



Sarah Walsh
Director, Regulatory Affairs

Gas Regulatory Affairs Correspondence
Email: gas.regulatory.affairs@fortisbc.com

Electric Regulatory Affairs Correspondence
Email: electricity.regulatory.affairs@fortisbc.com

FortisBC
16705 Fraser Highway
Surrey, B.C. V4N 0E8
Tel: (778) 578-3861
Cell: (604) 230-7874
Fax: (604) 576-7074
www.fortisbc.com

July 14, 2023

British Columbia Public Interest Advocacy Centre
Suite 803 470 Granville Street
Vancouver, B.C.
V6C 1V5

Attention: Leigha Worth, Executive Director

Dear Leigha Worth:

Re: FortisBC Energy Inc. (FEI)

Application for a Certificate of Public Convenience and Necessity (CPCN) for the Okanagan Capacity Upgrade (OCU) Project (Application) ~ Project No. 1599152

Response to the British Columbia Public Interest Advocacy Centre representing the British Columbia Old Age Pensioners' Organization, Active Support Against Poverty, Disability Alliance BC, Council of Senior Citizens' Organizations of BC, Together Against Poverty Society, and the Tenant Resource and Advisory Centre *et al.* (BCOAPO) Information Request (IR) No. 1 on Supplementary Filing

On November 16, 2020, FEI filed the Application referenced above. In accordance with British Columbia Utilities Commission Order G-106-23 establishing a further regulatory timetable for the review of the Application, FEI respectfully submits the attached response to BCOAPO IR No. 1 on Supplementary Filing.

FEI requests that the responses to BCOAPO Supplementary IR1 8.1 and 8.2, which are redacted in the public version, be filed on a confidential basis pursuant to Section 18 of the BCUC's Rules of Practice and Procedure regarding confidential documents as set out in Order G-72-23. The confidential information is commercially sensitive information that cannot be disclosed under the terms of an agreement between FEI and the Penticton Indian Band with respect to their negotiations. Further, the confidential information should remain confidential in perpetuity as disclosure may harm or prejudice negotiations with other parties in the future. The confidential responses are being filed with the BCUC under separate cover and will be made available to registered parties with signed Confidentiality Declarations and Undertakings filed on the record in this proceeding.

For convenience and efficiency, if FEI has provided an internet address for referenced reports instead of attaching the documents to its IR responses. FEI intends for the referenced documents to form part of its IR responses and the evidentiary record in this proceeding.

If further information is required, please contact the undersigned.

Sincerely,

FORTISBC ENERGY INC.

Original signed:

Sarah Walsh

Attachments

cc (email only): Commission Secretary
Registered Interveners



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1 **PROJECT NEED AND JUSTIFICATION**

2 **1.0 Reference: Exhibit B-35, FEI Supplementary Filing**

3 **Exhibit B-1-2, FEI Updated Application, pages 18-19**

4 **Topic: Short-Term Mitigation**

5 Preamble: FEI states:

6 "However, FEI's system capacity planning group has identified short-term
7 mitigation measures that can be used through the winter of 2021/2022 and
8 2022/23, if required, to manage the peak load within the available system capacity
9 while FEI implements a practical long-term solution." **(Updated Application, pgs.**
10 **18-19)**

11 1.1 Please explain whether the short-term mitigation measures were required during
12 the winters of 2021/2022 and 2022/23. If not, please explain why.

13
14 **Response:**

15 Short-term mitigation measures were required during the winter of 2022/23 but not during the
16 winter of 2021/22.

17 In the winter of 2021/22, the peak demand was less than the current ITS capacity. As a result,
18 the existing capacity was sufficient to meet the peak demand load and short-term mitigation
19 measures were not required.

20 In the winter of 2022/23, the peak demand exceeded the current ITS capacity. As a result, the
21 existing capacity was not sufficient to meet the peak demand load and short-term mitigation
22 measures were required. The measures used in the winter of 2022/23 were the increased tap
23 pressure at Savona and the distribution system load shifting at Polson Gate Station.

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3.3 Please quantify (on a percentage basis and TJ/d) the forecasted peak demand growth reduction, compared to that forecasted as part of the Updated Application. As part of the response, please also provide a table that compares the population growth (by sector) anticipated as part of the Updated Application compared to the Supplementary Filing.

Response:

The following table compares the peak demand growth of the Updated Application and the Supplementary Filing Forecasts. To compare the two forecasts, the growth in the Updated Application column was defined as being 0 in 2022 and 100 percent in 2042 to allow for comparison across the period covered by the Supplementary Filing Forecast. FEI interprets the request for population growth (by sector) to mean growth by rate class assumed in the peak demand forecasts. Please refer to the table in the response to BCUC Supplementary IR1 1.3 for growth rates by rate class for the respective forecasts.

Year	Updated Application Peak Demand (TJ/day)	Updated Application Growth (TJ/day)	Updated Application Growth (%)	Supplementary Filing Peak Demand (TJ/day)	Supplementary Filing Growth (TJ/day)	Supplementary Filing Growth (as % of full Updated Application Growth)*
2022	338	0	0%	336	0	0%
2023	344	6	9%	338	2	3%
2024	350	11	18%	340	4	6%
2025	353	15	23%	342	6	10%
2026	357	18	29%	344	8	13%
2027	360	22	34%	346	10	15%
2028	363	25	39%	348	12	18%
2029	367	28	44%	350	14	21%
2030	370	32	49%	352	16	24%
2031	373	35	54%	353	17	27%
2032	376	38	59%	355	19	30%
2033	379	41	63%	357	21	33%
2034	382	44	68%	359	23	36%
2035	385	47	72%	361	25	39%
2036	388	49	77%	363	27	41%
2037	390	52	81%	364	28	44%



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Year	Updated Application Peak Demand (TJ/day)	Updated Application Growth (TJ/day)	Updated Application Growth (%)	Supplementary Filing Peak Demand (TJ/day)	Supplementary Filing Growth (TJ/day)	Supplementary Filing Growth (as % of full Updated Application Growth)*
2038	393	55	85%	366	30	47%
2039	395	57	88%	368	32	50%
2040	398	59	92%	370	34	52%
2041	400	62	96%	371	35	55%
2042	403	64	100%	373	37	58%

1 * Percentages calculated as yearly "Supplementary Filing Growth" column divided by 64 TJ/day (the "100%
 2 Updated Application Growth" value).

3

4

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6 3.4 Please discuss what factors are contributing to lower than forecasted peak
 7 demand growth compared to that forecasted as part of the Updated Application,
 8 including for example, forecasted lower usage due to conservation, lower than
 9 forecasted growth in customers, loss of load, etc.

10

11 **Response:**

12 Please refer to the response to BCUC Supplementary IR1 1.3.

13

14

15

16 3.5 Please quantify and discuss what load, if any, has been lost to electricity due to
 17 decarbonization and provincial environmental targets.

18

19 **Response:**

20 FEI does not have sufficient information to separate the influences of electrification efforts on
 21 historic, actual gas demand from other influences such as, but not limited to, changes in energy
 22 prices, marketing campaigns, economic performance, shifting employer work location policies,
 23 inflation and household income. Each of these items and others could have an upward or
 24 downward influence on gas demand that FEI is not able to individually quantify.

25



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1 **4.0 Reference: Exhibit B-35, FEI Supplementary Filing, pages 1 & 3; Figures 2.1 &**
 2 **2.2**

3 **Topic: Excess Capacity**

4 Preamble: FEI states:

5 "FEI updates the peak demand forecast on an annual basis. Accordingly, FEI's
 6 current peak demand forecast differs from the one provided in the Updated
 7 Application. When comparing the Supplementary Filing Forecast to the forecast
 8 used in the Updated Application, FEI observes that gas demand is still expected
 9 to increase, but at a lower rate." **(Supplementary Filing, pg. 3)**

10 "FEI notes that there are no updates to the evaluation of alternatives considered
 11 and selection of the preferred solution discussed in Section 4 of the Updated
 12 Application." **(Supplementary Filing, pg. 1)**

13 4.1 Please provide a table that quantifies: (i) the incremental capacity available in 2029
 14 forecasted as part of the Updated Application (in percentage and TJ/d); (ii) the
 15 incremental capacity available in 2029 forecasted in the current Supplementary
 16 Filing (in percentage & TJ/d); (iii) the annualized cost of the incremental excess
 17 capacity in 2029, and in total, based on the Updated Application; (iv) the
 18 annualized cost of the incremental excess capacity in 2029 and in total based on
 19 the current Supplementary Filing; (v) the date in which load is expected to absorb
 20 the excess capacity available based on the Updated Application; and (vi) the date
 21 in which load is expected to absorb the excess capacity available based on the
 22 Supplementary Filing. Please provide the assumptions and any caveats as
 23 necessary.
 24

25 **Response:**

26 Please refer to Table 1 below for the requested information.

27 **Table 1: Incremental Capacity in 2029 – Updated Application vs Supplementary Filing**

(i)	Incremental capacity available in 2029 from Updated Application (TJ/d and %)	28 TJ/d (45%)
(ii)	Incremental capacity available in 2029 from Supplementary Filing (TJ/d and %)	45 TJ/d (73%)
(iii)	2029 annualized cost of the incremental excess capacity, and in total, based on the Updated Application (\$000s)	Excess: \$9,523 Total: \$21,162
(iv)	2029 annualized cost of the incremental excess capacity, and in total, based on the Supplementary Filing (\$000s)	Excess: \$18,676 Total: \$25,583
(v)	Date in which load is expected to absorb the excess capacity available based on the Updated Application	2039
(vi)	Date in which load is expected to absorb the excess capacity available based on the Supplementary Filing	2053



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2 The calculations for Table 1 above include the following assumptions:

3 1. The calculations for (i) and (ii) in percentage terms are based on the total incremental
4 capacity provided by the OCU Project of 62 TJ/day.

5 2. For (iii) and (iv), the "Total" values of \$21.162 million and \$25.583 million, respectively,
6 represent the *incremental* revenue requirement due to the OCU Project in 2029 based on
7 the Project cost estimates in the Updated Application and the Supplementary Filing. The
8 "Excess" values are calculated by multiplying the total incremental revenue requirement
9 by the percentage of incremental capacity available in 2029 from (i) and (ii). For example,
10 the incremental revenue requirement for the excess capacity available in 2029 based on
11 the Project cost estimate from the Updated Application is calculated as \$21.162 million
12 multiplied by 45 percent = \$9.523 million.

13
14

15
16 4.2 Please provide, even if on a directional basis only, the project cost difference
17 between the Updated Application and the project cost if sized to reflect the lower
18 demand growth forecast in the Supplementary Filing.

19

20 **Response:**

21 Please refer to the responses to BCUC Supplementary IR1 13.2 and 13.2.2.

22
23

24
25 4.3 FEI states that there are no updates to the evaluation of alternatives and selection
26 of the preferred solution. Please explain why not, given the sizable reduction in
27 demand growth.

28

29 **Response:**

30 Please refer to the response to BCUC Supplementary IR1 11.1.

31
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34 4.4 Please provide and explain the analysis prepared by FEI to conclude that the
35 proposed solution continues to represent the best alternative for addressing the
36 capacity needs despite a sizable decline in growth.



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1

2 **Response:**

3 Please refer to the responses to BCUC Supplementary IR1 11.1 and 13.2.

4

5

6

7 4.5 Please explain why facilities sizably larger than those now required (due to the
8 decline in load growth) are needed and justifiable.

9

10 **Response:**

11 FEI assumes that the statement “due to the decline in load growth” in this IR is referring to the
12 lower peak demand forecast included in the Supplementary Filing (i.e., the Supplementary Filing
13 Forecast) relative to the peak demand forecast included in the Updated Application (i.e., the
14 Updated Application Forecast). FEI clarifies that both forecasts predict growth in peak demand.

15 As the new pipeline will tie into the existing South Okanagan Natural Gas (SONG) pipeline, an
16 NPS 16 (406 mm) pipeline, FEI determined that an NPS 16 extension to the SONG pipeline could
17 provide sufficient capacity to meet the current OCU Project need and be capable of being
18 extended further north if required to meet future needs. Further, the selection of the NPS 16 pipe
19 provides benefits by improving the efficiency of pipeline integrity activities. The pipeline will form
20 a continuous run of NPS 16 pipeline between Oliver and the new Chute Lake Control Station that
21 can be inspected in a single uninterrupted in-line inspection (ILI) run.

22 The initial design parameters for the Chute Lake Control Station (Report P-00760-MEC-REP-
23 0001 in Appendix A-1 of the Updated Application) included a peak hourly flow of 4,910 10³m³/d
24 through the station. The new forecasted requirements from the Supplementary Filing require a
25 peak hourly flow of 4,069 10³m³/d. The change in peak hourly flow has limited impact on the
26 equipment and piping selection at the Chute Lake Control Station and as such, the originally sized
27 pipe and control valves would not need to be reduced in size. Instead, flow restriction trim kits
28 installed within the control valves would ensure appropriate operating ranges and allow for future
29 growth without equipment replacement.

30

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33 4.6 Please explain if, in hindsight, FEI would have selected the proposed alternative
34 given the current demand forecast. As part of the response, please also explain
35 which other alternatives assessed in the Updated Application may not have been



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1 screened out given the current demand forecast reflected in the Supplementary
2 Filing.

3
4 **Response:**

5 Please refer to the responses to BCUC Supplementary IR1 11.1 and 11.1.2.

6
7

8
9 4.7 Please explain if, in hindsight, FEI would have selected the proposed alternative
10 given the delay in construction. As part of the response, please also explain which
11 other alternatives assessed in the Updated Application may not have been
12 screened out given the current delay in construction.

13
14 **Response:**

15 FEI confirms that it would still have selected the proposed alternative despite the delays in
16 construction start. The delays in construction start would apply equally to the other two feasible
17 alternatives and as such, the weightings assigned to each alternative would remain unchanged
18 relative to each other. Further, the changes in costs to the proposed OCU Project are
19 proportionately applicable to the other alternatives; therefore, FEI would still have selected the
20 proposed alternative even if the increased OCU Project costs had been known.

21 Given the immediate need for the OCU Project and the schedule risks associated with the other
22 two feasible alternatives, the proposed alternative remains superior.

23 The following figure is from the Updated Application and shows how FEI scored each alternative
24 with respect to Schedule Risk. As explained above, FEI expects that the delays experienced to
25 date would still have been experienced had Alternatives 1 or 2 been selected. The Schedule Risk
26 scores are differentiated based on the unique schedule risks associated with the respective
27 alternatives and these risks are unchanged by the delay in construction start. As such, the
28 Schedule Risk scoring presented below is still valid.



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Table 4-6: Project Execution and Lifecycle Operation Alternative Evaluation

Criterion	Weighting	Alternative 1: ITS Upgrades Score	Alternative 2: Modified ITS Upgrades Score	Alternative 3: OLI PEN 406 Extension Score
Schedule Risk	55%	1	1	3
Environmental, Public and Indigenous Impacts	45%	2	2	3
Weighted Total:*	100%	1.45	1.45	3

*Weighted total is calculated for each alternative by multiplying the score for each criterion with its associated weighting, and then summing these scores. The maximum possible weighted total is 5.

- 1
- 2 Please refer to the response to BCUC Supplementary IR1 11.1.2 where FEI explains that the two
- 3 alternatives that were eliminated from consideration (Alternative 4 – 508 mm Loop from Savona
- 4 and Alternative 5 – LNG Facility Near Vernon) remain unfeasible. FEI expects Alternatives 4 and
- 5 5 would have encountered similar delays in construction start to Alternative 3. Thus, the schedule
- 6 risks associated with Alternatives 4 and 5 are expected to be worse than what was understood at
- 7 the time of the decision and would still have been screened out.

8



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1 **A. PROJECT COST ESTIMATE AND SCHEDULE**

2 **5.0 Reference: Exhibit B-35, FEI Supplementary Filing, page 12**

3 **Topic: Updated Total Project Cost Estimate**

4 Preamble: FEI states:

5 "The updated Total Project Cost estimate for the OCU Project is \$327.410 million
6 in as-spent dollars as shown in Table 3-1 above." **(Supplementary Filing, pg. 12)**

7 5.1 Please provide FEI's views on whether it would proceed with the OCU Project as
8 currently defined if it forecasted today that: (i) the ultimate cost of the project was
9 50% higher than current projections; and (ii) the ultimate cost of the project was
10 100% higher than current projections.

11
12 **Response:**

13 FEI does not consider the hypothetical cost increases listed in the request to be likely and notes
14 that the OCU Project cost estimate has been developed to an ACE Class 3 level of accuracy.
15 As explained in the response to BCUC Supplementary IR1 16.16, the accuracy range for the OCU
16 Project cost estimate is +18.4/-15.6 percent. However, to be responsive, and under the additional
17 assumption that the OCU Project scope (primarily distance and specifications) remained the
18 same, FEI would still proceed with the OCU Project as proposed.

19 Under a scenario where the OCU Project scope remained the same but the OCU Project costs
20 increased, it is most likely that the other pipeline alternatives presented within the Updated
21 Application would increase proportionally to the proposed OCU Project as they contain similar
22 scopes of work and use the same labour resources, materials, and construction methods in a
23 similar terrain. Therefore, in these hypothetical scenarios where the OCU Project costs increase
24 by 50 percent or 100 percent, the OCU Project need would remain the same and the alternatives
25 evaluation analysis would remain essentially the same, resulting in FEI continuing to support the
26 proposed OCU Project as the preferred alternative.



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1 **B. FINANCIAL ANALYSIS AND RATE IMPACT**

2 **6.0 Reference: Exhibit B-35, FEI Supplementary Filing, page 12**

3 **Topic: Cost Estimate & Rate Impacts**

4 Preamble: FEI states:

5 "The OCU Project will result in a cumulative delivery rate impact of 2.37 percent
6 by 2027 when all assets as well as closing costs have entered rate base."
7 **(Supplementary Filing, pg. 12)**

8 6.1 Please provide a table of the cumulative delivery rate impacts under the following
9 scenarios: (i) an OCU Project cost 20% higher than \$327.4 million; (ii) an OCU
10 Project cost 50% higher than \$327.4 million; and (iii) an OCU Project cost 100%
11 higher than \$327.4 million.

12 **Response:**

13 Please see Table 1 below for the cumulative delivery rate impacts by 2027, when compared to
14 the approved 2023 delivery rates, if the OCU Project cost is higher than \$327.4 million (as filed in
15 the Supplementary Filing) by 20 percent, 50 percent, and 100 percent.

16 **Table 1: Cumulative Delivery Rate Impacts by 2027 for Increased Project Costs by 20%, 50% and
17 100%**

Line	Scenario	Cumulative Delivery Rate Impact by 2027 (%)	Variance from As-filed (%)
1	As-filed	2.37%	-
2	20% Higher Project Cost	2.81%	0.43%
3	50% Higher Project Cost	3.47%	1.10%
4	100% Higher Project Cost	4.62%	2.24%

19

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1 **C. CONSULTATION AND ENGAGEMENT**

2 **7.0 Reference: Exhibit B-1-2, FEI Updated Application, page 5**

3 **Topic: FEI Engagement Efforts**

4 Preamble: FEI asserts that:

5 "FEI's Public Consultation and Indigenous Groups Engagement Efforts to Date are
6 Sufficient and Will Continue". **(Updated Application, pg. 5)**

7 7.1 Without disclosing confidential information, please provide a discussion of what
8 gave rise to FEI's conclusion that its engagement efforts were insufficient such that
9 an adjournment of the regulatory review of the OCU Project of over a year was
10 necessary.

11
12 **Response:**

13 At the time of the Updated Application, FEI was not made aware of any unresolved concerns or
14 outstanding interests from stakeholders or Indigenous communities. FEI has not taken the
15 position that its engagement efforts were insufficient; however, after the Updated Application was
16 submitted, FEI was made aware of unresolved concerns from Indigenous groups that it believed
17 warranted additional discussion.

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1 The confidential information is commercially sensitive information that cannot be disclosed under
2 the terms of an agreement between FEI and the PIB with respect to their negotiations. Further,
3 the confidential information should remain confidential in perpetuity as disclosure may harm or
4 prejudice negotiations with other parties in the future. The confidential response will be filed with
5 the BCUC under separate cover and will be made available to registered parties with signed
6 Confidentiality Declarations and Undertakings filed on the record in this proceeding.



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8.3 Without disclosing commercially sensitive or other confidential information, please provide a general discussion of what is impeding parties from reaching an agreement.

Response:

FEI remains optimistic in obtaining the PIB's consent for the OCU Project which has not yet been determined by the PIB. Please also refer to the confidential response to BCOAPO Supplementary IR1 8.2.

8.4 Without disclosing commercially sensitive or other confidential information, please explain how aligned or divergent parties are in terms of reaching agreement. For example, of the issues subject to agreement, do the settled issues represent 40%, 50%, 75% or 95% of the material issues.

Response:

The information requested is confidential.



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1 8.5 Please provide and explain FEI's views as to the absolute deadline that agreement
2 must be reached in order to proceed with the OCU Project.

3
4 **Response:**

5 In order to meet the Project timeline outlined in the Supplementary Filing, FEI would need to reach
6 an agreement before the end of 2023.

7
8

9
10 8.6 In the event that agreement cannot be reached, please explain whether FEI
11 intends to proceed with the OCU Project as currently proposed. If not, please
12 explain the alternatives available to FEI to meet the capacity deficiency in the
13 Okanagan area.

14
15 **Response:**

16 FEI is committed to obtaining the PIB's consent for the OCU Project. If FEI is unable to obtain the
17 PIB's consent, FEI will not proceed with the OCU Project as currently proposed (i.e., FEI will not
18 proceed with the Preferred Alternative). Should this occur, FEI may consider other alternatives
19 outlined in its Application to meet customer demand in the Okanagan area and would engage
20 with affected Indigenous communities as necessary. FEI has not investigated other alternatives
21 in any detail beyond the alternatives presented in the Updated Application.

22
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24
25 8.7 Please explain whether it is FEI's expectation that the BCUC issue a CPCN order
26 in the absence of an agreement. As part of the response, please discuss what, if
27 any, conditions ought to be placed by the BCUC assuming that the CPCN is
28 approved to proceed.

29
30 **Response:**

31 FEI does not currently expect there to be a requirement for the BCUC to issue a CPCN for the
32 OCU Project while the PIB opposes the OCU Project. Please also refer to the response to
33 BCOAPO Supplementary IR1 8.6.

34



FortisBC Energy Inc. (FEI or the Company) Application for a CPCN for the Okanagan Capacity Upgrade (OCU) Project (Application)	Submission Date: July 14, 2023
Response to the British Columbia Public Interest Advocacy Centre representing the British Columbia Old Age Pensioners' Organization, Active Support Against Poverty, Disability Alliance BC, Council of Senior Citizens' Organizations of BC, Together Against Poverty Society, and the Tenant Resource and Advisory Centre et al. (BCOAPO) Information Request (IR) No. 1 on Supplementary Filing	Page 18

1 **D. PROVINCIAL GOVERNMENT ENERGY OBJECTIVES & POLICY CONSIDERATIONS**

2 **10.0 Reference: Exhibit B-35, FEI Supplementary Filing, pages 2 & 21**

3 **Topic: Hydrogen**

4 Preamble: FEI states:

5 “Since filing the Original Application (and Updated Application), FEI has filed its
6 2022 Long Term Gas Resource Plan (LTGRP). The OCU Project remains
7 consistent with FEI’s most recently filed LTGRP and remains aligned with
8 provincial energy objectives, including those concerning greenhouse gas
9 emissions. FEI has provided additional information (Section 6 of the
10 Supplementary Filing) to show how the OCU Project addresses the recent
11 developments in the regulatory and policy environment, such as the CleanBC
12 Roadmap to 2030, as requested by BC Sustainable Energy Association in its
13 submission to the BCUC on the next steps in this proceeding.” **(Supplementary
14 Filing, pg. 2)**

15 “Utilities will determine how best to meet the target, which could include acquiring
16 more renewable gases as well as supporting greater energy efficiency. Measures
17 in CleanBC allow gas utilities to use renewables such as synthetic gas,
18 biomethane, green and waste hydrogen and lignin to achieve this.”
19 **(Supplementary Filing, pg. 21)**

20 10.1 Please explain whether the installed OCU project pipelines can support the
21 distribution of hydrogen. If not, please explain why and provide the incremental
22 cost to the OCU Project to allow the pipelines to be hydrogen ready.

23 **Response:**

24
25 It is possible for the OCU Project to support the delivery of hydrogen. The front-end engineering
26 design and materials selected for the OCU Project submitted in the Updated Application did not
27 contemplate the distribution of a hydrogen blend; however, since the detailed design and
28 materials selection has not yet been finalized, further design activities can accommodate the
29 distribution of varying concentrations of a hydrogen blend in the OCU Project. Additional work will
30 be required in the pipeline materials selection, internal pipeline coatings, weld procedures,
31 integrity management and testing requirements¹. The incremental cost will vary depending on the
32 hydrogen blend level targets and would include the design costs associated to confirm hydrogen
33 compatibility with the new infrastructure, as well as materials and construction costs to meet these
34 requirements. Based on FEI’s current experience with the Coastal Transmission System (CTS)
35 Transmission Integrity Management Capabilities (TIMC) Project, the anticipated incremental

¹ These additional activities have been outlined as part of an Engineering Assessment detailed in the new Clause 17 of the 2023 revision of CSA Z662.



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- 1 costs to accommodate hydrogen blend concentrations up to 10 percent would be approximately
- 2 \$1.9 million.

- 3 FEI continues to advance a range of activities to study, test, and verify the use of hydrogen in the
- 4 existing gas system and to identify any changes that may be required to ensure the continued
- 5 safe operation of the gas system. FEI is developing a system-wide hydrogen impact assessment
- 6 to determine the acceptable range of hydrogen content and confirm hydrogen blend level targets
- 7 in the gas system that would be suitable for safe long-term operation. The existing OLI PEN 406
- 8 is part of the hydrogen impact assessment.

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