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August 16, 2022

Coalition to Reduce Electropollution  
126-102 Forestbrook Place  
Penticton, BC V2A 7N4

Attention: Mr. Hans Karow

Dear Mr. Karow:

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

**Project No. 1599211**

**Application for a Certificate of Public Convenience and Necessity (CPCN) for Approval of the Advanced Metering Infrastructure (AMI) Project (Application)**

**Response to Coalition to Reduce Electropollution (CORE) Information Request (IR) No. 4 on Evidentiary Update**

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On May 5, 2021, FEI filed the Application referenced above. In accordance with the regulatory timetable as amended in British Columbia Utilities Commission Order G-206-22 for the review of the Application, FEI respectfully submits the attached response to CORE IR No. 4 on Evidentiary Update.

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

If further information is required, please contact the undersigned.

Sincerely,

**FORTISBC ENERGY INC.**

***Original signed:***

Diane Roy

Attachments

cc (email only): Commission Secretary  
Registered Parties



FortisBC Energy Inc. (FEI or the Company) Application for a Certificate of Public Convenience and Necessity (CPCN) for Approval of the Advanced Metering Infrastructure (AMI) Project (Application)	Submission Date: August 16, 2022
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1   **CORE-FEI-2022JULY26-001**

2           **Reference:   FEI Evidentiary Update, Exhibit B-30 PDF Page 3-4**

3           Issue: On PDF page 3-4, FEI states, in part:

4           Baseline

- 5           • Contractor Labour for Sustainment Activities – FEI currently completes its meter  
6           exchanges using both FEI’s internal labour and contractors (i.e., approximately 40  
7           to 45 percent is completed by contractors, depending on the year). At the time of  
8           the original Application, the labour rates per meter exchanges were similar  
9           between FEI’s internal labour and contractors; as such, FEI assumed the same  
10          labour rates per meter exchanges at that time. However, since filing the  
11          Application, FEI has experienced cost increases for work performed by  
12          contractors. Based on current average contractor rates for meter exchanges, the  
13          increase over the FEI internal labour rates (i.e., the assumption for the contractor  
14          labour rate in the original Application) is approximately 109 percent, which is  
15          reflected in the Evidentiary Update Confidential Appendix C in Confidential  
16          Appendix G-2, Baseline Cost Inputs, Schedule 2, Line 39 and 40.

17          1.a    Are the total costs something the public can afford to pay, and can Fortis justify?

18  
19          **Response:**

20          As shown in the Evidentiary Update, even with the forecast increased costs to the AMI Project,  
21          the total incremental levelized delivery rate impact over the 26-year analysis period due to the  
22          AMI Project (when compared to the Baseline scenario) increased by approximately 0.317 percent,  
23          from 0.125 percent in the Application to 0.442 percent. The AMI Project will have a minimal rate  
24          impact on customer annualized rates over the analysis period, at less than half a percent, while  
25          delivering substantial benefits, including greater cost certainty to customers and FEI (as set out  
26          in Section 4 of the Application).

27          FEI also notes that the incremental levelized delivery rate impact of the AMI Project over the 26-  
28          year analysis period could change from an increase of 0.442 percent to a reduction of  
29          0.153 percent if higher future labour rates for in-house meter reading are included in the Baseline  
30          scenario, as reflected in updated Table 6-12 in the Evidentiary Update.

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34          1.b    How much would the internal labour costs increase? And, if they are lower, why  
35          would the work not be done by them instead of the more expensive contractors?  
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1 **Response:**

2 Please refer to the response to BCUC IR4 49.1.

3  
4

5

6 1.c FEI cites to the “Evidentiary Update Confidential Appendix C in Confidential  
7 Appendix G-2”. How can cost increases be justified if the public is not privy to why  
8 these increases are necessary and/or how they are calculated?

9

10 **Response:**

11 FEI has requested that the financial analysis spreadsheets contained in Appendix C to the  
12 Evidentiary Update be kept confidential on the basis that the disclosure of estimated costs could  
13 be detrimental to FEI’s negotiating position for certain products and services. Interveners to the  
14 AMI Project regulatory process have been provided with the confidential appendices upon signing  
15 an undertaking for confidentiality and are able to review these confidential appendices and ask  
16 IRs to FEI on the detailed Project costs and financial analysis.

17



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1    **CORE-FEI-2022JULY26-002**

2           **Reference:    FEI Evidentiary Update, Exhibit B-30 PDF Page 5-6**

3           Issue: On PDF page 5-6, FEI states, in part:

4           ***1.3 Total Labour and Material Cost Impact to the AMI Project***

5           The impact of the cost increases in the two categories of labour and materials discussed  
6           above results in an increase of approximately \$92 million to the total capital cost for the  
7           AMI Project (over the pre-deployment and deployment period from 2021 to 2026), from  
8           \$638.4 million in the Application to \$730.8 million. This also results in an increase to the  
9           incremental levelized delivery rate impact over the 26-year analysis period due to the AMI  
10          Project (when compared to the Baseline scenario) of approximately 0.113 percent, from  
11          0.125 percent in the Application to 0.238 percent.

12          2.a       Please cite the source of the “26-year analysis period” referred to in the above  
13          reference.

14  
15        **Response:**

16        FEI explained the 26-year analysis period on page 110 of the Application (Section 6.3.1.1). The  
17        analysis period is comprised of the 6-year period of pre-deployment and deployment activities  
18        followed by the remaining 20 years after the last AMI meter is installed (which is equal to the  
19        estimated useful life of the new AMI meters).

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1    **CORE-FEI-2022JULY26-003**

2            **Reference:    FEI Evidentiary Update, Exhibit B-30 PDF Page 9**

3            Issue: On PDF page 9, FEI states, in part:

4                    [...] however, the benefits of the full AMI Project solution are still significant and  
5                    indeed, as reflected above, the current conditions have reinforced their  
6                    importance. The Project will still have a minimal impact on customer annualized  
7                    rates over the analysis period, at less than half of a percent.

8            3.a        Will FEI fix the less than half a percent increase to customers to ensure that it is  
9                    not increased beyond such amount?

10  
11            **Response:**

12            FEI has developed cost estimates for the AMI Project based on AACE Class 3 specifications, in  
13            accordance with the BCUC's CPCN Guidelines. While FEI has provided its most accurate  
14            forecasts of AMI Project costs as part of its CPCN Application, the actual costs for the Project  
15            may vary from forecast. Consistent with all prudently incurred capital expenditures undertaken by  
16            the utility, the costs and benefits associated with the AMI Project should be included in FEI's  
17            revenue requirements and therefore incorporated into customer rates.

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21            3.b        Why is there a price increase if the purpose and benefit of the AMI project is to  
22                    reduce costs? Shouldn't the rates decrease relative to the savings regarding travel  
23                    and manual labor?

24  
25            **Response:**

26            FEI has described in detail the need for and benefits of the AMI Project in Sections 3 and 4 of the  
27            Application and previously responded to CORE regarding the need for the AMI Project in its IR  
28            responses, and in particular in response to CORE IR2 5.b.

29            FEI assumes the "price increase" stated in the IR is referring to the impact on customer annualized  
30            delivery rates over the analysis period, at less than half of a percent (i.e., 0.442 percent) as  
31            referenced in the preamble above.

32            FEI notes the annualized delivery rate increases are over the 26-year analysis period, which  
33            includes the periods of pre-deployment, deployment, and post-deployment. As shown in Table  
34            6-1 of Appendix B, Section 6.2 of the Evidentiary Update, the AMI Project will result in capital  
35            costs being incurred during the pre-deployment and deployment period from 2021 to 2026 due to  
36            the installation of the AMI meters as well as the AMI network infrastructure, while the benefits and



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- 1 cost savings of the AMI Project (such as reducing manual meter reading and meter exchanges)
- 2 will be realized in the post-deployment period from 2027 to 2046.
  
- 3 Overall, the forecast annualized delivery rate impact is 0.442 percent per year over the 26-year
- 4 analysis period and includes both the initial costs of AMI and the savings from AMI in the later
- 5 years. FEI considers the Project's annualized delivery rate impact of less than half of a percent
- 6 over a 26-year period to be minimal for FEI's customers given the many benefits.
  
- 7



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1 **CORE-FEI-2022JULY26-004**

2 **Reference: FEI Evidentiary Update, Exhibit B-30 PDF Page 25**

3 Issue: On PDF page 25, lines 19-24, FEI states, in part:

19 **6.2.1.1 Meter Capital**

20 The meter capital cost is the largest portion of Project capital costs. The AMI Solution meter  
21 capital cost is estimated at \$645.7 million<sup>70</sup> which is \$464.2 million<sup>71</sup> higher than what is estimated  
22 to be spent in the Baseline estimate of \$181.5 million<sup>72</sup>. This incremental cost is offset by an  
23 estimated \$434.0 million<sup>73</sup> in meter capital savings in the Post-deployment period driven by the  
24 decreased volume of meter exchanges.

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5 4.a Please explain the extreme increase in meter costs since the first estimate.

6

7 **Response:**

8 Meter capital for the AMI alternative includes estimated costs of replacing each existing  
9 diaphragm meter with an advanced meter. Therefore, the capital cost includes the visit to replace  
10 each meter, the cost of the advanced meter, and a bypass valve and regulator when required.  
11 The increase in the meter capital cost is attributable to increased costs of deployment labour,  
12 regulators, and bypass valves as stated in the Evidentiary Update and further described in the  
13 responses to CEC IR4 13.1, 14.2, 15.1, and 19.1.

14 As noted in Section 1.2 of the Evidentiary Update, the cost of the advanced meters has not  
15 increased due to FEI's fixed price contract with Sensus.

16



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1    **CORE-FEI-2022JULY26-005**

2           **Reference:    FEI Evidentiary Update, Exhibit B-30 PDF Page 2**  
3                       **Request for Confidential Treatment of Financial Schedules**

4           Issue: On PDF page 2, FEI states in part:

5                       The Excel spreadsheet models included in Appendix C to this Evidentiary Update  
6                       provides updated cost estimates to those originally filed with the Application,  
7                       including updated capital cost estimates for the Project. They should continue to  
8                       be kept confidential on the basis that FEI is in the market negotiating with parties  
9                       for the deployment of the Project. If the estimated costs for the work are disclosed,  
10                      FEI reasonably expects that its negotiating position may be prejudiced.

11           5.a        What evidence does FEI rely upon in its assertion that it “reasonably expects that  
12                      its negotiating position may be prejudiced”? Please explain.

13  
14    **Response:**

15    Consistent with prior determinations in other CPCN proceedings, FEI reasonably expects that its  
16    customers could be harmed if its cost estimates are not held confidential.

17    FEI is currently negotiating with parties for the deployment of AMI meters related to the Project  
18    based on the pricing proposed by the parties. The only way that FEI can be assured that it is  
19    engaging in open and good faith negotiations with these parties is if its cost estimates are kept  
20    confidential. If they are not kept confidential and are accessed by the parties with whom FEI is  
21    negotiating, it is reasonable to conclude that the price offerings may be impacted by prior  
22    knowledge of FEI’s cost estimates and allowances, and subsequent bids may no longer be based  
23    on the parties’ most competitive proposals.

24





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1   **CORE-FEI-2022JULY26-006**

2           **Reference:   FEI Evidentiary Update, Exhibit B-30 PDF Page 3**  
3                           **Updates to the Costs in the Application**

4           Issue: On PDF page 3, FEI states in part:

5           AMI Project

6           •   **Deployment Labour** – As a result of the challenging labour market, FEI is  
7           forecasting higher deployment labour costs in the AMI financial analysis directly  
8           related to the following:

9                           ○ **Hourly rates for temporary field employees** – to recruit and retain  
10                           qualified employees, FEI is forecasting higher hourly rates for employees  
11                           hired to perform meter exchanges for the deployment period. The change is  
12                           reflected in the Evidentiary Update Confidential Appendix C in Confidential  
13                           Appendix G-1, AMI Cost Inputs, Schedule 2.1, Line 7 and 8, which amounts  
14                           to an estimated increase of approximately 37 percent from the hourly rates  
15                           originally reflected in the Application.

16           6.a   Can FEI commit to ensuring that the 37 percent increase from the hourly rates  
17           originally reflected in the Application will not increase further? If not, is there a point  
18           at which the hourly rates for employees hired to perform meter exchanges for the  
19           deployment period will become cost prohibitive for FEI to proceed with the  
20           proposed project?

21  
22    **Response:**

23    Please refer to the response to CORE IR4 3.a.

24

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1    **CORE-FEI-2022JULY26-007**

2           **Reference:    FEI Evidentiary Update, Exhibit B-30 PDF Page 3**

3                   **Updates to the Costs in the Application**

4           Issue: On PDF page 3, FEI states in part:

5           AMI Project

6                   • Deployment Labour – As a result of the challenging labour market, FEI is  
7                   forecasting higher deployment labour costs in the AMI financial analysis directly  
8                   related to the following:

9           [...]

10                   ○ Higher turnover rate – FEI is also expecting a higher turnover rate for  
11                   temporary field employees than originally forecast. This results in increased  
12                   hiring and training costs. The ratio of supervisors and gas ticketed installers  
13                   to internally trained installers has also been increased in the financial model  
14                   as a result, allowing for additional field support during deployment. As part  
15                   of this Evidentiary Update, FEI estimated an additional 12 percent of  
16                   temporary field employees would need to be hired due to turnover, and as  
17                   a result, increased the ratio of supervisors to temporary field employees by  
18                   1 and increased the number of full time managers by 1. These changes are  
19                   reflected in the Evidentiary Update Confidential Appendix C in Confidential  
20                   Appendix G-1, AMI Cost Inputs, Schedule 2.1, Line 4, 14, and 18,  
21                   respectively

22           7.a    Can FEI commit to ensuring that the 12 percent increase to temporary field  
23           employees will not increase further? If not, is there a point at which the costs for  
24           temporary field employees will become cost prohibitive for FEI to proceed with the  
25           proposed project?

26  
27    **Response:**

28    Please refer to the response to CORE IR4 3.a.

29

FortisBC Energy Inc. (FEI or the Company) Application for a Certificate of Public Convenience and Necessity (CPCN) for Approval of the Advanced Metering Infrastructure (AMI) Project (Application)	Submission Date: August 16, 2022
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1    **CORE-FEI-2022JULY26-008**

2           **Reference:    FEI Evidentiary Update, Exhibit B-30 PDF Page 3**  
3                           **Updates to the Costs in the Application**

4           Issue: On PDF page 3, FEI states in part:

5           AMI Project

6           [...]

- 7                           o   **Decreased meter deployment productivity rate** – the productivity rate is  
8                                   the number of advanced meters expected to be installed per employee  
9                                   each day. The productivity rate has been slightly decreased in the financial  
10                                   analysis to reflect the higher employee turnover rate (resulting in more time  
11                                   recruiting, onboarding and training new employees) and also as a result of  
12                                   changing customer attitudes to field employees entering their homes. FEI’s  
13                                   recent experience and feedback it has received suggest that customers are  
14                                   increasingly hesitant to have people in their homes and that it takes longer  
15                                   than traditionally was the case to gain access and conduct the necessary  
16                                   in-home activity (including for employees to don personal protective  
17                                   equipment for the comfort of both residents and employees). This change  
18                                   is reflected in the Evidentiary Update Confidential Appendix C in  
19                                   Confidential Appendix G-1, AMI Cost Inputs, Schedule 2.1, Line 3, which  
20                                   amounts to a 5 percent reduction in productivity over the amount originally  
21                                   reflected in the Application.

- 22                   8.a    Please identify the number and location of customers who provided feedback to  
23                           FEI suggesting that they are “increasingly hesitant to have people in their homes  
24                           and that it takes longer than traditionally was the case to gain access and conduct  
25                           the necessary in-home activity (including for employees to don personal protective  
26                           equipment for the comfort of both residents and employees).”

27  
28    **Response:**

29    FEI does not maintain precise data reflecting the number or location of customers who have  
30    provided specific feedback regarding being hesitant to have people in their homes. It is feedback  
31    that customers have provided during telephone calls to attempt to set meter exchange  
32    appointments, and these customer sentiments are reflected in the number of customers who have  
33    elected to relight their own appliances or attempted to avoid having their meter exchanged at all.  
34    This customer hesitancy is also reflected in a decreased meter exchange productivity rate which  
35    has impacted FEI’s Operations group. The time required to exchange a meter increased over 8  
36    percent from 2019 to 2020 throughout the province, and has remained consistently high since  
37    that time.



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8.b Please describe what “in-home” activity FEI is referring to in the above statement.

**Response:**

The in-home activity referred to consists of the visual inspection and relighting of customer appliances.

8.c Please identify in numerical terms what FEI means by its assertion that the productivity rate has “slightly decreased”.

**Response:**

As discussed on page 3 of the Evidentiary Update and as referenced in the preamble above, the change in productivity rate is reflected in the same schedule of AMI Cost Inputs (i.e., Confidential Appendix G-1, AMI Cost Inputs, Schedule 2.1, Line 3) as provided in the Application and in Confidential Appendix C of the Evidentiary Update. The reduction was 5 percent, from 6.5 AMI meters installed per employee per day in the Application to 6.18 AMI meters<sup>1</sup> installed per employee per day in the Evidentiary Update.

8.d Can FEI commit to ensuring that the productivity rate will not decrease further? If not, is there a point at which the productivity rate with respect to the installation of the advanced meters to be installed per employee each day will reach a level at which it will become cost prohibitive for FEI to proceed with the proposed project?

**Response:**

The actual productivity of meter deployment activities will be subject to several factors at the time of deployment and as such, FEI is unable to confirm that the actual productivity rate will not vary, either higher or lower, from the estimate provided in the Evidentiary Update.

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<sup>1</sup> Rounded to 6.2 AMI meters per employee per day in Confidential Appendix C of the Evidentiary Update, Confidential Appendix G-1, AMI Cost Inputs, Schedule 2.1, Line 3.



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- 1 However, FEI confirms that meter deployment productivity will be monitored throughout the
- 2 Project with actions taken accordingly to address any challenges that may occur. This will support
- 3 the achievement of productivity within a reasonable range of the estimate.
  
- 4



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1    **CORE-FEI-2022JULY26-009**

2            **Reference:    FEI Evidentiary Update, Exhibit B-30 PDF Page 3-4**  
3                            **Updates to the Costs in the Application**

4            Issue: On PDF pages 3-4, FEI states in part:

5            AMI Project

6            [...]

7            Baseline

- 8                    •    **Contractor Labour for Sustainment Activities** – FEI currently completes its  
9                            meter exchanges using both FEI’s internal labour and contractors (i.e.,  
10                            approximately 40 to 45 percent is completed by contractors, depending on the  
11                            year). At the time of the original Application, the labour rates per meter exchanges  
12                            were similar between FEI’s internal labour and contractors; as such, FEI assumed  
13                            the same labour rates per meter exchanges at that time. However, since filing the  
14                            Application, FEI has experienced cost increases for work performed by  
15                            contractors. Based on current average contractor rates for meter exchanges, the  
16                            increase over the FEI internal labour rates (i.e., the assumption for the contractor  
17                            labour rate in the original Application) is approximately 109 percent, which is  
18                            reflected in the Evidentiary Update Confidential Appendix C in Confidential  
19                            Appendix G-2, Baseline Cost Inputs, Schedule 2, Line 39 and 40.

20            9.a    Please identify what information FEI relies upon to support its assertion that there  
21                            has been an increase of 109 percent with respect to cost increases for work  
22                            performed by contractors.

23  
24            **Response:**

25            Please refer to the response to RCIA IR4 59.4.

26  
27

28  
29            9.b    Please explain what factor(s) have driven the increase in the costs for work  
30                            performed by contractors since the time of FEI’s original Application.

31  
32            **Response:**

33            Please refer to the response to RCIA IR4 59.4.

34  
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1  
2           9.c    Can FEI commit to ensuring that the increase in costs for work performed by  
3                   contractors will not increase further? If not, is there a point at which the productivity  
4                   rate with respect to the work performed by contractors will reach a level at which it  
5                   will become cost prohibitive for FEI to proceed with the proposed AMI project?

6  
7    **Response:**

8    FEI notes that the cited preamble is in regard to contractor labour for FEI's sustainment capital  
9    activities; these increases are not related to the AMI Project or the cost of FEI's preferred  
10   alternative. As such, the increased costs for contractor labour would impact the financial analysis  
11   for the Baseline scenario and the AMR alternative.<sup>2</sup>

12

---

<sup>2</sup> Under the AMI Project, FEI only continues to install diaphragm meters during the pre-deployment period in 2021 and 2022, and will be using local contractors from 2021 to 2023 prior to the beginning of the deployment period.



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1    **CORE-FEI-2022JULY26-010**

2           **Reference:    FEI Evidentiary Update, Exhibit B-30 PDF Pages 4-5**  
3                       **Materials Market Conditions**

4           Issue: On PDF page 4-5, FEI states in part:

5           AMI Project

- 6                       •   **Bypass Valves and Regulators** – As a result of the challenges noted above for  
7                            manufacturing industries, FEI is experiencing increased costs for bypass valves  
8                            and regulators, which need to be installed under all scenarios. The increased costs  
9                            are reflected in the Evidentiary Update Confidential Appendix C in Confidential  
10                           Appendix G-1, AMI Cost Inputs, Schedule 1, which amount to an increase of  
11                            approximately 24 percent for the regulators and approximately 10 percent for the  
12                            bypass valves during the AMI deployment years over the respective amounts  
13                            originally reflected in the Application

14           10.a    Please identify what information FEI relies upon to support its assertion that there  
15                    has been an increase of approximately 24 percent with respect to cost increases  
16                    for the regulators and 10 percent for the bypass valves.

17  
18           **Response:**

19           Please refer to the response to CEC IR4 19.1.

20  
21

22  
23           10.b    Can FEI commit to ensuring that the increase in costs for the regulators and bypass  
24                    valves will not increase further? If not, is there a point at which the costs of the  
25                    regulators and bypass valves will reach a level at which it will become cost  
26                    prohibitive for FEI to proceed with the proposed AMI project?

27  
28           **Response:**

29           The installation of bypass valves and regulators is not a specific cost related to the AMI Project,  
30                    as bypass valves and regulators are installed under the AMR alternative and the Baseline  
31                    scenario as well. Please also refer to the response to RCIA IR4 64.1.

32





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1   **CORE-FEI-2022JULY26-011**

2           **Reference:   FEI Evidentiary Update, Exhibit B-30 PDF Page 4**  
3                           **Materials Market Conditions**

4           Issue: On PDF page 4, FEI states in part:

5                           FEI notes that this cost escalation does not impact the advanced meters to be  
6                           installed as part of the AMI Project and thus no changes are required to the AMI  
7                           Project financial analysis meter costs as part of the Evidentiary Update. This is  
8                           because FEI's fixed price contract with Sensus (which covers the supply of  
9                           advanced meters, network and managed services) was negotiated prior to  
10                          submission of the Application and includes fixed pricing for the above-noted items.  
11                          That fixed pricing continues to provide certainty in costs and supply of advanced  
12                          meters, network and managed services throughout the life of the AMI Project. FEI  
13                          maintains fixed pricing under its contract with Sensus as long as the contractual  
14                          deadline for removal of the condition precedent related to BCUC approval is  
15                          satisfied by June 30, 2023.

16           11.a   If the condition precedent is not satisfied by June 30, 2023, can FEI provide an  
17                          estimate as to the potential increase in costs for the advanced meters? If so, what  
18                          is that estimate?

19  
20    **Response:**

21    As stated on page 8 of the Evidentiary Update, FEI expects that a significant increase in cost  
22    would result from renegotiating its contract with Sensus, but it is unable to speculate on the  
23    magnitude of this increase. Notwithstanding this, FEI would expect that current market pressures  
24    impacting other manufacturers and vendors (and which are precipitating large price increases)  
25    are having similar impacts on Sensus' meter business.

26  
27

28  
29           11.b   Apart from BCUC approval by June 30, 2023, are there any other conditions  
30                          precedent that must be satisfied by FEI with respect to securing the fixed pricing  
31                          for the advanced meters? If so, what are those conditions precedent?

32

33    **Response:**

34    FEI confirms there are no other conditions precedent to be satisfied by FEI. Please also refer to  
35    the response to CEC IR4 18.1.



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1   **CORE-FEI-2022JULY26-012**

2           **Reference:   FEI Evidentiary Update, Exhibit B-30 PDF Page 5**  
3                           **Materials Market Conditions**

4           Issue: On PDF page 5, FEI states in part:

5           Baseline

- 6           •   **Meters** – FEI has experienced increased costs for diaphragm meters, and  
7           therefore meter costs have increased in the Baseline financial analysis in the  
8           Evidentiary Update. Further, in FEI’s recent experience, diaphragm meter delivery  
9           timelines required for operating the utility cannot be met, which ultimately impacts  
10          the viability of the Baseline scenario.<sup>3</sup> Even apart from experiencing their own  
11          labour and materials issues, or perhaps because of them, vendors have been  
12          switching their business models even more quickly than expected from the  
13          manufacture of such meters to the manufacture of ultrasonic meters. For the  
14          purposes of this analysis FEI has assumed the continued viability of the Baseline  
15          scenario, and as such the increased diaphragm meter costs are reflected in the  
16          Evidentiary Update Confidential Appendix C in Confidential Appendix G-2,  
17          Baseline Cost Inputs Schedule 1, Line 16 for the residential type diaphragm meters  
18          and Line 17 for the commercial type diaphragm meters with the increases of  
19          approximately 26 percent and 6 percent, respectively over the amount originally  
20          reflected in the Application, which was based on costs from 2020.

21          12.a   Please identify which vendors are referred to in the above statement, specifically  
22          that portion which reads that: “Even apart from experiencing their own labour and  
23          materials issues, or perhaps because of them, vendors have been switching their  
24          business models even more quickly than expected from the manufacture of such  
25          meters to the manufacture of ultrasonic meters.”

26  
27          Response:

28          This cited statement is referencing meter vendors in general; however, it is informed by FEI’s  
29          specific knowledge of the three major suppliers to the North American market that FEI does  
30          business with: Itron, Sensus, and Honeywell/Elster.

31  
32

33  
34          12.b   Please specify what “labour and materials issues” are referred to in the above  
35          statement.  
36



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1 **Response:**

2 In this context, the phrase “labour and materials issues” refers to the current inflationary  
3 environment within North America combined with labour shortages in the regions where meters  
4 are manufactured as well as the difficulties associated with acquiring raw materials globally during  
5 the last 18 months.

6  
7

8

9 12.c Can FEI commit to ensuring that the 26% increase in costs for the residential  
10 diaphragm meters will not increase further? If not, is there a point at which the  
11 costs for the diaphragm meters will reach a level at which it will become cost  
12 prohibitive for FEI to proceed with the proposed AMI project?

13

14 **Response:**

15 FEI notes that the preamble and IR refers to diaphragm meters and is not related to AMI Project  
16 costs. The increasing cost of diaphragm meters impacts the AMR alternative and the Baseline  
17 scenario only. The AMI Project provides pricing certainty for the advanced meters installed as  
18 part of the Project and allows FEI to avoid the increasing costs of diaphragm meters altogether.  
19 FEI has no evidence that within the foreseeable future the unit price for diaphragm meters will  
20 stabilize or that the current shortage within the North American marketplace will be resolved as  
21 manufacturers shift to ultrasonic meters.

22



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1    **CORE-FEI-2022JULY26-013**

2            **Reference:    FEI Evidentiary Update, Exhibit B-30 PDF Page 5**

3                    **Materials Market Conditions**

4            Issue: On PDF page 5, FEI states in part:

- 5                    •   **Bypass Valves and Regulators** – The Baseline is also impacted by the increasing  
6                            costs for bypass valves and regulators, as described under the AMI scenario  
7                            above. This cost increase is reflected in the Evidentiary Update Confidential  
8                            Appendix C in Confidential Appendix G-2, Baseline Cost Inputs Schedule 1, Line  
9                            18 and 19, respectively.

10            13.a    Please identify what the increase is to the Baseline due to the increased costs for  
11                            the bypass valves and regulators.

12  
13    **Response:**

14    As discussed on page 5 of the Evidentiary Update and as referenced in the preamble above, the  
15    increases in bypass values and regulators are reflected in the same schedule of the Baseline  
16    Cost Inputs (i.e., Confidential Appendix G-2, Baseline Cost Inputs, Schedule 1, Lines 18 and 19)  
17    as provided in the Application and Confidential Appendix C of the Evidentiary Update. The  
18    increase included in the financial analysis is approximately 18 percent for the bypass values and  
19    4 percent for the regulators in 2023.

20



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1    **CORE-FEI-2022JULY26-014**

2           **Reference:   FEI Evidentiary Update, Exhibit B-30 PDF Page 6**  
3                       **Meter Exchange Dispensation**

4           Issue: On PDF page 6, FEI states in part:

5                       MC has now set out the policy for meter dispensation specifically with respect to  
6                       gas meters, adjusting the earlier practice adopted for electric utilities. In November  
7                       of 2021, MC provided notice that “the temporary permission is effective for the  
8                       specified implementation period.” Since that notice, the MC policy for dispensation  
9                       has been fully developed and confirms that a gas utility is only able to apply for  
10                      meter dispensation for years in which mass meter deployment is to take place.

11           14.a    Please provide a copy of the MC policy referred to above.

12  
13    **Response:**

14    Please refer to the response to BCSEA IR4 37.6.

15  
16

17  
18           14.b    Please identify the specific section where the above noted reference that “the  
19                      temporary permission is effective for the specified implementation period” is found  
20                      in the MC policy and also where it is confirmed in the MC policy that a “gas utility  
21                      is only able to apply for meter dispensation for years in which mass meter  
22                      deployment is to take place”.

23  
24    **Response:**

25    The Measurement Canada (MC) dispensation policy is included as Attachment 37.6 provided in  
26    the response to BCSEA IR4 37.6. The relevant sections of the policy are Section 5.0 and Section  
27    B2.0. FEI has also confirmed its understanding of the policy with MC.

28



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1   **CORE-FEI-2022JULY26-015**

2           **Reference:   FEI Evidentiary Update, Exhibit B-30 PDF Page 6**  
3                           **Meter Exchange Dispensation**

4           Issue: On PDF page 6, FEI states in part:

5                           As, pursuant to this new policy, FEI must continue exchanging meters under its  
6                           MC compliance sampling program until the year of mass deployment, the benefit  
7                           contemplated in the Application of avoiding meter exchange costs in 2022 or 2023  
8                           will not be experienced. The loss of this benefit is now factored into the Evidentiary  
9                           Update financial analysis. FEI notes that this lost benefit adds 0.204 percent to the  
10                          levelized delivery rate impact of the AMI Project reflected in this Evidentiary  
11                          Update, which is approximately 64 percent of the total increase as shown in  
12                          Section 3 below

13           15.a   What is the amount of the “loss” of the “benefit” of avoiding meter exchange costs  
14                          in 2022 or 2023 described in the above? Please explain.

15  
16   **Response:**

17   Please refer to the response to BCUC IR4 49.2, which shows the impact due to the mass  
18   deployment timing requirement in the new gas MC dispensation policy (i.e., the lost benefit) is  
19   \$21.7 million in capital costs.

20  
21  
22  
23           15.b   Given that smart meters are computers, and given that computers have short  
24                          lifespans under normal conditions, please explain an amortization period of 26  
25                          years upon which this rate impact is based.

26  
27   **Response:**

28   The expected useful life of the advanced meters to be installed during the AMI Project is 20 years  
29   (based on the product warranty period offered by Sensus), not 26 years, as explained in Section  
30   6.3.1 of the Application. A 26-year depreciation period that includes both the pre- and post-  
31   deployment lifespan of the Project better aligns the period of the Project benefits with the rate  
32   recovery interval and is consistent with the approach taken in previous FEI CPCN applications  
33   approved by the BCUC.

34   Please also refer to the response to CEC IR1 51.1.

35



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1   **CORE-FEI-2022JULY26-016**

2           **Reference:   FEI Evidentiary Update, Exhibit B-30 PDF Page 6**  
3                           **Meter Exchange Dispensation**

4           Issue: On PDF page 6, FEI states in part:

5                           Due to the rising costs and availability issues with diaphragm meters and as  
6                           contemplated in the Application, FEI still plans to install advanced meters (with the  
7                           radio turned off) instead of diaphragm meters beginning in 2023 as part of its  
8                           compliance sampling program, and then return to the premises where this  
9                           occurred during Project deployment in order to connect each meter to the network.  
10                          The associated hours and costs to commission these advanced meters installed  
11                          in 2023 (activate radio) is reflected in the Evidentiary Update Confidential Appendix  
12                          C in Confidential Appendix G-1, AMI Cost Inputs, Schedule 2, Line 43. In the event  
13                          the BCUC does not approve the Application, FEI will leave the radio turned off  
14                          within each meter and the meter will continue to be read manually.

15           16.a   What is the basis for why the associate hours and costs to commission the  
16                          advanced meters has been filed on a confidential basis? Please explain.

17  
18    **Response:**

19    Please refer to the response to CORE IR4 1.c.

20  
21

22  
23           16.b   What is the cost increase for these new smart meters vs the standard diaphragm  
24                          meter? How does this compare with replacing a standard meter with a smart meter  
25                          if the application is later approved?

26  
27    **Response:**

28    The incremental materials cost for replacing a standard diaphragm meter with an advanced meter  
29    as part of 2023 sustainment activities (regardless of BCUC approval of the AMI Project) is \$37,  
30    as demonstrated in Appendix C of the Application. The difference in the cost to complete the  
31    installation of an advanced meter (which will be left with the radio turned off during 2023  
32    sustainment) is the additional cost of returning to the site to commission the meter during mass  
33    deployment; this cost is expected to be minimal as crews will already be in the neighbourhood  
34    completing meter exchanges on nearby premises.

35  
36



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1  
2           16.c    Would it be possible to remotely activate the smart meter at some point without  
3                    having received appropriate approval?

4  
5    **Response:**

6    Please refer to the response to BCUC IR4 50.3.

7



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1     **CORE-FEI-2022JULY26-017**

2             **Reference:    FEI Evidentiary Update, Exhibit B-30 PDF Page 7**  
 3                             **Meter Exchange Dispensation**

4             Issue: On PDF page 7, FEI states in part:

5             **Table 3: Comparison of AMI Project Financials (NPVs)**

Financial Summary	AMI (As-Filed)	AMI (Evidentiary Update)	Changes
<b>Capital Costs (NPV):</b>			
Meter Capital	481.2	560.1	78.8
Project Management	35.2	35.2	-
Software Capital	9.1	9.1	-
Network Capital	17.1	17.1	-
Non-Meter Capital	3.6	3.6	-
AFUDC	12.7	16.0	3.3
<b>Total Capital (NPV)</b>	<b>558.9</b>	<b>641.1</b>	<b>82.2</b>
<b>O&amp;M Costs (NPV):</b>			
Meter Reading Costs <sup>1</sup>	78.3	79.1	0.8
Operations, Contact Centre and Meter Shop O&M <sup>2</sup>	12.9	14.6	1.7
New O&M	97.9	97.9	-
<b>Total O&amp;M, incl. Capitalized Overhead (NPV)</b>	<b>189.0</b>	<b>191.6</b>	<b>2.6</b>
<b>Incremental Capital (NPV, \$millions)</b>	<b>186.05</b>	<b>206.9</b>	<b>20.9</b>
<b>Incremental O&amp;M (NPV, \$millions)</b>	<b>(134.48)</b>	<b>(135.5)</b>	<b>(1.0)</b>
<b>Incremental To Baseline Revenue Requirement (NPV, \$millions)</b>	<b>15.0</b>	<b>53.3</b>	<b>38.3</b>
<b>Incremental to Delivery Rate Impact (%)</b>	<b>0.125%</b>	<b>0.442%</b>	<b>0.317%</b>

6

7             17.a    Please provide a breakdown of the increase of \$78.8 million in meter capital costs  
 8                             since the filing of FEI's original application.

9

10            **Response:**

11            Please refer to Table 1 below for the breakdown of the \$78.8 million increase in the NPV of the  
 12            meter capital costs between the Application and the Evidentiary Update.

1 **Table 1: Breakdown of the NPV increase in Meter Capital of the AMI Project (\$millions)**

Line	Meter Capital \$millions	Schedule	NPV AMI (As-Filed)	NPV AMI (Evid Update)	Changes
1	Non AMI Meter Capital	Appendix G-1-AMI Cost Inputs CONFIDENTIAL, Schedule 1, Line 32	9.4	19.4	10.0
2	Non AMI Meter Installation	Appendix G-1-AMI Cost Inputs CONFIDENTIAL, Schedule 2.3, Line 1	6.1	13.1	7.1
3	AMI Meter Capital	Appendix G-1-AMI Cost Inputs CONFIDENTIAL, Line 33	225.5	230.4	4.9
4	AMI Meter Installation	Appendix G-1-AMI Cost Inputs CONFIDENTIAL, Schedule 2.3, Line 5	123.7	167.2	43.5
5	Bypass Material Capital	Appendix G-1-AMI Cost Inputs CONFIDENTIAL, Schedule 1, Line 34	79.1	85.7	6.7
6	Bypass Material Installation	Appendix G-1-AMI Cost Inputs CONFIDENTIAL, Schedule 2.3, Line 8	31.5	38.1	6.6
7	Contact Center Capitalized Costs	Appendix G-1-AMI Cost Inputs CONFIDENTIAL, Schedule 3	6.0	6.2	0.2
8	<b>Total Meter Capital \$millions</b>	Sum of Lines 1 through 7	<b>481.2</b>	<b>560.1</b>	<b>78.8</b>

2  
3 Notes to Table 1:

- 4
- 5 • The non-AMI meter is related to the diaphragm meters and regulators to be installed during the
  - 6 pre-deployment period from 2021 to 2022. The increase in capital is related to the increase in
  - 7 diaphragm meter hardware costs and regulator costs. The increase in the installation costs is
  - 8 mostly related to the increase in local contractor rates during the pre-deployment period for the
  - 9 installation of the diaphragm meters and regulators.
- 10 • The AMI meter capital and AMI meter installation are related to the installation of the AMI meter
  - 11 hardware (including the regulators) during the deployment period as well as AMI meter exchanges
  - 12 during the post-deployment period (i.e., 0.5 percent of AMI meter failures). This also includes the
  - 13 AMI meters that will be installed in 2023 but will not be connected to the network (i.e., will not have
  - 14 the radio connection activated) until the deployment period from 2024 to 2026. FEI notes the
  - 15 increase related to AMI meter capital is primarily due to the increase in regulator costs as discussed
  - 16 on pages 4 to 5 of the Evidentiary Update. There is no change in the cost of the AMI meter
  - 17 hardware as FEI currently has a fixed price contract with Sensus which covers the supply of AMI
  - 18 meters. For AMI meter installation, the increase is primarily due to the increased AMI deployment
  - 19 labour costs discussed on page 3 of the Evidentiary Update.
- 20 • The bypass material is related to the capital and installation costs of the bypass valve hardware in
  - 21 all periods (i.e., pre-deployment, deployment, and post-deployment years).
  - 22 • The contact center capitalized costs are related to the capitalized costs for booking each meter
  - 23 exchange as discussed in Section 6.2.1.1 of the Application.

24

25

26 17.b If the contract includes a provision for fixed contract pricing, why would there be

27 an increase in capital costs?

28

29 **Response:**

30 As explained on page 4, Section 1.2 of the Evidentiary Update, there are no changes to the costs

31 related to the advanced meters (i.e., AMI hardware), network, or managed services as FEI

32 currently has a fixed price contract with Sensus. The increase in capital costs, as discussed in

33 the Evidentiary Update, is related to costs that do not have a fixed price contract, including the

34 AMI deployment labour costs, the increased costs of bypass valves and regulators, as well as the



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1 increased costs of diaphragm meters and local contractor rates that will impact the AMI Project  
2 only during the pre-deployment period.<sup>3</sup>

3  
4

5  
6 17.c Do the costs include software updates that occur regularly and frequently with  
7 computers?

8  
9 **Response:**

10 FEI confirms that the financial analysis includes costs for software updates, when required.

11

---

<sup>3</sup> Under the AMI Project, FEI continues to install diaphragm meters during the pre-deployment period in 2021 and 2022, and will be using local contractors from 2021 to 2023 prior to the beginning of the deployment period.



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1    **CORE-FEI-2022JULY26-018**

2           **Reference:    FEI Evidentiary Update, Exhibit B-30 PDF Page 8**

3                   **Timing of a CPCN Decision**

4           Issue: On PDF page 8, FEI states in part:

5                   FEI's ability to acquire other products and services that would be required as part  
6                   of the AMI Project in a timely manner and without further escalation in cost. The  
7                   later BCUC approval is received, the more FEI is exposed to the potential of  
8                   inflationary pressures on labour rates, facilities and materials that are not tied to  
9                   fixed price contracts, and the more FEI and its customers are exposed to potential  
10                  supply chain issues related to accessing the above.

11           18.a    What "other products and services" referred to in this statement would be required  
12                  as part of the AMI project?

13  
14    **Response:**

15    The term "other products and services" in this context includes costs to lease warehouses/offices  
16    and vehicles, computer hardware and software purchases, insurance premiums, and travel  
17    expenses. In essence, it relates to all goods, services and labour needed during deployment of  
18    the AMI Project that currently are not subject to a contracted rate.

19



FortisBC Energy Inc. (FEI or the Company) Application for a Certificate of Public Convenience and Necessity (CPCN) for Approval of the Advanced Metering Infrastructure (AMI) Project (Application)	Submission Date: August 16, 2022
Response to Coalition to Reduce Electropollution (CORE) Information Request (IR) No. 4 on Evidentiary Update	Page 28

1    **CORE-FEI-2022JULY26-019**

2           **Reference:    FEI Evidentiary Update, Exhibit B-30 PDF Page 8**

3                   **Timing of a CPCN Decision**

4           Issue: On PDF page 8, FEI states in part:

5                   FEI’s ability to maintain the fixed contract pricing it negotiated with Sensus,  
6                   allowing FEI to acquire the meters at a significant discount from their present list  
7                   price. Since the filing of the Application the parties agreed to one extension of the  
8                   contractual deadline for removal of the condition precedent related to BCUC  
9                   approval (the CP deadline), but FEI does not expect to be able to re- negotiate the  
10                  CP deadline (presently June 30, 2023) without a significant increase in cost.

11           19.a    What is the amount that comprises the “significant increase in cost” that FEI refers  
12                   to in the statement above? Please specify.

13

14    **Response:**

15    Please refer to the response to CORE IR4 11.a.

16



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1 **CORE-FEI-2022JULY26-020**

2 **Reference: FEI Evidentiary Update, Exhibit B-30 PDF Page 22**

3 **Section 6 – Project Costs**

4 Issue: On PDF page 22 (lines 20-27), FEI states in part:

- 5 1. Pre-deployment - the time period from 2021 to **2023**. During this phase, costs are  
6 being incurred for Project development and for the regulatory proceeding;
- 7 2. Deployment – the time period from **2024** to 2026. These are the years in which the  
8 majority of the AMI meters will be deployed; and
- 9 3. Post-deployment – the time period from 2027 to 2046. This is the time period over  
10 which the new AMI meters are expected to be in service, based on the estimated  
11 useful life of the new AMI meters of 20 years. The majority of the financial benefits  
12 of the Project, consisting primarily of reduced meter reading costs, will be realized  
13 over this phase

14 The Deployment period above has been updated from 2023 to 2026 to 2024 to 2026.

15 20.a Given the time period for deployment of the AMI meters has been decreased by 1  
16 year, if the BCUC approves the project, can FEI provide assurances that it will  
17 complete deployment within this condensed time frame of 2024 to 2026?  
18

19 **Response:**

20 Please refer to the response to CEC IR4 23.1.

21  
22

23  
24 20.b What is the guarantee period during which replacement of defective smart meters  
25 will be covered?  
26

27 **Response:**

28 Please refer to the responses to BCUC IR1 26.2.1, RCIA IR1 14.1 and BCUC IR2 44.1.

29



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Response to Coalition to Reduce Electropollution (CORE) Information Request (IR) No. 4 on Evidentiary Update	Page 30

1    **CORE-FEI-2022JULY26-021**

2           **Reference:    FEI Evidentiary Update, Exhibit B-30 PDF Page 27**

3                           **Section 6 – Project Costs**

4           Issue: On PDF page 27 (lines 5-12), FEI states in part:

5                           **Meter Installation**

6                           Meter installation consists of the costs to install meters, regulators, and large meter  
7                           modules. As discussed in Section 5.3.3.2, FEI is in the RFP process for an AMI  
8                           Deployment Vendor. Since a vendor-supplied cost estimate is not available, FEI  
9                           has estimated meter installation costing assuming internal FEI labour and **current**  
10                           **local contractor pricing as well as** related costs. Schedules 2.1, 2.2, and 2.3 in  
11                           confidential Appendix G-1 contain the detailed assumptions for meter installation.  
12                           Schedule 2.2 contains the detail supporting the incremental cost of installing the  
13                           AMI meters.

14           21.a    What is the status of the RFP process at this time regarding FEI’s search for an  
15                           AMI Deployment Vendor?

16  
17           **Response:**

18           The RFP process to consider an AMI Deployment Vendor(s) is ongoing. As noted in the  
19           Evidentiary Update and discussed in the response to CORE IR4 5.a, FEI is in the process of  
20           negotiating with certain parties.

21  
22

23  
24           21.b    When a AMI Deployment Vendor is secured by FEI, will FEI commit to filing a copy  
25                           of the vendor-supplied estimate once available?

26  
27           **Response:**

28           Following receipt of a CPCN for the AMI Project, FEI will include a control budget as part of its  
29           CPCN reporting requirements to the BCUC. This control budget will include an updated cost  
30           estimate for deployment. Subsequently, periodic CPCN progress reports will provide a  
31           comparison of actual Project spending and progress to the control budget until Project completion.

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