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September 28, 2020

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

Attention: Mr. William J. Andrews

Dear Mr. Andrews:

Re: FortisBC Energy Inc. (FEI)
Project No. 1599120
Annual Review for 2020 and 2021 Delivery Rates (Application)
Response to the B.C. Sustainable Energy Association and Sierra Club of British Columbia (BCSEA) Information Request (IR) No. 1

On August 12, 2020, FEI filed the Application referenced above. In accordance with the British Columbia Utilities Commission Order G-209-20 setting out the Regulatory Timetable for the review of the Application, FEI respectfully submits the attached response to BCSEA IR No. 1.

If further information is required, please contact the undersigned.

Sincerely,

FORTISBC ENERGY INC.

Original signed:

Diane Roy

Attachments

cc (email only): Commission Secretary
Registered Parties

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1 **1.0 Topic: COVID-19 Pandemic**

2 **Reference: Exhibit B-2, Section 12.2.1 COVID-19 Pandemic**

3 FEI discusses the COVID-19 pandemic under the heading of Exogenous Factors. FEI
4 states:

5 “Due to the uncertainty, FEI is not seeking approval of exogenous factor
6 treatment for incremental impacts related to COVID-19 at this time. Instead, over
7 the coming months, FEI will evaluate the COVID-19 incremental costs and
8 related savings. If the incremental costs and related savings are determined to
9 be significant, FEI proposes to include the amounts in the previously approved
10 COVID-19 Customer Recovery Fund Deferral Account. The amounts will then be
11 reviewed in 2021 when actual 2020 amounts and forecasts for future years can
12 be ascertained, and an appropriate recovery method can be determined.” [pdf
13 pp.172-173.]

14 1.1 Setting aside exogenous factor treatment for incremental impacts related to
15 COVID-19, please discuss the impact of the COVID-19 pandemic on FEI’s
16 demand-side management (DSM) spending and energy savings in 2020 and
17 2021.

18
19 **Response:**

20 Overall, FEI’s DSM spending and energy savings are largely on track for 2020 and, if current
21 DSM activity levels continue as planned, are expected be on track in 2021 as well.

22 FEI has made adjustments to all of its DSM programs to adapt to the pandemic and has kept
23 most DSM programs in the market for customers. During the initial stages of the pandemic FEI
24 put some activities requiring an on site presence on hold including, in particular, the Energy
25 Conservation Assistance Program and Rental Apartment Efficiency Program. Where possible,
26 virtual site visits replaced on-site visits. During the first few months of the pandemic, FEI also
27 paused active marketing campaigns for energy-efficient equipment rebates and focused instead
28 on energy saving tips for customers.

29 To help meet approved DSM expenditure and energy saving levels, FortisBC is supporting the
30 BC Restart Plan, collaborating with program partners BC Hydro and CleanBC, and enhancing
31 incentives to financially support all customers. In the Residential and Income Qualified Program
32 areas, FEI is launching a time-limited, pre-qualification period for enhanced heating system
33 incentives from October 1 to December 31, 2020, with the opportunity for equipment installation
34 by March 31, 2021. To support the construction of high performance homes in an economic
35 downturn, the New Home Program enhanced incentives will remain in the market through 2021.
36 In the Commercial and Industrial program areas, FEI is supporting customers by offering



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- 1 increased incentives through 2021, and modifying the payment structure in to support capital
- 2 project studies and project completion.
- 3

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1 **2.0 Topic: Total Energy Demand**

2 **Reference: Exhibit B-2, Figure 3-1, pdf p.25**

3 2.1 Is it a coincidence that Total Energy Demand for 2020 Projected, at 235.4 PJ, is
4 the same as for 2019 Approved? If not, please explain why this would be the
5 case.

6
7 **Response:**

8 Confirmed. It is a coincidence that, to one decimal place, the 2020 Projected demand of 235.4
9 PJs is the same as the 2019 Approved demand.

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1 **3.0 Topic: Demand Forecast**

2 **Reference: Exhibit B-2, Section 3.3, Demand Forecast,**

3 “FEI’s total energy demand consists of the weather normalized residential and
4 commercial demand and the industrial and NGT demand.” [pdf p.24, underline added]

5 3.1 Are the “Actual” numbers in Figures 3-1, 3-2, 3-3 and 3-4 weather normalized?
6

7 **Response:**

8 As per Section 3.3 of the Application and Section 2.4 of Appendix A3, demand from residential
9 and commercial rate schedules (Rate Schedules 1, 2, 3 and 23) are weather normalized, with
10 the except that, for the 2020 Projected demand, FEI replaced the first six months of projected
11 normalized load with actual load, which is not weather normalized. All other rate schedules are
12 not weather normalized.

13 Figure 3-1 is total energy, so the residential and commercial components are weather
14 normalized, except for the first six months of 2020.

15 Figure 3-2 is residential customer net additions. FEI does not normalize customer additions.

16 Figure 3-3 is residential UPC and is weather normalized, except for the first six months of 2020.

17 Figure 3-4 is residential demand and is weather normalized, except for the first six months of
18 2020.

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21
22 3.2 Please explain why Figure 3-4 is titled “Normalized Residential Demand.” Does
23 this mean that other Figures, or other numbers in other Figures, are not weather
24 normalized?
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26 **Response:**

27 Please refer to the response to BCSEA IR1 3.1.
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32 3.3 For greater certainty, is the data in Figure 3-3, Rate Schedule 1 UPC (Residential
33 Use Per Customer), weather normalized?



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- 1 **Response:**
- 2 Please refer to the response to BCSEA IR1 3.1.

1 **4.0 Topic: LNG Demand**

2 **Reference: Exhibit B-2, Section 3.3.4 Natural Gas for Transportation and LNG**
3 **Demand**

4 Regarding Table 3-2: FEI Total Natural Gas Demand for NGT and non-NGT (GJ per
5 year), FEI states “As directed in Order G-86-15, FEI has included the forecast of
6 demand provided to customers under spot purchase agreements (i.e., not under firm
7 take-or-pay commitments) in the total NGT and non-NGT demand.”

8 4.1 Please provide a version of Table 3-2 that breaks out spot purchase agreements
9 so that the Total NGT and Non-NGT Demand adds up.

10

11 **Response:**

12 Order G-86-15 is referring to spot purchase agreements for LNG demand under Rate Schedule
13 46. There are no spot purchase agreements for the delivery volume of CNG under Rate
14 Schedules 3, 23, 5 or 25.

15 Please refer to the table below for an updated version of Table 3-2 of the Application that breaks
16 out the LNG spot and firm volume for NGT and Non-NGT delivery demand under Rate
17 Schedule 46.

GJ	2019 Approved	2019 Actual	2020 Projected	2021 Forecast
CNG	1,074,309	885,913	845,199	951,388
LNG Firm	1,412,821	1,334,770	1,606,225	1,779,900
LNG Spot	113,228	309	37,161	4,500
Total NGT Demand	2,600,358	2,220,992	2,488,585	2,735,788
Non-NGT Demand Firm	-	255,859	918,227	3,586,085
Non-NGT Demand Spot	170,460	49,438	3,975	99,100
Total Non-NGT Demand	170,460	305,297	922,202	3,685,185
Total NGT and Non-NGT Demand	2,770,818	2,526,289	3,410,787	6,420,973

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21 4.2 In Table 3-2, the numbers for LNG Demand for 2020 Projected and 2021
22 Forecast are 1,643,386 GJ and 1,784,400 GJ, respectively. In Figure 3-11, the
23 numbers for “RS 46 - LNG (NGT)” appear to correspond (with rounding) to the
24 numbers for LNG Demand in Table 3-2. However, in Figure 3-11 there is another
25 row, titled “RS 46 - LNG (Non-NGT),” that for 2020P and 2021F is 0.9 PJ and 3.7
26 PJ. Please explain this apparent inconsistency.

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1 **Response:**

2 There is no inconsistency between Table 3-2 and Figure 3-11 of the Application.

3 In Table 3-2, there is a Non-NGT Demand line item with 922,202 GJ for 2020P and 3,685,185
4 GJ for 2021F, which is equivalent to the 0.9 PJ and 3.7 PJ for 2020P and 2021F, respectively,
5 in Figure 3-11.

6 FEI clarifies that Non-NGT demand in Table 3-2 is associated with LNG demand under RS 46
7 only.

8

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1 **5.0 Topic: Biomethane**

2 **Reference: Exhibit B-2, Section 6.3.5, Clean Growth Initiative - Biomethane**
3 **O&M,**

4 “The 2020 Projected and 2021 Forecast total Biomethane O&M is \$1.807 million and
5 \$1.848 million, respectively.” [pdf p.58]

6 5.1 Please provide an update on the biomethane (RNG) program.

7
8 **Response:**

9 For 2020, FEI is forecasting that the total RNG delivered from the five biomethane facilities
10 currently operating, and two facilities starting operation this fall, will be approximately 0.250 PJ.
11 This volume is higher than the 0.225 PJ of RNG delivered in 2019 and a 40 percent increase
12 over the 0.176 PJ delivered in 2018.

13 As of September 2020, FEI has received BCUC approval for 11 new biomethane projects. The
14 total portfolio of 18 operational and new projects are expected to provide greater than 5.8 PJs
15 annually to the biomethane program. The timing of RNG delivery from the new projects to the
16 program will vary, with the first project expected to deliver RNG in 2020 and other projects
17 starting delivery as late as 2023.

18 Based on the biomethane facilities currently operating, BCUC-approved projects, and filed
19 applications awaiting BCUC approval, the total maximum volume of RNG that could be
20 delivered to the program is nearing the *Greenhouse Gas Reduction (Clean Energy) Regulation*
21 volume cap of about 9 PJs per annum.

22 The demand for RNG currently exceeds the available supply delivered from FEI’s RNG
23 suppliers. In 2019, as demand was exceeding the available supply, FEI ceased accepting new
24 enrolments in the RNG Program and curtailed the volume of RNG available for sale to large
25 volume, interruptible RNG customers under Long Term BERC Rate contracts served through
26 Rate Schedule (RS) 11B. The temporary closure of the RNG Program to new participants and
27 the curtailment of volumes under RS 11B is likely to be maintained until late 2021.

28 FEI forecasts that in the later part of 2021 the available supply of RNG will increase significantly
29 and will exceed the demand of all customers currently enrolled in the RNG Program. In 2022,
30 FEI expects the demand from currently enrolled customers to be approximately 0.58 PJs for the
31 year, while the volume of supply is expected to exceed 3.8 PJs.

32 Although FEI has not allowed new participants to enroll in the RNG Program since 2019, a
33 number of large volume customers have made their interest in RNG known to FEI. FEI will
34 resume full service to existing customers, as well as enrolling new participants, as sufficient new
35 RNG supply becomes available.

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1 **6.0 Topic: Other Renewable Gases**

2 **Reference: Exhibit B-2, Section 6.3.6, Clean Growth Initiative – Renewable Gas**
3 **Development, pdf p. 58**

4 “In order to support the continued growth of the renewable gas portfolio, including
5 investigating the feasibility of other renewable gases such as hydrogen and synthetic
6 methane, FEI requires additional resources within its Renewable Gas team to support
7 work on safety, codes and standards, and feasibility work more generally. The O&M
8 requirements for this initial phase of hydrogen development are approximately \$0.400
9 million in 2020, increasing to approximately \$0.750 million in 2021 to hire or contract
10 resources to proceed with work on safety, codes and standards, and feasibility work.”

11 6.1 Please confirm, or otherwise explain, that the proposed spending on Renewable
12 Gas Development referred to in the preamble does not overlap with spending
13 under the Clean Growth Innovation Fund.
14

15 **Response:**

16 Confirmed. The proposed spending on Renewable Gas Development referred to in the
17 preamble does not overlap with spending under the Clean Growth Innovation Fund.

18 FEI internal Renewable Gas team resources will undertake work on activities such as safety,
19 codes and standards and feasibility work related to developing the supply of additional
20 renewable gases and hydrogen into the program.

21 The Clean Growth Innovation Fund (CGIF) is designed to support feasibility studies that will
22 identify pre-commercial technologies or commercial technology gaps in areas related to the
23 CGIF mandate.

24 The CGIF will not directly fund the Renewable Gas team scope. However, CGIF-funded
25 research may indirectly advance efforts undertaken by the Renewable Gas team towards the
26 development of codes and standards as project proponents work with regulatory agencies to get
27 pilot projects and other technology trials approved and advanced.

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31 6.2 How will FEI report on the results of its further development of other renewable
32 gases such as hydrogen and synthetic methane?
33

34 **Response:**

35 For FEI’s Renewable Natural Gas (biomethane) program, FEI provides information to the BCUC
36 through four streams of information:

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- 1 1. As projects are developed, they are brought before the BCUC for approval;
- 2 2. Each year, FEI provides the BCUC with a BVA Annual Status Report, which provides
- 3 information on the quantities and costs of biomethane purchased, and quantities and
- 4 prices for biomethane sold;
- 5 3. Through the Annual Review process, which includes information on the revenues,
- 6 capital and O&M related to the various biomethane projects; and
- 7 4. By copying the BCUC on its Annual Report under Section 18 of the *Clean Energy Act* to
- 8 the Ministry of Energy, Mines and Petroleum Resources (MEMPR) for biomethane
- 9 projects that are undertaken through the GGRR.

10 Although FEI will continue with the above noted reporting, and will also include information on
11 the Renewable Gas team O&M through the Annual Review process, FEI recognizes that, as the
12 biomethane program is growing and expanding into other renewable gases, more
13 comprehensive reporting to the BCUC will be needed. As such, FEI proposes to develop an
14 annual report to the BCUC on its Renewable Gas program that provides a more comprehensive
15 overview of all of the activities undertaken in support of the program.

16 FEI would report, for example, on its progress on various initiatives, technical and economic
17 feasibility studies, testing programs, work to support codes and standards development, and
18 education, safety and training that may need to occur before FEI could acquire, produce or
19 deliver these new types of renewable gases and hydrogen gas to our customers. FEI proposes
20 that this reporting be aligned with the timing and content of the reporting that FEI currently
21 undertakes to MEMPR on its GGRR activities, to avoid duplication of any overlapping content.

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1 **7.0 Topic: 2022 LTGRP Spending**

2 **Reference: Exhibit B-2, pdf p.76**

3 FEI seeks approval of a deferral account for the costs of external resources required for
4 the 2022 Long Term Gas Resource Plan that are incremental to the costs in FEI's Base
5 O&M for the LTGRP. FEI says these incremental costs are required to comply with the
6 BCUC directives from the 2010, 2014, 2017 and 2019 LTGRP Decisions to conduct
7 work incremental to that required for past resource plans.

8 FEI notes that the 2019 LTGRP Decision (Order G-39-19) includes a specific direction to
9 address climate action and GHG emissions in the 2022 LTGRP, as follows:

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

- 15 • Initiatives targeting more energy efficient buildings, in terms of gas
- 16 • Requirements for 15 percent of natural gas consumption to be from
17 renewable gas;
- 18 • Industrial electrification, with respect to demand for natural gas;
- 19 • How 2018 CleanBC's plans for clean transportation affect FEI's forecast
20 for its NGT programs; and
- 21 • Other initiatives to be developed by the Government of BC over the next
22 18 to 24 months.”

23 FEI provides 2022 LTGRP Estimated Expenditures in Table 7-10.

24 7.1 Is FEI confident that the proposed spending outlined in Table 7-10 will be
25 adequate to fully address climate action and GHG emissions in the 2022 LTGRP,
26 including the particular points identified by the Panel in the 2019 LTGRP
27 Decision?

28 **Response:**

29 Yes, FEI is confident that the estimated spending will be sufficient to enable FEI to address the
30 BCUC's directives and recommendations from past long-term resource plans, including the
31 BCUC's directives in the 2019 LTGRP Decision referenced in the above preamble regarding
32 climate action and GHG emissions. As part of the 2022 LTGRP, FEI will also address its own
33 Clean Growth Pathway commitments.
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7.2 What is FEI’s timetable for developing the 2022 LTGRP?

Response:

FEI intends to file the 2022 LTGRP on March 31, 2022 in accordance with Order G-39-19. Ongoing scanning of the planning environment and a range of analytical activities are currently underway and will continue through 2021. FEI will be undertaking stakeholder engagement activities this fall. As part of the engagement activities, FEI will present a timeline of the major activities involved in preparing the LTGRP and key points when FEI will seek input from the Resource Planning Advisory Group, Indigenous communities and other stakeholders.

1 **8.0 Topic: FEI GHG Emissions**

2 **Reference: FEI Annual Review for 2019 Rates, Exhibit B-4, FEI Response to**
 3 **BCSEA IR 1.7.1, pdf pp.15-16.**

4 In the Annual Review for FEI’s 2019 Rates, FEI provided the following information
 5 regarding its reported annual GHG emissions from 2009 to 2017:

Estimated GHG Emission (tCO2e)	
2009	161,793
2010	153,993
2011	137,059
2012	134,355
2013	127,940

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Estimated GHG Emission (tCO2e)	
2014	140,507 *
2015	120,997 *
2016	124,077 ^a
2017	137,903 ^b

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Notes:

* GHG Emissions for 2014-2017 adopted IPCC 4th Assessment Report for global warming potential.

^a Value reported to BC Ministry of Environment. GHG emission reported to Environment Canada and Climate Change was 126,613 tCO2e. The difference is attributed to differing reporting requirements.

^b Value reported to BC Ministry of Environment. GHG emission reported to Environment Canada and Climate Change was 142,534 tCO2e. The difference is attributed to differing reporting requirements.

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9 The Environment Canada and Climate Change website provides GHG emission values
 10 for the organization based on the revised Global Warming Potential adopted in 2014 (as
 11 noted by the asterisk in the table provided above). Reporting using the Environment
 12 Canada Global Warming Potential standard provides a more comparable year to year
 13 comparison of GHG emissions. The revised GHG Emission values for FEI using the
 14 Environment Canada Global Warming Potential standard are as follows:

Estimated GHG Emission (tCO ₂ e)	
2009	177,827
2010	171,059
2011	153,611
2012	150,648
2013	141,947

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8.1 Please provide a table showing FEI’s annual reported estimated GHG emissions for 2009 up to the most recent available year. For 2009 to 2013, please use the revised figures based on the 2014 Environment Canada Global Warming Potential (for methane).

Response:

Please see the table below which shows FEI’s annual reported estimated GHG emissions from the year 2009 through 2019.

GHG Emissions Reported to ECCC using IPCC 4 th Assessment (tCO ₂ e)	
Year	
2009	177,827
2010	171,059
2011	153,611
2012	150,647
2013	141,948
2014	140,507
2015	120,997
2016	126,612
2017	142,534
2018	123,509
2019	145,127

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8.2 What measures did FEI take in 2019 and 2020 year-to-date to control and reduce its GHG emissions? Please provide an estimate of the cost in 2019 and 2020 year-to-date of carrying out these measures.

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1 **Response:**

2 In general, FEI's day-to-day operational activities are designed to ensure the integrity of the
3 natural gas system, assisting in the control and reduction of GHG emissions to the atmosphere.
4 These operational activities include fugitive leak detection surveys and repairs at compressor
5 stations and LNG plants, maintenance related activities such as pigging to monitor the integrity
6 of the transmission pipeline, residential meter set redesign, replacement of end of life assets,
7 and the use of CNG for fleet vehicles.

8 FEI's costs associated with GHG reduction measures that are in addition to FEI's integrity
9 management costs are discussed below.

10 For 2019, the cost of these additional GHG reduction measures was similar to previous years at
11 \$50 thousand for detailed Leak Detection and Repair (LDAR) surveys using Optical Gas
12 Imaging (OGI) cameras by an external consultant at Tilbury Expansion and Mt. Hayes LNG
13 plants.

14 For 2020, the cost to complete LDAR surveys using OGI will increase from \$50 thousand to
15 approximately \$100 to \$150 thousand due to requirements under the BC OGC Methane
16 regulations and the Fugitive Methane Guideline. In addition, FEI's capital program in 2020 will
17 include the purchase of Zero Emission Vacuum (ZeVAC) compressor units to reduce venting
18 from transmission pipeline maintenance projects. The estimated capital cost associated with
19 the ZeVAC units is approximately \$1.25 million. Additional programs such as research on
20 compliance options on dry seal gas requirements and revisions to the fugitive emission factor
21 for farm taps were examined in 2019 and 2020 at a cost of approximately \$10 thousand.

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25 8.3 How do these measures and their cost compare with measures taken in 2018?

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27 **Response:**

28 As explained in the response to BCSEA IR1 8.2, GHG reduction and control measures include a
29 variety of operation and maintenance activities associated with gas system integrity
30 management. The incremental increase in GHG reduction measures from 2018 included the
31 expansion of the LDAR surveys using OGI and the forecasted capital purchase of the ZeVAC
32 units. For 2020, the total forecasted increase in costs (over 2018) for these GHG reduction
33 measures is approximately \$1.35 million. FEI expects an estimated reportable GHG savings of
34 approximately 5,000 – 10,000 tCO₂e from these measures.

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2 8.4 How do these measures and their cost compare with measures expected in
3 2021?
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5 **Response:**

6 The costs associated with GHG reduction measures for 2021 are expected to increase slightly
7 in comparison to 2020 due to an increase in LDAR survey requirements. LDAR surveys using
8 OGI are a compliance requirement with the BC OGC and do not reduce actual GHG emissions.

9 The capital costs associated with GHG emission reduction measures in 2021 are dependent on
10 a number of factors, and in particular, whether the upgrade of the Eagle Mountain (V1)
11 compressor station commences. The proposed Eagle Mountain (V1) compressor station project
12 would involve the addition of two electric compressor engines at the site, potentially reducing
13 the combustion related emissions for operations. Should this project commence in 2021, the
14 capital cost of GHG reduction measures are expected to increase significantly. Other major
15 capital measures will include compliance requirements associated with BC OGC dry seal gas
16 venting requirements. Compliance options for the dry seal venting limits are still being
17 assessed and a cost estimate is not currently available. These capital projects will not be
18 completed in 2021 and as such, the GHG reductions will not materialize until project completion
19 post 2021.

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23 In its September 18, 2018 response to BCSEA IR 1 in the FEI Annual Review for 2019
24 Rates proceeding, FEI stated:

25 “Lastly, other compliance measures associated with GHG emissions reporting
26 and compliance requirements face uncertainty. Specifically, Environment and
27 Climate Change Canada (ECCC) Regulations Respecting Reduction in the
28 Release of Methane and Certain Volatile Organic Compounds are subject to
29 equivalency agreements between ECCC with BC Ministry of Environment.
30 Should ECCC requirements be adopted, additional O&M and capital compliance
31 costs are expected. The timeframe associated with adopting these changes is
32 not expected until 2020.” [pdf p.18]

33 8.5 What is the status of the BC Ministry of Environment’s adoption of the ECCC
34 Regulations Respecting Reduction in the Release of Methane and Certain
35 Volatile Organic Compounds, and FEI’s associated additional O&M and capital
36 compliance costs?
37



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1 **Response:**

2 The BC Ministry of Environment, through the BC Oil and Gas Commission (BC OGC), agreed to
3 equivalency with Environment and Climate Change Canada on methane regulations in Q2 of
4 2019. For FEI, compliance requirements associated with methane regulations can be
5 categorized as either fugitive survey requirements or seal gas venting requirements.

6 Fugitive survey requirements came into effect in 2020. These requirements include multiple
7 comprehensive LDAR surveys using OGI devices and subsequent repair report submissions to
8 the BC OGC. The number of required leak detection surveys is dependent on the operating
9 hours of the compressor stations. FEI's forecast O&M cost for these surveys is \$100 thousand
10 – \$150 thousand.

11 Seal gas venting requirements come into effect in January 2022. FEI is assessing the capital
12 compliance costs of these requirements.

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1 **9.0 Topic: FortisBC Corporate and Sustainability Report**

2 **Reference:** <https://www.fortisbc.com/sustainabilityreport/home>

3 In Decision and Order G-165-20, p.167, the Panel noted that FEI said that it expects that
4 interveners will be free to ask questions regarding FortisBC's Annual Sustainability
5 Report within the Annual Review process.

6 On its website, FortisBC says its 2019 Corporate and Sustainability Report has "moved
7 online" to: <https://www.fortisbc.com/sustainabilityreport/home>.

8 9.1 Please file a pdf copy of FortisBC's 2019 Corporate and Sustainability Report if
9 possible.

10
11 **Response:**

12 The 2019 FortisBC Corporate and Sustainability Report is only available in digital format online
13 through the website link provided in the preamble to the IR above. A PDF document is not
14 available for the 2019 reporting year.

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1 **10.0 Topic: FortisBC Corporate and Sustainability Report, Environmental**
2 **Indicators**

3 **Reference:** [https://www.fortisbc.com/sustainabilityreport/2019-performance-](https://www.fortisbc.com/sustainabilityreport/2019-performance-indicators/protecting-our-environment)
4 [indicators/protecting-our-environment](https://www.fortisbc.com/sustainabilityreport/2019-performance-indicators/protecting-our-environment)

5 In its 2019 FortisBC Corporate and Sustainability Report, FortisBC provides data for
6 performance indicators in various tables.

7 The table “Protecting Our Environment, Performance Summary,” says in Footnote 1
8 “This summary table reports on sustainability data for FortisBC Energy Inc. (FEI) and
9 FortisBC Inc. (FBC) as of December 31, 2019.”

10 The table and notes for the first two indicators, under the heading Emissions, are as
11 follows:

Indicator	2017	2018	2019
Emissions			
Direct greenhouse gas (GHG) emissions (scope 1) ² (figures in tCO ₂ e)	153,000	130,000	158,000
Indirect GHG emissions (scope 2) ³ (figures in tCO ₂ e)	5,300	7,200	7,000

12 ² Scope 1 emissions, as defined under the Greenhouse Gas Protocol, are direct
13 emissions from owned or controlled sources. For 2019, this includes externally verified
14 scope 1 GHG emissions as reported to the BC Ministry of Environment of 138,000
15 tCO₂e and 7,500 tCO₂e for FortisBC Energy Inc. and LNG operations, respectively.

16 ³ Scope 2 emissions, as defined under the Greenhouse Gas Protocol, are indirect
17 emissions from the generation of purchased electricity for own use. Not included is
18 externally verified scope 3 GHG emissions for FBC as reported to the BC Ministry of
19 Environment in 2019 of approximately 56,000 tCO₂e.

20 10.1 Please clarify whether the figures for Direct GHG emissions and for Indirect GHG
21 emissions include GHG emissions attributable to FBC (electric). If so, please
22 provide figures for FEI (gas) alone.
23

24 **Response:**

25 The figures for Direct and Indirect GHG emissions in the “Protecting Our Environment,
26 Performance Summary” include emissions attributable to FBC (electric) as per Footnote 1. The

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1 2019 Direct GHG emissions for FEI were 152,000 tCO₂e and the 2019 Indirect GHG emissions
2 for FEI were 400 tCO₂e.

3 For 2017 and 2018, the separation of Direct and Indirect GHG emissions attributed to FEI and
4 FBC is problematic as the emissions related to office building use is difficult to separate
5 between entities due to limitations with the dataset. However, for Direct GHG emissions, the
6 contribution of FBC to the value is minor (i.e. less than 10 percent) compared to FEI. In
7 contrast, for Indirect GHG emissions, the contribution of FEI to the value is small (i.e.
8 approximately 30 percent) compared to FBC.

9
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12 10.2 For Direct GHG emissions, what explains the drop from 2017 to 2018 and the
13 increase from 2018 to 2019?

14

15 **Response:**

16 The majority of Direct GHG emissions are attributed to FEI Operations and the movement of
17 natural gas through the gas pipeline system. As such, the decrease in Direct GHG emissions
18 from 2017 to 2018, and the subsequent increase from 2018 to 2019, is the result of fluctuations
19 in the amount of natural gas moved through the system and delivered to customers.

20

21

22

23 10.3 What are FEI's expectations for Direct GHG emissions in 2020, based on year-
24 to-do and projections?

25

26 **Response:**

27 As indicated in the response to BCSEA IR1 10.2, the majority of Direct GHG emissions are
28 attributed to FEI operations and the movement of natural gas through the system. Factors such
29 as customer energy usage, the location of customer demand, weather patterns and
30 conservation efforts affect the volume of natural gas consumed and therefore, the associated
31 Direct GHG emissions. As such, estimates on GHG emissions are challenging and not normally
32 completed by FEI. However, for the purposes of this response, based on the forecast natural
33 gas demand as noted in Section 3.3 of the Application, an increase in Direct GHG emissions in
34 the range of 5 percent could be anticipated.

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1
2 The table and notes for the next indicators, under the heading Environmental benefits
3 from FortisBC energy solutions, are as follows:

Indicator	2017	2018	2019
Environmental benefits from FortisBC energy solutions			
GHG emissions saved from natural gas used for transportation ⁴ (figures in tCO ₂ e)	48,000	45,000	37,100
GHG emissions saved from liquefied natural gas (LNG) used for marine bunkering (figures in tCO ₂ e)	9,000	17,000	34,200
GHG emissions saved from Renewable Natural Gas ⁵ (figures in tCO ₂ e)	7,700	8,900	11,100
Reduction in criteria air contaminants (CAC) released to the environment through the use of LNG and compressed natural gas (CNG) by customers ⁶ (figures in tonnes CAC)	249	269	294
Lifetime energy saved from conservation and energy management programs ⁷ (figures in tCO ₂ e)	292,000	334,000	483,000

4 ⁴ Value differs from the compliance credits as determined by the Renewable and Low
5 Carbon Fuel Requirements Regulation due to designated allowable limits as determined
6 by the BC Government for the purposes of reporting under that regulation.

7 ⁵ Renewable Natural Gas is produced in a different manner than conventional natural
8 gas. It is derived from biogas, which is produced from decomposing organic waste from
9 landfills, agricultural waste and wastewater from treatment facilities. The biogas is
10 captured and cleaned to create carbon neutral Renewable Natural Gas (also called
11 biomethane).

12 ⁶ The CAC value includes nitrogen oxides (NO_x) and sulphur oxides (SO_x) but excludes
13 particulate matter. The formation of particulate matter is related to the concentration of
14 NO_x and SO_x in the exhaust. Given the decrease in NO_x and SO_x emissions for the use
15 of natural gas versus diesel, a decrease in particulate matter is expected.

16 ⁷ The lifetime energy saved is based on the net present value (NPV) estimates on
17 energy savings from gas and electric programs that commenced in the reporting year as
18 published in FortisBC's conservation and energy management filings to the British
19 Columbia Utilities Commission (BCUC) as well as lifecycle GHG emission factor for gas
20 using models adopted by the BC Government.

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1 10.4 What explains the decline in GHG emissions saved from natural gas used for
2 transportation from 2017 to 2019? What are FEI's expectations for 2020 and
3 2021?
4

5 **Response:**

6 The natural gas used for transportation from 2017 to 2019 includes both CNG and LNG used for
7 on-road transportation. Although CNG demand has increased moderately from 2017 through
8 2019, the overall demand for natural gas has declined in the transportation sector as a result of
9 LNG on-road customers taking their vehicles off road at the end of life. There is currently not an
10 LNG-powered technology option available to serve the high horsepower market. The decline in
11 GHG emissions saved from natural gas used for transportation over this period is associated
12 with the decline in the use of LNG as an on-road transportation fuel.

13 FEI is forecasting a decrease in GHG emissions saved in 2020 for the on-road transportation
14 sector from 2019 actuals. This is because the overall sales volumes for 2020 are expected to be
15 lower than 2019 actuals as some customer segments such as the transit segment, which
16 contributes more than 40 percent of the overall CNG demand, have reduced their services as a
17 result of COVID-19. There service reductions have significantly impacting overall fuel demand in
18 2020.

19 FEI anticipates 2021 emissions savings to be higher than 2020 with CNG demand from the
20 transit sector expected to return to pre-COVID levels and continued growth from the addition of
21 new CNG vehicles across all market segments- FEI also anticipates that the additional growth
22 of CNG as an on-road transportation fuel will partially offset the continued gradual decline of
23 LNG for on-road transportation uses.

24 Given the uncertainty associated with COVID-19 impacts through the remainder of 2020 and
25 into 2021, FEI cautions that the emissions savings for 2021 may be materially impacted if the
26 CNG/LNG on-road customers have to curtail or reduce their operations, especially in the transit
27 segment, and the expected adoption of new CNG vehicles across all market segments slows.

28
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31 10.5 For GHG emissions saved from liquefied natural gas (LNG) used for marine
32 bunkering, what are FEI's expectations for 2020 and 2021?
33

34 **Response:**

35 FEI expects GHG emissions saved from LNG used for marine bunkering to increase in 2020
36 and 2021 from 2019 actuals due to the projected increase in LNG demand as a marine fuel with
37 existing customers — BC Ferries and Seaspans Ferries.

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1 LNG demand is projected to increase in 2020 as the new BC Ferries vessel, Spirit of
2 Vancouver, which was commissioned in May 2019, will have been in operation for a full
3 calendar year. In addition, two new Seaspan Ferries' vessels are expected to be in revenue
4 service by Q4 2021 resulting in higher LNG demand. With these projected increases in LNG
5 demand over the next two years, the associated GHG emissions savings are also expected to
6 increase.

7 Given the uncertainty associated with COVID-19, FEI cautions that the emissions savings for
8 2020 and 2021 may be materially impacted if existing customers curtail or reduce operations.

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12 10.6 What explains the substantial increase in Lifetime energy saved from
13 conservation and energy management programs from 2017 to 2019? What are
14 FEI's expectations for 2020 and 2021?
15

16 **Response:**

17 The increase in net present value (NPV) of gas savings from conservation and energy
18 management programs when comparing 2017 to 2019 is due primarily to the substantial
19 increase in approved budget between those two years. In particular, between 2017 and 2019,
20 there have been increased incentive expenditures and participants resulting in a larger quantity
21 of program qualified energy efficient equipment installed through Conservation and Energy
22 Management programs.

23 At this time, FEI's expectations for 2020 and 2021 have not changed from the approved FEI
24 2019-2022 Demand Side Management Expenditures Plan (DSM Plan). FEI is in the midst of
25 assessing some changes to the DSM Plan for those two years but this assessment is not ready
26 yet. FEI currently plans to bring that update forward for external stakeholder and BCUC review
27 later this year.

28

1 **11.0 Topic: FortisBC Corporate and Sustainability Report, Partners and**
 2 **Communities Indicators**

3 **Reference:** [https://www.fortisbc.com/sustainabilityreport/2019-performance-](https://www.fortisbc.com/sustainabilityreport/2019-performance-indicators/working-with-our-partners-and-communities)
 4 [indicators/working-with-our-partners-and-communities](https://www.fortisbc.com/sustainabilityreport/2019-performance-indicators/working-with-our-partners-and-communities)

5 Under the heading “Working with our partners and communities,” the table and notes for
 6 the performance indicators under the subheading “Economic” are as follows:

7 **Performance summary¹**

Indicator	2017	2018	2019
Economic			
Community events participated in ²	505	429	332
Communities that received investment	85	75	76
Number of Indigenous communities that received training from the First Nations Emergency Services Society	126	120	70

8 ¹ This summary table reports on sustainability data for FortisBC Energy Inc. and
 9 FortisBC Inc. as of December 31, 2019.

10 ² A FortisBC event or activity open to members of the public (inclusive of virtual
 11 activities) where a FortisBC employee is present to answer questions and share
 12 information about the company.

13 ³ Revenues as reported per external financial statements for FortisBC Energy Inc. and
 14 FortisBC Inc.

15 11.1 Please provide a revised version of the table in the preamble, showing data for
 16 FEI alone.

17 **Response:**

18 FEI provides a revised version of the Performance summary table showing data for FEI alone
 19 below.
 20

Performance Summary - FEI alone			
Indicator	2017	2018	2019
Community events participated in	364	300	242
# of Communities that received investment	60	53	57

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Performance Summary - FEI alone			
Indicator	2017	2018	2019
Number of Indigenous communities that received training from the First Nations Emergency Services Society	126	120	70

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11.2 For “Community events participated in,” does the declining trend from 2017 to 2019 apply to FEI alone? If so, what explains the decline? What does FEI expect for 2020 and 2021?

Response:

No, the declining trend applies to both FEI and FBC. The decrease in the number of events, communities that received investment and indigenous communities that received training is due to a number of factors, including:

- Beginning in 2018, FEI implemented a more targeted approach to event attendance in order to reach specific market segments with a focus on closer and more effective engagement. This has resulted in FEI expending increased effort over fewer events;
- The C&EM budget apportioned to these events and investments was decreased by \$200 thousand in 2019, as the focus was to target segmented markets defined from our market research.

The forecast for engagement and community outreach for 2020 and 2021 was similar to 2019. However, the majority of engagement activities and events in 2020 have been cancelled due to COVID-19. As such, FEI is evolving its approach by piloting virtual open houses and events.

11.3 For “Number of Indigenous communities that received training from the First Nations Emergency Services Society,” does the declining trend from 2017 to 2019 apply to FEI alone? If so, what explains the decline? What does FEI expect for 2020 and 2021?



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1 **Response:**

2 Yes this figure is for FEI alone. FEI provides funding to First Nations Emergency Services
3 Society (FNESS) to support its Fire Expo where the goal is to provide safety training to First
4 Nation communities that lack capacity, resources, or infrastructure for emergency response,
5 including firefighting and prevention. The number and composition of the communities that
6 receive support is determined by FNESS, and is influenced by a number of factors. For
7 example, FNESS has advised FEI that the number of communities that receive training through
8 its Fire Expo is heavily impacted by the location of the training. For instance, there are fewer
9 participants in remote areas as compared to the number of participants in more accessible
10 areas.

11 The 2020 Fire Expo Event was slated to take place in the Lower Mainland but was cancelled
12 due to the COVID-19 pandemic. FNESS Fire Expo remains uncertain for 2021, but if it
13 proceeds, FEI expects that participation will be similar to previous years, or more if the event is
14 held in an accessible location such as the Lower Mainland.

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1 **12.0 Topic: Clean Growth Pathway to 2050, 30BY30 Target**

2 **Reference: Fortis BC Clean Growth Pathway to 2050**

3 ([https://www.cdn.fortisbc.com/libraries/docs/default-source/about-](https://www.cdn.fortisbc.com/libraries/docs/default-source/about-us-documents/clean-growth-pathway-brochure.pdf?sfvrsn=1a4b811f_2)
4 [us-documents/clean-growth-pathway-](https://www.cdn.fortisbc.com/libraries/docs/default-source/about-us-documents/clean-growth-pathway-brochure.pdf?sfvrsn=1a4b811f_2)
5 [brochure.pdf?sfvrsn=1a4b811f_2](https://www.cdn.fortisbc.com/libraries/docs/default-source/about-us-documents/clean-growth-pathway-brochure.pdf?sfvrsn=1a4b811f_2)); **FortisBC 30BY30 Target**
6 ([https://www.fortisbc.com/news-events/media-centre-](https://www.fortisbc.com/news-events/media-centre-details/2019/09/23/fortisbc-sets-30by30-target-for-a-lower-carbon-future)
7 [details/2019/09/23/fortisbc-sets-30by30-target-for-a-lower-carbon-](https://www.fortisbc.com/news-events/media-centre-details/2019/09/23/fortisbc-sets-30by30-target-for-a-lower-carbon-future)
8 [future](https://www.fortisbc.com/news-events/media-centre-details/2019/09/23/fortisbc-sets-30by30-target-for-a-lower-carbon-future))

9 FortisBC’s “Clean Growth Pathway to 2050” outlined four key areas in which FortisBC
10 would make substantial reductions in GHG emissions across the province:

- 11 • “tripling investment in energy efficiency in homes, businesses and industry and
12 developing innovative energy projects in BC’s communities
- 13 • investing in low and zero-carbon vehicles and transportation infrastructure
- 14 • increasing Renewable Gas inventory by increasing Renewable Natural Gas
15 (RNG) supply and advancing hydrogen deployment
- 16 • positioning BC as a vital domestic and international Liquefied Natural Gas (LNG)
17 provider to lower global GHG emissions.”

18 On September 23, 2019 FortisBC issued its 30BY30 Target to reduce its customers’
19 greenhouse gas emissions by 30 per cent by the year 2030. FortisBC says:

20 “Our 30BY30 target is part of the next phase of our [2018] Clean Growth
21 Pathway to 2050. It will help focus us on our path, allow us to track our progress
22 and drive us to find innovative new solutions that advance a sustainable future –
23 in an affordable way.” [\[https://www.fortisbc.com/about-us/sustainability\]](https://www.fortisbc.com/about-us/sustainability)

24 12.1 Please describe in more detail the relationship between the Clean Growth
25 Pathway to 2050 and the 30BY30 target.

26
27 **Response:**

28 The Clean Growth Pathway to 2050 (Clean Growth Pathway) outlines FortisBC’s vision to align
29 with the B.C. government’s goal to transition to a low carbon and renewable energy economy
30 and address climate change solutions in a global context. While the Clean Growth Pathway is
31 FortisBC’s long-term plan to 2050, the 30BY30 target represents FortisBC plan to track the
32 progress of its activities, outlined in the four key areas of the Clean Growth Pathway, over the
33 next ten years.

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1
2 12.2 How does the 30% customer GHG reduction target deal with changes in the
3 number of customers over time?
4

5 **Response:**

6 The 30BY30 target is an absolute target to avoid 3.9 million tonnes of carbon dioxide equivalent
7 (CO₂e) emissions by the year 2030, which is approximately 30 percent of our 2007 customer
8 emissions. Given that the target is absolute, it does not take into account changes in the
9 number of customers over time. This methodology was chosen because it is straightforward,
10 easily understood, and aligned with the provincial government's CleanBC baseline year of 2007.

11
12

13
14 12.3 Does the customer GHG reduction target apply to customers' GHG emissions
15 from energy supplied by FortisBC or from all sources?
16

17 **Response:**

18 FortisBC's 30BY30 target applies to customers' GHG emissions from energy supplied by
19 FortisBC.

20
21

22
23 12.3.1 Does the customer GHG reduction target include GHG emissions
24 reductions due to substitution of lower-carbon fuel for higher-carbon
25 fuel?
26

27 **Response:**

28 Yes, an activity to substitute higher carbon fuels for lower carbon fuels reduces a customer's
29 GHG emissions; therefore, these avoided emissions are included.

30
31

32
33 12.4 Does the 30BY30 Target apply only to customers' GHG emissions within BC?
34

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1 **Response:**

2 No, as noted in the preamble above, one of the four key areas in which FortisBC plans to
3 reduce customer GHG emissions is by providing liquefied natural gas (LNG) to international
4 customers, including for marine bunkering and other international energy uses that displace
5 higher carbon fuels such as marine heavy fuel oil and coal. Accordingly, the target includes
6 GHG emissions reductions derived from customers' out-of-province use of FEI's LNG. FEI
7 calculates the GHG emissions reductions based on the difference in carbon emissions between
8 FEI's LNG and the incumbent fuel.

9
10

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12 12.4.1 Does the target include GHG emissions from customers' out-of-
13 province use of LNG from FEI?

14

15 **Response:**

16 Please refer to the response to BCSEA IR1 12.4.

17
18

19

20 12.4.2 How does the 30BY30 Target apply to customers' GHG emissions
21 reductions associated with FEI's marine LNG service or "export
22 customers"?

23

24 **Response:**

25 Please refer to the response to BCSEA IR1 12.4.

26

27

28

29

30 12.5 How does FortisBC determine the quantity of customers' GHG emissions in
31 terms of the 30BY30 Target?

32

33 **Response:**

34 Please refer to the response to BCSEA IR1 12.2.

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12.6 Does the reduction target apply to GHG emissions by FBC (electric) customers in addition to GHG emissions by FEI (gas) customers?

Response:

Yes, the 30BY30 target applies to both FEI and FBC customer GHG emissions reductions as both the natural gas and electric infrastructure systems have key roles to play in meeting GHG emission reduction goals. Activities within FBC, such as investing in electric vehicle charging infrastructure, also help our customers reduce their GHG impact.

12.7 Please confirm, or otherwise explain, that the reduction target applies to the total GHG emissions from all customers, and not to GHG emissions from individual customers.

Response:

Confirmed, the reduction target applies to the total GHG emissions from all customers. Please also refer to the response to BCSEA IR1 12.2 for additional detail.

12.8 What is the 2020 GHG emissions baseline in annual tonnes CO₂e to which the 30% reduction target is applicable? For greater certainty, please specify the 2030 target in annual tonnes CO₂e.

Response:

Please refer to the response to BCSEA IR1 12.2.

12.9 Does FEI have intermediate milestones for 30BY30, such as percentage reductions by year?

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1 **Response:**

2 Since FortisBC's 30BY30 target is the intermediate milestone for the company's Clean Growth
3 Pathway to 2050, FortisBC has not set an intermediate milestone for 30BY30. Rather, FEI
4 anticipates reporting annually on the progress of the activities within its 30BY30 plan.
5 Accordingly, FEI is developing roadmaps for each of the four key GHG reduction pillars
6 identified in the Clean Growth Pathway. The roadmaps, which will be developed over 2020 and
7 2021, will identify key activities that are required in the near to medium term to achieve our
8 30BY30 target. The Company has also undertaken an exercise to review existing GHG data
9 and analyses related to the Company's activities in order to ensure consistency and best
10 practices in 30BY30 reporting.

11 While the roadmaps are being developed, FEI will continue to advance its existing programs
12 and initiatives that support the four key pillars of the Clean Growth Pathway in order to reduce
13 our customers' emissions.

14 Finally, progress to date on activities and GHG emissions avoided is reported in the Company's
15 annual sustainability report.

16
17

18

19 12.10 Will FEI report annually on progress toward achieving the 30% customer GHG
20 reduction target?

21

22 **Response:**

23 Please refer to the response to BCSEA IR1 12.9.

24

25

26

27 12.11 What measures will FEI undertake in 2020 and 2021 (a) to implement the
28 30BY30 program and (b) to achieve the reductions in customers' GHG
29 emissions?

30

31 **Response:**

32 Please refer to the response to BCSEA IR1 12.9.

33

34

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1 12.12 Please file any documentation FEI has that further elaborates the 30BY30 Target
2 beyond the September 2019 media release noted in the preamble.

3

4 **Response:**

5 In FortisBC's 2019 Corporate and Sustainability Report, the Company discusses the 30BY30
6 target and provides additional description of how our current activities in each of the four key
7 areas of the Clean Growth Pathway to 2050 will advance progress toward the goal. Online:

8 [https://www.fortisbc.com/sustainabilityreport/sustainability-in-all-we-do/protecting-the-](https://www.fortisbc.com/sustainabilityreport/sustainability-in-all-we-do/protecting-the-environment)
9 [environment](https://www.fortisbc.com/sustainabilityreport/sustainability-in-all-we-do/protecting-the-environment)

10 The Company expects to add additional detail about the target, progress and enabling activities
11 in the 2020 Corporate and Sustainability Report.

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1 **13.0 Topic: LNG Sales to Customers From China**

2 **Reference: FortisBC 2019 Corporate and Sustainability Report**

3 The FortisBC 2019 Corporate and Sustainability Report cites a FortisBC article titled
4 “Tilbury LNG exports can reduce lifecycle GHGs in China: study”
5 (<https://talkingenergy.ca/topic/tilbury-lng-exports-can-reduce-lifecycle-ghgs-china-study>).

6 The article states that “Customers from China are purchasing LNG produce [sic] at
7 Tilbury is [sic] to displace coal as a source of energy for heating, industrial processes
8 and power generation.”

9 13.1 Can FEI provide evidence that LNG sold to customers from China is purchased
10 for the purpose of displacing coal as a source of energy for heating, industrial
11 processes and power generation?
12

13 **Response:**

14 FEI’s current customer who purchases LNG from Tilbury and exports it to China has several
15 end-use customers they sell to depending on the time of year and current price for LNG landed
16 in China. According to our customer, who primarily ships LNG into eastern China, every GJ of
17 LNG sent to China displaces a higher carbon fuel source, such as coal and diesel. The actual
18 fuel source displaced will vary from customer to customer and with each shipment.

19