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March 2, 2018

Lawson Lundell LLP
Suite 1600 Cathedral Place
925 West Georgia Street
Vancouver, B.C.
V6C 3L2

Attention: Mr. Ian Webb

Dear Mr. Webb:

Re: FortisBC Energy Inc. (FEI)

Project No. 1598915

**Application for Approval of Operating Terms between the City of Surrey and FEI
(the Application)**

Response to the City of Surrey (Surrey) Information Request (IR) No. 2

On May 18, 2017, FEI filed the Application referenced above. In accordance with the British Columbia Utilities Commission Order G-201-17 setting out the amended Regulatory Timetable for the review of the Application, FEI respectfully submits the attached response to Surrey IR No. 2.

If further information is required, please contact Ilva Bevacqua at 604-592-7664.

Sincerely,

FORTISBC ENERGY INC.

Original signed:

Diane Roy

Attachments

cc (email only): Commission Secretary
Registered Parties

FortisBC Energy Inc. (FEI or the Company) Application for Approval of Terms for an Operating Agreement between the City of Surrey and FEI (the Application)	Submission Date: March 2, 2018
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1 **A. OPERATING FEE**

2 **4.0 Reference: FEI's response to BCUC IR 1.5.4**

3 **FEI's response to Surrey IR 1.2.14**

4 **FEI's response to BCOAPO IR 1.8.3**

5 **BCUC IR 2.17.2 to FEI**

6 BCUC IR 1.5.4 to FortisBC Energy Inc. (FEI) asked FEI to describe the benefits and
7 risks of utilizing delivery margin versus gross revenue in the calculation of an Operating
8 Fee. In its response, FEI did not discuss any benefits or risks to FEI shareholders
9 associated with utilizing delivery margin versus gross revenue as the basis for
10 calculating the operating fee.

11 Surrey IR 1.2.14 to FEI asked FEI to explain why it takes the position that Surrey should
12 receive an operating fee that is less than the 3% of gross revenue operating fee that FEI
13 remits to other municipalities. In its response, FEI did not discuss any benefits or risks to
14 FEI shareholders associated with FEI's operating fee proposal.

15 In response to BCOAPO IR 1.8.3, FEI said that its interests are aligned with customers
16 in that fees added to customer bills represent a competitive challenge.

17 BCUC IR 2.17.2 to FEI asks FEI if applying a 3 percent operating fee to gross revenue
18 would put FEI at competitive disadvantage.

19 4.1 Please explain and discuss the benefits and risks to FEI's shareholders if the
20 operating fee is applied to (i) gross revenues (including commodity) as proposed
21 by the City of Surrey, as compared to (ii) delivery margin as proposed by FEI.
22

23 **Response:**

24 FEI shareholders are financially indifferent to whether a fee is calculated with reference to Gross
25 Revenues or Delivery Margin. Please also refer to the response to Robinson-FEI IR 1.4.3.

26
27

28
29 4.2 If the operating fee is applied to gross revenues, would FEI expect to have a
30 competitive disadvantage and reduced market share relative to competing fuels
31 in the City of Surrey, as compared to if the operating fee is applied to delivery
32 margin? Please discuss.
33

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1 **Response:**

2 As noted in the preamble, FEI has observed that its interests are aligned with those of its
3 customers in consideration of minimizing bill impacts. FEI also recognizes that higher bills
4 make it harder for natural gas to compete with other energy forms.

5 The competitive concern identified by FEI relates to the absolute value of the fee, rather than
6 whether it is calculated with reference to Gross Revenues or Delivery Margin. An Operating
7 Fee as proposed by FEI and applied to Delivery Margin would result in what FEI considers a
8 reasonable Operating Fee in exchange for what FEI customers are receiving (avoided payment
9 of currently disputed permit / authorization fees and streamlined processes). An Operating Fee
10 based on 3 percent of Gross Revenues results in a significantly higher Operating Fee that
11 reduces the price differential between natural gas and electricity, for example. Please also refer
12 to the response to BCUC-FEI IR 2.17.2.

13

14

15

16 4.3 Does FEI expect that applying the operating fee to delivery margin instead of to
17 gross revenue will result in relatively greater shareholder value for FEI
18 shareholders? Please discuss.

19

20 **Response:**

21 No. Please refer to the response to Surrey-FEI IR 2.4.1.

22

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1 **5.0 Reference: FEI's response to BCUC IR 1.5.3**

2 **FEI's response to Surrey IR 1.2.15.5**

3 In response to BCUC IR 1.5.3, FEI provided, for the municipality of Surrey, the gross
4 revenue, delivery margin, delivery margin as a percentage of gross revenues, and
5 estimates of operating fees for each year from 2007 to 2016.

6 In response to Surrey IR 1.2.15.5 regarding natural gas price volatility, FEI provided a
7 figure showing historical daily natural gas spot prices for AECO/NIT and Sumas hubs.
8 Volatility in the spot natural gas prices for AECO/NIT and Sumas hubs is not reflected
9 directly in the commodity rates FEI charges to its customers.

10 5.1 Please add three more columns to the table FEI provided in response to BCUC
11 IR 1.5.3 to show each of the following:

12 (i) year over year change (in %) in Gross Revenue (column 2)

13 (ii) year over year change (in %) in Delivery Margin (column 3)

14 (iii) (column (5) / column (3)) * 100

15

16 **Response:**

17 In response to this question, FEI has provided Table 1 below which has added columns 2.1, 3.1,
18 5.1, and 7 to the original table which was provided in the response to BCUC-FEI IR 1.5.3.

19 Columns 2.1 and 3.1 show the percentage change in FEI's Gross Revenue and Delivery Margin
20 in the City of Surrey. Column 5.1 shows the percentage difference between an Operating Fee
21 Surrey would receive under its proposal (using 3 percent of Gross Revenues) as compared to
22 applying a 3 percent Operating Fee on Delivery Margin. As expected, Column 5.1 shows that
23 the Operating Fee which Surrey would receive under its proposal as a percentage of Delivery
24 Margin would have decreased over this time period; this is due to the decline in the commodity
25 costs over the years shown; if the reverse were true and commodity costs were increasing, this
26 percentage would also increase. Since gas prices are near 20 year historical lows, current
27 expectations are for rising natural gas commodity prices over time; this will have the effect of
28 driving up the percentage. Basing an Operating Fee on Gross Revenues in a period of rising
29 gas prices will exacerbate the annual bill impacts for customers at a time when they are already
30 facing higher costs.

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1

Table 1

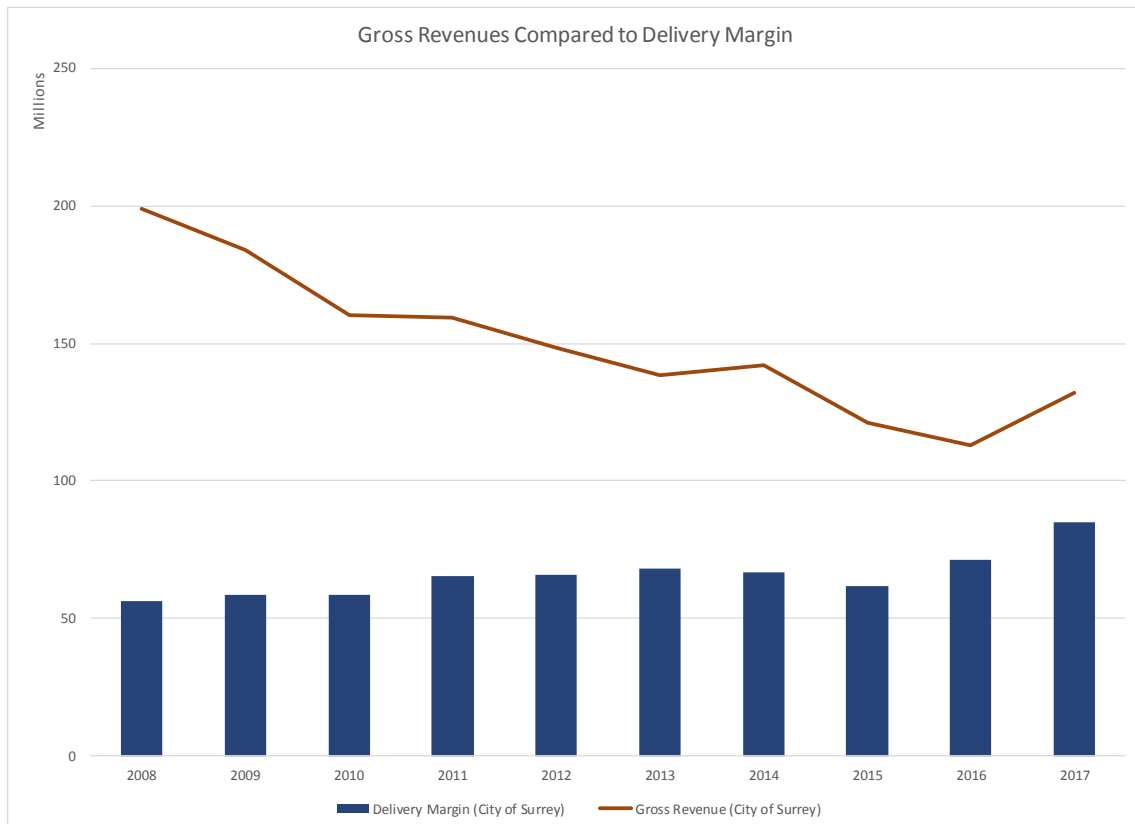
(1)	(2)	(2.1)	(3)	(3.1)	(4)	(5)	(5.1)	(6)	(7)
Year	Gross Revenue (City of Surrey)	Year over Year Change (in) in Gross Revenue 5.1 (i)	Delivery Margin (City of Surrey)	Year over Year Change (in %) in Delivery Margin 5.1 (ii)	Delivery Margin as % of Gross Revenue (3) / (2)	Operating Fee Under City of Surrey Proposal (2) x 3%	(Column (5) / Column (3)) * 100 5.1 (iii)	Operating Fee Under FEI Proposal (3) x 0.7%	Operating Fee at 3% of Delivery Margin (3) x 3%
2007	177,309,613		N/A			5,319,288			
2008	198,902,478	12.18%	56,315,594		28.31%	5,967,074	10.60	394,209	1,689,468
2009	183,958,099	(7.51%)	58,721,732	4.27%	31.92%	5,518,743	9.40	411,052	1,761,652
2010	160,470,828	(12.77%)	58,707,333	(0.025%)	36.58%	4,814,125	8.20	410,951	1,761,220
2011	159,511,102	(0.60%)	65,466,772	11.51%	41.04%	4,785,333	7.31	458,267	1,964,003
2012	148,481,666	(6.91%)	65,853,780	0.59%	44.35%	4,454,450	6.76	460,976	1,975,613
2013	138,584,595	(6.67%)	68,009,066	3.27%	49.07%	4,157,538	6.11	476,063	2,040,272
2014	142,125,873	2.56%	66,925,607	(1.59%)	47.09%	4,263,776	6.37	468,479	2,007,768
2015	121,125,018	(14.78%)	61,735,481	(7.76%)	50.97%	3,633,751	5.89	432,148	1,852,064
2016	112,778,116	(6.89%)	71,205,081	15.34%	63.14%	3,383,343	4.75	498,436	2,136,152
2017	132,021,181	17.06%	85,001,298	19.38%	64.38%	3,960,635	4.66	595,009	2,550,039

2

3 As can be seen by the graph in Figure 1 below, the Delivery Margin (Table 1, column 3.1) tends
4 to be more stable than the Gross Revenue (Table 1, column 2.1) which fluctuates more
5 significantly because of the volatility of commodity prices.

6

Figure 1

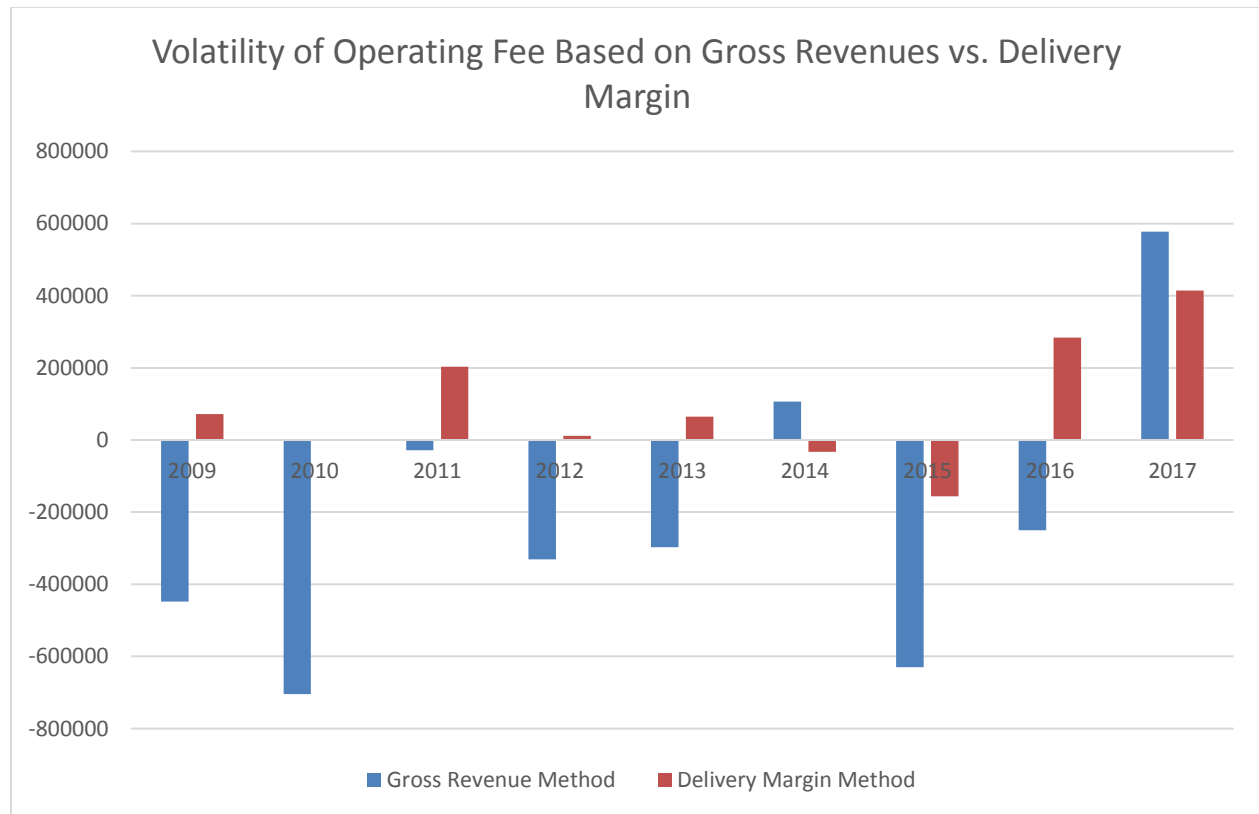


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Figure 2 below provides a more detailed view of the annual change in the Operating Fee using the two methods - Gross Revenue and Delivery Margin -- from 2009 to 2017. FEI believes this provides a more accurate comparison of the volatility in the Gross Revenue method. It shows that, in every year but one (2011) the annual change in the Operating Fee would be smaller had it been calculated under FEI's proposed approach relative to Surrey's proposed approach.

Figure 2



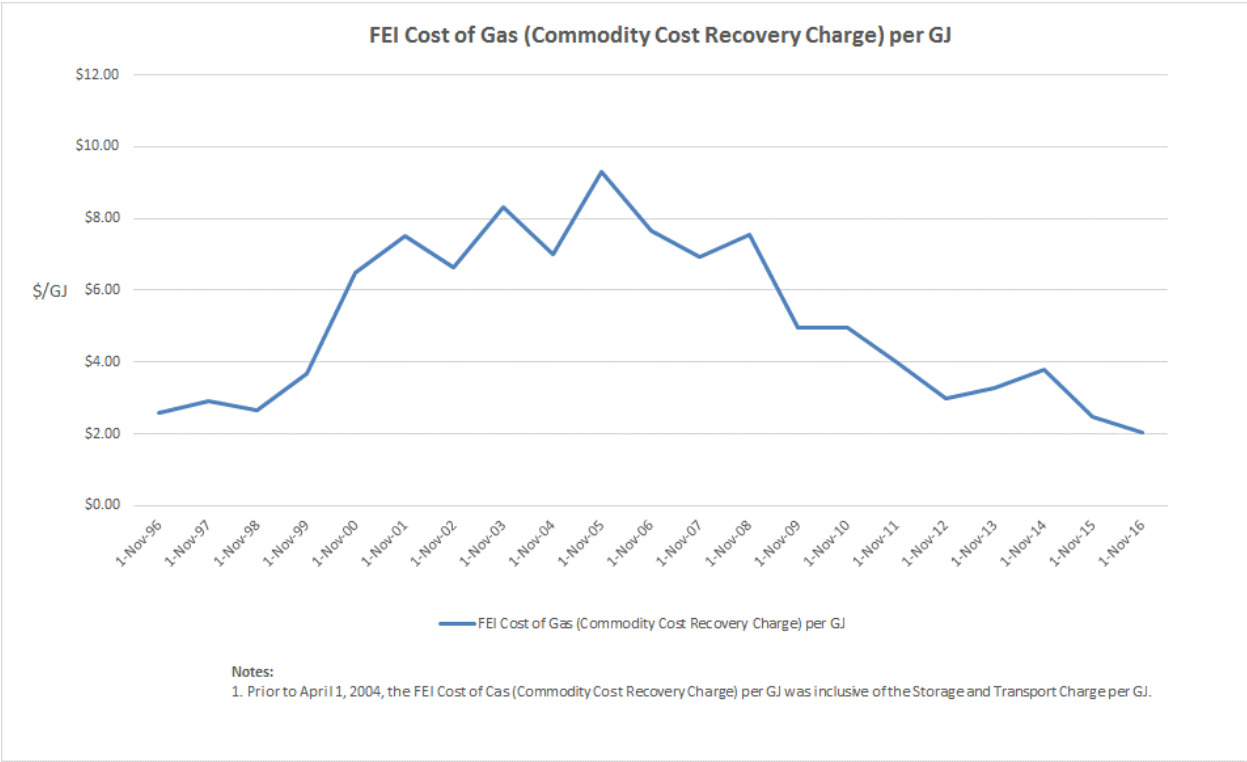
5.2 Please provide another figure showing, for the same time period as the figure provided in response to Surrey IR 1.2.15.5 (November 1996 to November 2016), the FEI Cost of Gas (Commodity Cost Recovery Charge) FEI actually charged to its customers. For reference, the charge is currently \$1.549/GJ.

Response:

Please refer to the Figure 1 below that shows the FEI Rate Schedule 1 Residential Commodity Cost Recovery Charge per GJ charged to customers for the period November 1996 to November 2016.

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1 **Figure 1: FEI Cost of Gas - Rate Schedule 1 (Nov. 1996 to Nov. 2016)**

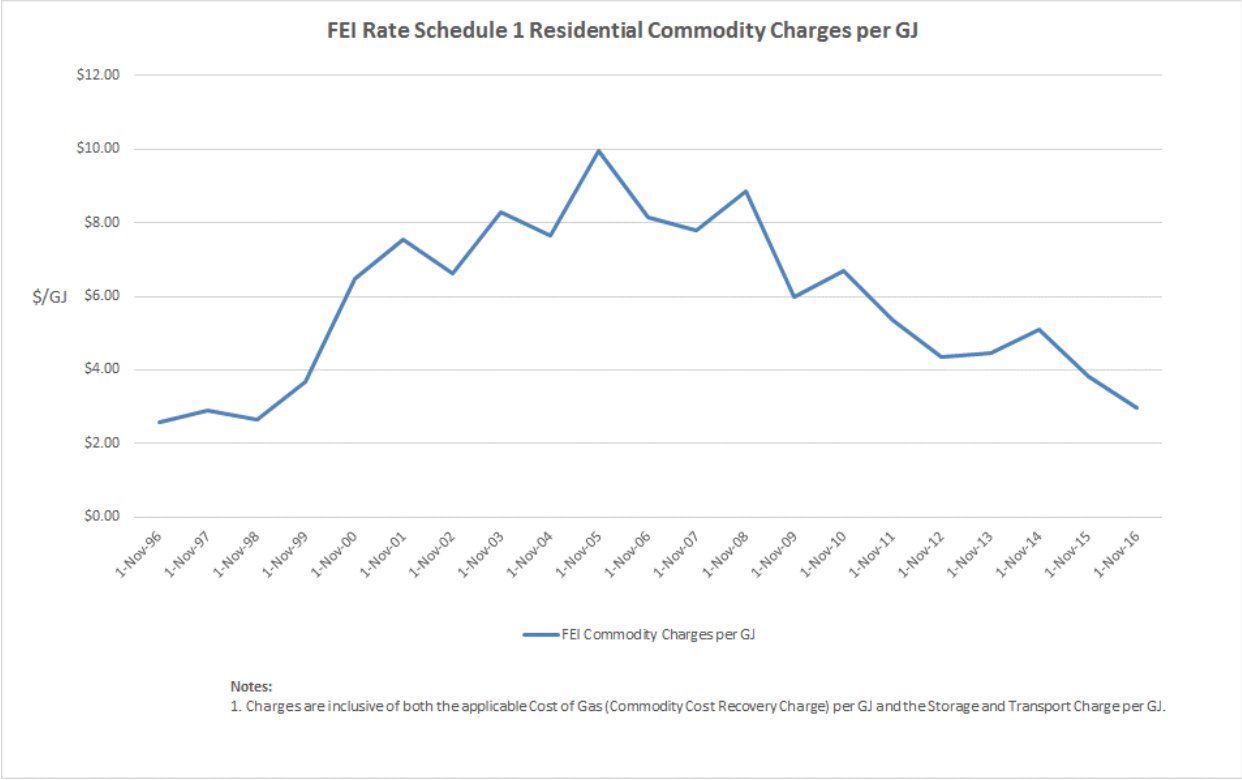


2

3 Figure 2 below provides the FEI Rate Schedule 1 Commodity Charge per GJ for the same
 4 period November 1996 to November 2016 but including the Storage and Transport Charge per
 5 GJ in addition to the Cost of Gas (Commodity Cost Recovery Charge) per GJ. Figure 2
 6 provides a better comparison because an Operating Fee based on Delivery Margin would
 7 exclude both the Storage and Transport Charge and the Cost of Gas.

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Figure 2: FEI Cost of Gas including Storage and Transportation - Rate Schedule 1 (Nov. 1996 to Nov. 2016)



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1 **B. DEFINITION OF “RELOCATION COSTS”**

2 **6.0 Reference: FEI’s response to Surrey IR 1.3.4.1**

3 **FEI Rebuttal Evidence, section 1.1**

4 In response to Surrey IR 1.3.4.1, FEI provided a table setting out FEI’s proposed
5 allocation of costs under five scenarios. The FEI Rebuttal Evidence, section 1.1, further
6 develops and clarifies FEI’s proposal regarding costs to be included in “Relocation
7 Costs” for the operating agreement.

8 6.1 Please discuss how FEI proposes to provide transparent information to the City
9 of Surrey to enable the City to verify whether FEI facilities to be relocated are
10 already identified for replacement under FEI’s asset management plans, per
11 FEI’s commitment in Scenario 1 in the response to Surrey IR 1.3.4.1.

12
13 **Response:**

14 Scenario 1 in the response to Surrey-FEI IR 1.3.4.1 is as follows:

Scenario	Outcome	Rationale	Responsibility for Payment
1. The facilities that the other party has requested be relocated are already identified for replacement under owner’s asset management plans.	Relocation Costs do not include these costs.	The decision to replace is merely accelerated by the request.	Owner pays

15

16 FEI proposes to share its planned capital improvements with the City of Surrey on an annual
17 basis. The information sharing would include approximately a 5 year outlook, updated annually,
18 so that the City of Surrey’s infrastructure plans and FEI’s can be coordinated, where possible, to
19 reduce disruption to the City of Surrey and its residents and businesses.

20 A similar approach is already in place with other municipalities within BC where it has created
21 improved communication and cooperation between the parties.

22

23

24

25 6.2 Please provide a copy of (or web link to) FEI’s current asset management plan(s)
26 that identifies the facilities FEI is planning to replace in Surrey over the next ten
27 years.

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Response:

FEI does not currently create a detailed capital plan beyond a 5 year horizon. The table below shows the capital projects in the City of Surrey that are currently in planning stages. The projects below represent Company-driven work that FEI is aware of at this point in time. Additional work can and will arise due to:

- New customer additions requiring capacity increases or new mains and services; and
- Unplanned repairs or replacement of assets.

The capital plan is a working plan that is continually changing to meet emerging asset needs and priorities. The projects listed below are valued and prioritized against other capital work throughout the gas delivery system and throughout the province and the exact timing of each project can and will shift to accommodate higher priority work first.

Project Name	Description	Job Type	Current Planned Year
128St & 100Ave Stn - Upgr Htr & Regs	Add station bypass within existing facility	Station	2018
152 St & 64 Ave - Shorted Casing 323IP	HDD Replacement crossing of railroad at 64 Ave along 152 St	Pipe	2018
191 St & 72 Ave Station - Upgrades	Upgrade within existing facility	Station	2018
192 St & 96 Ave - Htr & OPP upgrade	OPP Upgrade within existing facility	Station	2018
City of Surrey Biogas Interconnect	Interconnect Biogas Station at Surrey Transfer Station to DP system near 9752 192 St.	Pipe	2018
Nichol Valve Assembly - Replace NIC 41 Control Vlv	Repair Control Valve within existing facility	Station	2018
LIVPAT457 Retrofits for ILI	Various upgrades along the length of the LIVPAT457 through Surrey. Specific locations to be determined.	Pipe	2018
NICFRA610 - Pigging barrel upgrade	Upgrade within existing facility	Station	2018
NICPTM610 - 300m N of 102Ave Sur: PM	Realignment and new road crossing upgrades near 140 St between 103 Ave and 104 Ave	Pipe	2018
NICPTM610 - Repl Ferguson Valve	Upgrade within existing facility	Station	2018
NICPTM610 - Remove Encased Valve @ 100A Ave	Remove encased valve at the end of 100A Ave west of 140 St	Pipe	2018
Replace Main 332m x 60PE 1601 154 St	Replace the main along 154/Best St from Vine Ave north to 16A Ave, and the main along 16A Ave from 154/Best St west to 15336 16A Ave	Pipe	2018
Replace Main 765m x 60PE 20 AV St @ 176 St SU	Replace the main along 176 St from 20 Ave north to 298 176 St and the main along 20 Ave from 174 St east to 17687 20 Ave	Pipe	2018

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Project Name	Description	Job Type	Current Planned Year
152 St & 80 Ave Stn Upgd	Upgrade within existing facility	Station	2019
168 St & 32 Av Stn - RTU Upgr	RTU Upgrade within existing facility	Station	2019
168 St & 80 Ave - Htr & OPP upgrades	Upgrade within existing facility	Station	2019
168 St & 96 Ave Stn - Station Upgrade	Upgrade within existing facility	Station	2019
8739 King Grg Blvd - Heat Exch OPP and Telemetry	Upgrade within existing facility	Station	2019
Remove Settlement Monitors - 323IP 152St at Colebrook Rd (SE)	Removal of Settlement Monitors on 323 IP Pipeline on 152 St at Colebrook Rd	Pipe	2019
SI - 20m x 60 DPPE 124 St	20m x 60 DPPE on 124th St. from 60DP on 124th St. to 60 DP on 68th Ave.	Pipe	2019
SI - 735m x 219 DPPE along 192 Street	735m x 219 DP/PE along 192 Street from existing 219 DP/ST main just south of Trans Canada Hwy to the intersection of 192 Street & 88 Avenue	Pipe	2019
SI - 790m x 219 DPPE along 16 Ave	790m x 219 DP/PE along 16 Avenue from intersection of 172 Street & 16 Avenue to the intersection of 176 Street & 16 Avenue.	Pipe	2019
SI - 820m x 114 DPPE along 192 Street	820m x 114 DP/PE along 192 Street from existing 114 DP/PE main at intersection of 192 Street & 36th Avenue to existing 114 DP/PE main at intersection of 192 Street & 40th Avenue.	Pipe	2019
SI - 275m x 114 DPPE along 142 Street	275m x 114 DPPE along 142 Street from existing 114 DPST main at intersection of 142 Street & 64 Avenue to existing 60 DPST main at 6264 142 Street.	Pipe	2019
CTS Valve Automation - CST Station	Upgrade within existing facility	Station	2019
CTS Valve Automation - LAT Station	Upgrade within existing facility	Station	2019
LIVPAT457 kP22.36 Bear Cr HID1402	Low DOC of LIVPAT457 under Bear Creek. Requires remediation.	Pipe	2019
CTS Valve Automation - CLA Station	Upgrade within existing facility	Station	2019
CTS Valve Automation - TYN Station	Upgrade within existing facility	Station	2019
NICFRA610 Retrofits for ILI	Various upgrades along the length of the NICFRA610 through Surrey. Specific locations to be determined.	Pipe	2019
SI – 25m x 60 DPPE along 101 Ave	25m x 60 DPPE along 101 Avenue from existing 168 DPST main at intersection of 152 Street & 101 Avenue to existing 60 DPST just west of 152 Street & 101 Avenue intersection.	Pipe	2019
Replace Main 113m x 60PE Townline Division @ 96	Replace the main along Townline Division from 96 Ave north to Regal Dr.	Pipe	2019

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Project Name	Description	Job Type	Current Planned Year
Replace Main 241m x 60PE 111Ave @ 146 St	Replace the main along 111 Ave from 146 St east to 14717 111 Ave (end of main).	Pipe	2019
140A St & 108Ave - OPP & RTU Upgrade	OPP Upgrade within existing facility.	Station	2020
Pattullo Station- Capacity Upgrade and Valve Actuator Replacement	Upgrade within existing facility.	Station	2020
SI - 35m x 60 DPPE along 136B Street	35m x 60 DP/PE along 136B Street from existing 42 DP/PE to existing 42 DP/PE main at intersection of 59 Avenue & 136A Street.	Pipe	2020
SI – 400m x 114 DPPE along Old Yale Rd	400m x 114 DPPE along Old Yale Rd from existing 60 DPST main at 13078 Old Yale Rd to existing 60 DPST main just west of Old Yale Rd & 133 Street intersection.	Pipe	2020
White Rock IP - 250m@1" IP 48th Ave. Upg	Replace 250m of 42 IPST east of 152 St, along 48th Ave.	Pipe	2020
Replace Main 870m x 60PE Prince Charles @ 96 A	Replace the main along the east side of Prince Charles Blvs from 92 Ave north to 96 Ave, and abandon the main on the west side of Prince Charles from Huntley Ave north to Wallace Crs.	Pipe	2020
Replace Main 462m x 60PE Fraser Hwy @160 St	Replace the main along Fraser Hwy from 164 St east to 166 St.	Pipe	2020
Nichol Control - Hi Flow Reconfig	Upgrade within existing facility	Station	2021
Replace Main 430m X 60PE 108 Ave @ 132 St	Replace the main along 108 Ave from 132 St west to 130 St.	Pipe	2021
152 St & 64 Ave Stn - Upgrades	Potential rebuild of the existing pit station.	Station	2022
ROETIL914 Cougar Ck kP 6.8	Repair existing Cougar Ck crossing structure.	Pipe	2022
LIVPAT457 Upr Nicomekl Rv kP0.4	Low DOoC of LIVPAT457 under Nicomekl River. Requires remediation.	Pipe	2022
SI – 405m x 114 DPPE along 28 Avenue	405m x 114 DPPE along 28 Avenue from existing 114 DPPE main at intersection of 160 Street & 28 Avenue to existing 42 DPST main at intersection of 158 Street & 28 Avenue.	Pipe	2022
SI - 630m x 168 DPPE along 36 Avenue	630m x 168 DP/PE along 36 Avenue from existing 114 DP/PE main at intersection of 196 Street & 36 Avenue to existing 114 DP/PE main just east of 192 Street & 36 Avenue intersection.	Pipe	2022
Replace Main 295m X 42PE Kew Drive @ 150 St	Replace the main along the north/east side of Kew Dr from 150 St to Lansdowne Dr.	Pipe	2022
New Station - 144 St & 72 Ave	New pit station to be installed near 144 St and 72 Ave.	Station	2023
SI - 1345m x 219 DPPE along 72 Ave	1345m x 219 DP/PE along 72 Avenue from Clayton Station (192 St and 72 Ave) to intersection of 184 Street & 72 Avenue.	Pipe	2023

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Project Name	Description	Job Type	Current Planned Year
SI - 1620m x 219 DPPE along 184 Street	1620m x 219 DP/PE along 184 Street from existing 219 DP/PE main at intersection of 184 Street & 68 Avenue to existing 168 DP/ST main at intersection of 184 Street & 60 Avenue.	Pipe	2023
SI - 800m x 114 DPST 60 Ave	800m x 114mm STL DP on 60th Ave. from 144th St. to 148th St.	Pipe	2023
SI - 800m x 114 IPST 144 St	800m x 114mm STL IP on 144th St. from 68th Ave. to 72nd Ave. to supply a new IP/DP station at 144th St. and 72nd Ave.	Pipe	2023
SI - 800m x 114 DPST 60 Ave	800m x 114mm STL DP on 60th Ave. from 140th St. to 144th St.	Pipe	2024
SI - 1600m x 114 DPPE 32 Ave	1600 x 114mm PE DP along 32 Ave from 152 St to 160 St.	Pipe	2024
132 St & 68 Ave Stn - Valve Replacement	Replace two underground valves.	Station	2025
Second Fraser Rvr Xing - Port Mann	Install second crossing of the Fraser River near the Port Mann Bridge.	Pipe	2025

6.3 Please discuss how FEI proposes to provide transparent information to the City of Surrey to enable the City to verify that FEI's bill for the appropriate apportionment of costs to relocate facilities reflects the "lowest cost solution to meet applicable Laws (codes and regulatory standards – not company policies/practices)" per FEI's commitment at page 3, lines 13-16, of the FEI Rebuttal Evidence.

Response:

FEI's Proposed Operating Agreement Terms has language intended to establish checks and balances throughout project execution to provide transparency. The details are noted in Section 8.3 and 8.4 of FEI's Proposed Operating Agreement Terms and are summarized below:

- Detailed estimation of cost to establish scope of work and main tasks performed, including overheads and taxes;
- Project/Job change management communication process for notification of changes in scope, scheduling, costs, etc.; and
- Detailed invoicing to allow for assessment of reasonableness of cost.

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1 In addition, FEI will only be charging its cost for this work, plus disclosed overhead. The City
2 has the option to complete the excavation and restoration portion of the projects with their own
3 crews or contractors as a way for Surrey to control the work and/or costs as it sees fit. For most
4 main relocations this can be a large portion of the cost.

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6
7
8 6.4 Please discussed how FEI proposes to provide separate, itemized detail for the
9 incremental cost of the more expensive alternative or extra work if the City of
10 Surrey specifically requests such alternative or extra work as described on page
11 3, lines 16- 19 of the FEI Rebuttal Evidence.

12
13 **Response:**

14 The level of itemized detail FEI agreed to provide is set out in the Proposed Operating
15 Agreement Terms in Section 8.3 and 8.4, and is discussed in the response to Surrey-FEI IR
16 2.6.3. FEI will provide an estimate for the lowest cost alternative, and Surrey has the
17 opportunity to review and accept that estimate, or request changes to the scope of work on the
18 estimate (such as specifically requesting alternative or extra work). FEI will provide the revised
19 estimate which the City must approve before work can commence. FEI does not intend to
20 provide multiple estimates at the outset because the costs to do so would cause the overall
21 project/job costs to increase.

22
23
24
25 6.5 Please discuss how FEI proposes to provide transparent information to the City
26 of Surrey to enable the City to verify that FEI's bill for the appropriate
27 apportionment of costs to relocate facilities complies with FEI's commitment that
28 "any incremental cost between the less costly option and what FEI [actually]
29 installs would be paid by FEI and would not be billed to Surrey" per the table on
30 page 4 of the FEI Rebuttal Evidence.

31
32 **Response:**

33 FEI's estimate will note any improvements FEI chooses to make (such as increasing the size of
34 pipe) for which FEI will pay. The estimate will set out the total amount that Surrey will pay,
35 subject to any changes approved through the change process. The invoice will reflect the
36 actual cost for work which the City of Surrey is responsible to pay, based on the approved
37 estimate. Please also refer to the response to Surrey-FEI IR 2.6.3.

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4 6.6 In all of the scenarios set out in FEI's response to Surrey IR 1.3.4.1 and in
5 section 1.1 of the FEI Rebuttal Evidence, FEI replaces the facilities that the City
6 needs FEI to relocate to accommodate the City's work. Does FEI ever reuse and
7 actually relocate its existing facilities in a relocation project, or does FEI always
8 scrap the existing facilities and replace them with new facilities in the new
9 location? Do codes or standards require FEI to scrap the existing facilities and
10 replace them with new facilities? Please discuss.

11

12 **Response:**

13 In almost all relocation scenarios, in order to maintain gas flow to downstream customers, the
14 new piping must be installed before the old piping can be abandoned and taken out of service.
15 This would make the ability to reuse the existing pipe very rare and almost impossible. In the
16 very rare occasion, if pipe can be reused, it would be only at the existing site from which it was
17 removed. For example, if pipe is removed from one site, it is generally cost prohibitive to reuse
18 in a new location as compared to installing new pipe. Other considerations that would factor
19 into whether existing pipe can be reused would be the effort and cost associated with digging up
20 the old pipe, cleaning, and inspecting the old pipe to ensure it is fit for use. Pipe that cannot be
21 reused at the existing site is disposed according to the applicable regulations.

22

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1 **C. APPORTIONMENT OF “RELOCATION COSTS”**

2 **7.0 Reference: FEI Rebuttal Evidence, section 1.4.2**

3 On page 14 of the FEI Rebuttal Evidence, FEI says that “the most recent depreciation
4 study estimates the financial end of life of distribution mains at 64 years and 65 years for
5 transmission pipelines...”

6 7.1 Please provide a copy of (or web link to) the referenced depreciation study.
7 Please provide the references to where the study recommends the 64 and 65
8 year lives.
9

10 **Response:**

11 FEI filed its most recent full depreciation study in the FEI Annual Review for 2016 Rates, in
12 Appendix D, available at the following link:

13 [http://www.bcuc.com/Documents/Proceedings/2015/DOC_44495_B-2_FEI_Annual-Review-](http://www.bcuc.com/Documents/Proceedings/2015/DOC_44495_B-2_FEI_Annual-Review-2016-Rates-Application.pdf)
14 [2016-Rates-Application.pdf](http://www.bcuc.com/Documents/Proceedings/2015/DOC_44495_B-2_FEI_Annual-Review-2016-Rates-Application.pdf).

15 The recommended service life for distribution mains is 64 years (“Iowa 64-R2.5 survivor curve”,
16 p. II-4). The recommended service life for transmission pipelines is 65 years (“Iowa 65-R3
17 survivor curve”, p. II-5).

18
19

20

21 7.2 Do steel gas mains have an expected service life of 64 years?

22

23 **Response:**

24 All distribution mains have an expected financial service life of 64 years in the depreciation
25 study. The depreciation study looks at the asset group as a whole, irrespective of the pipe type.
26 As discussed in the response to CEC-FEI IR 2.14.1, the financial end of life is shorter than the
27 actual useful life of the assets.

28
29

30

31 7.3 What proportion of FEI’s gas mains installed in the City of Surrey are made of
32 steel?
33

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1 **Response:**

2 Approximately 53 percent of the Gas Mains in Surrey are steel. This percentage continues to
3 decrease due to installation of new PE pipe mains to support strong customer growth in Surrey.
4 Main renewals and replacements driven by relocation work contribute only a very small fraction
5 to the decrease in percentage of steel mains as a result of being replaced with PE pipe.

6 Only 14 percent of Gas Mains located on private property, known as service headers, are made
7 of steel.

8
9

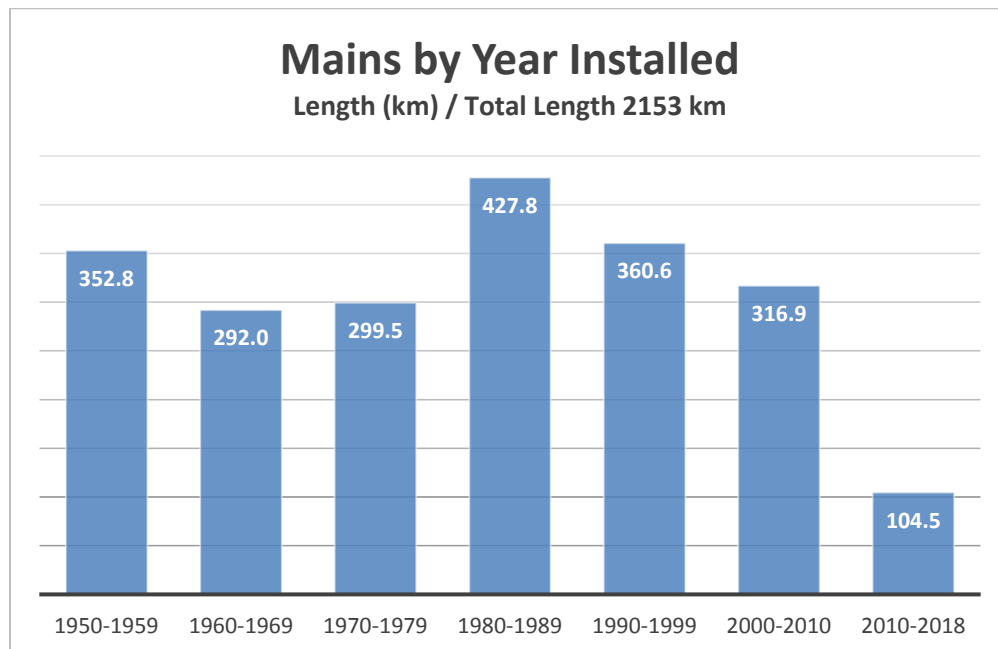
10

11 7.4 Please provide a copy of (or web link to) FEI's document(s) that identify the age
12 and/or installation dates of FEI's existing pipes in the City of Surrey.

13

14 **Response:**

15 The graph below shows the age distribution of Gas Mains currently installed within the City of
16 Surrey. The graph below is derived from the detail contained in Attachment 7.4 which provides
17 an Excel spreadsheet listing of the assets and age.



18

19

Attachment 7.4

REFER TO LIVE SPREADSHEET MODEL

Provided in electronic format only

(accessible by opening the Attachments Tab in Adobe)