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April 15, 2021

Patrick Wruck

Commission Secretary

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

Commission.Secretary@bcuc.com

Re: FortisBC Energy Inc. – Application for a Certificate of Public Convenience and Necessity for the Okanagan Capacity Upgrade Project – Project Number 1599152 – Residential Consumer Intervener Association (via its agent Midgard Consulting Incorporated) Information Request ("IR") No. 2 to FortisBC Energy Inc. – NON-CONFIDENTIAL SUBMISSION

Dear Mr. Wruck,

In accordance with the Regulatory Timetable set by the British Columbia Utilities Commission Order G-97-21, please find enclosed the Residential Consumer Intervener Association (**"RCIA"**) IR No. 2 to FortisBC Energy Inc. on the above noted Application. Please note that on previous submissions as part of this proceeding, the RCIA was using the name "Residential Consumer Intervener Group". Our organization's name has since been revised during the process of its establishment, and "Association" will be used going forward.

For this second round of IRs, the RCIA is splitting its submission into two documents: this one, containing non-confidential information, and a second, containing confidential information and to be filed confidentially.

If further information is required, please contact the undersigned.

Sincerely,

Original signed by:

Sam Mason
Consultant on behalf of the Residential Consumer Intervener Association

REQUESTOR: **Residential Consumer Intervener Association ("RCIA")**

INFORMATION REQUEST ROUND NUMBER: **2**

TO: **FortisBC Energy Inc. (FEI)**

DATE: **April 15, 2021**

APPLICATION NAME: **Certificate of Public Convenience and Necessity (CPCN) Application for Okanagan Capacity Upgrade (OCU)**

Table of Contents **Page Number**

A. Project Need and Justification

27. Reference: Exhibit B-2, FEI Response to BCUC IR1, IR 6.2

"FEI notes that the LHA HHF growth rates were applied to all residential customers equally and that this approach does not account for the differences between single and multi-family housing starts that is captured in the CBOC method."

27.1 Explain how the CBOC and LHA HHF forecasts address single and multi-family housing starts and why their approaches are different.

27.1.1. Explain how these different approaches affect the residential customer forecasts.

27.2 Is FEI of the view that the CBOC forecast is superior, based on the decision to true-up the LHA HHF forecast to the CBOC forecast? If not, provide additional rationale for the improvement to the forecast that is achieved by trueing up to the CBOC forecast.

"Consistency in forecast methods is important to ensure efficiency and transparency in the development of the forecast and reduce the potential for unreasonable or conflicting results."

27.3 What conflicting results could arise if the forecasts are not trued up?

27.4 Explain the impact that eliminating the true-up on the demand forecast would have on the year that ITS capacity becomes insufficient (with implementation of short term mitigation measures). Does elimination of

the true-up affect the year (2029) when additional compression in the East Kootenay region is expected to be required?

27.4.1. Graphically show FEI's forecasted ITS peak demand along with a forecast of ITS peak demand that does not true up to the CBOC forecast.

28. Reference: Exhibit B-2, FEI Response to BCUC IR1, IR 7.1

"The system capacity is therefore designed to support the maximum hourly load and industrial customer load is assessed to determine their maximum hourly loads. These loads are applied to the distribution system models and roll up into the Transmission system models. The metered data for industrial customers does not have a high degree of consistency as customers can have daily periods of extended high flow, daily periods of extend low flow, or daily periods of intermittent high flow and low flow. Due to the inconsistent nature of industrial customers' daily demand, FEI models the capacity of the ITS assuming that the industrial customers are capable of sustaining their highest observed flow rate (as used in the peak hour distribution model) throughout the daily period. This also means FEI assumes that the periods of low consumption that an industrial customer might have on a typical day, that would contribute to rebuilding line pack in the system, will therefore not occur on a peak day."

28.1 Explain why the lack of line pack in the distribution system (which may justify using the peak hourly demand in capacity modeling of the distribution system) justifies the use of industrial customer peak hourly demand in each hour of the day when modeling the capacity of the transmission system.

28.1.1. Provide the proportions of total industrial customers in the areas served by the ITS that are connected to i) the distribution system, ii) the intermediate pressure system, and iii) the transmission system.

28.1.2. Provide the proportions of total industrial customers in the areas served by the ITS that are connected to i) the distribution system, ii) the intermediate pressure system, and iii) the transmission system, but weighted by their peak demand.

The data in the response to BCUC IR1 7.2.2 show that the load factor for the 2018 flows is approximately 88%. Likewise, the load factors for 2019 and 2020 are approximately 91% and 94% (subject to the inaccuracies of reading off the graph).

28.2 Explain why FEI does not apply a load factor to the peak hourly demand for industrial customers in the calculation of the peak day loads, as it appears these data are readily available.

29. Reference: Exhibit B-6, FEI Response to RCIA IR1, IR 3.1

"Because many underlying drivers affect the level of FEI net customer additions in a given year, FEI is unable to confirm the extent or impact from any one of these intrinsic drivers (such as the proportion of households taking gas service) on an individual basis on the residential customer forecast."

29.1 RCIG IR1 3.1 did not ask FEI to confirm the extent or impact of any drivers that affect the proportion of residential customers that take gas service. RCIG IR1 3.1 requested FEI to confirm the mathematical observation that applying the LHA growth rate, which is based on overall household formations (i.e. all residential households), to its existing number of residential gas accounts (i.e. a subset of all residential households) results in the same proportion of residential gas accounts to residential households, which in turn means that the proportion of new residential households taking gas service is the same as the existing proportion of gas accounts to total residential households. Does FEI agree that this is implicit in its methodology?

"FEI does not determine the proportion of new households that take gas service for the purposes of the residential customer forecast. Rather, FEI applies the relevant LHA growth rates to the customer counts in each municipality to develop a 20-year customer forecast for each municipality as described in Section 3.3.1.2 of the Updated Application."

29.2 If FEI has data on the proportions of new households who elect gas service in recent years, please provide.

29.3 If FEI has data on the proportions of the total number of households who elect gas service (for example by comparing the number of residential gas accounts with the number of residential electricity accounts), please provide.

30. Reference: Exhibit B-2, FEI Response to BCUC IR1, IR 8.3

30.1 Please re-file the degree day graphs showing only the highest degree day each year. Overlay 20- and 30-year moving averages on the resulting data sets.

30.1.1. Provide FEI's comments on any observed trends in the above graph.

31. Reference: Exhibit B-2, FEI Response to BCUC IR1, IRs 1.7, 6, 8.3; Exhibit B-6 FEI Response to RCIA IR1, IR 3.1; Exhibit B-1-2 Figure 4-1 p.37

A number of assumptions and methodology decisions that support the peak demand forecast are conservative in that they result in a higher peak day forecast.

31.1 Recalculate the forecasted ITS peak demand with the following adjustments and graphically show the peak demand forecast along with ITS capacity (similar to Figure 4-1). Show the effect of each adjustment separately.

1. Do not true-up the residential customer forecast with the CBOC forecast data and instead use the LHA forecast of housing starts.
2. Apply a load factor, such as an average of the past three years, to the industrial peak hourly demand when calculating the peak daily demand.
3. Use a more recent data set of 30 years for the design degree day calculations.

31.2 Explain how the above adjustments affect the timing of the need for the Okanagan Capacity Upgrade.

B. Short-Term Mitigation Measures

32. Reference: Exhibit B-6, FEI Response to RCIA IR1, IR 6; Exhibit B-2, FEI Response to BCUC IR1, IR 2

"The minimum contractual delivery pressure at the East Kootenay Exchange (Yahk) by TC Energy is 5512 kPag (800 psig)."

"FEI has ongoing engagements with TC Energy regarding contractual delivery pressures and will continue to do so. However, changes in the Yahk delivery pressure would only impact the timing and sizing of a future compression expansion at FEI's Kitchener Compressor station and would not address the capacity constraint driver for the OCU Project."

32.1 Explain why it is acceptable that TC Energy delivers to the East Kootenay Exchange at 650 psig which is below the minimum contractual pressure.

32.2 How would TC Energy delivering at the minimum contractual pressure of 800 psig affect the timing of the compression upgrade currently expected on FEI's ITS in 2029?

C. Description and Evaluation of Alternatives

33. Reference: Exhibit B-6, FEI Response to RCIA IR1, IRs 8.3, 14.1

"FEI is unable to speculate about the location or extent of any further changes to class location that may occur during the forecast period."

33.1 Please discuss the differences between Alternatives 1, 2, and 3 in how future (and more restrictive) class location changes in the area between Penticton and Vernon could affect the ability of Alternatives 1, 2, and 3 to meet the project objective of providing sufficient transmission system capacity for the twenty-year planning period. That is, which alternative is

likely to be the least affected by future class location changes?

33.2 Confirm whether a class location change from class 2 to class 3 in the area of kilometer post 93.2 to kp 95 would cause FEI to derate the MOP of the VER PEN 323 line from its current MOP of 5171 kPa.

33.2.1. If Alternative 1 was implemented and the VER PEN 323 MOP was re-established to 6619 kPa, confirm whether a class location change from 2 to 3 in this segment (kp 93.2 to 95) would cause the MOP to be derated. To what MOP would the pipeline be derated? How would this affect the ITS capacity?

33.3 Confirm whether a class location change from class 2 to class 3 in the area of kilometer post 88.9 to kp 92.2 would cause FEI to derate the MOP of the VER PEN 323 line.

33.3.1. If Alternative 1 or 2 were implemented and the VER PEN 323 MOP was re-established to 6619 kPa, confirm whether a class location change from 2 to 3 in this segment would cause the MOP to be derated. To what MOP would the pipeline be derated? How would this affect the ITS capacity?

34. Reference: Exhibit B-6, FEI Response to RCIA IR1, IR 15; Exhibit B-1-2 Section 4.6.2.2, 4.6.3.1 pp.51, 55

"'Do the cost estimates for Alternatives 1 and 2 include the cost to repair any damage from failed hydrostatic testing as well as the cost of subsequent tests?'

Yes, Alternatives 1 and 2 include an allowance for the cost of pipeline repairs and subsequent tests from failed hydrostatic testing."

Table 4-8 of the Application gives the Capital Cost As-Spent for Alternative 1 as $220,215 and for Alternative 2 as $232,927.

"Due to limitations on allowable elevation difference on a test section, thirty-three requalification tests would be required in addition to six tests for the replacement segments."

34.1 Provide the as-spent capital costs for Alternatives 1 and 2 assuming there are no failed hydrotests and therefore no subsequent repairs.

34.2 Are 39 hydrotests tests required for Alternative 1, Alternative 2, or both? If for Alternative 1, how many tests are required for Alternative 2?

34.3 How many of re-tests are included in the capital costs for each alternative?

34.4 How would FEI repair a failed pipeline segment that is under Ellis Creek, Penticton Creek, Naramata Creek, or any environmentally sensitive area?

34.4.1. What are the implications for obtaining any required permits on the timeline for repair of failed pipe segments in these challenging

areas?

D. Project Cost Estimate

35. Reference: Exhibit B-6, FEI Response to RCIA IR1, IR 20; Exhibit B-2-1 pp.24, 69; Exhibit B-2, FEI Response to BCUC IR1, IR 30

"The Ellis Creek Pressure Control Station connects and provides pressure control (regulation) and overpressure protection from the OLI PEN 406 pipeline operating at a maximum operating pressure (MOP) of 7,826 kPa to the VER PEN 323 pipeline operating at an MOP of 5,171 kPa. It also provides seasonal flow control via the SN10-3 block valve into the VER PEN 323 pipeline, allowing control of gas flows either to the north or south."

"FEI did not consider relocating and repurposing the station equipment at the Ellis Creek Pressure Control Station for two reasons. First, FEI must maintain full functionality of the Ellis Creek Pressure Control Station until the new OLI PEN 406 extension is completely commissioned. The commissioning process may take several months due to the potential for odor fade[4] in newly constructed steel pipelines. It would be impractical to attempt to repurpose the equipment when both the Ellis Creek Pressure Control Station and newly constructed Chute Lake Pressure Control Station are required to be operational simultaneously."

"The South tie-in to the new pipeline will be an underground butt-weld into the existing OLI PEN 406 pipeline."

35.1 Provide additional explanation for why the Ellis Creek station must remain in operation during the start-up and commissioning of the OLI PEN 406 extension (Alternative 3).

35.2 How will the Ellis Creek and Chute Lake stations be in operation simultaneously if gas can no longer flow on the 1.2 km section of line following the tie-in?

35.3 Explain how FEI will operate the Ellis Creek and Chute Lake stations to mitigate odour fade in the newly constructed pipeline.

35.4 Confirm whether FEI has upgraded the Ellis Creek station pressure regulating equipment or any other substantial components since the station was constructed (presumably in 1994).

35.5 Confirm whether it will be possible to perform inline inspections of the 1.2 km deactivated portion of OLI PEN 406 if Alternative 3 is constructed.

"The gas supplies from the north and south converge at the lowest pressure point within this portion of the ITS, typically near the Polson Gate Station on the south side of Vernon."

"Should the BCUC approve the ITS TIMC project, and if cracking is found in the VER PEN 323 section which would require significant rehabilitation or replacement, FEI may choose to reactivate the 1,200 m section of the OLI PEN

406 to provide additional redundancy and resiliency to the Penticton and Summerland systems."

35.6 What are the prevailing directions of flows, by season, on the NPS 12 line between SN10-3 and the ITS interconnect on the west side of Penticton?

35.6.1. If prevailing flows are west to east, how will reactivation of the deactivated 1.2 km segment of OLI PEN 406 assist with the ITS Transmission Integrity Management Capabilities program?

35.7 Once the ITS Transmission Integrity Management Capabilities program is completed, will there be any future uses for the deactivated 1.2 km of the OLI PEN 406 line and the Ellis Creek station? If so, explain what these uses will be.

"The scope of work for abandonment would follow FEI abandonment specifications and is consistent with industry standard practice…Between the two isolated ends, FEI would excavate every 200 metres, segment the pipe, and install a cap on each side. Each segmented section would be grout filled to prevent pipe collapse (since cathodic protection would be discontinued it is expected that the pipe would corrode away over time)."

35.8 Identify the industry standards or guidelines (and provide excerpts) that state that cutting and capping of an abandoned pipeline is required every 200 metres.

35.9 Identify the industry standards or guidelines (and provide excerpts) that require grouting of the pipeline along its full abandoned length.

35.9.1. Is grouting to prevent subsidence required along the full abandoned length or only where the pipeline crosses (or is co-located with) roads and railways?

36. Reference: Exhibit B-6, FEI Response to RCIA IR1, IR 22.1, 22.3

"The table below provides details on two gas pipeline CPCN projects FEI has undertaken within the past five years that are of a similar magnitude as the OCU Project and in excess of $50 million in estimated capital costs. Both of these projects are currently underway and, as such, final actual project costs are not yet available."

36.1 Does FEI have any recently <u>completed</u> pipeline projects for which it can show the budgeted contingency, management reserve, and escalation reserve in comparison with the final amounts expended? If so, provide the base costs, budgeted contingency, management reserve, escalation reserve, the final cost of the project, and the amounts allocated to the contingency and reserves for each completed project.

36.2 Were any of these completed projects in excess of the amount budgeted in the CPCN Application? If so, did the BCUC approve the

collection from ratepayers of the full additional amounts in excess of the CPCN approved budgets?

36.2.1. Provide a summary of or a reference to the BCUC decisions on the approval of these rate base additions.

36.3 Has the BCUC approved rate base additions for any projects which received a CPCN but denied the rate base additions for the costs which exceeded the costs budgeted in the CPCN application? If so, provide details.

36.4 At what confidence levels did FEI fund (and receive CPCN approval for) the contingencies, management reserves, and escalation reserves shown in the response to RCIG IR1 22.1?

37. Reference: Exhibit B-5, FEI Responses to CEC IR1, IR 37

"Market risk covers increased costs to the project stemming from a reduced level of competitiveness when trying to recruit a construction contractor specialized in building gas line projects through mountainous terrain with shallow bedrock."

37.1 What are FEI's assumptions about the amount of excavation (as a proportion of the pipeline route) that is expected to be through bedrock, requiring blasting or hydraulic hammer excavation?

37.2 If bedrock excavation is required for substantially all of the pipeline route, what is the additional cost that FEI expects to incur?