) and (e) of the DSM Regulation. However, for the reasons explained in FEI's response to BCUC 2.59.1, the effort would have marginal value, and engages considerations that are more appropriately addressed in program design as opposed to long term forecasting.[54] FEI further submits that the issue of whether 3(1)(c), (d) and (e) are included in FEI's C&EM *analysis* is a separate and different issue from FEI's *intention* to pursue adequate, cost effective DSM. FEI has demonstrated a good reason for not including these items in its C&EM analysis, while at the same time confirming its plan and intention to address these adequacy issues in specific DSM expenditure schedules. FEI has met the requirement of section 44.1(8)(c) of the UCA.

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[52] B-2, BCUC IR 1.24.1.

[53] B-1, p. 123.

[54] B-5, BCUC IR 2.59.1.

B. Use of "Maximum Achievable Savings" in DSM Analysis

72. Through a number of information requests, and the evidence of James Grevatt provided on behalf of BCSEA, the BCUC and BCSEA raised the issue of whether FEI's C&EM analysis has properly captured all achievable savings or "Maximum Achievable Savings".[55] On behalf of BCSEA, Mr. Grevatt summarized this issue by stating that because FEI's analysis "rejects Maximum Achievable Savings" it contains 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. For the reasons explained in this section, FEI respectfully disagrees with Mr. Grevatt's opinion and submits that BCSEA has not established any deficiency in its C&EM analysis.

73. FEI responded to this issue through several responses to the above referenced information requests and by submitting rebuttal evidence to the report of Mr. Grevatt. FEI's rebuttal evidence is the October 2, 2018, report of Navigant titled "Rebuttal Evidence on DSM Energy Savings Trajectories".[56] The authors of the Navigant report, Ms. Maslowski and Mr. Slote, have extensive experience in natural gas and electricity DSM, cost-benefit assessments, strategic planning, modeling analytics and project management.[57]

74. Navigant's report explains why Mr. Grevatt's assertion that FEI's DSM savings are "overly conservative" is not justified. In its report, Navigant explains how the CPR (which informed the LTGRP C&EM analysis) 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". In particular, Navigant explains that the CPR:

(a) Assumed an unconstrained budget for FEI's DSM expenditures, which in many jurisdictions is one of the underlying assumptions underpinning the difference between a realistic achievable and maximum achievable scenario.

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[55] B-2, BCUC IRs 1.25 series, 1.28.4; B-3, BCSEA IRs 1.9.1, 1.10.1, 1.13.1, 1.17 series; 1.18 series; 1.21.4 and 1.21.5. B-6, BCSEA IR 2.62 series and 2.63 series; C2-7, BCSEA Intervener Evidence.

[56] B-11, Navigant Report.

[57] B-11, Navigant Report, CVs.

(b) Analyzed the potential for new measures not currently within FEI's portfolio to ensure that opportunities were not omitted outright. This step was reviewed by stakeholders and determined to be comprehensive.

(c) Applied more than one approach to screening measure cost effectiveness, including use of the mTRC, with the objective of capturing the non-energy and non-monetary benefits that many measures provide customers, which otherwise would not be quantified in the savings estimates.

(d) Tested a range of incentive sensitivities. Navigant notes that Mr. Grevatt ignores the fact that there is a diminishing rate of acquired savings per dollar of incentive spending, for incentive levels above those used in the market potential forecast. By testing a range of incentive sensitivities, Navigant determined that the realistic market potential forecast provides a reasonable level of spending on a $/GJ basis for FEI.[58]

75. Fundamentally, Navigant disagrees with Mr. Grevatt's assessment that the CPR did not consider all cost effective measures. As Navigant states in section 2.2.5 of its report:

> As discussed in FEI's response to BCSEA IR 1.9.1, the identification of all cost effective DSM measures is accomplished through the economic potential portion of the BC CPR. As noted in FEI's response to BCSEA IR 1.17.1, the 2017 LTGRP C&EM analysis imports the BC CPR measure assumptions, calibrates the analysis in light of the BC CPR technical potential results, then applies the applicable cost effectiveness tests to produce economic energy savings potential before applying further analysis steps. **As such, the 2017 LTGRP considered all cost effective demand-side measure activity**.
>
> As stated in FEI's response to BCSEA IR 1.18.3, since the BC CPR evaluated a comprehensive, peer-reviewed collection of C&EM measures, the economic potential provides a reasonable assessment of cost effective savings, given the exclusion of market barriers. To account for market barriers, the BC CPR relied on widely accepted Bass diffusion models and assessments of customer willingness to adopt, as discussed above. Given that all cost effective measures were eligible for market potential and the forecasts of customer willingness to adopt were grounded in observed local market behaviour, the market potential provides a reasonable assessment of cost effective savings potential.[59] [Emphasis added.]

[58] B-11, Navigant Report, p. 5.

[59] B-11, Navigant Report, pp. 7-8.

76. FEI submits that Navigant's evidence and analysis of the issue raised by Mr. Grevatt provides a full answer to his concern that FEI's analysis contains a "gap". Navigant provides a more detailed and thorough review of the steps that FEI actually took to estimate DSM savings than does Mr. Grevatt, and Navigant identified several aspects of the analysis that Mr. Grevatt either overlooked or was unaware of. FEI respectfully submits that Navigant's evidence should be preferred to Mr. Grevatt's.

77. In the recent Decision from the BCUC in the FortisBC Inc. 2016 LTERP proceeding, the BCUC confirmed that while section 44.1 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. In this regard, the BCUC stated the following regarding FBC's High DSM preferred scenario:

> The Panel agrees with FBC that the UCA does not compel FBC to pursue any and all DSM resources that are cost effective, but rather to provide an explanation for its choice of DSM scenarios.
>
> The Panel notes BCOAPO's comments that FBC's use of the incremental cost of the Max scenario is problematic, and more will be said on that issue later in this Decision in Section 8.2.
>
> FBC has set out in some detail the basis on which it constructed the alternative DSM scenarios, evaluated the pros and cons of each, and ultimately selected the High DSM scenario. The Panel is satisfied that, whether or not all parties agree that the High DSM is their preferred scenario, FBC has adequately explained why it is FBC's preferred scenario.[60]

78. As the BCUC states in this decision, the UCA does not compel FEI to pursue any and all DSM resources that are cost effective, but rather to provide an explanation for its choice of DSM scenarios for long term planning purposes. FEI submits that, like FBC in the 2016 proceeding, it has adequately explained its C&EM savings analysis. Whether or not BCSEA agrees with its approach, FEI has met its obligations under the UCA.

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[60] FBC 2016 LTERP Decision, p. 12.

79. FEI submits, on the basis of Navigant's evidence and FEI's responses to the information requests identified above, that FEI's DSM savings are reasonable and that BCSEA has not demonstrated any deficiency with the LTGRP.

C. DSM Impacts on Infrastructure Requirements

80. Through a number of information requests, and the evidence of James Grevatt provided on behalf of BCSEA, the BCUC and BCSEA raised the issue of whether FEI should be conducting further study and analysis to allow it to consider DSM alternatives to infrastructure investments.[61] Mr. Grevatt specifically recommends as follows:

> FEI's open-ended proposal to study the potential use of DSM to defer traditional peak capacity-related infrastructure investments is insufficient to ensure that the BCUC won't be "forced" to approve capital investments that could have been avoided. FEI should submit to the BCUC a proposal and timeline for conducting the analyses that will allow it to fairly consider DSM alternatives to infrastructure investments in the early stages of any project development.[62]

81. Further details of the kind of direction that Mr. Grevatt recommends were provided in BCSEA's response to BCUC IR 1.4.2.[63]

82. For the reasons explained in this section, FEI respectfully submits that the BCUC should not issue the kind of direction suggested by Mr. Grevatt. FEI is not opposed to studying this matter and intends to do so. FEI provides a summary of its position and the reporting that it suggests regarding this matter in the concluding paragraphs of this section.

83. FEI responded to this issue through several responses to the above referenced information requests and by submitting rebuttal evidence to the report of Mr. Grevatt. FEI's rebuttal evidence in respect of this issue is the October 11, 2018, report of ICF titled "Rebuttal to Evidence of James Grevatt on 2017 FortisBC LTGRP Testimony".[64] The authors of the ICF

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[61] B-2, BCUC IRs 1.29 series, 1.32 series; B-5, BCUC IR 2.64 series; B-6, BCUC IR 2.51 series; C2-7, BCSEA Intervener Evidence.

[62] C2-7, BCSEA Intervener Evidence, Testimony of James Grevatt, p. 17.

[63] C2-8, BCUC IR to BCSEA 1.4.2.

[64] B-11, ICF Report.

report, Mr. Sloan and Mr. Dikeos, have extensive experience advising public utilities on issues related to natural gas storage, transmission and distribution. Mr. Sloan has experience specifically related to the issue of deferring capital projects through DSM, and has authored reports on this very topic.[65]

84. ICF says that Mr. Grevatt's recommended direction is premature and would have limited value at this time.

85. As a starting point, ICF disagrees with Mr. Grevatt's assessment that the use of DSM as an alternative to infrastructure investments is an "emerging best practice". In its report ICF reviews the very limited experience of other gas utilities in assessing the potential for DSM to defer infrastructure projects. Based on this review and ICF's experience, it opines that the integration of DSM and infrastructure planning should not be considered an emerging best practice for natural gas utilities.[66]

86. ICF points out that Mr. Grevatt's views and opinions on the potential to use DSM to avoid capital investments is based primarily on a review of electric utility industry experience.[67] ICF recognizes that electric utilities have been using DSM programs to reduce the need for new generating and transmission capacity for many years. However, ICF points out that there are important differences between electric and gas infrastructure planning processes that Mr. Grevatt overlooks. These include differences in facilities planning requirements, different cost structures, different approaches to system outage risk and resource planning, and peak hour data availability.[68] ICF's opinion is that these differences reduce the value of the electric utility experience as a proxy for the natural gas industry.

87. Mr. Grevatt suggests that FEI's perception that DSM measures are inherently too risky for planning purposes is not supported by Con Edison's experience. ICF explains that its

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[65] B-11, ICF Report, CVs.

[66] B-11, ICF Report, p. 6.

[67] See C2-8, BCSEA Response to BCUC IR 1.2.2 for discussion of the lack of documented success involving the deferral of gas infrastructure investments.

[68] B-11, ICF Report, p. 12.

experience with natural gas utilities supports the perception that the risks of using natural gas DSM to avoid infrastructure investments are not currently well understood and, in most cases, have only begun to be considered by gas utilities and their regulators. ICF goes on to describe the major differences and uncertainty in the planning environments for DSM and infrastructure that impact the risks of using DSM to avoid or defer natural gas infrastructure investments, including differences in risk and reliability criteria and coordinating timelines for geo-targeted DSM programs.[69]

88. In section 5 of its report, ICF identifies a number of considerations that impact the ability of a gas utility such as FEI to use DSM to avoid or defer investments in natural gas infrastructure. These considerations, in summary, include:

(a) **Changes in the approval process for infrastructure targeted DSM:** DSM programs and technologies targeted at infrastructure deferral or avoidance may need to be subject to a different business and regulatory construct, cost-benefit analysis and different evaluation standards than standard DSM.

(b) **Allocation of risk:** the increased risk and costs of a utility relying on DSM programs as an alternative to infrastructure investment means that a regulator or the legislature will have to address a number of policy questions, including how much risk is appropriate and who bears the risk of the benefits of the DSM program not materializing and the pipeline system being insufficient to meet peak demand.

(c) **Additional research:** the incorporation of DSM to reduce infrastructure investments as part of the normal infrastructure planning process will require additional certainty regarding the costs of geo-targeted DSM programs, and the impact of DSM programs on peak period demand, which will require additional data collection and research.

(d) **Cross-subsidization:** geo-targeted DSM programs have the potential to lead to cross-subsidization between customer classes, and between DSM participants and other customers.

(e) **Customer discrimination:** by definition, the use of geo-targeted DSM programs to reduce infrastructure investments will lead to discrimination between customers at the boundary of the geo-targeted region. Customers within the

[69] B-11, ICF Report, pp. 14 to 16.

> boundary will be eligible for potentially significant incentives, while customers outside of the boundary will not.[70]

89. To these points, FEI would add that better measuring and monitoring of peak demand at or close to the end use is a key requirement for understanding the impact of peak and designing peak specific DSM programs. FEI does not currently have this capability at a sufficient granularity to undertake a study. This is a key unknown that FEI cannot put into a planning timeline at this time.

90. 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. ICF further observes that FEI has made progress towards expanding its forecasting approach and understanding the capacity impacts of broad-based DSM, and has indicated that it is starting to assess metering solutions that may enable further study into whether DSM can be used as a cost effective alternative to infrastructure spending.[71]

91. With respect to Mr. Grevatt's recommendation that FEI be directed to develop a plan to address deferral of infrastructure through the use of DSM, ICF concludes its report as follows:

> We do not agree that a specific and detailed Commission directive on this point is needed at this time. Given the lack of certainty surrounding the effectiveness of DSM as an alternative to facility investments and the current lack of any specific major gas infrastructure projects where DSM could be used as an alternative in FEI's service territory in the next several years, the value of directing FEI to develop an accelerated plan is unclear.
>
> In addition, Mr. Grevatt's assessment that FEI could "develop a plan and timeline" to determine the potential to use DSM savings to defer capital infrastructure "in short order" is overly simplistic and does not account for the range of issues that need to be resolved prior to setting a firm schedule for consideration of DSM as an alternative to infrastructure investment.

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[70] B-11, ICF Report, pp. 17-18.

[71] B-11, ICF Report, p. 20.

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Finally, based on our discussions with FEI staff, and our review of the FEI 2017 LTGRP filing, FEI has made significant progress to expand its forecasting approach, to understand the capacity impacts of DSM, and to start assessing metering solutions that may enable further study into whether DSM can be used as an alternative to infrastructure spending. Based on the progress to-date and the uncertainty surrounding any pathway for further activities, we recommend that FEI be allowed to continue to conduct exploratory research to determine if and how targeted DSM should be incorporated into the infrastructure planning process, rather than having the approach and timeline determined as part of a regulatory process without any significant assessment of the potential benefits of setting a pre-determined timeline at such an early stage.[72]

92. As part of its rebuttal evidence, FEI provided the following evidence:

1. ICF's Report identifies numerous activities that are required to enable FEI to determine if it could use Demand Side Management (DSM) to defer infrastructure projects. These activities potentially include further study, metering enhancements, process updates and regulatory adjustments. FEI is already working on these activities by exploring avenues for expanding its peak demand forecast method (as explained in Section 6 of the Application) and examining the technical viability of advanced metering solutions (as explained in FEI's response to BCUC IR 1.29.1).

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

[72] B-11, ICF Report, pp. 21 - 22.

93. FEI's rebuttal evidence further confirms the findings of ICF, and the difficulty inherent in the BCUC issuing the directive that Mr. Grevatt and BCSEA endorse. In response to BCSEA IRs 3.64.1, 3.64.2, 3.64.3 and 3.64.4 FEI provided further clarification of its position.[73]

94. In response BCUC IR 3.81.1, FEI explained the approach it has been taking to exploring these issues, and the continued exploration that it should consider going forward, including:

(a) ongoing monitoring of progress on understanding the impacts of DSM on peak demand in other jurisdictions;

(b) developing a deeper understanding of peak consumption patterns in FEI's service territory – i.e. advancing FEI's knowledge of daily, hourly and sub-hourly load shapes for various natural gas equipment and new DSM measures as information becomes available;

(c) further exploring, and where possible improving on, FEI's exploratory end-use peak demand forecast method;

(d) additional research and pilot testing of options for measuring and monitoring peak demand; and

(e) further consideration of pilot testing for geo-targeted DSM programs.[74]

95. FEI submits that ICF's evidence and analysis of the issue raised by Mr. Grevatt provides a full answer to his recommendations regarding DSM and infrastructure planning. ICF provides a more detailed and thorough review of the issues as they impact gas utilities than does Mr. Grevatt, and it identifies several issues and problems with the recommendation that Mr. Grevatt either overlooked or was unaware of. FEI submits that ICF's evidence should be preferred to Mr. Grevatt's.

96. In summary, FEI agrees that the issue raised by BCSEA and Mr. Grevatt is an important issue and warrants continued investigation. The ability to identify the impacts of DSM on peak demand, if any, depends on a number of questions that remain unanswered from an industry-wide perspective. The ability to answer these questions and to set a time frame

[73] B-13, BCSEA IR 3.64.1.

[74] B-12, BCUC IR 3.81.1. See also B-13, BCSEA IR 3.64.5.

within which to answer these questions does not rest solely with FEI. Technology and information related to this topic are undergoing change as a number of utilities and jurisdictions are taking more active interest. Forcing a prescriptive and structured approach and a defined timeline outside of the LTGRP process wherein FEI must report back to stakeholders and interveners will create unnecessary administrative burden for everyone involved that could well result in an outcome that simply says that more study is required. FEI does not feel that this is in the best interest of customers at this time and submits that FEI should be allowed to report back on its progress (and perhaps provide an update on industry progress) in the next LTGRP. FEI is very much interested in understanding ways that it can optimize its system to best serve its customers.

97. Accordingly, FEI will report on the progress it has made on its activities when filing the next LTGRP and submits that no directive is needed in this respect. To the extent that a directive is made, FEI submits that it should be limited to a general directive that FEI report to the BCUC on its progress on this topic as part of the next LTGRP.

D. Funding for Action Plan Item 8 Activities

98. BCSEA raised questions about the extent to which FEI is actively pursuing innovative gas technologies that will help FEI meet its customers' preferences for gas while also helping to address provincial plans for reducing GHG emissions

99. In response to BCSEA IR 1.1, FEI listed seven projects it is exploring that support innovative gas technologies that will help FEI meet its customers' preferences for gas while also helping to address provincial plans for reducing GHG emissions.[75] FEI referred to Action Plan Activity 8 and stated that it may seek approvals to increase its ability to financially support investigations of innovations that will help keep energy costs low and help its customers reduce emissions.

100. The referenced Action Item 8 from the LTGRP Action Plan states:

[75] B-3, BCSEA IR 1.1.

8. Pursue approvals as necessary of a funding envelope dedicated to enabling FEI to further monitor and, where applicable, support innovative natural gas technologies which may help FEI meet market preferences while also supporting solutions for BC's emissions policy objectives.[76]

101. In a subsequent information request, BCSEA asked FEI to explain why it is "merely exploring" the seven listed projects referred to in BCSEA IR 1.1, and not "vigorously participating in them".[77]

102. In response, FEI confirmed that:

(a) it is already exploring various activities under its existing funding regime and hopes that some of them will be fruitful;

(b) it will explore additional activities that are not yet foreseeable;

(c) it will pursue funding as required (i.e., via the BCUC or via government) if Item 8 activities require more funding than is currently available.[78]

103. In response to BCSEA IR 2.46.2, FEI states:

> As with FEI's other innovative service initiatives (e.g., DSM, RNG and TES), FEI is fully committed to pursuing the innovative natural gas technology projects described in the response to BCSEA IR 1.1.1 through to their conclusion in the hope and expectation that some or all of the projects will prove to be viable. FEI maintains that innovation in this regard is vital to the interests of its customers and the long-term future of the gas utility. FEI is therefore also committed to pursuing approval of a funding envelope, as needed, to enable these projects to proceed. FEI will seek approval(s) of a funding envelope when the requirements of these projects necessitate additional funding sources.[79]

104. FEI submits that its evidence in respect of the Action Item 8 items further demonstrates that the LTGRP is consistent with British Columbia's energy objectives, is in the interests of persons in British Columbia who receive or may receive service from the public utility, and is in the public interest.

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[76] B-1, p. 219.

[77] B-6, BCSEA IR 2.46.1.

[78] B-6, BCSEA IR 2.46.1.

[79] B-6, BCSEA IR 2.46.2.

E. Price Risk Management Principles

105. In the FEU 2014 LTRP Decision, the BCUC directed the FEU (now FEI) to include in its next LTRP a description of its long term vision for price risk management and provide broad principles, which can be used to inform FEI's price risk management plans (PRMP).[80] FEI addressed this directive in section 5.5.1 of the LTGRP. In that section, FEI set out the following "guiding principles" for its long term price risk management:

(a) Reduction of market price risk: adverse market price movements and their subsequent impacts to customers through commodity rates should be reduced.

(b) Capture market opportunities: where possible, FEI should capture low-priced market opportunities in the interests of keeping rates low for customers.

(c) Cost effective: price risk management tools and strategies should be cost effective so as to not significantly increase costs for customers.[81]

106. FEI has also described its price risk management objectives, which include mitigating market price volatility to support rate stability and capturing favourable prices to provide customers with more affordable rates.[82]

107. In BCUC IR 1.35.1, the BCUC referred to the objectives described in FEI's 2017 Price Risk Management Application, which include:

(a) mitigate market price volatility to support rate stability, and

(b) capture opportunities to maintain commodity rates at historically low levels."

108. The BCUC asked FEI to reconcile what it perceived as differences between the objectives stated in the LTGRP and the 2018 PRMP Application. In response, FEI confirmed that while the 2018 PRMP objectives do not explicitly include achieving affordable and competitive rates, achieving the objective of capturing opportunities to maintain low commodity rates may, at the same time, help provide some customers with more affordable rates than in the past and

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[80] 2014 FEU LTRP Decision, p. 37.

[81] B-1, p. 143.

[82] B-1, p. 143.

help with the competitiveness of natural gas compared to other energy sources.[83] FEI submits that LTGRP and PRMP objectives are consistent.

109. In a further information request, the BCUC asked FEI to explain the difference between price risk management principles and objectives.[84] FEI explained that the principles for price risk management provide the long-term, high-level guidelines to help frame FEI's objectives for price risk management. The objectives are more specific so as to determine the specific price risk management strategies that will achieve the principles. For example, the guiding principle of the reduction of market price risk is supported by the price risk management objectives of mitigating market price volatility to support rate stability for customers. The strategies change over time in response to the changing market conditions.

110. FEI submits that the LTGRP meets the BCUC's 2014 directive in respect of providing a description of its long term vision for price risk management and provides broad principles, which can be used to inform FEI's price risk management plans. FEI respectfully submits that the PRMP and its annual reports provide for a more appropriate venue for examining short and medium-term issues and changes with respect to price risk management.

F. Annual Demand and Rate Impact of 50% Emissions Reductions from Buildings by 2030

111. In certain information requests, BCSEA inquired as to whether FEI appropriately considered the probability of possible emissions reduction policies becoming effective during the forecast horizon. In BCSEA IR 2.51.3, for example, BCSEA asked FEI to explain whether increased building energy performance standards, such as net zero buildings, or a 50% reduction in GHG emissions from buildings by 2030, are incorporated into any of the alternate future scenarios, and if "yes", which ones?[85] In response, FEI advised that it did not complete an alternate forecast scenario specific only to the BC building sector reducing GHG emissions by 50 percent by 2030 for the 2017 LTGRP. However, in its response to the information request,

[83] B-2. BCUC IR 1.35.1.

[84] B-5, BCUC IR 2.66.1.

[85] B-6, BCSEA IR 2.51.3.

FEI pointed out that under the hypothetical assumption that a reduction in GHG emissions from the building sector were to be mirrored by an equal reduction in natural gas demand, the directional effect on FEI's delivery rates as a result of reducing 50 percent of GHG emissions from the building sectors by 2030 can be estimated using the 20-year vision of FEI's delivery rate impact under the Lower Bound Scenario already available in Section 8.6 of the Application.

112. As the above information request response demonstrates, FEI's scenario analysis is sufficiently broad to simulate the outcomes of such action even if FEI is not certain as to how they will become implemented.

G. Impact of Demand on a Day Exceeding FEI Distribution Capacities

113. In the BCUC's acceptance of FEU's 2014 LTRP, it provided the following specific directive related to customer demand outstripping FEI supply:

> 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.[86]

114. Further to this directive, the BCUC asked FEI to comment on the probability of a scenario where combined natural gas and LNG demand from all customers, including non-BC LNG export customers, exceeds FEI's distribution capabilities on a given day and what FEI would do to prevent and mitigate the impacts of such a scenario.[87]

115. 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's 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). This includes year round liquefaction at volumes approved for

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[86] See B-1, LTRP pp. 10-12 for a summary of the directions from Order G-189-14.

[87] B-5, BCUC IR 2.48.0 series.

Phase 1A of the Tilbury LNG facility. In order for demand to exceed FEI's current overall distribution capabilities, the High Growth Scenario would have to be realized. This scenario forecasts LNG demand growing dramatically over the planning horizon.[88] The forecast accounts for both future LNG demand requirements from the Tilbury LNG facilities and demand from FEI's non-LNG customers.

116. FEI submits that if demand associated with the High Growth Scenario were to materialize it would construct infrastructure in lockstep with the installation of additional liquefaction capacity/storage facilities. This would include seeking the necessary approvals to expand the CTS system when and as required. Strategic investment of this kind is an effective prevention measure that would keep the probability of such a shortfall event and its potential impact low.[89]

117. FEI submits that it has complied with the BCUC's 2014 directive as set out above.

H. Impact of Uptick in Interest for the RNG Program

118. The BCUC asked FEI to comment on the extent to which it accounted for the impacts of recent increased interest in renewable natural gas (RNG) in its forecast RNG trajectories and how interest that is not already accounted for would affect the trajectories.[90]

119. At the time the LTGRP was completed, information regarding increased interest in RNG from large sophisticated customers was included. Any impacts associated with such interest are only reflected up to the completion date for the LTGRP RNG forecasts. FEI only became aware of additional interest recently, after the LTGRP analysis on RNG was completed.[91] In response to an information request made by the CEC, FEI acknowledged that RNG has grown faster than expected, confirming that there is an appetite for RNG.[92]

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[88] B-5, BCUC IR 2.48.1.

[89] B-5, BCUC IR 2.48.1

[90] B-5, BCUC IR 2.57.0 series.

[91] B-5, BCUC IR 2.57.1 and 2.57.1.1. See B-2, BCUC IR 1.19.4.

[92] B-4, CEC IR 1.15.5.

120. In accordance with its ongoing management of the RNG program, FEI regularly files short-term forecast updates which more accurately account for demand within a one to two-year window. These updates capture changes in input assumptions, which arise following the completion of the last LTGRP.[93] Despite FEI updating the LTGRP with the benefit of the most recent practically available information, it is nonetheless a long term forecast which can only capture a snapshot in time. As the LTGRP is submitted at regular intervals, it is not amendable to continuous updates in order to reflect changes in the planning environment.[94]

121. FEI submits that the recent increase in customer interest regarding RNG may affect future demand in the next two years. Relying on directional indicators alone and assuming that the shape of future demand will not drastically change from the shape modeled for the LTGRP, such an increase would shift the forecast demand curve upwards. As a result, the slope of the demand curve may also steepen with residential customer growth.[95]

I. Impacts on the Zero Emissions Energy Alternative for the DSM MTRC Cost Effectiveness Test

122. Through information requests, the BCUC examined the impacts of a policy change on the Zero Emissions Energy Alternative (ZEEA).[96] In particular, the BCUC questioned FEI's consideration of ZEEA value fluctuations as they concern 2017 LTGRP analysis, whether FEI agreed that the ZEEA value may be affected by policy change and how the long run marginal cost (LRMC) of the ZEEA compared to RNG.

123. FEI has not prepared any quantitative analysis of ZEEA scenarios because it presumed the ZEEA would remain relatively stable in the long run. FEI's ZEEA is informed by BC Hydro's LRMC of procuring renewable electricity.[97] With respect to considerations involving fluctuations in response to 2017 LTGRP scenario parameters, FEI relies on BC Hydro's

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[93] B-5, BCUC IR 2.57.1.

[94] B-5, BCUC IR 2.57.1.2.

[95] B-5, BCUC IR 2.57.1.2.

[96] B-2, BCUC IR 1.26.4, 1.26.5, 1.26.5.1, 1.26.6, 1.26.6.1, 1.26.1.1.

[97] B-2, BCUC IR 1.26.5.

statements for calculating its ZEEA value. The method of calculation mirrors the method used for FEI's annual DSM Programs report to the BCUC.[98]

124. The main factors that would result in changes to the FEI's ZEEA would be legislative change or a change in BC Hydro's LMRC. In its 2015 Rate Design Application, BC Hydro downplayed the impact of Load Resource Balance on LRMC.[99] While conditions influencing changes in economic growth, natural gas price, carbon price and/or non-price carbon policy action may all impact BC Hydro's LMRC, FEI submits that it has no way of predicting how much, in which direction or when changes to BC Hydro's LMRC may occur. It is therefore hesitant to speculate in this regard.[100]

125. In response to a second round of information requests regarding the impact of non-price carbon policy action on BC Hydro's LMRC value, FEI reiterated that one may influence the other but that it was not in a position to predict how.[101] Furthermore, FEI does not believe legislative changes to the ZEEA are being contemplated at this time. BC Hydro suggests the ZEEA will remain stable in the long run and FEI believes, based on this information, that it is reasonable to use a consistent ZEEA throughout the planning horizon. FEI further submits that LTGRPs are completed frequently enough to capture and address future changes to the ZEEA as appropriate.

126. Finally, for the purposes of comparison with the ZEEA value of $27.78 per GJ,[102] FEI submits that the most reasonable LMRC for acquiring RNG is based on the maximum acquisition price established by the BC Ministry of Energy and Mines. This is valued at $30 per GJ.[103]

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[98] B-2, BCUC IR 1.26.4.

[99] B-2, BCUC IR 1.26.5.

[100] B-2, BCUC IR 1.26.5.1.

[101] B-5, BCUC IR 2.62.1.1.

[102] B-2, BCUC IR 1.26.4.

[103] B-5, BCUC IR 2.62.2.

PART SIX: THE LTGRP IS IN THE PUBLIC INTEREST

127. The LTGRP meets all of the filing requirements set out in section 44.1(2) of the Act.

128. FEI has complied with all applicable directives from previous orders.

129. FEI has followed, where applicable, the BCUC's Resource Planning Guidelines.

130. All of the considerations in section 44.1(8) support acceptance of the LTGRP.

131. The LTGRP is in the interests of FEI's customers. 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 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.

132. For the reasons described above, FEI submits that the LTGRP meets the requirements under the UCA and that carrying out the plan is in the public interest.

133. FEI submits that the 2017 LTGRP should be accepted as filed pursuant to section 44.1(6)(a) of the UCA.

ALL OF WHICH IS RESPECTFULLY SUBMITTED.

Dated: November 22, 2019

[original signed by David Curtis]

David Curtis
Counsel for FortisBC Energy Inc.