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August 16, 2022

Commercial Energy Consumers Association of British Columbia
c/o Owen Bird Law Corporation
P.O. Box 49130
Three Bentall Centre
2900 – 595 Burrard Street
Vancouver, BC
V7X 1J5

Attention: Mr. Christopher P. Weafer

Dear Mr. Weafer:

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 the Commercial Energy Consumers Association of British Columbia (CEC) 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 CEC 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

13. Reference: Exhibit B-30, page 3

- **Deployment Labour** – As a result of the challenging labour market, FEI is forecasting higher deployment labour costs in the AMI financial analysis directly related to the following:
  - **Hourly rates for temporary field employees** – to recruit and retain qualified employees, FEI is forecasting higher hourly rates for employees hired to perform meter exchanges for the deployment period. The change is reflected in the Evidentiary Update Confidential Appendix C in Confidential Appendix G-1, AMI Cost Inputs, Schedule 2.1, Line 7 and 8, which amounts to an estimated increase of approximately 37 percent from the hourly rates originally reflected in the Application.

13.1 Please provide FEI's justification for an expected increase of 37% in the hourly rates originally reflected in the application.

Response:

FEI's explanation for an expected increase in the deployment labour rates originally reflected in the Application is found in Section 1.1 of the Evidentiary Update and is attributable largely to the challenging labour market conditions it is currently facing. The 37 percent hourly rate increase was determined after FEI reviewed the current rate of pay of its meter exchange contractors, the pay and benefit increases that have occurred for entry-level positions, and the development of an enhanced retention strategy.

FEI, like many employers, is competing for talent at a time when labour shortages already exist and the gap between available work and available workers continues to grow. FEI believes it must offer a market competitive wage to employees to be able to attract and retain those employees, and this wage is higher than originally estimated in the Application. This belief is supported by Benefits Canada, which reports that the current pace of inflation is driving many employers to continue to raise wages at a fast rate over the next 12 months in order to attract and retain their in demand workforce.[1]

The situation is compounded for FEI in that the meter exchange work within the Project is temporary in nature, for which it is typically more difficult to recruit workers in comparison to recruiting for full-time positions. Using figures from 2020 and 2021, for example, the average number of applicants who applied for permanent job postings at FEI was 161 percent higher than the average number of applicants who applied for temporary job postings. In response to the increasingly competitive labour market, FEI is not only offering a competitive wage to attract a temporary workforce, the Company has also added the incremental cost of additional incentives and benefits to encourage these temporary employees to continue their employment throughout the advanced meter deployment phase.

[1] https://www.benefitscanada.com/news/bencan/wage-hikes-expected-alongside-rising-inflation-in-2022-surveys/.

In order to complete the Project in a timely manner, FEI needs to be able to offer reasonable market competitive compensation for this temporary work that will entice workers to come to and stay through the completion of the Project.

13.2 Please discuss whether or not FEI would be able to retain less qualified employees and train them for the work, and discuss if this option was considered as an alternative. If so, please provide the quantitative assumptions and cost comparisons.

Response:

FEI has worked with Technical Safety BC regarding the development of an Alternate Safety Approach Program[2] that, when approved, will allow FEI to hire field service representatives without trades certifications to perform meter exchange work. There is no further opportunity to retain less qualified employees and still meet Technical Safety BC's qualification requirements to complete this work.

[2] https://www.technicalsafetybc.ca/alternative-safety-approaches.

14. Reference: Exhibit B-30, page 3

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

14.1 Please provide FEI's justification for the expected higher turnover for temporary field employees. What is FEI's understanding of the conditions causing this to occur?

Response:

FEI is anticipating higher turnover for temporary field employees than originally reported because of the overall challenging labour market and its own recent experiences with retaining employees.

To illustrate, from Q2 2021 to Q2 2022 FEI experienced a 50 percent increase in its employee turnover rate; one of the top reasons exiting employees gave for their departures was lack of career advancement opportunities. FEI recognizes that temporary employees hired to install advanced meters will consider their permanent opportunities to be limited. Given the challenging labour market that has continued to develop, FEI expects these employees will be more likely to leave the organization for other opportunities that offer longer-term career development and job security.

There is always a risk with temporary work that FEI will lose temporary employees to other permanent positions that offer job security, advancement opportunities, benefits and competitive pay; however, this risk is increased in a labour market where opportunities are plentiful, the available workforce is in short supply and highly sought after across industries, and wage rates for this workforce are increasing.

The labour market has changed significantly in recent years and FEI continues to evaluate its strategies to position itself to be successful in completing the AMI meter deployment.

14.2 Please provide the change in the ratio of supervisors and gas ticketed installers to internally trained installers.

Response:

The higher turnover rate will result in FEI having to train and support more internally trained installers as these employees gain experience completing their responsibilities. FEI has determined hiring a larger percentage/ratio of gas ticketed installers and supervisors will ensure sufficient levels of support are available to internally trained installers.

The change in the ratio of supervisors and gas ticketed installers to internally trained installers is as follows:

	Application	Evidentiary Update
Internally Trained Installers / Supervisors	9.8 : 1	8.5 : 1
Internally Trained Installers / Gas Ticketed Installers	4.88 : 1	4 : 1

14.3 Please explain why the ratio has been increased, and why FEI has determined its new rate as being appropriate.

Response:

Please refer to the response to CEC IR4 14.2.

15. Reference: Exhibit B-30, page 3

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

15.1 Please quantify the change in deployment productivity rate, including the previously excluded rate and the new revised one.

Response:

FEI's expected productivity rate per installer has decreased from 6.5 meters per day to 6.2 meters per day.

15.2 Please compare this productivity rate to the one experienced by FBC in its AMI implementation and separately describe the components that are different between gas and electric AMI.

Response:

The productivity rate experienced by FBC and the one assumed by FEI are not directly comparable for multiple reasons:

There are more steps to exchange a gas meter than there are to exchange an electric meter, including completing piping changes, and in most cases, entering a customer's premises to relight appliances.

The requirement for an appointment with the customer to complete a gas meter exchange removes the ability to fully optimize routes for productivity, as the routes will be dictated in large part by customer availability rather than proximity to each other.

On average, an installer working on the FBC project would complete approximately 35 advanced meter installations per day. Due to the differences noted above, FEI installers will only be able to complete approximately 6 advanced meter installations per day.

15.3 Please provide any expectations used in the analysis to anticipate productivity improvement over time with cumulative experience.

Response:

As new employees transition from being mentored in the field to working independently, there will be a productivity improvement. FEI has projected this productivity improvement in the estimated overall average of 6.2 exchanges per day (as shown in Schedule 2.1 of Appendix G-1 of the Evidentiary Update). The 6.2 exchanges per day is an average that already takes into account the assumed productivity improvement after a new employee has been trained.

15.4 What activities, if any, has FEI undertaken to improve productivity with respect to:

- employee turnover rate;
- reassuring customers; and
- any other issues affecting productivity (please identify)?

Response:

With respect to the AMI Project, FEI is taking steps to manage productivity as follows:

- **Employee Turnover Rate:** Please refer to the response to CEC IR4 13.1 for a discussion on FEI's approach to managing employee turnover during the AMI Project.
- **Assuring Customers:** FEI continues to refine its customer messaging and customer communications strategy in an attempt to reduce customer concerns about FEI employees entering their premises. In addition, FEI will continue to make appropriate PPE (e.g., masks) available for installers to don before entering a customer's premises, if requested by the customer or preferred by the installer.
- **Other Issues:** FEI will ensure that installers are adequately trained, have the right tools and equipment, and have sufficient day-to-day support to do their work confidently and efficiently.

During the deployment phase of the AMI Project, FEI will continually review productivity rates and address any challenges while not compromising employee safety and customer experience.

16. Reference: Exhibit B-30, page 3 and 4

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

16.1 Does FEI have options to either adjust (increase) the use of internal labour to reduce exposure to contractor labour rate increases, or otherwise revise its contracts to mitigate the rate increases? Please explain, and confirm that FEI considered such alternatives before assuming the increases.

Response:

Please refer to the response to BCUC IR4 49.1.

17. Reference: Exhibit B-30, page 4

AMR Alternative

- **Deployment Labour -** The AMR Alternative requires the deployment of AMR modules to existing meters and therefore faces the same deployment labour challenges (i.e., hourly rates for temporary field employees, higher turnover rate, and decreased meter deployment productivity rate) as described above in relation to the AMI Project scenario. The associated costs for the AMR Alternative have been adjusted accordingly in the Evidentiary Update. The change is reflected in the Evidentiary Update Confidential Appendix C in AMR Cost Inputs in Confidential Table 4-2 (as included originally in the Confidential Attachment 1 of Exhibit B-2, Schedule 3) and amounts to an overall increase of approximately 48 percent over the amount originally reflected in the Application.
- **Contractor Labour for Sustainment Activities –** Given the underlying meters for the AMR Alternative are still diaphragm meters (AMR module install to existing diaphragm meters), the increased contractor activities as well as the impact due to the higher contractor rates per activity for meter exchanges as described in the Baseline scenario above also impact the AMR Alternative. As such, the same change as for the Baseline scenario is also reflected in the Evidentiary Update Confidential Appendix C in AMR Cost Inputs in Confidential Table 4-2 (as included originally in the Confidential Attachment 1 of Exhibit B-2, Schedule 2, Line 39 and 40).

17.1 Please confirm or otherwise explain that the adjustments to the AMR Alternative reflect, proportionately, the identical changes as those applied to the AMI Alternative.

Response:

As described in Section 1.1 (AMR Alternative) of the Evidentiary Update, FEI confirms that the adjustments to the AMR alternative reflect proportionately the same changes to labour costs as those applied to the AMI Project.

18. Reference: Exhibit B-30, page 4

> ***1.2 Materials Market Conditions***
>
> Manufacturing industries globally are experiencing supply chain disruptions and rising supplier costs linked to labour shortages, material availability, and logistical constraints. FEI has also experienced increased costs for materials. The Evidentiary Update reflects the impacts that these pressures have had on two sub-categories of material costs: diaphragm meters (Baseline and AMR); and bypass valves and regulators (all scenarios).
>
> FEI notes that this cost escalation does not impact the advanced meters to be installed as part of the AMI Project and thus no changes are required to the AMI Project financial analysis meter costs as part of the Evidentiary Update. This is because FEI's fixed price contract with Sensus (which covers the supply of advanced meters, network and managed services) was negotiated prior to submission of the Application and includes fixed pricing for the above-noted items. That fixed pricing continues to provide certainty in costs and supply of advanced meters, network and managed services throughout the life of the AMI Project. FEI maintains fixed pricing under its contract with Sensus as long as the contractual deadline for removal of the condition precedent related to BCUC approval is satisfied by June 30, 2023.

18.1 Please confirm or otherwise explain that FEI could risk significant price increases from Sensus if the decision were delayed beyond June 30, 2023.

Response:

FEI confirms that there are significant risks with respect to the pricing received for Sensus supply and services if the referenced condition precedent is not satisfied by June 30, 2023 and re-negotiation is required.

Additionally, FEI clarifies that June 30, 2023 is the deadline for when it must satisfy or waive this condition precedent in its contract with Sensus for the contract to take effect. As discussed in Section 4 of the Evidentiary Update, an earlier BCUC decision is desirable.

18.2 Please confirm that there are no extraordinary cost or other loopholes or contractual mechanisms that would permit Sensus to substantially alter the fixed price associated with the contract.

Response:

FEI confirms that its contract with Sensus was negotiated to ensure that fixed prices would be maintained for the duration of the proposed AMI Project.

19. Reference: Exhibit B-30, page 4-5

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

19.1 What information did FEI rely upon to determine the expected increases of 24% for regulators, and 10% for bypass valves?

Response:

FEI has already experienced similar price increases from regulator and bypass valve vendors for purchases completed as part of FEI's annual sustainment capital program. Additionally, the price increases reflect the proposals being made by the vendors as part of the contract negotiations to support the AMI Project.

20. Reference: Exhibit B-30, page 5

Baseline

- **Meters** – FEI has experienced increased costs for diaphragm meters, and therefore meter costs have increased in the Baseline financial analysis in the Evidentiary Update. Further, in FEI's recent experience, diaphragm meter delivery timelines required for operating the utility cannot be met, which ultimately impacts the viability of the Baseline scenario.[3] Even apart from experiencing their own labour and materials issues, or perhaps because of them, vendors have been switching their business models even more quickly than expected from the manufacture of such meters to the manufacture of ultrasonic meters. For the purposes of this analysis FEI has assumed the continued viability of the Baseline scenario, and as such the increased diaphragm meter costs are reflected in the Evidentiary Update Confidential Appendix C in Confidential Appendix G-2, Baseline Cost Inputs Schedule 1, Line 16 for the residential type diaphragm meters and Line 17 for the commercial type diaphragm meters with the increases of approximately 26 percent and 6 percent, respectively over the amount originally reflected in the Application, which was based on costs from 2020.
- **Bypass Valves and Regulators** – The Baseline is also impacted by the increasing costs for bypass valves and regulators, as described under the AMI scenario above. This cost increase is reflected in the Evidentiary Update Confidential Appendix C in Confidential Appendix G-2, Baseline Cost Inputs Schedule 1, Line 18 and 19, respectively.

20.1 Please provide the expected % increase for the Baseline diaphragm meters, and please provide the source(s) from which that expectation was derived.

Response:

The increases for diaphragm meters reflect the actual price paid for these meters by FEI for its sustainment meter exchanges. FEI had originally included an overall 2 percent inflation per year for materials in the Baseline scenario and AMR alternative.

20.2 To the extent that vendor business models rapidly switch to ultrasonic models, does this add an increased risk element to the baseline scenario? Please explain and quantify to the extent possible.

Response:

Vendors accelerating their transition to ultrasonic models would add an increased risk to the Baseline scenario. The reduced availability of diaphragm meters means the Baseline scenario may not be viable at all.

With reduced availability of diaphragm meters, even if the Application were not approved FEI would have to procure and install ultrasonic meters at customer premises. In the absence of Application approval, FEI would need to procure those ultrasonic meters under terms and conditions, including pricing, that are less favourable than what has been negotiated as part of the contract with Sensus to support the AMI Project.

If ultrasonic meters were installed, but the Application were not approved, customers and FEI would be prevented from realizing the full benefits provided by ultrasonic meters as these meters would continue to be manually read given that the communication network and related software contemplated in the Application would not be installed.

21. Reference: Exhibit B-30, page 5

> AMR Alternative
>
> - **Meters** – As the AMR Alternative also requires diaphragm meters, the discussion under Baseline scenario applies here as well. For the purposes of this analysis FEI has assumed the continued viability of the AMR Alternative, and as such the same increased diaphragm meter costs in the Baseline scenario are also reflected in the Evidentiary Update Confidential Appendix C AMR Cost Inputs in Confidential Table 4-2 (as included originally in the Confidential Attachment 1 of Exhibit B-2), Schedule 1, Line 16 and 17 for the residential and commercial type diaphragm meters, respectively.
> - **Bypass Valves and Regulators** – The AMR Alternative is also impacted by the increasing costs for bypass valves and regulators, as described in both the AMI scenario and Baseline scenario above. This impact to the AMR scenario is reflected in the Evidentiary Update Confidential Appendix C AMR Cost Inputs in Confidential Table 4-2 (as included originally in the Confidential Attachment 1 of Exhibit B-2), Schedule 1, Line 18 and 19 for the regulators and bypass valves, respectively.

21.1 Please confirm or otherwise explain that the adjustments to the AMR Alternative with respect to diaphragm meter costs reflect, proportionately, the identical changes as those applied to the Baseline scenario.

Response:

FEI confirms that, as identified in the Evidentiary Update and cited in the preamble above, the diaphragm meter costs in the AMR alternative are reflected in Confidential Appendix C of the Evidentiary Update, Confidential Table 4-2, AMR Cost Inputs, Schedule 1, Lines 16 and 17. These costs are identical to the cost inputs to the Baseline scenario, which are reflected in Confidential Appendix C of the Evidentiary Update, Appendix G-2, Baseline Cost Inputs, Schedule 1, Lines 16 and 17.

21.2 Please confirm or otherwise explain that the adjustments to the AMR Alternative with respect to bypass valves and regulators reflect, proportionately, the identical changes as those applied to the AMI Alternative and the baseline scenario.

Response:

FEI confirms that, as indicated in the Evidentiary Update and cited in the preamble above, the bypass valves and regulator costs in the AMR alternative are reflected in Confidential Appendix C of the Evidentiary Update, Confidential Table 4-2, AMR Cost Inputs, Schedule 1, Lines 18 and 19. These costs are identical to the cost inputs to the Baseline scenario, which are reflected in the Confidential Appendix C of the Evidentiary Update, Appendix G-2, Baseline Cost Inputs, Schedule 1, Lines 18 and 19.

22. Reference: Exhibit B-30, page 6

> **2. Meter Exchange Dispensation**
>
> With this Evidentiary Update, FEI is also providing information on a development regarding Measurement Canada's (MC) policy for meter dispensation for gas utilities. The Application as filed expected the Company would receive the approval of MC, upon the BCUC's granting of a CPCN in respect of the Project, to dispense with meter exchanges in 2022. This expectation was based on the existing policy in place for electric utility deployments throughout Canada where utilities receive dispensations from MC meter exchange requirements upon approval of a project.[4]
>
> MC has now set out the policy for meter dispensation specifically with respect to gas meters, adjusting the earlier practice adopted for electric utilities. In November of 2021, MC provided notice that "the temporary permission is effective for the specified implementation period." Since that notice, the MC policy for dispensation has been fully developed and confirms that a gas utility is only able to apply for meter dispensation for years in which mass meter deployment is to take place.
>
> As, pursuant to this new policy, FEI must continue exchanging meters under its MC compliance sampling program until the year of mass deployment, the benefit contemplated in the Application of avoiding meter exchange costs in 2022 or 2023 will not be experienced. The loss of this benefit is now factored into the Evidentiary Update financial analysis. FEI notes that this lost benefit adds 0.204 percent to the levelized delivery rate impact of the AMI Project reflected in this Evidentiary Update, which is approximately 64 percent of the total increase as shown in Section 3 below.
>
> Due to the rising costs and availability issues with diaphragm meters and as contemplated in the Application, FEI still plans to install advanced meters (with the radio turned off) instead of diaphragm meters beginning in 2023 as part of its compliance sampling program, and then return to the premises where this occurred during Project deployment in order to connect each meter to the network. The associated hours and costs to commission these advanced meters installed in 2023 (activate radio) is reflected in the Evidentiary Update Confidential Appendix C in Confidential Appendix G-1, AMI Cost Inputs, Schedule 2, Line 43. In the event the BCUC does not approve the Application, FEI will leave the radio turned off within each meter and the meter will continue to be read manually.

[4] MC did not have a policy in place for gas utility AMI deployments at the time of filing. The policy was developed throughout 2021 and FEI's understanding remained that the same policy would apply to gas utilities until it received notice otherwise in November of 2021.

22.1 Please elaborate on the 'temporary permission for the specified implementation period' – did FEI have temporary permission? What was the specified implementation period? Is the specified period still in effect?

Response:

The wording cited in the IR and preamble refers to the bulletin published by Measurement Canada (MC) summarizing its new meter dispensation policy for gas utilities. Specifically, "the temporary

permission is effective for the specified implementation period" refers to the fact that dispensation will only be granted for a gas utility beginning in the year of mass deployment. The implementation period refers to the period over which mass deployment will take place. This interpretation of the policy is supported by discussions between MC representatives and FEI. FEI does not have permission for dispensation of its meters because it does not yet have an approved project and mass deployment will not begin until 2024.

22.2 Please provide FEI's views as to why Measurement Canada may have established the new policy related to gas meter exchange dispensation. Would such a dispensation have been expected to increase risk to the public?

Response:

Please refer to the response to BCSEA IR4 37.2.

22.3 Did Measurement Canada change its policies towards electric utility meters as well? Please explain if yes.

Response:

To FEI's knowledge, MC's policy for meter dispensation for electric utilities has not changed.

22.4 Does the commissioning of the advanced meters to be installed in 2023 impact the fixed cost of the meters under the Sensus agreement? Please explain and quantify if yes.

Response:

No, the fixed price of the meters to be purchased during the proposed AMI Project, under the Sensus agreement, is not affected by any activities associated with purchase or installation of meters in 2023.

23. Reference: Exhibit B-30, page 7 and PDF page 22

Table 3: Comparison of AMI Project Financials (NPVs)

Financial Summary	AMI (As-Filed)	AMI (Evidentiary Update)	Changes
Capital Costs (NPV):			
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
Total Capital (NPV)	**558.9**	**641.1**	**82.2**
O&M Costs (NPV):			
Meter Reading Costs[1]	78.3	79.1	0.8
Operations, Contact Centre and Meter Shop O&M[2]	12.9	14.6	1.7
New O&M	97.9	97.9	-
Total O&M, incl. Capitalized Overhead (NPV)	**189.0**	**191.6**	**2.6**
Incremental Capital (NPV, $millions)	**186.05**	**206.9**	**20.9**
Incremental O&M (NPV, $millions)	**(134.48)**	**(135.5)**	**(1.0)**
Incremental To Baseline Revenue Requirement (NPV, $millions)	**15.0**	**53.3**	**38.3**
Incremental to Delivery Rate Impact (%)	**0.125%**	**0.442%**	**0.317%**

Notes to Table 3:

1. The change in AMI meter reading costs shown is due to the shift in the start of AMI meter deployment from 2023 as originally filed to 2024, which results in more manual meter readings occurring in 2023 and 2024 than originally assumed; the underlying costs for meter reading remained unchanged as per FEI's contract with Sensus.

23.1 Please explain the shift in the AMI meter deployment from 2023 to 2024.

Response:

The AMI deployment period is still 36 months, as originally filed. In the Application, the expected start of advanced meter deployment was mid-2023; however, due to the ongoing regulatory review of the Application and effort to secure deployment services, materials and equipment, FEI has extended the deployment start date to early 2024.

23.2 Please provide the same summary table for the AMR Alternative.

Response:

Please refer to Table 1 below for the summary of changes to the AMR alternative in the Evidentiary Update.

Table 1: Comparison of AMR Alternative Financials (NPVs)

Financial Summary	AMR (As-Filed)	AMR (Evidentiary Update)	Changes
Capital Costs (NPV):			
Meter Capital	458.9	541.1	82.2
Project Management	26.2	26.2	-
Software Capital	2.2	2.2	-
Network Capital	0.3	0.3	-
Non-Meter Capital	5.3	5.3	-
In House Meter Reading Capital	-	-	-
AFUDC[1]	3.0	3.5	0.6
Total Capital (NPV, $millions)	**496.0**	**578.8**	**82.8**
O&M Costs (NPV):			
Meter Reading Costs[2]	102.0	100.9	(1.1)
Operations, Contact Centre and Meter Shop O&M[3]	55.4	58.7	3.3
New O&M[4]	7.3	8.8	1.5
Total O&M, incl. Capitalized Overhead (NPV, $millions)	**164.7**	**168.4**	**3.7**
Incremental Capital (NPV, $millions)	**123.1**	**144.6**	**21.5**
Incremental O&M (NPV, $millions)	**(158.8)**	**(158.7)**	**0.2**
Incremental To Baseline Revenue Requirement (NPV, $millions)	**(34.5)**	**(7.2)**	**27.3**
Incremental to Delivery Rate Impact (%)	**-0.286%**	**-0.059%**	**0.227%**

Notes to Table 1:

1. While responding to this information request, FEI noticed the NPV of AFUDC for the AMR alternative in Table 4-2 of the Application was incorrectly shown as $3.6 million instead of $3.0 million. FEI has corrected this in Table 1 above. The revision is minor and has no impact on the levelized delivery rate impact for the AMR alternative.

2. The small change in AMR meter reading costs is due to the shift in the start of AMR module deployment from 2023 as originally filed to 2024; the underlying costs for meter reading remain unchanged.

3. The increase in NPV of the Operations, Contract Centre, and Meter Shop O&M is primarily due to the 14 percent allocation of meter exchange installation cost to O&M with the remaining 86 percent capitalized (included under Meter Capital as shown in the table).

4. As part of the Evidentiary Update, FEI noticed the NPV of New O&M (i.e., new network and software O&M) for the AMR alternative in Table 4-2 of the Application inadvertently only included the new software O&M cost but not the new network O&M cost. This was corrected in the Evidentiary Update by including the new network O&M cost and results in an increase of $1.5 million in NPV for New O&M from $7.3 million to $8.8 million. This is also reflected in the updated Table 4-2 in Appendix A of the Evidentiary Update. Besides the new network O&M cost being inadvertently excluded in the Application, there was no change to the underlying costs for the new software and network O&M between the original filing and the Evidentiary Update.

24. Reference: Exhibit B-30, page 8

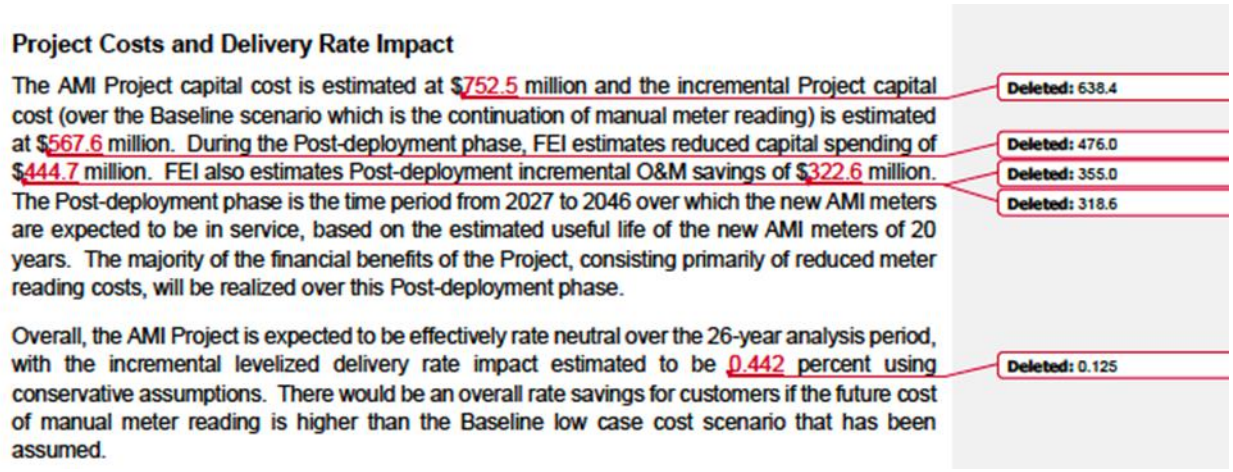
> **4. Timing of a CPCN Decision**
>
> With the above information as background, and in line with prior consideration that the BCUC and interveners have also specifically given to the importance of a timely resolution of this proceeding,[5] FEI believes that the remainder of the regulatory process should allow for approval of the Project by year end 2022. Doing so would maximize:
>
> - FEI's ability to acquire other products and services that would be required as part of the AMI Project in a timely manner and without further escalation in cost. The later BCUC approval is received, the more FEI is exposed to the potential of inflationary pressures on labour rates, facilities and materials that are not tied to fixed price contracts, and the more FEI and its customers are exposed to potential supply chain issues related to accessing the above.
>
> - FEI's ability to maintain the fixed contract pricing it negotiated with Sensus, allowing FEI to acquire the meters at a significant discount from their present list price. Since the filing of the Application the parties agreed to one extension of the contractual deadline for removal of the condition precedent related to BCUC approval (the CP deadline), but FEI does not expect to be able to re-negotiate the CP deadline (presently June 30, 2023) without a significant increase in cost.
>
> Further, as addressed in FEI's separate correspondence on June 30, 2022, FEI remains of the view that an oral hearing, which could otherwise prolong this proceeding and delay a BCUC decision, is not required.

24.1 Would a later decision also exacerbate the issue of the Measurement Canada decision in that FEI would exchange diaphragm meters with non-AMI meters until the decision, and then exchange again during the mass deployment, or would FEI exchange the meters as planned in the absence of a decision? Or are there any other ways in which a later decision could impact the costs from the Measurement Canada decision? Please explain and please quantify any potential impact.

Response:

A later decision would not necessarily exacerbate the MC dispensation process. As noted in Section 2 of the Application, FEI plans to install advanced meters with the radios shut off beginning in 2023 as part of its compliance sampling program and will do so even without a BCUC decision on the Project due to the unavailability of diaphragm meters. FEI will then be able to leave those meters in operation regardless of the decision related to the Application. Should the Application be approved, FEI would need to return to each meter to commission the meter during mass deployment as described in the response to BCUC IR4 50.3. However, a timely decision from the BCUC is still important for the Project for the reasons stated in Section 4 of the Evidentiary Update.

25. Reference: Exhibit B-30, PDF page 11



Project Costs and Delivery Rate Impact

The AMI Project capital cost is estimated at $752.5 million and the incremental Project capital cost (over the Baseline scenario which is the continuation of manual meter reading) is estimated at $567.6 million. During the Post-deployment phase, FEI estimates reduced capital spending of $444.7 million. FEI also estimates Post-deployment incremental O&M savings of $322.6 million. The Post-deployment phase is the time period from 2027 to 2046 over which the new AMI meters are expected to be in service, based on the estimated useful life of the new AMI meters of 20 years. The majority of the financial benefits of the Project, consisting primarily of reduced meter reading costs, will be realized over this Post-deployment phase.

Overall, the AMI Project is expected to be effectively rate neutral over the 26-year analysis period, with the incremental levelized delivery rate impact estimated to be 0.442 percent using conservative assumptions. There would be an overall rate savings for customers if the future cost of manual meter reading is higher than the Baseline low case cost scenario that has been assumed.

25.1 Please provide further details of the $90 million increase in the 'reduced capital spending' during the post-deployment phase.

Response:

In the Application, the incremental capital cost savings due to AMI during the post-deployment period (i.e., from 2027 to 2046) is $355.0 million, while the Evidentiary Update shows the incremental capital cost savings over the same period are $444.7 million (Table 6-1 of both the Application and Evidentiary Update, Line 5, Column 4). This difference results in an additional capital cost savings of approximately $90 million during the post-deployment period as referenced in the preamble.

The capital spending during the post-deployment phase is primarily related to the difference in meter exchanges between the AMI Project and the Baseline scenario from 2027 to 2046. Over this post-deployment period, the assumptions for the meter exchanges were:

- For the Baseline scenario, as discussed in Section 6.2.1.1 of the Application, the number of meter exchanges per year is based on FEI's current meter exchange and sampling program, which ranges annually from approximately 61,000 to 75,000 meters depending on the year. The forecast cost of these exchanges is based on current unit pricing for existing diaphragm meters and labour rates (internal and external contractors) plus inflation.
- For the AMI Project, since all existing diaphragm meters will be replaced with new AMI meters during the deployment period (2024 to 2026), as discussed in Section 6.2.1.1 of the Application, there would be limited meter exchanges during the post-deployment period. These limited meter exchanges are comprised of the annual allowance of 0.5 percent of meter failures and MC's mandated sampling program. This is equivalent to annual exchanges of approximately 6,000 to 9,600 meters depending on the year. The

forecast cost of these exchanges is based on current unit pricing for AMI meters and labour rates (internal and external contractors) plus inflation.

Therefore, as the Evidentiary Update includes increases in diaphragm meter costs as well as installation costs related to labour (internal and external contractors), these increases would predominantly impact the Baseline scenario given the large number of meter exchanges required under the Baseline scenario when compared to the AMI Project during the post-deployment period (i.e., 61,000 to 75,000 per year for the Baseline scenario vs. 6,000 to 9,600 meters per year for the AMI Project). The result further increases the capital costs savings by approximately $90 million (i.e., from incremental capital cost savings of $355.0 million to savings of $444.7 million) during the post-deployment period as reflected in the Evidentiary Update.

26. Reference: Exhibit B-30, PDF page 13

Table 4-2: AMR Alternative: NPV of Capital and Operating Costs ($ millions)

Financial Summary	AMR
Capital Costs:	
Meter Capital	$541.1
Project Management	$26.2
Software Capital	$2.2
Network Capital	$0.3
Non-Meter Capital	$5.3
AFUDC	$3.5
Total Capital	$578.8
O&M Costs:	
Meter Reading Costs	$100.9
Operations, Contact Centre and Meter Shop O&M	$58.7
New O&M	$8.8
Total O&M (incl. Capitalized Overhead)	$168.4
Baseline Capital[1]	$434.1
Baseline O&M[2]	$327.1
AMR Incremental Capital[3]	$144.7
AMR Incremental O&M Savings[4]	($158.7)

26.1 The original table is not included in the black-lined document. Please confirm that the appropriate comparison would be found in Table 4-2 of Exhibit B-1.

Response:

Confirmed. Please also refer to the response to CEC IR4 23.2.

27. Reference: Exhibit B-30, PDF page 21

Table 4-5: Summary of Alternative Financials

	AMR	AMI
Capital Costs (NPV, $millions)		
Meter Capital	$541.1	$560.1
Project Management	$26.2	$35.2
Software Capital	$2.2	$9.1
Network Capital	$0.3	$17.1
Non-Meter Capital	$5.3	$3.6
AFUDC	$3.5	$16.1
Total Capital	$578.8	$641.1
O&M Costs (NPV, $millions)		
Meter Reading Costs	$100.9	$79.1
Operations, Contact Centre and Meter Shop O&M	$58.7	$14.6
New O&M	$8.8	$97.9
Total O&M (incl. Capitalized Overhead)	$168.4	$191.6
Incremental Capital (NPV, $millions)	$144.7	$207.0
Incremental O&M (NPV, $millions)	($158.7)	($135.5)
Incremental To Baseline Revenue Requirement (NPV, $millions)	$7.2	$53.3
Incremental Delivery Rate Impact (%)	-0.059%	0.442%

27.1 Is it fair to expect that, given the current labour situation and inflationary uncertainty, Meter Reading Costs of both project alternatives could be subject to further increases over time than are anticipated in this update, and would have greater impact on the AMR alternative? Please explain why or why not.

Response:

FEI clarifies that it did not provide any changes to Meter Reading Costs in the Evidentiary Update. Please refer to the response to RCIA IR4 62.1 for further discussion.

With the limitations of the AMR alternative, FEI would still require a sufficient number of meter readers to drive to all areas of FEI's service territory where AMR devices are located to obtain timely meter reads for billing purposes. In contrast, as discussed in Section 6.2.2.3 of the Application, and the responses to BCUC IR1 23.1 and BCSEA IR1 25.1, FEI assumes only 1.5 percent of the AMI meters will require a manual read. Therefore, it is probable that any increases in future meter reading costs would have a greater impact on the AMR alternative than the AMI Project.

28. Reference: Exhibit B-30, PDF page 27

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

28.1 Please explain why FEI has now included 'current local contractor pricing' when it did not before this update.

Response:

At the time of the Application, FEI's local contractor rates were essentially the same as FEI's internal rates; consequently, FEI did not distinguish the work or the rates between FEI's internal labour and local contractors.

However, since the Application was submitted, FEI has experienced significant cost increases for the work performed by contractors while FEI's internal labour rates remain at the rates set out in the current collective agreement. As discussed on pages 3 to 4 of the Evidentiary Update, the current average contractor rate for meter exchanges is approximately 109 percent higher than FEI's internal labour rates, which impacts the Baseline scenario, the AMR alternative, and to a lesser extent the AMI Project.

Please refer to Table 1 below, which shows the estimated impact of the adjusted local contractor rates reflected in the financial analysis of the Evidentiary Update.

Table 1: Impact of Current Local Contractor Rates

Line	Incremental Capital Costs due to Contractor rates ($millions)	Pre-Deployment (2021 - 2023)	Deployment (2024 - 2026)	Subtotal (2021-2026)	Post-Deployment (2027 - 2046)	Total (2021-2046)
1	Impact to AMI Capital	3.0	-	3.0	-	3.0
2	Impact to Baseline Capital	3.0	5.2	8.2	43.0	51.2
3	Incremental Impact due to Contractor Rates	0.0	(5.2)	(5.1)	(43.0)	(48.1)

Notes to Table 1:

- As explained in the Evidentiary Update, FEI will continue to complete the meter exchanges during the pre-deployment period (i.e., with diaphragm meters from 2021 to 2022, and with AMI meters without radio activation in 2023 as reflected in the financial analysis). This work will be completed by both FEI's internal labour and local contractors; therefore, it is impacted by the current local contractor rates and reflected in Table 1 above under the AMI Project.

- During the deployment period of the AMI Project, the meter exchanges will be completed by FEI's internal labour and AMI Project deployment labour; therefore, there is no impact to the AMI Project during the deployment period from the local contractor rate increase.
- As discussed in Section 6.2.1.1 (and also in the response to CEC IR4 25.1), the only meter exchanges during the post-deployment period assumed to occur for the AMI Project would be the estimated 0.5 percent of meter failures. FEI expects these exchanges to be completed by FEI's internal labour. As such, there is no impact assumed in the financial analysis to the AMI capital during the post-deployment period due to the increase in current contractor rates.
- For the Baseline scenario, FEI's current meter exchange program will continue in the post-deployment period with the work being completed by a mix of FEI's internal labour and local contractors. As such, the Baseline scenario will be impacted by the higher local contractor rates throughout the post-deployment period.

28.2 Please quantify the impact of including current local contractor pricing instead of relying on internal FEI labour.

Response:

Please refer to the response to CEC IR4 28.1.