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April 30, 2020

Sent via email/eFile

PNGNE CPCN AUTOMATED METERING
READING EXHIBIT A-3

Gordon Doyle
Vice President, Regulatory Affairs, Legal & Gas Supply
Pacific Northern Gas Ltd.
750 – 888 Dunsmuir Street
Vancouver, BC V6C 3K4
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Re: Pacific Northern Gas (N.E.) Ltd. – Application for a Certificate of Public Convenience and Necessity to Implement Automated Meter Reading Infrastructure – Project No. 1599049 – Information Request No. 1

Dear Mr. Doyle:

Further to your March 25, 2020 filing of the above-noted application, enclosed please find British Columbia Utilities Commission Information Request No. 1. In accordance with the Regulatory Timetable established by Order G-86-20, please file your responses on or before Thursday, May 21, 2020.

Sincerely,

Original Signed By:

Patrick Wruck
Commission Secretary

/mp

Enclosure

cc: votto@png.ca



Pacific Northern Gas (N.E.) Ltd.
Application for a Certificate of Public Convenience and Necessity to Implement Automated Meter
Reading Infrastructure

INFORMATION REQUEST NO. 1 TO PACIFIC NORTHERN GAS (N.E.) LTD.

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A. PROJECT BACKGROUND

- 1.0 Reference: APPLICATION OVERVIEW**
Exhibit B-1, Section 1.2.1, p. 6; PNG Code of Conduct and Transfer Pricing Policy
Application, Exhibit B-3, Attachment BCUC Panel IR No. 1 – PNG Proposed 2019 Code
of Conduct – Amended Draft, Section 3.2.3
Financial Capability

On page 6 of the Application, Pacific Northern Gas (N.E.) Ltd. (PNG(NE)) states it “is capable of financing the implementation and operation of the AMR [Automated Meter Reading] Project either directly, or indirectly through its association with PNG [Pacific Northern Gas] and the ACI [AltaGas Canada Inc.] group of companies.”

Section 3.2.3 of the PNG Code of Conduct and Transfer Pricing Policy (COC/TPP), approved by the British Columbia Utilities Commission Order G-270-19, states:

PNG shall ensure that any loan, investment, or other financial support provided to an Affiliate is provided on terms no more favorable than what that Affiliate would be able to obtain as a stand-alone entity from the capital markets, and in all cases at no more favorable terms than PNG could obtain directly for itself in capital markets.

Any loan, investment, or other financial support provided to, or received from, an Affiliate must be approved by the BCUC.

- 1.1 Please provide the terms and conditions of the proposed related-party financing (e.g. interest rate, repayment terms, covenants, security) and discuss how the terms and conditions compare to the terms and conditions if PNG(NE) were to access capital markets on its own.
- 1.1.1 Please provide reference to where (e.g. Excel row number or cell reference) the terms and conditions are reflected in the Excel versions of Appendix B and C, respectively (Exhibit B-2).

- 1.2 Please discuss the impact, if any, of the proposed related-party financing on PNG(NE)'s current approved debt-equity ratio.
- 1.3 Given current capital market conditions and rates, please discuss whether PNG(NE) considered obtaining financing as a stand-alone entity from the capital markets. If yes, what were the pros and cons of this alternative and why was it rejected.

B. PROJECT NEED

2.0 Reference: PROJECT NEED AND JUSTIFICATION Exhibit B-1, Section 2.1.3, p. 10 Existing Manual Meter Reading Processes

On page 10 of the Application, PNG(NE) states that residential meters are read on a bi-monthly basis and commercial meters are read monthly. In addition, PNG(NE) states that meter reading is performed over a series of eight cycles, with each cycle taking approximately three days.

PNG(NE) further states:

PNG(NE)'s meter reading workforce is comprised of two area managers and five full-time equivalent (FTE) meter readers... In addition to the regular meter reading cycles, manual meter reads are also required each time a customer requests a move in / move out from a premise or makes a special request for an actual read. Meter re-reads may also be required to verify or correct previous reads when an error has been identified.

- 2.1 Please explain what a meter reading "cycle" is, including what work is currently performed during a "cycle."
- 2.2 Please explain how the meter reading cycle is expected to change following the implementation of the AMR project. Please comment on whether meter reading will continue to be performed bi-monthly for residential customers, and whether the series of eight cycles of three days each will be maintained.
- 2.3 Please explain how many off-cycle manual meter reads (move in/move out, special request and meter re-reads) PNG(NE) currently conducts annually.
- 2.4 Please confirm whether the five FTE meter readers are also responsible for the manual meter reads arising from customer requests and meter re-reads, as described in the preamble above.
 - 2.4.1 If confirmed, please discuss how many FTEs (or portions of an FTE) out of the existing five FTE meter readers are required to conduct manual meter reads arising from customer requests and meter re-reads in the existing manual meter reading process.
- 2.5 Please explain whether off-cycle manual meter reads will be required after the proposed AMR Project is implemented.
 - 2.5.1 If not, please explain why not.
 - 2.5.2 If yes, please explain how these meter reads will be performed, the costs involved and where those costs are identified in the Application.

3.0 Reference: PROJECT NEED AND JUSTIFICATION Exhibit B-1, Section 2.2.6, p. 12 Benefits of Automated Meter Reading – Revenue Protection

On page 12 of the Application, PNG(NE) states that, currently, gas theft is identified by a drastic decrease in customer consumption, a chance sighting of illegal activity, or meter reader identification of signs of meter tampering.

- 3.1 Please quantify the historical cost of identified gas theft in the most recent five-year time period.
- 3.2 Please clarify whether savings from reduced gas theft are considered as a qualitative or quantitative benefit of the proposed AMR Project.
 - 3.2.1 If it is a quantitative benefit, please provide reference to where (e.g. Excel row number or cell reference) the expected savings are reflected in the Excel versions of Appendix B and C, respectively, (Exhibit B-2), and provide PNG(NE)'s assumptions and supporting calculations for the expected savings.

C. PROJECT ALTERNATIVES

4.0 Reference: **PROJECT ALTERNATIVES CONSIDERED Exhibit B-1, Section 2.3.1, pp. 12-13 Automated Meter Reading**

On pages 12-13 of the Application, PNG(NE) states:

Various levels of AMR technology exists – from basic handheld units to fixed networks with data collection infrastructure tied to power poles and repeater units.

The AMR infrastructure considered by PNG(NE) involves equipping existing meters with ERT [Encoder Receiver Transmitter] modules that transmit meter read data via a RF [Radio Frequency] signal to a vehicle-mounted radio transceiver....

The implementation of mobile collection technology will allow for the remote reading of meter data communicated by RF from the ERTs simply by driving the service vehicle equipped with the mobile collection unit in the general vicinity of customer meters without having to follow existing meter reading routes and without having to access customer premises.

- 4.1 Please provide an assessment of the cost-effectiveness for the proposed AMR system (vehicle-mounted collection unit) compared to a fixed network option.
- 4.2 Please explain whether AMR technology allows for a combination of mobile and fixed network-type data collection and entry methods.
 - 4.2.1 If not, why not?
- 4.3 Please compare the quality and quantity of information available to either PNG(NE) or its customers from fixed network-type data collection and the proposed AMR system.
- 4.4 Please explain further the meter data transmission capability of the proposed AMR system, including the distance over which the data can be transmitted and whether the mobile collection vehicle is required to drive by each customer property.
- 4.5 Please explain whether the proposed AMR system can be upgraded to enhance mobile collection distance and efficiency in the future, if warranted.
 - 4.5.1 If yes, please explain what the cost would be.
- 4.6 Please discuss any system redundancies in the proposed AMR data collection system, including whether the data collection unit is portable to a back-up PNG(NE) vehicle.
 - 4.6.1 Please identify where the costs associated with this system redundancy are included in the Application.

**5.0 Reference: PROJECT ALTERNATIVES CONSIDERED
Exhibit B-1, Section 2.3.3.1, p. 15; Section 2.3.4, p.17;
Assessment of AMR Alternatives**

On page 15 of the Application, PNG(NE) states:

The products of two industry leaders in the field of meter reading technologies were considered for PNG(NE)'s evaluation: Itron and Sensus Flexnet (Sensus). Both product lines offer AMR and AMI [Advanced Metering Infrastructure] solutions for the natural gas market, with the respective technologies of each having comparable functionality.

On page 17 of the Application, PNG(NE) summarizes its assessment of AMR alternatives:

“Based on the lower capital and incremental costs, greater anticipated financial benefits for customers, and prior established working relationships, PNG(NE) proposes proceeding with implementation of Itron AMR infrastructure.”

- 5.1 Notwithstanding the difference in cost and PNG(NE)'s previous experience with Itron products, please explain whether PNG(NE) considers the Itron and Sensus AMR technologies to be equivalent in terms of functionality. Please explain any differences identified.

**6.0 Reference: PROJECT ALTERNATIVES CONSIDERED
Exhibit B-1, Section 2.3.2, pp. 14-15
Advanced Metering Infrastructure (AMI)**

On pages 14-15 of the Application, PNG(NE) states:

Gas and water utilities would have to either develop agreements with other utility companies with existing towers or build their own network infrastructure which may come at considerable cost.

Based on the foregoing, gas utilities have generally chosen to invest in AMR with a focus on the benefit of automating the meter reading process, rather than AMI. Where gas utilities have implemented AMI, they have generally done so where they are part of a corporate entity that provides both electric and natural gas service and where AMI infrastructure has been implemented concurrently for both areas of the business. PNG(NE) notes that at this time, no Canadian Gas Association member natural gas utility has implemented AMI.

- 6.1 Please describe any potential cost differences, relative to the proposed AMR project, if PNG(NE) were able to develop agreements with other companies with existing towers or existing network infrastructure.
- 6.2 Please discuss any barriers to AMI installation on existing towers or on existing network infrastructure.
- 6.3 Please discuss any efforts undertaken by PNG(NE) to develop agreements with other companies with existing towers or existing network infrastructure.
- 6.3.1 If undertaken, please discuss the expected costs. Were these costs considered in the financial analysis presented on page 16 of the Application?
- 6.4 Please explain whether PNG(NE) is aware of any natural gas utility in Canada planning to implement AMI.
- 6.4.1 If so, please provide the name of the utility and where it plans to implement AMI.

On page 15 of the Application, PNG(NE) states:

An AMI endpoint may also have the ability to record a variety of other physical data (i.e. pressure, flowrate, temperature, corrosion data and methane detection) and the ability to virtually and remotely shut off the gas supply, offering the potential for further operational efficiencies for system safety and integrity. PNG(NE) notes that the configuration of its gas distribution networks/systems is such that there is reduced potential for benefits to be realized from virtual/remote shut-off capability. PNG(NE)'s systems are relatively small with taps from upstream gas suppliers and, as such, line pack is not significant. Further, PNG(NE)'s systems do not serve large urban centres where the supply/demand balance can be managed through load shedding in the event of an upstream upset.

A second key feature of AMI referred to previously is the ability to provide real time consumption data. Real time data has other benefits, including the ability to provide customers with greater details on their consumption and the potential to allow for flexible billing dates.

6.5 Please explain further the opportunity for operational efficiencies of system safety and integrity attributed to remote shut-off capability of an AMI system.

6.5.1 Please explain whether PNG(NE) quantified any cost benefits from these operational efficiencies related to AMI in the Application.

6.5.2 If not, please explain why not.

6.5.3 If yes, please identify where in the Application the cost benefits can be found.

6.6 Please discuss how customer access to personal real-time usage data is different between AMR and AMI technology.

6.6.1 Please discuss any information PNG(NE) has gathered regarding customer interest in real time consumption data.

6.6.2 Please explain whether customer interest in real time consumption data was considered in PNG(NE)'s assessment of project alternatives.

**7.0 Reference: PROJECT RISKS
Exhibit B-1, Section 2.5, pp. 22-23
COVID-19**

7.1 Please comment on how the evolving COVID-19 situation has impacted the likelihood of PNG(NE) experiencing any of its other risk scenarios. Please provide an update to Exhibit 2-9 on page 23 of the Application, if necessary.

**8.0 Reference: PROJECT NEED AND JUSTIFICATION
Exhibit B-1, Section 2.3.3, p. 16
Capital Cost Estimate of Alternatives**

On page 16 of the Application, PNG(NE) states:

...[It] obtained cost estimates for each of the AMR and AMI solutions offered by each of the vendors, with the Itron product estimate coming from Vendor A and the estimate for the Sensus product coming from Vendor B. Parameters specified in PNG(NE)'s request for vendor proposals for upgrading 22,887 services (active and inventoried meters) included the capital cost of metering, collection and support systems to allow for automated meter reading, the cost of installation, and the cost of project

management [*Emphasis added*].

- 8.1 Please clarify whether the request for vendor proposals for AMR and AMI solutions was open to parties other than Vendor A and B.
 - 8.1.1 If yes, please provide the total number of bids received for each solution (e.g. AMR, AMI) and the proponent selection criteria for the top AMI and AMR solutions described in the Application.
 - 8.1.2 If no, please explain why not.

**9.0 Reference: IMPLEMENTATION OF AMI
Exhibit B-1, Section 2.3.3, p. 16
Capital Cost Estimate of AMI Alternative**

On page 16 of the Application, PNG(NE) states:

Initial cost estimates for AMI infrastructure provided to PNG(NE) were in the range of \$7 million to \$11 million with system functionality limited to the automation of the meter reading function. With the assistance of industry consultants, PNG(NE) subsequently conducted a more thorough analysis and determined that significant additional up-front and ongoing capital costs would be required in the area of system integration and for added human resources to operate and support a complete fully functioning AMI system. Provision for these additional elements has the effect of pushing the estimated initial capital costs for an AMI solution to exceed \$20 million, well beyond a level that supports a cost-effective solution for PNG(NE).

- 9.1 Please explain further the difference in the scope of work and final system functionality included in the AMI infrastructure estimated to cost \$7-11 million and the AMI infrastructure estimated to cost greater than \$20 million.
- 9.2 Please provide a detailed breakdown of the cost estimate for AMI infrastructure implementation and the anticipated cost savings.
- 9.3 Can AMI infrastructure with system functionality, which is initially limited to the automation of meter reading, be expanded to a fully functional AMI system in the future?
 - 9.3.1 If yes, what is the incremental cost of adding this functionality later?
 - 9.3.2 If not, please explain why not.
- 9.4 Please explain whether AMR infrastructure deployed through this Project could be upgraded to AMI technology in the future.

**10.0 Reference: PROJECT NEED AND JUSTIFICATION
Exhibit B-1, Section 2.3.4, p. 17
Assessment of AMR Alternatives**

- 10.1 Please provide the Association of Cost Engineering Guidelines 17R-97 and 18R-97 (Cost Estimating Classification System – revision November 2011) (AACE Guidelines) estimate class and level of accuracy for the Vendor B capital cost estimate.

**11.0 Reference: PROJECT NEED AND JUSTIFICATION
Exhibit B-1, Section 2.4, pp. 17-21
Project Justification and Benefits**

- 11.1 Please discuss whether PNG(NE) intends to track the realization of financial and qualitative AMR Project benefits. Please explain why or why not.

11.1.1 Would PNG(NE) be amenable to providing AMR Project benefits realization reporting to the BCUC? Please explain why or why not.

11.1.1.1 If yes, please provide the proposed content and timing of such reporting.

**12.0 Reference: PROJECT NEED AND JUSTIFICATION
Exhibit B-1, Section 2.5, p. 22
Resource Calendar**

On page 22 of the Application, PNG(NE) states that the financial analysis modelled labour headcount reductions to occur three months after the project is fully implemented.

12.1 Please explain why the financial analysis modelled labour headcount reductions to occur three months after the project is fully implemented. Does PNG(NE) expect to recover the cost of three months of labour headcount through rates after AMR is fully implemented? Please explain.

D. PROJECT DESCRIPTION

**13.0 Reference: PROJECT DESCRIPTION
Exhibit B-1, Section 2.5, p. 23, Appendix D, p. 3
Replacement of Meters**

On page 23 of the Application, PNG(NE) states:

Meters for recall will be replaced prior to installing ERTs. Project schedule will include the timing of meter replacement for meters due for recalls. A post-deployment plan will be developed to recall meters and attach the ERT post implementation.

On page 3 of Appendix D, PNG(NE) states a key learning of the PNG-West 2018 AMR Pilot was that expired meters had to be recalled prior to marrying the meter with an ERT. This activity was not initially considered a risk in the AMR Pilot project schedule.

13.1 Please explain further the rationale and plan for replacing meters prior to installing ERTs.

13.2 Please explain how PNG(NE) determines which meters and how many meters are required for replacement prior to installing ERTs.

13.3 Please clarify how many of the existing gas meters to be fitted with ERTs would need to be replaced prior to the project implementation. In your explanation, please provide the average age of PNG(NE) meters.

13.3.1 Is this a similar proportion of gas meters requiring replacement compared to the PNG-West 2018 AMR Pilot? If not, please explain why not.

13.4 Please describe the resources, including equipment and staff, required to implement these meter replacements.

13.5 Are the costs of the resources required to support these meter replacements and the meter replacements included in the PNG(NE) AMR project estimate? Please explain.

13.6 If a meter, with an ERT attached, is to be replaced in the future, please explain whether the ERT will be transferred to the replacement meter.

**14.0 Reference: PROJECT DESCRIPTION
Exhibit B-1, Section 3.3, p. 26, Sections 3.4.2, p. 28, Appendix D, p. 2
Field Installation of ERTs**

On page 26 of the Application, PNG(NE) states:

Vendor A has provided PNG(NE) with a quotation for materials and services whereby it will undertake the installation and implementation of a fully functioning AMR system for all residential and small commercial customers in PNG(NE) service areas.

Page 28 of the Application shows that field installation of ERTs is scheduled for October and November of 2020.

On page 2 of Appendix D, PNG(NE) observed that in the PNG-West 2018 AMR Pilot “weather conditions had a significant impact on the project schedule when installing ERTs. Sales & Service was working during weekends during winter season, which caused delay in the installation and meter reading.” Further, PNG(NE) identified weather conditions as a risk in the project schedule and recommended installation during non-winter months as a risk mitigation strategy in the future.

- 14.1 Please explain if there is an increased risk to the project from installing ERTs in October and November 2020 and, if so, what mitigation measures PNG(NE) and Vendor A proposes to employ while performing the installation.
- 14.2 Is the cost for any additional resources required to support installation in unfavorable weather conditions included in the AMR project estimate? Please explain.
 - 14.2.1 If not, please provide an estimate of any additional cost.

**15.0 Reference: PROJECT DESCRIPTION
Exhibit B-1, Section 3.6.2, pp. 29-30; Order G-127-11, Appendix A, p. 4;
Application by PNG for Approval of its Consolidated Gas Sales Tariff proceeding,
Exhibit B-7, BCUC IR 14.2¹
Radio-off Option for Customers**

On page 29 of the Application, PNG(NE) states,

customers requesting radio-off will be levied a service charge to cover the cost of setting up their account as having opted out of AMR. Such a customer would also be levied a service charge should they subsequently request a move to AMR. PNG(NE) proposes that a fee of \$60 would be levied...

PNG(NE) further states the proposed fee is consistent with the service Reconnection Fee under the Standard Fees and Charges Schedule of PNG’s Consolidated Gas Sales General Terms and Conditions (Appendix F).

On page 4 of Appendix A to BCUC Order G-127-11, the BCUC states:

With respect to the \$60 reconnection fee, PNG notes there is a significant difference between connecting a customer and reconnecting a customer. When a customer disconnects and reconnects two service calls are required. In the case of a new account only one service call is required. Thus, PNG submits that charging \$30 would not be comparatively reasonable. Further, PNG notes that the average cost incurred for reconnection is \$60.20 which is in line with the current reconnection charge and

¹ Retrieved from: https://www.bcuc.com/Documents/Proceedings/2011/DOC_27094_B-7_PNG-Resp-BCUC-IR-No1.pdf

therefore fair from a cost recovery point of view.

- 15.1 Please explain the proposed business process and the amount of time required for: a) setting up customer's account as having opted out of AMR; and b) setting up a customer's account if the customer subsequently requests to move to AMR.
- 15.2 Please confirm, or explain otherwise, that the proposed \$60 fee will be charged once when the customer opts out of AMR and again when, or if, the customer subsequently requests to move to AMR (e.g. the total fee levied will be $\$60 + \$60 = \$120$ for a customer choosing to switch out of and back to AMR).
- 15.2.1 Please explain whether it would be appropriate to levy a \$30 fee when setting up a customer's account as having opted out of AMR and again when subsequently requesting to move to AMR (e.g. the total fee levied will be $\$30 + \$30 = \$60$ for a customer choosing to switch back to AMR). Please explain why or why not.
- 15.3 Please provide the current average cost incurred for reconnection and compare that to the expected average cost for:
- i. setting up a customer's account to opt out of AMR;
 - ii. setting up a customer's account if the customer subsequently requests to switch to AMR; and
 - iii. both i) and ii)

If possible, please provide cost breakdowns by action required (e.g. customer contact, travel time to customer), including the hourly rate(s) and estimated amount of time that will be spent. Please state the assumptions (if any) for all amounts.

- 15.4 Please clarify whether the proposed \$60 fee assumes that the configuration of the radio-off meter within the AMR system will take place at the same time as the initial installation of the AMR meter at the customer's property. Please discuss why or why not and explain who will perform the configuration (e.g. PNG(NE) employee or Vendor A employee).

On page 30 of the Application, PNG(NE) states:

Customers selecting the radio-off option would also be charged a fee to cover the cost of manually reading their meter, currently on a bi-monthly basis. PNG(NE) proposes that a fee of \$30 would be levied for the required manual meter read. This proposed fee is considered reasonable and is consistent with the Customer Requested Meter Reading Fee under the Standard Fees and Charges Schedule of PNG's Consolidated Gas Sale General Terms and Conditions.

On page 10 of the Application, PNG(NE) states that residential meters are read on a bi-monthly basis and commercial meters are read monthly.

- 15.5 Please explain whether the proposed \$30 fee for radio-off customers will be a one-time fee or if it will be charged bi-monthly for residential customers and monthly for commercial customers.

In the Application by PNG for Approval of its Consolidated Gas Sales Tariff proceeding, PNG stated in response to BCUC IR 14.2:

The estimated cost of reading a meter at the customer's request depends on the location of the customer. PNG receives very few requests from customers to perform a special meter reading. A rough estimate, which takes into account labour for the Customer Service Technician to perform the read, administration costs associated with

creating and closing the Service Order, automotive costs, and overheads, is approximately \$40...

- 15.6 Please provide an update to the response provided to BCUC IR 14.2 above. What is the current business process and associated cost of performing a manual meter read at the customer's request? If possible, please provide a cost breakdown by action and state the assumptions (if any).
- 15.6.1 Please compare and contrast the current business process to perform a manual meter read at the customer's request and the proposed business process for a manual meter read after AMR implementation.
- 15.6.2 If the proposed business process differs, please provide a breakdown of the estimated cost of the proposed process by action, including the hourly rate(s) and estimated amount of time that will be spent. Please state the assumptions (if any) and compare that to the proposed \$30 fee.
- 15.7 Please provide the maximum cost to perform a manual meter read for PNG(NE)'s most remotely located customer, and the minimum cost to perform a manual meter read for PNG(NE)'s closest customer.

On page 30 of the Application, PNG(NE) states, "Since customers would be charged a fee per meter read, PNG(NE) submits that the cost of these additional procedures would have a negligible effect on the financial analysis presented in support of this Application."

- 15.8 Please discuss if PNG(NE) will track the incremental costs associated with the radio-off option separately from all other Operation & Maintenance expenses. Please explain why or why not.

E. FINANCIAL

**16.0 Reference: PROJECT COST ESTIMATES
Exhibit B-1, Section 4.1, p. 31
Capital Cost Estimates – Vendor A (Itron)**

On page 31 of the Application, PNG(NE) states the Vendor A cost estimate is "considered to be definitive" and at a Class 1 to Class 2 level of accuracy as per AACE Guidelines.

Exhibit 4-1, on page 31 of the Application, shows PNG(NE) applied a provision of 10 percent for overhead and 15 percent for contingency to the Vendor A cost estimate.

- 16.1 Please explain why a provision of 10 percent for overhead is appropriate.
- 16.2 Please explain why a 15 percent provision for contingency is appropriate for the Vendor A cost estimate.

**17.0 Reference: PROJECT COST ESTIMATES
Exhibit B-2, Excel version of Appendices B, C; Exhibit B-1, Section 2.5, p. 22
Cost of Service Forecast – Vendor A (Itron) and Vendor B (Sensus)**

Excel rows 23-25 in the Excel version of Appendices B and C, provided in Exhibit B-2, show the forecast annual vehicle operating (capital, fuel and maintenance) cost savings associated with the elimination of five trucks dedicated to meter reading.

- 17.1 Please explain what the forecast annual vehicle operating cost savings for each type of operating costs (capital, fuel and maintenance) is based on (e.g. certain number of years of historical average cost?)

On page 22 of the Application, PNG(NE) states the financial analysis assumes the elimination of 5 FTEs and 5 trucks because “existing non-meter reader FTE with existing truck will assume the responsibility of meter reading after AMR implementation.”

17.2 Please confirm, or explain otherwise, that the financial analysis in Appendices B and C, respectively, do not include any incremental annual labour or vehicle operating cost associated with employing an existing non-meter reader FTE with existing truck to assume meter reading responsibility.

17.2.1 If confirmed, please explain why not. Given that AMR technology requires the existing truck be driven in the general vicinity of all customer meters, would there be additional mileage undertaken resulting in capital, fuel and maintenance costs that do not currently exist? Could there be additional salary expenses assuming meter reading responsibility cannot be performed within the existing non-meter reader FTE’s current work hours or salary? Please discuss.

**18.0 Reference: PROJECT COST ESTIMATES
Exhibit B-1, Section 4, p. 32; Exhibit B-2, Excel version of Appendices B, C
Cost of Service Forecast – Vendor A (Itron) Only**

On page 32 of the Application, PNG(NE) states it has included a nominal average annual provision of \$6,500 for maintenance costs for the mobile collection system in the forecast for AMR Project operating costs.

Row 32 in the Excel version of Appendix B, provided in Exhibit B-2, shows that the forecast for new handheld maintenance costs is as follows for the Itron product:

- 2020E – \$2,987
- 2021E – \$12,189
- 2022E – \$10,232
- 2023E – 2040E – increases from \$3,702 to \$5,183 based on an assumed rate of inflation of 2 percent²

18.1 Please provide the calculation of the nominal average annual provision of \$6,500 for maintenance costs using the forecast for new handheld maintenance costs for 2020E through 2040E, as provided in Excel row 32 in the Excel version of Appendix B.

18.2 Please explain how PNG(NE) forecasted the new handheld maintenance costs for the Itron product for each of the years: 2020E; 2021E; 2022E; and 2023E.

18.2.1 Please explain the annual variances in forecast new handheld maintenance costs from 2020E through 2023E.

18.2.2 Please explain why forecast new handheld maintenance costs are expected to stabilize (but for inflation) after 2023E.

**19.0 Reference: PROJECT COST ESTIMATES
Exhibit B-2, Excel version of Appendix C
Cost of Service Forecast – Vendor B (Sensus) Only**

Row 33 in the Excel version of Appendix C, provided in Exhibit B-2, shows that the forecast for new handheld maintenance costs is as follows for the Sensus product:

- 2020E – \$2,679

² e.g. 2024E = 20203E x 1.02 (inflation rate per Excel row 63), 2025E = 20204E x 1.02 (inflation rate per Excel row 63), etc.

- 2021E – \$10,929
- 2022E – 2040E – increases from \$9,214 to \$13,160 based on an assumed rate of inflation of 2 percent³

19.1 Please explain how PNG(NE) forecasted the new handheld maintenance costs for the Sensus product for each of the years: 2020E; 2021E; and 2022E.

19.1.1 Please explain the annual variances in forecast new handheld maintenance costs from 2020E through 2022E.

19.1.2 Please explain why forecast new handheld maintenance costs are expected to stabilize (but for inflation) after 2022E.

F. PUBLIC CONSULTATION

20.0 Reference: PUBLIC CONSULTATION Exhibit B-1, Section 5, pp. 33-34; Order G-20-15, Appendix A⁴ General Consultation

Appendix A to Order G-20-15 includes the 2015 Certificate of Public Convenience and Necessity Application Guidelines (CPCN Guidelines). Section 3 of the CPCN Guidelines outlines the requirements regarding public consultation.

In section 5.1 of the Application, PNG(NE) provides a description of the consultation conducted prior to filing the Application.

20.1 Pursuant to section 3(v) of the CPCN Guidelines regarding public consultation, please provide PNG(NE)'s overall assessment of the sufficiency of the public consultation process with respect to the Project.

On page 34 of the Application, PNG(NE) states “[community information sessions] [a]ttendees had questions on matters related to device safety, the cost to consumers, the loss of meter reading jobs and project timelines. Attendees were pleased to obtain a better understanding of the AMR technology and of the project goals.” Also, on page 34 of the Application, PNG(NE) states it met “with representatives of the municipalities for which the AMR Project will be implemented... Questions included the matter of displacement of meter readers, the cost to consumers, and confirmation of the technology to be used.”

20.2 Please describe the measures taken, or planned, to address issues or concerns raised by attendees and representatives of the municipalities for which the AMR Project will be implemented.

20.2.1 If no further action is required to address issues or concerns raised by attendees and municipality representatives, please explain why not.

21.0 Reference: PUBLIC CONSULTATION Exhibit B-1, Section 5, p. 33 Future Consultation and Communication

On page 33 of the Application, PNG(NE) includes an External Consultation and Communication Plan Milestones as Exhibit 5-1.

21.1 Please explain whether PNG(NE) sought input at the community information sessions and at its meetings with municipality representatives regarding future consultation and communication,

³ e.g. 2023E = 20202E x 1.02 (inflation rate per Excel row 60), 2024E = 20203E x 1.02 (inflation rate per Excel row 60), etc.

⁴ https://www.bcuc.com/Documents/Guidelines/2015/DOC_25326_G-20-15_BCUC-2015-CPCN-Guidelines.pdf

as proposed in PNG(NE)'s External Consultation and Communication Plan Milestones.

21.1.1 If yes, please provide a summary of the input received from stakeholders.

21.1.1.1 Please explain whether PNG(NE) modified its External Consultation and Communication Plan Milestones based on the input received.

21.1.2 If PNG(NE) did not seek input on its proposed future consultation and communication with stakeholders, please explain why not.