



March 23, 2020

Sent via email/eFile

PNG WEST 2020-2021 REVENUE REQUIREMENTS EXHIBIT A-3
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Mr. Verlon Otto
Director, Regulatory Affairs
Pacific Northern Gas Ltd.
750 – 888 Dunsmuir Street
Vancouver, BC V6C 3K4
regulatory@png.ca

**Re: Pacific Northern Gas Ltd. – PNG-West Division – 2020–2021 Revenue Requirements Application –
Project Number 1599059 – Information Request No. 1**

Dear Mr. Otto:

Further to your 2020–2021 Revenue Requirements Application dated November 29, 2019, enclosed please find British Columbia Utilities Commission Information Request No. 1. In accordance with Order G-330-19A establishing the regulatory timetable for this proceeding, please file your responses on or before Wednesday, April 15, 2020.

Sincerely,

Original signed by:

Patrick Wruck
Commission Secretary

/dg
Enclosure



Pacific Northern Gas Ltd.
2020-2021 Revenue Requirements Amended Application

INFORMATION REQUEST NO. 1 TO PACIFIC NORTHERN GAS LTD.

Table of Contents	Page no.
A. General	1
B. Demand Forecast, Revenue and Margin	2
C. Cost of Gas.....	4
D. OPERATING EXPENSES.....	8
E. Administrative & General Expenses	13
F. Transfers to Capital (Capitalized Overhead).....	25
G. Property Taxes.....	26
H. Deferral Accounts	27
I. Shared Services Recovery from PNG(NE)	29
J. Rate Base	31
K. Proposed Rate Changes.....	41
L. Capital Expenditure Reporting – Actual vs Decision	42
M. Cost of Service Reporting – Actual vs Decision	44
N. Identified Service Quality Metrics	45
O. Other Matter to Be Addressed from Prior Year Decisions	46
P. Other Directives.....	53

A. **GENERAL**

**1.0 Reference GENERAL
Cybersecurity**

- 1.1 Please confirm, or explain otherwise, that Pacific Northern Gas (PNG) has a cybersecurity emergency recovery plan. If confirmed, please provide a copy. If not, please explain why not and identify any risks associated with this.
- 1.2 Please explain the measures PNG has already taken to protect critical infrastructure and prevent cyber attacks.
 - 1.2.1 For any planned, future measures, please include a description and provide the implementation timeline for these measures.

B. DEMAND FORECAST, REVENUE AND MARGIN

- 2.0 Reference: DEMAND FORECAST, REVENUE AND MARGIN
Exhibit B-2 (Amended Application), Section 1.3, pp. 7, 25
Demand Forecast, Revenue and Margin**

On page 7 of the Amended Application, PNG states:

PNG-West also notes that with the positive FID decision on the LNG Canada project resulting in increased economic activity in PNG-West's service territory and PNG-West's proposed Reactivated Capacity Allocation Process (RECAP) in 2020, PNG-West is confident it will realize significant additional revenues from new customers to the benefit of existing ratepayers in the near future.

- 2.1 Please provide an update on the timing for commencement of the RECAP and an estimate of the incremental volumes and the expected year in which they will materialize.

Further on page 25 of the Amended Application, PNG states:

There is an overall increase in forecast deliveries of approximately 180,000 GJ for Large Commercial Firm sales. Of this increase, 176,000 GJ can be attributed to forecast demand for two new customers, one in Kitimat involved in the construction of a liquefied natural gas (LNG) export facility in that city, and one in Prince Rupert developing a propane export terminal.

- 2.2 Please provide a breakdown of the incremental 2020 and 2021 volumes for each of the new customers identified in the preamble.

- 3.0 Reference: DEMAND FORECAST, REVENUE AND MARGIN
Exhibit B-2, Section 2.1, p. 23
Demand Forecast, Revenue and Margin**

On page 23 of the Amended Application, PNG states:

The forecast gas delivery volumes and margin for Test Year 2020 and Test Year 2021 are summarized and compared to the Decision 2019 forecast amounts in the table below. Reductions in Test Year 2020 and Test Year 2021 amounts from Decision 2019 are indicated by figures in brackets. A discussion of significant variances follows.

Further on page 23 of the Amended Application, PNG provides Table 9 with forecast gas deliveries.

- 3.1 Please provide a table in the same format as Table 9 that compares the actual 2019 deliveries with the forecast 2020 deliveries for each customer class. Please also provide an explanation for any significant variances between the actual 2019 deliveries and the forecast 2020 and 2021 deliveries and between the actual and decision 2019 deliveries for each customer class.

**4.0 Reference: DEMAND FORECAST, REVENUE AND MARGIN
Exhibit B-2, Section 2.1.1, pp. 23-24; Section 2.1.2, p. 24
Pacific Northern Gas Ltd. and Pacific Northern Gas (N.E.) Ltd. Application for
Acceptance of 2019 Consolidated Resource Plan and for Acceptance of Energy
Conservation and Innovation (ECI) Portfolio Funding for 2020 to 2022 proceeding
(PNG 2019 Consolidated Resource Plan), Exhibit B-1, Section 7.3.1.2, p. 88, Figure 26
Residential and Small Commercial Deliveries and Margin**

On pages 23 and 24 of the Amended Application, PNG states:

The forecast Test Year 2020 and Test Year 2021 deliveries to the Residential class are based on the forecast normalized Use per Account (UPA) multiplied by the forecast number of customers.

The methodology to forecast deliveries of small commercial customers is the same as residential customers as explained in Section 2.1.2 on page 24 of the Amended Application.

Further on pages 23 and 24, PNG provides Tables 10 and 11 for forecast customer count and use per account for residential and small commercial customers.

4.1 Please reconcile the forecast deliveries for 2020 and 2021 in Table 9 of the Amended Application for the residential and small commercial customers with the data contained in Table 10 and 11, respectively.

On page 88 of the Application in PNG's 2019 Consolidated Resource Plan proceeding, PNG states the following and provides Figure 26 illustrating the trend in residential use per account for PNG-West (figure not reproduced):

The performance of PNG's forecasting method over the five years since the last resource plans were submitted is also presented. Actual UPA in all systems over the period from 2014 to 2018 has been lower than forecast in the previous resource plans. The impact of the Clean BC policy actions is reflected in a sharper decrease in UPA over the forecast period, as compared to the previous forecasts.

4.2 Please explain whether the 2020 and 2021 forecast residential UPA included in the Revenue Requirements Application (RRA) have been updated to include the impact of Clean BC noted in PNG's 2019 Consolidated Resource Plan. If yes, please discuss how these factors have been incorporated. If not, please explain why not.

4.3 Please explain the pros and cons of using the residential and small commercial forecasting methodology used in PNG's 2019 Consolidated Resource Plan versus the one used in the 2020-2021 RRA.

4.3.1 Please provide an analysis of the performance of both the forecasting methods by comparing the actual versus forecasted UPA and customer additions for the residential and small commercial customers for the 2015-2019 period.

On page 24 of the Amended Application, PNG states:

The Test Year 2020 and Test Year 2021 forecast normalized UPAs are 68.5 GJ and 68.3 GJ, respectively, and represent the mid-point between the test year forecast normalized UPA and the linear trend of customer use. The forecast number of customers is based on the recent trend experienced for the service area.

- 4.4 Please explain why the actual UPA for 2017 provided in Table 10 (72 GJ) of the RRA is different from the actual UPA for 2017 provided in Figure 26 of PNG's 2019 Consolidated Resource Plan (66.7 GJ).
- 4.5 Please explain how the UPA provided in PNG's 2019 Consolidated Resource Plan impacts the linear trend of customer use, forecast residential UPA and deliveries for 2020 and 2021.

**5.0 Reference: DEMAND FORECAST, REVENUE AND MARGIN
Exhibit B-2, Section 2.1.3.3, p. 23
Industrial Deliveries and Margin**

On page 27 of the Amended Application, PNG explains the forecast for its Large Industrial Transport customer class and states:

BC Hydro [British Columbia Hydro and Power Authority] forecast deliveries for Test Year 2020 and Test Year 2021 are based on the assumption that BC Hydro will continue to operate its Prince Rupert generating station as a backup facility. The 24,000 GJ figure is consistent with historical deliveries during those years when BC Hydro has operated its generating station on a standby basis and placed it into service during times of emergency.

- 5.1 As presented in Table 9 of the Amended Application, BC Hydro actual deliveries have ranged from 14,567 GJ to 349,273 GJ for the period 2016 to 2019, indicating BC Hydro operated this generation facility more frequently in some years. Please explain which years are consistent with the period that BC Hydro operated its generation station as a backup facility and which years are not.
- 5.1.1 Based on the years that BC Hydro operated its generation facilities as a back-up facility please explain how the 24,000 GJ demand was calculated.
- 5.2 Please discuss the probability that BC Hydro annual demand profile for Prince Rupert generating station will be greater than 24,000 GJ in 2020 and 2021.
- 5.3 Please discuss whether BC Hydro has confirmed to PNG that it will continue to operate the Prince Rupert generating facility on a standby basis in 2020 and 2021 and that 24,000 GJ is their maximum demand when its generating station is operated on a standby basis.

C. COST OF GAS

**6.0 Reference: COST OF GAS
Exhibit B-2, Section 2.2.3, pp. 29-33; Appendix B, p. 4; PNG-West's 2018-2019 RRA proceeding, Exhibit B-3, BCUC IR 55.16, Exhibit B-1-1, Appendix B, p. 8
Unaccounted for Gas**

On page 30 of the Amended Application, PNG states:

Historically, there have been offsetting gains and losses such that a zero percent UAF loss remained a satisfactory proxy for setting the Company use recovery rate, consequently PNG-West did not see a need to make a change to this provision.

However, PNG-West submits that its recent experience supports a change to this provision. For the five-year period of 2015 to 2019, PNG-West has experienced average net UAF losses equal to 1.88% of deliveries. In light of the forgoing, PNG-West submits

that establishing the UAF component of Company use gas at 1.0 percent of deliveries and reflecting this in the cost of service is appropriate. PNG-West notes that this proposal is predicated on continued use of the UAF Volume deferral account.

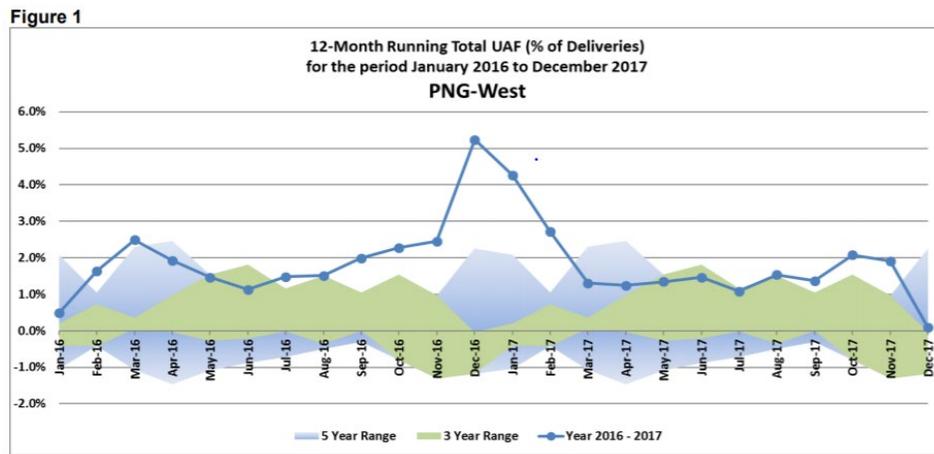
On page 32, PNG provides Table 15 with the contribution of the four primary drivers to UAF volumes on the PNG-West system.

- 6.1 Please discuss any specific reasons why there have not been offsetting gains and losses in UAF gas in 2015 to 2019 as compared to the 2004 to 2014 time period.
- 6.2 Please explain how the UAF loss percentages on PNG-West’s system compares with other gas utilities with similar systems to PNG.
- 6.3 Please provide the actual UAF losses, total deliveries, the UAF losses as a percentage of deliveries and the value of UAF losses for each year between 2004 and 2019.
- 6.4 For each year of the five-year period from 2015-2019, please explain the reasons for the UAF losses. In your response, please also explain how each of the primary drivers of the UAF volumes affect UAF losses for that year.

On page 29 of the Amended Application, PNG states: “Primary reasons for natural gas loss which goes unaccounted include: meter inaccuracy; leakages from pipelines due to third-party damage or problems with pipelines themselves; theft issues and meter tampering; and variations in surrounding temperature.”

- 6.5 Please discuss how each of the primary reasons for gas loss discussed on page 29 of the Amended Application contribute to UAF gas for PNG, with specific reference to how they relate to the primary drivers for UAF gas volumes on the PNG system in Table 15.

On page 4 of Appendix B to PNG-West’s Amended 2018-2019 RRA, PNG provided the following Figure 1:



- 6.6 Please provide a graph consistent with the figure above for the actual 12-Month Running Total UAF (% of deliveries) for the 2015-2019 period.

On page 33 of the Amended Application PNG submits:

Based on PNG-West’s view that it is inappropriate for shareholders to bear all of the risk of UAF losses above a pre-determined level when customers benefit when UAF losses

are less than this level, PNG-West is recommending that the UAF Loss Cap be set at 1.5 percent with PNG-West being obliged to apply for BCUC approval to record UAF losses above 1.5 percent in the UAF volume deferral account.

- 6.7 Please provide the UAF losses borne by PNG's shareholders and the benefits related to UAF for PNG's ratepayers for each year between 2015 and 2019.

In response to BCUC information request (IR) 55.16 in the PNG-West's 2018-2019 RRA proceeding, PNG stated:

As stated on page 90 of the Amended Application, PNG intends to undertake a pilot installation of approximately 1,650 advanced metering units in order to evaluate the benefits of Automated Meter Reading (AMR) infrastructure. Data from these meters is expected to provide more information on the correlation between daily customer demand and ambient temperatures.

In addition, PNG would need to initiate a customer end-use survey in order to understand better the efficiencies of the gas appliances and building characteristics associated with the AMR installations. PNG last completed a Residential End Use Survey (REUS) in 2015.

Finally, PNG would need to engage a consultant to undertake a statistical analysis in order to refine its customer end-use model and unbilled consumption estimation method, all of which would then be based on a small sample of customers located in one geographic location.

To summarize, PNG has identified opportunities for improving the quality of its customer information and revising its unbilled estimate. However, as stated in PNG's response to BCOAPO IR 1.4.1, PNG has evidence to suggest that the theoretical and practical floor for UAF on the PNG-West system is 0.68 and 1.0 percent, respectively.

- 6.8 Please explain whether PNG has implemented any of the measures discussed above to improve the accuracy of its customer information or estimate of unbilled estimates. If yes, please discuss the results. If not, please explain why not.
- 6.9 Please identify measures that other utilities or industry players undertake to mitigate UAF losses and discuss whether these measures are applicable to the PNG system.
- 6.10 Please explain why the theoretical and practical floor for UAF on PNG-West's system has changed from "0.68 and 1.0 percent" discussed in the preamble above to the ± 1.13 and ± 1.5 provided in the Amended Application.

**7.0 Reference: COST OF GAS
Exhibit B-2, Section 2.2.3, pp. 29-33
Unaccounted for Gas – Unbilled Estimate**

On page 32 of the Amended Application, PNG states:

Finally, errors in the unbilled estimate of monthly and bi-monthly billed customers whose meters are read on one of eight cycles rather than at the end of the calendar month are a significant contributor to UAF. The average of the net accruals over the 12-month period in each of the past five calendar years was compared to variations in heating degree days. Only two-thirds of the variability of the accruals could be explained by heating degree day variances; the remainder is due to the inability of the unbilled

estimation algorithm, in all circumstances, to accurately reflect the physical consumption that occurred during the unbilled stub period. Based on PNG-West's analysis, deviations in the unbilled accrual from the actual, physical deliveries account for $\pm 42,200$ GJ, or ± 0.88 percent UAF.

- 7.1 Please explain in detail how PNG calculates the unbilled estimate of monthly and bi-monthly billed customers.
- 7.2 Please explain what factors could lead to actual loss of gas from when the meters are read to when the unbilled estimate is calculated.
- 7.3 Please explain the statement identified in the preamble that "the remainder is due to the inability of the unbilled estimation algorithm."
- 7.4 Please discuss how PNG utilizes heating degree days to forecast the volume of gas delivered.
- 7.5 How many customers have the meters read in one of the eight cycles rather than at the end of the calendar month?
 - 7.5.1 Please elaborate on how PNG performs meter reading and billing for these customers, and how frequently is this process carried out.
- 7.6 Please explain whether an increase in the frequency in meter readings would improve the calculation of the unbilled estimate. Please explain the pros and cons of increasing the frequency of meter readings.
- 7.7 Please explain if the errors in unbilled estimates create offsetting UAF gas gains and losses. If they create both gains and losses, please elaborate on why this is contributing factor to overall UAF losses. If they only create losses, please explain why.

On page 8 of Appendix B to PNG-West's Amended 2018-2019 RRA PNG stated:

The change in the unbilled DOS report created a one-time impact on the UAF volumes recorded in February and March, 2016. The impact of a cold snap in December 2016 on the unbilled estimate is an isolated event, albeit one that may occur again in the future....

.....All of the excess UAF can be explained by isolated events affecting the UAF additions in February, March and December. A change in how the unbilled DOS are reported affected the UAF additions in February and March, and the unbilled estimate did not correctly reflect the impact of a cold snap in December.

Through its diligent review of the causes of the UAF in 2016, PNG has achieved a high degree of confidence that these causes were isolated events affecting only three months during 2016, rather than systemic issues that may continue to result in UAF volumes that are higher than historic levels. The trend in UAF after December 2016 has returned to within historic boundaries, supporting PNG's position.

- 7.8 Please confirm whether PNG has corrected how the unbilled DOS are reported that led to the one-time impact on UAF volumes recorded in 2016.
- 7.9 If the "trend in UAF after December 2016 has returned to within historic boundaries", please explain what has changed to warrant the increase in UAF loss percentage since December 2016.
- 7.10 Please identify and discuss any solutions available to PNG to reduce the errors in the unbilled estimate of monthly and bi-monthly billed customers. Please discuss the pros and cons associated with these solutions and why they have not been implemented.

**8.0 Reference: COST OF GAS
Exhibit B-2, Section 2.2.3, p. 31
Unaccounted for Gas – Measurement Error, Linepack Error and Blowdown and Venting
Estimates**

- 8.1 Please elaborate on what is meant by Linepack error and Blowdown and Venting Estimates, how these are estimated and how they impact UAF losses.
- 8.2 For each of the blowdown and venting estimate error, measurement error and linepack error presented in Table 15, please explain if these drivers create offsetting UAF gas gains and losses. If they create both gains and losses, please elaborate on why this is contributing factor to overall UAF losses. If they create losses only, please explain why.

D. OPERATING EXPENSES

**9.0 Reference: OPERATING EXPENSES
Exhibit B-2, Section 2.3, p. 34
Operating Expenses**

On page 34 of the Amended Application, PNG provides a breakdown of operating expenses in Table 16 and states that “operating expense line items have been presented net of shared service cost recoveries of expenditures for specific items.”

- 9.1 Please revise Table 16 to show the gross operating expenses before the shared service cost recoveries from Pacific Northern Gas (N.E.) Ltd. (PNG(NE)) and provide an explanation for any significant variances for 2018 and 2019 (Decision and Actual) and the year over year changes from 2019 actual to 2021 forecast, where not already provided in the Amended Application.

**10.0 Reference: OPERATING EXPENSES
Exhibit B-2, Section 2.3.1, pp. 35, 38.
Account 665 – Pipelines**

On page 35 of the Amended Application, PNG states that “Test Year 2020 costs of \$3.338 million are forecast to increase \$1.577 million or 87.4% over Decision 2019 costs of \$1.781 million.”

- 10.1 Please provide a breakdown of the 2018 and 2019 (forecast and actual), and Test Year 2020 and 2021 Account 665 – Pipeline costs for the following categories: ILLI Tool runs, investigative digs and repairs, third party system integrity costs, costs for transitioning operation strategy from reactive to proactive, right of way clearing and any other relevant cost categories. Please also provide an explanation for any significant variances, if not already provided in the Amended Application.

On page 38 of the Amended Application, PNG states that “[f]ollowing on activities undertaken in 2018 and 2019, PNG-West has planned further expenditures for Test Year 2020 and Test Year 2021 to perform initial assessments and to develop a management system that would transition its operation strategy from reactive (emergency response) to proactive (prioritized prevention).”

- 10.1.1 Please elaborate on the management system developed and the activities to transition the strategy from reactive to proactive in nature.
- 10.1.2 Please provide a breakdown of the actual 2018 and 2019 and forecast 2020 and 2021 and beyond costs associated with developing the management system between third-party expertise costs and other costs.

10.1.3 Please elaborate on the benefits realized as a result of the activities completed to date and the expected future benefits.

**11.0 Reference: OPERATING EXPENSES
Exhibit B-2, Section 2.3.1 p. 35
Account 665 – Pipelines – Integrity Management Plan**

On page 35 of the Amended Application, PNG states:

The majority of the test year cost increases over Decision 2019 relate to ensuring compliance with PNG's Integrity Management Plans and related codes, standards and regulations.

11.1 Please provide PNG's Integrity Management Plan.

11.1.1 Please elaborate how compliance to this plan and related codes, standards and regulations have impacted test year pipeline operating expenses. For example, have there been changes to the codes and standards, or have pipelines been recently identified as non-compliant? Please discuss.

11.2 Please discuss any risks associated with delays to the timing of execution of these pipeline integrity activities.

**12.0 Reference: OPERATING EXPENSES
Exhibit B-2, Section 2.3.1 p. 36
Account 665 – Pipelines – Transmission Integrity Management Plan**

12.1 Please provide PNG's Transmission Integrity Management Plan (TIMP).

**13.0 Reference: OPERATING EXPENSES
Exhibit B-2, Section 2.3.1 p. 36-37
Account 665 – Pipelines – ILI Tool Runs and Investigative Digs**

On page 36 of the Amended Application, PNG states:

The forecast cost for running the inspection tool varies based on the length and diameter of the pipeline being inspected in any given year. Each year PNG-West requests quotes from third party vendors for performing this activity on identified segments of pipeline and it is this information that is the basis for the forecast cost included in this Amended Application...

Forecast costs for pipeline inspection activities is \$961,000 for Test Year 2020 and \$272,000 for Test Year 2021, compared to costs of \$176,000 forecast for Decision 2019. PNG-West notes that there were no expense-based ILI runs carried out in 2019...

The main rehabilitation activities used to follow-up on the findings of the ILI tool runs are investigative digs and repairs, or pipe replacement. For Test Year 2020, the forecast expenditure for investigative dig activity is \$614,000, compared to \$558,000 forecast under Decision 2019. Costs for Test Year 2021 are forecast to be \$628,000.

13.1 Please provide additional information regarding the process to obtain quotes. Specifically, please address whether it is an open bidding process or whether PNG invites pre-qualified vendors to submit pricing.

13.1.1 Does PNG have capacity to complete the ILI runs using internal resources? If not, please discuss if PNG has assessed the feasibility of doing so.

- 13.2 Please discuss the specific activities and costs for the ILI tool runs and investigative digs that are capitalized and expensed and the rationale for the accounting treatment.
- 13.3 Please provide the following information in table format for each year (decision and actual) between 2015 and 2019 and forecast 2020 and 2021:
- ILI tool runs expensed
 - Investigative digs expensed
 - Capitalized costs for ILI tool runs
 - Capitalized costs for investigative digs
 - Number of executed ILI tool runs and investigate digs
- 13.3.1 Please provide an explanation for any significant variances between forecast and actual costs (and number of cut outs and digs) and any significant increases year over year that are not already provided in the Amended Application.
- 13.4 Please clarify how the forecast operating expenditures for investigative dig activities are determined.

14.0 Reference: OPERATING EXPENSES
Exhibit B-2, Section 2.3.1 p. 38
Account 665 – Pipelines – System Integrity Support and Geohazard Identification and Management

On page 38 of the Amended Application, PNG states that it has forecast approximately \$100,000 for each of Test Year 2020 and 2021 for third-party system integrity support and approximately \$200,000 for each of Test Year 2020 and 2021 for third-party support to execute geohazard risk management activities.

- 14.1 Please elaborate on the type of third-party system integrity support PNG is seeking (e.g. risk assessment, material expertise, data analysis, etc.).
- 14.1.1 Please provide historical actual system integrity and geohazard risk management support costs from third parties (five year).

15.0 Reference: OPERATING EXPENSES
Exhibit B-2, Section 2.3.1 p. 38
Account 665 – Pipelines – Right of way clearing

On page 38 PNG states “ROW clearing is primarily undertaken by contractors as PNG-West is not equipped to undertake the activities with internal resources.”

- 15.1 Please clarify the portion of right of way clearing attributed to contractor costs.

16.0 Reference: OPERATING EXPENSES
Exhibit B-2, Section 2.3.2, pp. 38–39
Account 666 – Compressors

On pages 38 and 39 of the Amended Application, PNG states:

Forecast Test Year 2020 costs of \$635,000 are \$146,000 or 29.8% higher than Decision 2019 costs of \$489,000. Compressor work planned for 2020 is an integrity management activity on the gas coolers on the discharge of the R1 Compressor to ensure continued safe operation and maintenance of the compressor station. This pressure testing activity will be repeated at regular intervals, likely to be every 10 years.

- 16.1 Please provide the methodology for deriving the forecast cost in the Test Period.
- 16.2 Please clarify when this testing activity was last performed on the R1 Compressor and why the R1 compressor was selected for this pressure testing in Test Year 2020.

On page 39 of the Amended Application, PNG states that “[f]orecast expenditures are for a robotic inspection of the inside of the pipework utilizing a new technology (GRAID) that has been developed in the United Kingdom.”

- 16.3 Please provide the analysis undertaken (both qualitative and quantitative), if any, on the selection of this new technology (GRAID) for the pipework inspection, including any alternative considered.
- 16.4 Please clarify what portion of the total forecasted Compressor operating costs for Test Year 2021 is made up by this robotic inspection project.

**17.0 Reference: OPERATING EXPENSES
Exhibit B-2, Section 2.3.5, pp. 40-41
Account 685 - New Staff Positions**

On page 40 of the Amended Application PNG states:

Test Year 2020 expenditures of \$3.229 million are forecast to increase by approximately \$212,000 or 7.0% over Decision 2019 expenditure of \$3.017 million. These cost increases have been offset in part by the absence of costs related to the implementation of the digital data mapping and the geographical information system projects that were incurred in 2019.

...

...the primary factor contributing to this increase is the full-year impact of the new management and field staff positions added in 2020, a further two new field staff positions and to inflationary pressures on other costs.

Further, on page 40 PNG states:

Test Year 2021 expenditures of \$3.513 million are forecast to increase by approximately \$284,000 or 8.8% over Test Year 2020. As described below, the primary factor contributing to this increase is the full-year impact of the new management and field staff positions added in 2020, a further two new field staff positions and to inflationary pressures on other costs. [*Emphasis Added*]

- 17.1 For each management new position, please provide the actual/expected start date, annual salary and the forecast cost for 2020 and 2021.
- 17.2 Please explain if the forecast costs associated with the new hires have been prorated to account for the expected start dates. If not, please explain why not and propose any adjustments to account for the expected start dates.
- 17.3 Please confirm, or explain otherwise, that the new management positions are full-time.
- 17.4 Please provide the amount of digital data mapping and GIS project costs included in Decision 2019 and confirm, or explain otherwise, that these costs are not included in Test Year 2020.

And on page 41, PNG states that “as it pertains to the four additional [field staff] positions PNG will directionally decrease its reliance on temporary employees, summer students, and contractors.”
[Emphasis Added]

17.5 Please discuss how PNG will reduce its reliance on temporary employees, summer students, and contractors and quantify the cost savings associated with this by account for Test Year 2020 and 2021.

**18.0 Reference: OPERATING EXPENSES
Exhibit B-2, Section 2.3.7, pp. 44, 90–91, 102, 111, Table 35; Tab 1, p. 3; Section 2.13.1.1.1, p. 102; Section 2.13.1.1.2, p. 111
Account 711/713/714 – New CIS System**

On page 44 of the Amended Application, PNG states that it “...along with its sister utilities, AUI and HGL, have commenced a project to jointly implement a new CIS system to replace the existing legacy systems at the respective utilities.”

18.1 Please discuss the alternatives to the implementation of the new CIS system that were considered, the pros and cons of the alternatives, and why they were ultimately rejected.

18.2 Please elaborate on why PNG is reliant on UnionGas using the Banner CIS system and discuss any risks or issues associated with maintaining PNG’s existing CIS system.

Further, on page 44 PNG states:

The joint CIS project will be led by AUI with significant involvement from PNG and HGL. Shared implementation costs will be capitalized by AUI and amortized over the expected useful life of 10 years. AUI will allocate and recover the capital costs from PNG and HGL on a cost-recovery basis under the terms of Shared Services Agreements that will be effective at the system go-live date expected in April 2021. AUI will also allocate shared support costs which includes the monthly fee to VertexOne for the managed services to be provided. The allocation is based on customer count, therefore PNG will be allocated approximately 31% of the costs.

PNG will also incur direct capital costs for SAP licenses and data extraction from Banner to VertexOne.

On page 102 of the Amended Application, PNG states that “[i]n 2020, PNG-West anticipates incurring \$108,000 for the extraction of data from the old Banner system as well as CIS license fees for the VertexOne CIS system that will be capitalized.”

On page 111 PNG states that “[i]n 2021, PNG-West anticipates incurring CIS software costs of \$98,000 for the VertexOne CIS system for data extraction as well as license fees.”

18.3 For the new CIS system, please provide a breakdown of the total costs, costs allocated to PNG (consolidated) and costs allocated to PNG-West, PNG(NE) FSJ/DC and PNG(TR) by year, by operating and capital costs and by account number.

18.3.1 Please elaborate on why customer count was selected as the basis of allocating costs to PNG (consolidated) for the new CIS system identify any alternatives that were considered.

18.3.2 Please provide the expected annual ongoing costs for the new CIS system.

- 18.4 Considering the system is expected to go live April 2021, please confirm or explain otherwise that there are no annual license fee costs allocated to PNG in Test Year 2020.

On page 44 of the Amended Application PNG submits:

As a corporate group, it was determined that implementation of a CIS solution that worked for all utilities would bring many advantages including sharing of common costs, more efficient use of resources, and the opportunity to merge and align business practices.

- 18.5 Please elaborate on how the new CIS system will allow the sharing of common costs, more efficient use of resources and the opportunity to align business practices. For each of these items, please provide the estimated annual costs savings and the timing of these benefits.

18.5.1 Please discuss any other financial benefits PNG expects to realize from the new CIS system and the anticipated timing of these benefits.

On page 102 of the Amended Application PNG states:

In 2020, PNG-West anticipates incurring \$108,000 for the extraction of data from the old Banner system as well as CIS license fees for the VertexOne CIS system that will be capitalized.

On page 111, PNG states:

In 2021, PNG-West anticipates incurring CIS software costs for \$98,000 for the VertexOne CIS system for data extraction as well as license fees.

- 18.6 Please identify the relevant factors that should be considered from PNG's perspective in the treatment of data extraction costs for the purpose of capitalizing intangible assets in accordance with US GAAP.
- 18.7 Please explain why data extraction costs are expected to be incurred in both Test Year 2020 and 2021.

E. ADMINISTRATIVE & GENERAL EXPENSES

- 19.0 Reference: ADMINISTRATIVE & GENERAL EXPENSES
Exhibit B-2, Section 2.5, pp. 49–50
Administrative & General Expenses**

On page 49 of the Amended Application, PNG provides a breakdown of administrative and general expenses in Table 18 and states that "administrative and general expense line items have been presented net of shared service cost recoveries."

- 19.1 Please provide Table 18 revised to show the gross administrative and general expenses before the shared service cost recoveries from PNG(NE), including explanations for any significant variances that are not already provided in the Amended Application.
- 19.2 Please provide a breakdown of Account 721 – Administration costs presented in Table 18 for 2015, 2016, 2017, 2018 and 2019 actual and 2020 and 2021 forecast using the same categories as presented in Table 19.

**20.0 Reference: ADMINISTRATIVE & GENERAL EXPENSES
Exhibit B-2, Section 2.5.1, pp. 51–53, Table 21
Account 721 – JDE Accounting System**

On page 51 of the Amended Application, PNG states:

Rather than opting to implement a standalone ERP for PNG alone, it was determined that it would be more cost-effective for all ACI entities to collaborate on a new ERP solution. This approach was considered to be prudent as it allows for cost savings at each of the entities as the result of sharing costs for servers, sustainment activities and IT support which would otherwise need to be incurred by each of the entities on a standalone basis. As all of the entities were already using various versions of JDE or related predecessor systems, it was decided to proceed with a JDE implementation. The decision was also made that the JDE system would be hosted at AUI in order to maximize economies of scale with existing AUI infrastructure and IT support personnel.

- 20.1 Please discuss the alternatives to the implementation of the new JDE system that were considered, the pros and cons of the alternatives, and why they were ultimately rejected.
- 20.2 Please provide the expected benefits and cost savings PNG will realize as a result of this new JDE system. Please quantify the annual cost savings by category and identify the year in which these savings will be realized.
 - 20.2.1 Please explain the methodology for allocating costs to PNG for the JDE accounting system.
 - 20.2.2 Please provide the expected start and completion date of each phase of the JDE accounting system project.

On page 52 of the Amended Application PNG states, “[t]he second phase involves the migration of PNG, ACI and BMW code and data from ALA to AUI.”

Further, on page 52 PNG states:

The third phase of the project will involve converting all entity general ledgers to a standardized chart of accounts...PNG will share in the costs associated with converting the Chart of Accounts. This phase will also involve providing AUI and HGL with the customized enhancements that exist in JDE now that the migration of the code and data from AltaGas has been completed in February 2020. The expectation is that most of the costs for these activities will be borne by AUI and HGL.

- 20.3 Considering the activities taking place in the third phase, please confirm, or explain otherwise, that PNG will only share the costs associated with converting the Chart of Accounts.
 - 20.3.1 If not confirmed, please provide a breakdown of the activities and the associated costs allocated to PNG.

Additionally, on page 52 of the Amended Application, PNG states:

As the JDE system will be hosted by AUI, the majority of the system costs are being capitalized by AUI. Capital costs will be amortized by AUI over an expected useful life of 10 years. AUI will allocate and recover the capital costs from other entities on a cost-recovery basis under the terms of a Shared Services Agreement that will be effective at the system go-live date, which was completed on February 26, 2020. As described

previously, capital costs for each of the three implementation phases are to be allocated to those entities benefiting from the work on that phase. On this basis, PNG is expected to be allocated the majority of the capital costs incurred for phase two and approximately 34% of the capital costs for phase four. Based on the foregoing, on a consolidated basis for PNG and PNG(NE), the charge from AUI for these costs capitalized by AUI is estimated to be \$191,000 for Test Year 2020 (ten months) and \$258,000 for Test Year 2021 (full year).

- 20.4 Please provide a copy of the Shared Services Agreement related to the JDE system.
- 20.5 Please explain why PNG is expected to be allocated most of the capital costs incurred for phase two.
- 20.6 Please explain how the 34 percent allocation of the phase four capital costs was derived and why the allocation method is considered reasonable.
 - 20.6.1 Given that the JDE implementation consists of three phases, please clarify what costs and activities are involved with phase four.

On page 52 of the Amended Application, PNG states “[i]n 2019, [it] incurred a cost of \$530,000 for these licenses which has been capitalized and reflected in work in progress at the end of 2019.”

BCUC staff prepared the following extract of Table 21 on page 53 of the Amended Application, showing the allocation of the JDE licenses cost between PNG’s divisions.

Table 21: Summary of Consolidated JDE System Costs

Expense Item	BCUC Account	Test Year 2020			
		PNG-West	FSJ/DC	TR	Total
JDE Licenses Capitalized	490	333,700	184,600	11,700	530,000

- 20.7 Considering AltaGas Ltd. is providing services through to June 30, 2020, please explain why JDE licences costs were incurred in 2019.

**21.0 Reference: ADMINISTRATIVE AND GENERAL EXPENSES
Exhibit B-2, Section 2.5.1, pp. 54, 50
Account 721 – New Payroll System**

On page 54 of the Amended Application, PNG states:

With the formation of ACI as a separate standalone public company in October 2018, AltaGas entered into a Transition Services Agreement with ACI to remain as the provider of certain services up to a date no later than June 30, 2020. Those services included hosting the JDE payroll system on behalf of PNG. With access to AltaGas’ JDE no longer being an option, PNG sought an alternative system that could process payroll.

Further on page 54 PNG states:

Given all ACI-owned companies share similar human resource operational requirements and objectives, it was determined that a single Human Resource Information System (HRIS) would be the most cost-effective solution for all ACI entities. Based on responses to a call for proposals, UltiPro was selected as the best solution for the ACI group of companies from a cost, financial return, timing, IT, and strategy perspective.

PNG additionally states on page 54, that “[t]he UltiPro HRIS is being implemented in two phases: (i) the first phase” “occurred in February 2020; and (ii) the second phase, to proceed during 2020.”

On page 54, PNG states:

[t]he UltiPro third-party platform does not have any capital costs, but has a monthly charge based on the number of employees and retirees that are being served using the system. [*Emphasis Added*]

- 21.1 Please discuss the alternatives to the implementation of the new payroll system that were considered, the pros and cons of the alternatives, and why they were ultimately rejected.
 - 21.1.1 Please elaborate on the reasons why UltiPro was considered the best solution for ACI from a cost, financial return, timing, IT, and strategy perspective.
- 21.2 Please provide a breakdown of the total costs for the new payroll system, costs allocated to PNG and costs allocated to PNG-West, PNG(NE) FSJ/DC and PNG(NE) TR by phase, year and by account number.
- 21.3 Please confirm that Test Year 2021 forecast costs include costs other than the monthly charges and explain the nature of the additional costs.
 - 21.3.1 If not confirmed, please explain why the increase from Test Year 2020 to 2021 appears greater than a full year of implementation costs plus inflationary cost increases.
- 21.4 Please confirm or explain otherwise, that all costs associated with this new payroll system are being allocated to PNG, among other “sister utilities”, based on the number of employees and retirees in each entity.
 - 21.4.1 Please confirm, or explain otherwise, that only PNG, AUI and HGL will be implementing this new payroll system.
- 21.5 Please discuss the expected benefits and cost savings to be realized from the new payroll system, including the anticipated timing of these benefits/cost savings. Please quantify any expected financial benefits by year. If no financial benefits are expected, please explain why.

**22.0 Reference: ADMINISTRATIVE & GENERAL EXPENSES
Exhibit B-2, Section 2.5.2, p. 56; PNG-West 2018-2019 RRA proceeding, Exhibit B-1-1
(Amended Application), p. 45;
Consulting Fees**

- 22.1 Please prepare a table that includes the consulting fees by specific account (including 722, 721 and other accounts with consulting fees) for the following time periods: decision 2015, 2016, 2017, 2018, 2019, actual 2015, 2016, 2017, 2018, 2019 and forecast 2020 and 2021.
 - 22.1.1 Based on the table prepared above, please provide an explanation for any significant variances between decision and actual for each year and significant changes in actual (or forecast for 2020 and 2021) amounts year over year.

On page 56 of the Amended Application, PNG states:

Consultant Fees (2020 increase: \$124,000; 2021 increase: \$13,000)

The increase in consulting fees for Test Year 2020 reflects an anticipated increase in consultation and engagement activity with government and industry on climate change policies and initiatives such as renewable natural gas (RNG) and the proposed federal

clean fuel standards. The increase for Test Year 2021 is primarily due to inflation.

22.2 Please explain how the forecast 2020 and 2021 consulting fees for Account 722 were estimated.

On page 45 of the PNG-West 2018-2019 RRA Amended Application, PNG provided the following explanation for the increased costs in Business development and government relations consulting fees to \$163,000 in Test Year 2018:

Business development and government relations consulting fees for Test Year 2018 are forecast to be \$21,000 greater than Decision 2017 in anticipation of increased consultation and engagement activity with government and industry on climate change policies and initiatives such as renewable natural gas (RNG) and the proposed federal clean fuel standards. [*Emphasis Added*]

- 22.3 Please discuss the benefits and cost savings that have been/will be obtained for each of PNG's ratepayers and its shareholder as a result of the work performed by consultants on business development and government relations. Please provide the actual/expected timing of these benefits and cost savings.
- 22.4 Please identify any changes in circumstances in 2020 as compared to previous years in the areas of climate change policies and initiatives and the proposed federal clean fuel standards that contribute to the increase in consulting costs in 2020.
- 22.5 Please discuss if PNG intends on using consultants for business development and government relations activities on an ongoing basis.
- 22.6 Please identify and discuss any work associated with business development and government relations that is undertaken by PNG's parent company, ACI, and if this work has been factored into the shared services cost allocation to PNG.

**23.0 Reference: ADMINISTRATIVE & GENERAL EXPENSES
Exhibit B-2, Section 2.5.1, p. 55
IT Contractors**

On page 55 of the Amended Application, PNG states that "IT-related contractor costs have increased by \$115,000 in Test Year 2020 from Decision 2019 as a result of PNG transitioning to the Microsoft 365 platform."

- 23.1 Please provide a timeline for the transition to the Microsoft 365 Platform, including when the transition is expected to commence and be completed.
- 23.2 Please provide a schedule of historic and forecast costs broken down by year and between capital and operating costs for the transition to Microsoft 365 Platform.
- 23.3 Please provide a description of the activities that will be undertaken by the contractor in 2021 in relation to the transition.

**24.0 Reference: ADMINISTRATIVE & GENERAL EXPENSES
Exhibit B-2, Section 2.5.1, p. 55
Office Rent**

- 24.1 Please provide the annual base rent for PNG's previous Vancouver office and the base rent for the new office space effective October 2019.

On page 55 of the Amended Application, PNG states, "PNG incurred net costs of approximately \$650,000 on tenant improvements to modify the leased space, inclusive of a tenant inducement

allowance of \$346,000. The costs incurred... are consistent with per square foot costs for tenant improvement projects.”

24.2 Please describe the improvements that were required to the leased premises and discuss what tenant improvement projects were used for the comparison of the square foot costs for tenant improvement projects.

**25.0 Reference: ADMINISTRATIVE & GENERAL EXPENSES
Exhibit B-2, Section 2.5.1, p. 55
Other Administrative Expenses**

On page 55 of the Amended Application, PNG states:

Other Administrative Expenses (2020 increase: \$143,000; 2021 decrease: \$8,000)

The remaining cost change for Test Year 2020 and for Test Year 2021 reflect a variety of anticipated cost fluctuations in the normal course of business.

25.1 Please elaborate on the anticipated cost fluctuations that result in the forecast cost increase of \$143,000 in 2020.

25.2 Please provide a breakdown of the Test Year 2020 increase of \$143,000 over Decision 2019 and actual 2019 costs and provide an explanation for any significant variances.

**26.0 Reference: ADMINISTRATIVE & GENERAL EXPENSES
Exhibit B-2, Section 2.5.3, p. 57
Insurance**

On page 57 of the Amended Application, PNG states, “The increase in forecast insurance costs for Test Year 2020 reflects a significant increase in property insurance premiums, which are approximately 14% higher over the prior year.”

26.1 Please provide a breakdown of the actual 2019 and forecast 2020 and 2021 insurance costs, including a category for the property insurance premiums.

26.2 Please identify and discuss any increases in insurance costs that are related to the new ownership of PNG by ACI rather than AltaGas Ltd.

**27.0 Reference: ADMINISTRATIVE & GENERAL EXPENSES
Exhibit B-2, Section 2.5.4, pp. 61, 114
Employee Benefits**

On page 61 of the Amended Application, PNG provided the following table summarizing the forecast and historic benefit load rates:

Table 25: Employee Benefit Load Rates

Employee Affiliation	Test Year 2021	2021/2020 Difference	Test Year 2020	2020/2019 Difference	Decision 2019	Decision 2018	Decision 2017	Decision 2016	Decision 2015
		%		%					
Executive	40.7%	(0.3)%	41.0%	7.0%	34.0%	33.9%	43.4%	41.4%	45.3%
Non-bargaining Unit	29.4%	(0.9)%	30.3%	(1.7)%	32.0%	33.1%	37.7%	36.9%	39.0%
Bargaining Unit - PNG-West	37.0%	(0.6)%	37.6%	1.5%	36.1%	37.6%	47.1%	47.9%	51.5%
Bargaining Unit - PNG(N.E.)	35.7%	(0.4)%	36.1%	(1.4)%	37.5%	38.7%	49.5%	48.0%	49.6%

Further on page 61, PNG states that “[t]he increase in Test Year 2020 rates is primarily due to increases in the actuarially determined pension costs on a ‘per employee’ basis, while the decrease for Test Year 2021 reflects generally lower pension costs for 2021 compared to 2020 for non-bargaining and

bargaining unit employees. The Test Year 2020 benefit load rates are also impacted by the decrease in NPPRB costs compared to Decision 2019.”

27.1 Please explain why pension costs are expected to be lower for non-bargaining unit employees in Test Year 2021 compared to Test Year 2020.

On page 114 of the Amended Application, PNG state that “an actuarial valuation is planned as at December 31, 2019 and is anticipated to be completed in the third quarter of 2020.”

27.2 Please provide a copy of this actuarial pension valuation report as at December 31, 2019 once it is made available.

**28.0 Reference: ADMINISTRATIVE & GENERAL EXPENSES
Exhibit B-2, Section 2.5.5, p. 61; Tab 1, p. 5
Account 728 – General**

28.1 Please provide the Actual 2018 and 2019 Account 728 costs with the disallowed costs removed.

**29.0 Reference Administrative & General Expenses
Exhibit B-2, Section 2.5.1, p. 50, Table 20
Shared Corporate Services Costs**

On page 50 of the Amended Application, PNG provides Table 20 illustrating ACI Shared Corporate Services Costs, an extract is presented below:

Table 20: ACI Shared Corporate Services Costs

Expense Item	\$000's										
	Test Year 2021	2021 to 2020 Change		Test Year 2020	2020 to 2019 Change		Decision 2019	Actual 2018	Actual 2017	Actual 2016	Actual 2015
		\$	%		\$	%					
Shared Corporate Services Costs	1,872	37	2.0%	1,835	676	58.4%	1,159	1,909	1,913	2,057	2,106
Disallowed by BCUC Decision	-	-	n/a	-	416	(100.0)%	(416)	(1,179)	(1,198)	(1,342)	(1,391)
Approved Recovery - Consolidated	1,872	37	2.0%	1,835	1,092	147.0%	743	730	715	715	715
Applied for Recovery - per PNG	1,872	37	2.0%	1,835	1,092	147.0%	743	730	745	729	715
Cost Allocation											
PNG-West	1,207	47	4.0%	1,160	693	148.1%	468	1,641	1,650	1,798	1,854
PNG(NE) - FSJ/DC	624	(10)	(1.6)%	634	375	144.8%	259	253	249	244	237
PNG(NE) - TR	42	0	1.0%	41	25	150.3%	16	16	14	15	15
Consolidated	1,872	37	2.0%	1,835	1,092	147.0%	743	1,909	1,913	2,057	2,106

29.1 Please provide the 2019 actual Shared Corporate Services costs for Table 20. Provide explanations for any significant variances from the Decision 2019 costs.

29.2 Please explain whether ACI uses actual or forecast costs in the allocation of the Shared Corporate Service costs. If forecast costs, discuss how the risks of over/under forecasting are managed.

**30.0 Reference Administrative & General Expenses
Exhibit B-2, Section 2.5.7.1, p. 63; Appendix B, pp. 2, 4-5
Shared Corporate Services Costs – Impact of Full Recovery**

On page 63 of the Amended Application, PNG states:

PNG deems it appropriate to seek full recovery at this time as in the first quarter of 2020, PNG will benefit from incremental near-term volumes associated with energy export related business activity in its service territory. Moreover, PNG expects to launch a successful reactivated capacity allocation process (RECAP) and utilize the available capacity that will result in significant benefits to ratepayers.

- 30.1 Please provide additional details on the incremental near-term volume referenced in the preamble, specifically the customer, forecast incremental volumes and margin and the test year in which the incremental volumes/margin will be realized.
- 30.2 With reference to the expected timing for the realization of the incremental volumes resulting from the RECAP as provided in response to IR series 2 above, please elaborate on why PNG considers it appropriate to seek full recovery of the ACI Corporate Shared Services Charge in the current test period.
- 30.3 Please identify and discuss any other factors and changes in circumstances, beyond utilization of the capacity on the PNG-West system, that were considered when deciding to seek full recovery of the ACI Corporate Shared Services Charge in the current Test Period.

**31.0 Reference: ADMINISTRATIVE & GENERAL EXPENSES
Exhibit B-2, Section 2.5.7.1, p. 64
Shared Corporate Services Costs – Deferral Account**

On page 64 of the Amended Application, PNG states:

PNG is proposing that a new interest bearing deferral account be established to record a portion of the Shared Corporate Services Costs to be amortized at a future date instead of being recovered in the period the services are received by PNG. On a consolidated basis, the amount of the deferral included in PNG and PNG(NE)'s revenue requirements applications is \$1.078 million for Test Year 2020 and \$1.099 million for Test Year 2021. PNG will seek approval for the amortization of this deferral account in future years as PNG attaches more customer volumes in the system. Therefore, PNG is proposing to recover the amount approved under Decision 2019 plus an inflationary increase for both Test Year 2020 and Test Year 2021.

- 31.1 Please clarify if PNG is seeking to establish this deferral account and record a portion of Shared Corporate Services costs for the Test Period only, or if PNG plans to seek approval to record future costs beyond the test period in this deferral account as well.
- 31.2 Please provide an estimate for when PNG expects to commence amortization of the deferral account, with a rationale for the estimate provided, and the estimated amortization period.
- 31.3 Please provide the incremental revenue deficiency/sufficiency and rate impact for Test Years 2020 and 2021 based the following scenarios:
 - (a) PNG is approved to recover the full amount, however not approved to defer any portion, of the ACI Shared Corporate Services Costs.
 - (b) PNG is approved to only recover a portion of the ACI shared corporate services costs that is consistent with decision 2019, and not approved to defer any portion.

Please provide all supporting calculations.

- 31.4 Under a scenario where the Shared Corporate Services costs deferral account is approved by the BCUC and the expected, incremental customer volumes on the PNG system do not materialize, please provide an estimate of the rate impact for PNG's existing customers based on an amortization period of one, three and five years.
- 31.5 Please discuss any issues associated with intergenerational inequity due to deferring Shared Corporate Services costs incurred in this Test Period to a future period.

32.0 Reference: ADMINISTRATIVE & GENERAL EXPENSES

Exhibit B-2, Section 2.5.7.1, pp. 63-64; Appendix B, pp. 2, 4-5

**Shared Corporate Services Costs – KPMG Report – Services and Allocation, p. 2
Methodology**

On page 63 of the Amended Application, PNG states, “[t]he costs associated with the necessary services are incurred at the parent company level (ACI) and PNG is allocated its share of those costs.”

On page 2 of the ACI Corporate Shared Services Cost Report (KPMG Report) filed as Appendix B, it states, “PNG represents approximately 19%, 21% and 31% of the property, EBITDA and payroll composite cost drivers of ACI respectively.”

Pages 4 and 5 of Appendix B to the Amended Application, state:

The costs related to the above noted Shared Corporate Services are combined into one common cost pool for allocation. The cost pool is then allocated to ACI’s subsidiaries using the Modified Massachusetts Formula (“MMF”). The pool costs are actual costs, reflecting no mark-up, before being allocated to business units and subsidiaries.

- 32.1 Please discuss any differences between the current methodology for allocating Shared Corporate Services costs from ACI to PNG and the methodology used by PNG’s former parent AltaGas Ltd.
- 32.2 Please explain why EBITDA rather than revenues is used as one of the cost drivers for the MMF. Please provide the incremental increase/decrease of the shared services cost allocation over the Test Period if EBITDA was replaced with revenues as a cost driver.

On page 4 of Appendix B, KPMG provides a summary of the services and benefits that PNG receives from the Shared Corporate Services received from ACI.

- 32.3 For each of the benefits listed, please indicate how this directly or indirectly benefits PNG’s ratepayers.

On page 5 of Appendix B, KPMG states, “all the Shared Corporate Services outlined above will be performed by PNG if it was a stand-alone public company.”

- 32.4 For each of the services that are being provided by ACI to PNG, please provide the cost of services from ACI, the previous cost of service from AltaGas Ltd. Please provide the costs PNG incurred in 2011, pre-AltaGas Ltd. amalgamation, adjusted for inflation.

On page 64 of the Amended Application, PNG states:

Through ACI’s Shared Services model, these costs are allocated across ACI’s three Utilities and renewable power assets, and PNG receives the full benefit of these key services at a lower cost than PNG could acquire them as a standalone entity.

In order to validate the fair value of PNG’s allocation of shared use of services and review the market value of those services, KPMG LLP has been engaged to produce a report to provide objective evidence for support of the validation of these costs (KPMG Report).

- 32.5 Please explain whether the ACI allocation methodology has been previously reviewed by any other energy regulator(s) in relation to the other utilities owned by ACI. If so, please provide relevant extracts from the regulatory Decisions.

33.0 Reference: ADMINISTRATIVE & GENERAL EXPENSES
Exhibit B-2, Appendix B, pp. 3, 11
Shared Corporate Services Costs – KPMG Report – Approach

On page 3 of Appendix B, KPMG describes the approach adopted in performing its assessment of the estimated fair value of Shared Corporate Services.

Page 11 of Appendix B states:

KPMG has neither audited nor reviewed the underlying budgeted shared service cost pools, including the data that underpins the ACI’s cost driver allocators that form the basis of their allocations nor has KPMG audited the estimate of fair value of shared services to be received from ACI.

33.1 Please explain why KPMG was not requested to complete an audit or review of the underlying budgeted shared service cost pools or the estimate of fair value of shared services to be received by ACI.

33.1.1 Please discuss the risks associated with using information that has not been audited nor reviewed.

34.0 Reference: ADMINISTRATIVE & GENERAL EXPENSES
Exhibit B-2, Appendix B, pp. 5-10
Shared Corporate Services Costs – KPMG Report – Estimated Fair Value

On page 6 of Appendix B, the estimated fair value of the shared corporate services is provided in Table 2:

Table 2 - Estimated Fair Value of Shared Corporate Services

Shared Corporate Service Function	Standalone employee and third party costs 2020	Standalone employee and third party costs 2021
Board of Directors	\$ 824,073	\$ 840,554
Executive Management	2,256,747	2,301,882
Less: PNG President	(520,000)	(530,400)
Total Executive Management	1,736,747	1,771,482
Corporate Resources (incl. Legal & Compliance)	560,647	571,859
Accounting, Tax & Finance	949,639	969,651
Total	\$ 4,071,105	\$ 4,153,547
Shared Corporate Services cost	1,835,433	1,872,142
Savings to PNG	\$ 2,235,671	\$ 2,281,405

**note totals may not reconcile due to rounding differences*

34.1 For each Shared Corporate Service function, please provide the costs required in 2011, pre-AltaGas Ltd amalgamation. Adjust for inflation and compare to the 2020 KPMG Report estimate of the standalone employee and third party costs. Please provide discuss the reasons for any significant variances.

Further on page 6 of Appendix B it states:

PNG Management assumes that as a standalone public company, it would have required the services of a seven member Board consisting of one executive and six non-executive members. PNG Management based the annual fees and retainers payable to the Board of Directors on the 'Corporate Board Governance and Director Compensation for Canada, Report for 2018' published by Korn Ferry (the "Korn Ferry Report").

Page 7 of Appendix B states:

The Board size of 6 non-executive Board members and the fees and retainers payable to Board members are consistent with the average amounts paid to Board members of "micro companies", per the Korn Ferry Report, where no meeting fees are paid. Micro companies are the smallest company category identified in the report, and are defined as companies with assets of less than \$1.5 billion, and would be the category PNG would fall into from a size perspective.

- 34.2 Please provide the total number of board members PNG required the services of in 2011, pre-AltaGas Ltd. amalgamation. If less than seven, please provide justification for the additional board members.
- 34.3 Please provide the average and median asset size of the "micro companies" per the Korn Report. Please compare to PNG's asset size to the median and average and discuss any differences.

Further page 7 of Appendix B states:

...to further assess the reasonableness of PNG Management's assumption to use the Korn Ferry Report, we also compared the annual fees and retainer amounts to amounts paid to ACI and FortisBC Energy Inc. ("FortisBC") Board members per their public filings. We consider the two companies to be comparable to PNG, being utility companies operating in Western Canada. Although the ACI and FortisBC amounts are lower than the Korn Ferry Report numbers, they are sufficiently approximate to suggest that it is reasonable for PNG Management to have used the Korn Ferry Report numbers as a reference point.

- 34.4 Please use specific metrics (i.e. asset size, revenues, etc.) to justify why ACI and FortisBC are considered comparable to PNG as a standalone entity.
- 34.5 Considering both ACI and Fortis BC amounts are lower than the Korn Ferry Report number, please comment on the validity of using the Korn Ferry Report to base the annual fees and retainers for Board of Directors for a standalone PNG.

Page 8 of Appendix B states:

We compared the CEO and CFO compensation payable to ACI's public filings and confirmed that the amounts used by PNG Management are consistent with the total direct compensation disclosed in ACI's filings. As a reasonableness check, we also compared the amounts to the compensation paid by FortisBC to its CEO and CFO per its public filings, and noted that the amounts are higher than that paid by FortisBC. We were also provided access by ACI to the '2019 CA Mercer Total Compensation Survey for the Energy Sector – General Benchmark' (the "Mercer Survey").

- 34.6 Please compare PNG's costs for the executive management positions in 2011, pre-AltaGas Ltd. amalgamation, to the costs of FortisBC executive management positions in 2011.
- 34.6.1 Considering the compensation paid by FortisBC to its CEO and CFO are lower than that estimated for PNG as a standalone entity, please justify the additional costs.

Pages 8 and 9 of Appendix B state:

In estimating the fair value of PNG's hypothetical stand-alone accounting costs, PNG Management assumed that two additional accounting staff members would be required to fulfill all the additional accounting requirements of PNG, and that significant additional costs, such as higher insurance, additional credit rating costs and incremental audit and related fees would have to be incurred ("Net Additional Third Party Costs").

- 34.7 Please provide a breakdown of the 2011 and 2020 accounting, tax and finance stand alone costs.
- 34.8 Please elaborate on the duties that would be completed by the two additional accounting staff members. Discuss whether these positions were staffed in 2011, pre-AltaGas Ltd. amalgamation, and whether there were subsequent cost reductions as a result.

Page 9 of Appendix B states:

PNG Management assumes that the services of a General Counsel would be required on a standalone basis, to provide PNG with the necessary legal advice, corporate governance and corporate secretarial services it would require. The General Counsel's role and seniority would be comparable to that of ACI's General Counsel.

- 34.9 Please explain whether PNG assumed the same level of services of a General Counsel in 2011, pre-AltaGas Ltd. amalgamation. If not, please discuss why it is required now.

Page 10 of Appendix B states:

We compared and agreed the amount to the total direct compensation paid per the Mercer Survey for an executive level General Counsel. As a reasonableness check, we also compared the compensation to base salary amounts for a General Counsel per the Robert Half Survey, and noted that the base salary amounts used for the calculation fall within the 50th to 95th percentile range.

- 34.10 Please provide the median General Council salary per the Mercer Survey and Robert Half Survey.
- 34.10.1 Please compare the median General Council salaries in each of the surveys to that used in the KPMG Report, and comment on any differences.

**35.0 Reference ADMINISTRATIVE & GENERAL EXPENSES
Exhibit B-2, Section 2.5.7.2, p. 66; Tab 1, p. 6
Non-Regulated Services to Affiliates**

On page 66 of the Amended Application, PNG states:

For Test Years 2020 and 2021, PNG has estimated that PNG's President would spend approximately 20% of her time fulfilling her obligations as an ACI executive, and that PNG's Director of Business Development would spend approximately 30% of his time fulfilling his obligations for BMWP. Based on these factors, PNG-West is reporting cost recoveries from the affiliates of \$207,000 in Test Year 2020 and \$212,000 in Test Year 2021 as a cost adjustment.

- 35.1 Please confirm whether the forecast cost recoveries in Test Year 2020 and 2021 are solely for non-regulated service (NRS) activities provided by PNG's President and Director of Business Development.
- 35.1.1 If not confirmed, please provide a breakdown of the PNG employees that performed NRS activities and the costs associated with each for 2020 and 2021.
- 35.2 Please explain how PNG ensures there is segregation of NRS activities from regulated activities thereby mitigating any risk of cross subsidization.
- 35.3 Please discuss whether there are cost recoveries for the use of PNG resources, facilities, or general overhead as a result of the NRS activities. If so, please indicate where these cost recoveries are recorded in the financial schedules. If not, please explain why not.

Further on page 66 of the Amended Application, PNG states:

PNG-West is proposing that the one-year interest bearing Transfer Pricing deferral account that was approved in the decision on the PNG-West 2012 Revenue Requirement Application (BCUC Order G-13-12) be reinstated and be used to capture differences between the forecast and the actual affiliate charges.

- 35.4 Please discuss the factors that contribute to forecast uncertainty for NRS activities. As part of the explanation, please comment on how forecasting NRS costs has changed as compared to the previous Test Period.
- 35.5 Please explain whether the deferral account will only capture the difference between forecast and actual cost recoveries for NRS activities for Test Year 2020.
- 35.5.1 If not, please discuss the estimated duration of the deferral account, and the amortization period.
- 35.6 Please provide the interest rate that will be applicable to the deferral account and the rationale for the rate proposed.

F. TRANSFERS TO CAPITAL (CAPITALIZED OVERHEAD)

36.0 Reference: TRANSFERS TO CAPITAL (CAPITALIZED OVERHEAD) Exhibit B-2, Section 2.6, pp. 69-70, Table 27 Transfers to Capital

On page 69 of the Amended Application, PNG provides the following table that summarizes the capital overhead allocation, both historical and that forecast for Test Year 2020 and Test Year 2021:

Table 27: Transfers to Capital and Overhead Capitalization

Description	Test Year 2021	2021 to 2020 Change		Test Year 2020	2020 to 2019 Change		Decision 2019	Actual 2019	Actual 2018	Actual 2017	Actual 2016	Actual 2015
		\$	%		\$	%						
Overhead Capitalization Rate [(A)/(B)]	6.8%	0.2%	3.2%	6.6%	1.9%	40.3%	4.7%	4.7%	5.5%	4.7%	3.8%	3.7%
Overhead as % of Capital Expenditures [(A)/(C)]	10.1%	(0.6%)	(5.7%)	10.7%	(6.8%)	(39.0%)	17.6%	8.1%	5.9%	20.9%	15.9%	17.6%
(A) Transfers to Capital												
Operating	699	42	6.4%	657	147	28.8%	510	510	543	397	362	314
Administrative & General	855	22	2.6%	833	439	111.5%	394	421	515	496	372	367
Total Transfers to Capital	1,554	64	4.3%	1,490	586	64.9%	904	931	1,057	893	734	682
(B) Expenses												
Operating	11,710	18	0.2%	11,692	2,139	22.4%	9,553	8,777	9,295	9,234	8,989	8,519
Maintenance	587	12	2.1%	575	70	13.9%	505	495	327	399	388	382
Administrative & General	8,858	138	1.6%	8,720	559	6.9%	8,161	9,475	8,717	8,576	9,242	8,929
Total Expenses - Net of Transfers to Capital	21,156	168	0.8%	20,987	2,768	15.2%	18,219	18,747	18,338	18,210	18,619	17,830
Plus: Transfers to Capital	1,554	64	4.3%	1,490	586	64.9%	904	931	1,057	893	734	682
Total Expenses - Gross	22,710	232	1.0%	22,478	3,354	17.5%	19,123	19,678	19,396	19,103	19,353	18,511
(C) Capital Expenditures (before Overhead)	15,385	1,477	10.6%	13,908	8,762	170.2%	5,147	11,497	17,860	4,272	4,609	3,868

- 36.1 Please confirm or explain otherwise that the 2019 actual overhead % as a percent of capital expenditures is lower than the decision 2019 % as a result of the increased actual capital expenditures as compared to decision.
- 36.2 Please discuss if PNG conducts an assessment of the actual time spent and costs associated with corporate and management salary and benefits costs, support staff labour and benefit costs and field staff benefit costs, in order to assess the reasonableness of the overhead capitalization rate. If not, please explain why not. If yes, please provide the results of the analysis for 2018 and 2019.
- 36.3 For Test Years 2020 and 2021, please separately show how much of the change in Operating Transfers to Capital and Administrative and General transfers to capital are related to: (i) changes to forecast capital expenditures; (ii) a change in allocation of corporate and management salaries and benefits to capital projects; (iii) a change in allocation of support staff salaries and benefits to capital projects; and (iv) a change in allocation of field staff benefit costs to capital projects.

On page 70 of the Amended Application, PNG state that “[t]ransfers to capital for Test Year 2020 are forecast to increase in comparison to Decision 2019 primarily due to greater forecast capital expenditures, and due to an increase in direct capital labour over prior years as planned activities are to make greater use of PNG-West resources rather than contractors in 2020 and 2021.”

- 36.4 With reference to the table on historic and forecast contractor costs provided in response to BCUC IR 36.1 above, please provide the amount of any corresponding decrease in contractor costs for 2020 and 2021 in relation to the plan to make greater use of PNG West resources.

G. PROPERTY TAXES

**37.0 Reference: PROPERTY TAXES
Exhibit B-2, Section 2.7, p. 71
Property Taxes**

On page 71 of the Amended Application, PNG provided the following table showing the forecast and historic property taxes:

Table 28: Property Taxes

Expense Item	Test Year 2021	2021 to 2020 Change		Test Year 2020	2020 to 2019 Change		Decision 2019	Actual 2019	Actual 2018	Actual 2017	Actual 2016	Actual 2015
		\$	%		\$	%						
		\$000's										
Property taxes	3,735	73	2.0%	3,662	156	4.5%	3,505	3,505	3,437	3,379	3,313	3,322
1% in lieu	385	-	0.0%	385	(36)	(8.5)%	421	421	349	371	371	349
Total	4,120	73	1.8%	4,047	121	3.1%	3,926	3,926	3,786	3,751	3,684	3,670

Further on page 71, PNG states that “[t]he forecast for Test Year 2020 property taxes is based on 2019 assessed values with an inflationary increase of 2%.”

- 37.1 Please reconcile the inflationary increase of 2 percent in 2020 to the table in the preamble.

H. DEFERRAL ACCOUNTS

38.0 Reference DEFERRAL ACCOUNTS
Exhibit B-2, Section 2.9, pp. 74-75.
Amortization – Net Salvage and Removal

On page 74 of the Amended Application PNG states:

PNG has forecast \$305,000 of removal and retirement costs and has included this amount as a drawdown of this credit deferral account in Test Year 2020. The majority of these costs will be used to formally abandon the Rio Tinto Lateral Plant Site as no gas is expected to flow in this pipeline in the future.

On page 75 of the Amended Application PNG states, “has also forecast \$34,000 of removal and retirement costs for series in Test Year 2021.”

38.1 Please explain how the 2020 and 2021 forecast amounts are derived.

39.0 Reference DEFERRAL ACCOUNTS
Exhibit B-2, Section 2.9, p. 75; Tab 2, pp. 19-20
Amortization – Demand Side Management

On page 75 of the Amended Application, PNG provides context on the Demand Side Management (DSM) deferral account.

On Tab 2, pages 19 and 20 PNG presents the continuity of deferred charges for the Test Year 2020 and 2021. Line 7 of each page is the DSM deferral account.

39.1 Please confirm or explain otherwise, that PNG defers all of its DSM expenditures to the DSM regulatory account.

40.0 Reference Deferral Accounts
Exhibit B-2, Section 2.9, p. 78
PLP Project Amendment Sharing

On page 78 of the Amended Application PNG seeks approval for the dissolution of the PLP Project Amendment Sharing deferral account.

40.1 Please provide an update on the status of the PLP project and identify any forecast 2020 and 2021 costs associated with the PLP project.

41.0 Reference DEFERRAL ACCOUNTS
Exhibit B-2, Section 2.9, p. 78
Amortization – Resource Plans

On page 76 of the Amended Application PNG states:

This deferral account records the variance between actual and forecast costs incurred in the preparation and review of PNG’s resource plans. PNG-West and PNG(NE) filed the 2019 Consolidated Resource Plan in October 2019, and anticipate future submissions to be made every five years. There is no forecast amortization for Test Year 2020.

41.1 Considering the Consolidated Resource Plan was prepared and subsequently filed in October 2019, please explain why no additions were included for 2019.

42.0 Reference DEFERRAL ACCOUNTS
Exhibit B-2, Section 1.3, p. 7; Section 2.9, p. 78
Amortization – Option Fee Payment

On page 78 of the Amended Application, PNG states:

This interest bearing deferral account was initially established under Order G-174-08 to track the receipt of option fee payments received from customers to secure future transportation capacity in PNG-West’s system.

42.1 Please confirm, or explain otherwise, that the LNG Partners Option Fee Payment deferral account does not include payments for active contracts whereby the option fees may be required to be credited back to the other party.

Further on page 78 of the Amended Application, PNG states: “As at December 31, 2019, the credit balance of this account was \$4.677 million. For Test Year 2020 and Test Year 2021, PNG-West is proposing to drawdown \$0.857 million and \$2.825 million respectively.”

42.2 Please provide the rate impact for 2020 and 2021 in the absence of any amortization of the LNG Partners Option Fee Payment Deferral account.

43.0 Reference DEFERRAL ACCOUNTS
Exhibit B-2, Tab 2, p. 19
Amortization – One Year Amortization Period

On page 19, Tab 2, PNG provides a continuity schedule of deferral charges for Test Year 2020. An extract of the schedule is provided below:

<u>Line No.</u>	<u>Description</u>	<u>Interest Rate</u>	<u>Amortization Period</u>	<u>Actual Balance '19</u>	<u>Additions</u>	<u>Imputed Interest</u>	<u>Amortization</u>	<u>Test Year Balance '20</u>
...								
12	NOT INCLUDED IN RATE BASE:							
13	Pipeline Inspections	STI	1 yr	595	-	13	609	-
14	Line break costs	WACD	n/a	(134)	-	(2)	(188)	52
15	Investigative Digs	STI	1 yr	(470)	-	(11)	(481)	-
16	PLP Termination Cost of Service Credit	STI	1 yr	(0)	-	(0)	(0)	-
17	Rate Smoothing	STI	1 yr	-	-	-	-	-
18	RSAM	WACD	n/a	3,184	(2,492)	106	-	798
19	GCVAs	WACD	n/a	289	(164)	16	-	141
20	Pension / NPPRB	WACD	3 yrs	(78)	-	(4)	(7)	(75)
21	Accelerated Capital Cost Allowance - 2019	STI	1 yr	(176)	-	(4)	(180)	0
22	Industrial Customer Deliveries	STI	1 yr	(1,308)	-	(30)	(1,337)	-
23	BCUC Fees	STI	1 yr	72	-	2	74	-
24	BCUC Proceedings	STI	1 yr	(35)	-	(1)	(36)	-
25	Property Tax Variance	STI	1 yr	(23)	-	(1)	(24)	-
26	Resource Plans	STI	1 yr	-	-	-	-	-
27	Short term interest	STI	1 yr	(12)	-	(0)	(12)	-
28	Long term interest	STI	1 yr	(114)	-	(3)	(116)	-
29	Old Revolving Debt Issue Costs	STI	1 yr	-	-	-	-	-
30	LNG Partners Option Fee Payment	STI	tbd	(4,677)	-	(194)	(857)	(4,014)
31	Management Fee Deferral	STI	tbd	-	676	13	-	689
32	Sub-Total: Gross Interest Bearing Deferrals			(2,887)	(1,980)	(99)	(2,557)	(2,409)

43.1 For any deferral accounts that capture forecast and actual variances from the prior Test Period (in this case 2018 and 2019), please discuss the pros and cons of a one-year amortization period as compared to a two-year amortization period.

43.1.1 Please provide the rate impact for 2020 and 2021 of applying a two-year amortization period to these deferral accounts.

44.0 Reference DEFERRAL ACCOUNTS
Exhibit B-2, Tab 2, pp. 19-20; PNG-West 2018-2019 RRA proceeding, Exhibit B-3, BCUC IR 19.6.
Management Fee Deferral

On pages 19 and 20, Tab 2, PNG presents the continuity of deferred charges for the Test Years 2020 and 2021. Line 31 of each page is the Management Fee Deferral.

In response to BCUC IR 19.6 in the PNG-West 2018-2019 RRA proceeding, PNG provided the following response:

Compared with the Actual 2017 amount, the AltaGas management fee for Test Years 2018 and 2019 is forecast to be lower by \$0.3 million and \$0.8 million, respectively. The reduction is attributable to a reduction in the cost pool allocator. PNG's MMF allocator in 2017 was 4.08%; its MMF allocator in Test Year 2018 is forecast to be 2.7%, further reducing to 2.2% in Test Year 2019...

44.1 Please clarify the nature of this deferral account and comment on any changes in cost pools or cost pool allocators from the prior Test Period.

45.0 Reference DEFERRAL ACCOUNTS
PNG-West Division 2018-2019 RRA (PNG-West - 2018-19 RRA –) Order G-151-18; PNG-West - 2018-19 RRA –Compliance Filing dated September 14, 2018
Compressor Engine Overhaul Costs

Directive 14 of Order G-151-18 states:

PNG's request to record the compressor engine overhaul costs in a new rate base deferral account is denied. PNG is directed to capitalize these costs in accordance with US Generally Accepted Accounting Principles and depreciate over a period of 5 years once those assets are placed into service.

In the PNG-West-2018-19 RRA –compliance filing dated September 14, 2018, PNG stated:

Further, the Decision 2019 Transfers to Capital – Administrative & General is greater by \$7,000 from Test Year 2019 (Tab 1, page 2, line 15). These increases primarily reflect the directive to capitalize compressor engine overhaul costs in 2019 (Directive 14), and the reduction in new services and distribution mains in PNG(NE) (Order G-164-18, Directives 12 and 13, respectively).

45.1 Please confirm, or explain otherwise, that PNG is depreciating the compressor engine overhaul costs over a period of five years.

I. SHARED SERVICES RECOVERY FROM PNG(NE)

46.0 Reference: SHARED SERVICES RECOVERY FROM PNG(NE)
Exhibit B-2, Section 2.11, pp. 81, 86, 89, 91; PNG-West 2018-2019 RRA proceeding, Exhibit B-3, BCUC IR 39.2.
Shared Services Recovery from PNG(NE)

On page 81 of the Amended Application, PNG states:

PNG continues to apply the shared services cost allocation and recovery methodology as approved for use in Decision 2013. While there have not been any changes to this

approved methodology, there have been, by design, changes to cost pools and cost allocators to reflect revised forecasts for base costs and financial and operating metrics for each test year under review.

- 46.1 Please explain if there have been any changes in circumstances for PNG and PNG(NE) since Decision 2013 that justify a review of the shared services methodology. If yes, please discuss the change in circumstances. If not, please provide an explanation for why the circumstances have not changed and elaborate on why the methodology is still appropriate.
- 46.2 Please provide an estimate of the time and costs associated with conducting a review of the shared services methodology.

On page 86 of the Amended Application, PNG states that it “will be incurring annual sustainment costs” for the Maximo asset management system of approximately \$260,000.

- 46.3 Please provide the amount, if any, of the Maximo sustainment costs incurred in 2019.

In relation to cost pool 721 – Administration, PNG states on page 89 that the “[o]verall cost pool increase of approximately \$857,000 [is] due to a number of factors, including: JDE sustainment costs; higher Vancouver office rent; costs associated with transitioning to Microsoft 365; costs related to the HRIS; and general inflationary costs increases on all costs in this cost pool over Decision 2019 amounts. [Emphasis Added]

- 46.4 Please clarify whether inflationary cost increases were applied on all costs in this cost pool, including any on-off costs.

In response to BCUC IR 39.2 in the PNG-West 2018-2019 RRA proceeding, PNG provided the following table:

Table 39.2 – Shared Service Composite Allocators

Test Year / Division	Customer Count		Employee Count		Rate Base		Composite
	#	%	#	%	\$	%	Average w/o Time
2019 Test Year							
PNG-West	20,401	48.8%	92	75.4%	143,323	63.7%	62.7%
FSJ	12,865	30.8%	15	12.3%	48,272	21.5%	21.5%
DC	7,285	17.4%	13	10.7%	28,806	12.8%	13.6%
TR	1,242	3.0%	2	1.6%	4,478	2.0%	2.2%
PNG(NE)	21,393	51.2%	30	24.6%	81,556	36.3%	37.3%
Total	41,793	100.0%	122	100.0%	224,878	100.0%	100.0%
2018 Test Year							
PNG-West	20,385	49.0%	92	75.4%	138,190	64.8%	63.1%
FSJ	12,723	30.6%	15	12.3%	45,110	21.2%	21.4%
DC	7,228	17.4%	13	10.7%	26,029	12.2%	13.4%
TR	1,242	3.0%	2	1.6%	3,828	1.8%	2.1%
PNG(NE)	21,193	51.0%	30	24.6%	74,967	35.2%	36.9%
Total	41,579	100.0%	122	100.0%	213,157	100.0%	100.0%
Actual 2017							
PNG-West	20,583	48.9%	90	74.4%	135,475	64.9%	62.7%
FSJ	12,870	30.5%	14	11.6%	43,351	20.8%	21.0%
DC	7,445	17.7%	13	10.7%	24,026	11.5%	13.3%
TR	1,235	2.9%	2	1.7%	3,202	1.5%	2.0%
PNG(NE)	21,550	51.1%	29	24.0%	72,990	35.0%	36.7%
Total	42,133	100.0%	121	100.0%	208,756	100.0%	100.0%
Actual 2016							
PNG-West	20,513	49.3%	89	73.6%	135,958	66.9%	63.2%
FSJ	12,666	30.4%	14	11.6%	40,287	19.8%	20.6%
DC	7,205	17.3%	13	10.7%	23,091	11.4%	13.1%
TR	1,246	3.0%	2	1.7%	3,069	1.5%	2.1%
PNG(NE)	21,117	50.7%	29	24.0%	68,076	33.5%	36.1%
Total	41,630	100.0%	121	100.0%	203,191	100.0%	100.0%

46.5 Please recreate the table above for each of 2018 and 2019 actuals and Test Years 2020 and 2021 forecasts.

J. RATE BASE

**47.0 Reference: RATE BASE
Exhibit B-2, Section 2.13.1.1.1, p. 97
2020 Planned – Recurring Capital Expenditures – Investigative dig cut-outs**

On page 97 of the Amended Application, PNG states:

For pipeline sections with a larger density of potentially significant anomalies, pipe replacement is more cost effective than on-going site-specific inspections and repairs...The forecast expenditure for 2020 of \$1,021,000 represents the anticipated cost for cut-outs as a result of the four planned ILI runs and the need to outsource a large portion of this work due to internal resource constraints.

47.1 Please provide additional information regarding the proposed cut-outs, including: (i) location of cut-outs, (ii) length of replaced pipe, (iii) diameter of pipe, and (iv) existing pipe anomalies identified.

**48.0 Reference: RATE BASE
Exhibit B-2, Section 2.13.1.1.1, p. 97
2020 Planned – Recurring Capital Expenditures – Unspecified mainline repairs**

On page 97 PNG states:

The five year average (2015-2019) expenditure for this type of work is \$695,000 and reflects recent unplanned pipeline repairs/remediation (Salmon River, MP 250, etc.). With the increasing age of PNG-West's pipeline assets, along with increased scrutiny from not only within PNG, but also from regulators, insurers, and other stakeholders (Indigenous Nations, land owners, agencies with asset overlap, etc.), PNG-West can expect upward pressure on the timeliness and scope associated with unplanned repairs.

48.1 Please provide the unspecified mainline repairs costs for actual and decision 2015 to 2019 and forecast 2020 and 2021.

48.2 In addition to potentially assessing the five-year average expenditure for this type of work, please describe how PNG has forecast the costs associated with unspecified mainline repairs for 2020 and 2021.

48.3 Please quantify or provide specific examples of the upward pressure on timeliness and scope that PNG has experienced with respect to its unplanned repairs.

48.3.1 Please elaborate whether upward pressure on scope of unspecified mainline repairs may exceed PNG's ability to complete the repair scope within the test year. Please discuss any strategies PNG has implemented to mitigate this risk.

**49.0 Reference: RATE BASE
Exhibit B-2, Section 2.13.1.1.1, pp. 98-99
2020 Planned – Non-Recurring Capital Expenditures – Transmission Mainline Repairs and Assessments**

On pages 98-99 of the Amended Application, PNG states:

With the recent emergence of natural gas pipeline crack detection tool technology free from need for liquid couplant (EMAT vs UT tools) and commercially marketed in diameters small enough to suite those of PNG West's operating transmission pipelines, the PNG ILI plan established as part of PNG's integrity management planning and associated regulatory compliance has been revised to incorporate EMAT use where possible...

PNG has also been monitoring the Canadian Transportation Safety Board (TSB) investigation relating to Enbridge's natural gas pipeline rupture and ignition that occurred northeast of Prince George. PNG believes its past and planned use of EMAT aligns with the TSB's pipeline transportation safety advisory letter (617-02/19) that highlights the importance of stress corrosion cracking management...

Forecast costs for both Test Year 2020 and Test Year 2021 have been based on a combination of vendor budgetary pricing, 2018 EMAT run actual costs, and the adjustment of variable costs...The 2020 costs will be for the actual ILI run execution, and the 2021 costs will be for final report deliverables and other associated trailing costs.

- 49.1 Please elaborate on and discuss the risks associated with SCC for PNG's pipelines and any risks associated with delays in completing work scheduled for transmission mainline repairs and assessments.
- 49.2 Please clarify how the recommendations made in the TSB's pipeline transportation safety advisory letter (617-02/19) have impacted PNG's approach to integrity management. Please discuss whether PNG has identified the SCC-susceptible pipeline segments within its system (e.g. due to use of polyethylene tape coating).
- 49.3 Please elaborate on the technology changes which have allowed PNG to increase implementation of in-line inspections (ILI). Specifically discuss the range of PNG transmission pipeline diameters which have become suitable for ILI as a result of technology improvements.
 - 49.3.1 Please discuss the changes to associated regulatory standards which have resulted in PNG's expanded use of ILI.
- 49.4 Please confirm whether ILI execution is typically completed on a regular frequency.
 - 49.4.1 If yes, please discuss criteria used to established frequency interval for ILI execution. If no, please explain.
- 49.5 Please elaborate on whether PNG expects to incur capital costs associated with the retrofit of transmission pipeline segments in order to make them ILI compatible.
- 49.6 Please elaborate how PNG forecasts the costs for this type of work and quantify the variable cost adjustments associated with pipeline segment length, terrain, area remoteness, etc.
 - 49.6.1 Please discuss any strategies PNG has implemented to reduce the costs associated with ILI runs.

**50.0 Reference: RATE BASE
Exhibit B-2, Section 2.13.1.1.1, pp. 99-100
2020 Planned – Non-Recurring Capital Expenditures – Salvus to Galloway Remediation**

On pages 99-100 of the Amended Application, PNG states:

This multi-year program is focused on addressing integrity concerns on the Prince Rupert NPS 8 transmission mainline commenced in 2018, with completion of a sophisticated and modern inline inspection, geo-hazard assessment, and front end access planning and mitigation works design...

Following-up on the 2018 ILI run, PNG-West has identified a substantial quantity of metal loss and dent integrity related features that need immediate prioritization and address to comply with the CSA Z662 standard. PNG-West has also overlaid desktop studies completed in 2018 by a third-party engineering firm so as to understand risks due to geo-hazards such as landslide, rockfall, hydraulic scour or accretion, flood, and avalanche...

...full pipeline system remediation [is] expected to be completed by 2023. For 2020, PNG-West will focus on planning and addressing high-priority and urgent segments needing immediate repair and improving access to remote locations. PNG-West plans to advance an application to the BCUC in the second or third quarter of 2020 seeking a CPCN for the full execution of the project

- 50.1 Please provide an update on the expected filing timeline for the CPCN application with the BCUC and any other regulatory applications that are required e.g. permits and/or environmental assessment applications.
- 50.2 Please provide the alternatives that are available for the Salvus to Galloway Remediation project, the pros and cons and total costs associated with each alternative and ultimately why they were not proposed.
- 50.3 Please identify any risks associated with delays to the timing of execution of the planned capital activities for this project.
- 50.4 Please list the significant project execution risks PNG has identified regarding this project. Please discuss any mitigation measures proposed to address these identified risks.
- 50.5 Please provide any preliminary feasibility reports, risk assessment reports, engineering reports, costing reports completed regarding this project.
- 50.6 Please provide a table with the forecast and actual (where applicable) capital costs for each year with project expenditures, including years other than the 2020 and 2021 test period. Please provide a summary of the scope of work expected to be completed in each year.
- 50.7 Please provide detailed information regarding the extent of the metal loss and dent integrity features identified in 2018. Please elaborate under which section of the CSA Z662 standard is this segment of pipe considered non-compliant.
 - 50.7.1 Please confirm whether or not PNG has been directed by any regulatory authority (e.g. BC OGC) to complete any of the remediation work being proposed.
- 50.8 Please clarify whether the decision to file a CPCN application with the BCUC for this project was made due to the capital cost estimate for the project, the scope of the project, a public interest component of the project, and/or some other criteria.
- 50.9 Please confirm the level of scope definition (cost estimate class) for the forecasted 2020 and 2021 costs included in the RRA for this project.
- 50.10 Please discuss whether the potential outcome of the RECAP process could have an impact on the scope of work for this remediation project. Specifically, would the reactivating and reinforcing project activities envisioned as part of the RECAP proceeding also address integrity concerns on this segment of pipeline? If so, please elaborate how PNG has considered potential RECAP related projects when establishing pipeline integrity Capital Expenditures currently included in this RRA.

**51.0 Reference: RATE BASE
Exhibit B-2, Section 2.13.1.1.1, p. 100
2020 Planned – Non-Recurring Capital Expenditures – Compressor Station Upgrades**

On page 100 of the Amended Application, PNG states:

A number of compressor station upgrades across the PNG-West system that have been deferred, but must now proceed to keep the facilities in a safe operating condition. Required activities include: installing new isolation valves at R3 compressor station – this is required to address safety and maintenance issues;

- 51.1 Please discuss any risks associated with delays to the timing of execution of the planned capital activities for this project in both 2020 and 2021.
- 51.2 Please elaborate how PNG prioritizes the various compressor station upgrade activities. Has PNG developed a plan to guide decision making regarding execution of these upgrade activities for 2020 and 2021 and beyond?
- 51.3 Please clarify whether the safety and maintenance issues that the installation of new isolation valves at R3 will address. Please provide additional detail regarding the scope and schedule of this work. Please elaborate on the alternative solutions PNG considered in order to address the safety and maintenance issues identified.

**52.0 Reference: RATE BASE
Exhibit B-2, Section 2.13.1.1.1, p. 100
2020 Planned – Non-Recurring Capital Expenditures – LNG Canada Let Down Station #1**

On page 100 of the Amended Application, PNG states:

PNG-West anticipates entering in to a GSA in the first quarter of 2020, well in advance of executing the full scope of the project and plans to make application to the BCUC seeking approval for a CPCN for this project.

- 52.1 Please provide a schedule of project milestones, including preliminary engineering design initiation, large equipment procurement, BCUC CPCN application submission, construction completion, commissioning and gas delivery. Please also include the expected timeline for other regulatory applications (e.g. permits and/or environmental assessment applications).
- 52.2 Please discuss any risks associated with delays to the timing of execution of the planned capital activities for this project.
- 52.3 Please list the significant project execution risks PNG has identified regarding this project. Please discuss any mitigation measures proposed to address these identified risks.
- 52.4 Please provide any preliminary feasibility reports, risk assessment reports, engineering reports, costing reports completed regarding this project.
- 52.5 Please clarify over how many years this multi-year project is expected to extend. Please provide a table with the forecast and actual (where applicable) capital costs for each year with project expenditures, including years other than the 2020 and 2021 test period. Please provide a summary of the scope of work expected to be completed in each year.
- 52.6 Please clarify whether the decision to file a CPCN application with the BCUC was made due to the capital cost estimate for the project, the scope of the project, a public interest component of the project, and/or some other criteria.

**53.0 Reference: RATE BASE
Exhibit B-2, Section 2.13.1.1.1, p. 101
2020 Planned – Non-Recurring Capital Expenditures – Geographic Information System (GIS)**

On page 101 of the Amended Application, PNG states:

The overall project cost is estimated at \$2.4 million that has been incurred over three year (2018-2020) planned implementation period. Project costs are being shared by PNG West and PNG(NE) service areas. The project is on-schedule and on-budget...

In 2020, PNG will be migrating the remaining 40% of the distribution asset data into the ESRI system. Upon completion, PNG will focus on applications, reporting, interfaces, Q/A and field device implementation. PNG will also finalize its sustainment model and process changes to ensure the GIS system is up-to-date and accurate in future years.

- 53.1 Table 3 in the 2018-2019 PNG West RRA decision¹ includes a breakdown of the consolidated GIS costs allocated to each division and the allocator. Please provide a revised table that also includes columns for actual 2018 and 2019 costs and forecast 2020 costs with an explanation for any variances from budget.
- 53.2 Please clarify what is the estimated ongoing annual costs of maintaining an accurate GIS system in future years.

**54.0 Reference: RATE BASE
Exhibit B-2, Section 2.13.1.1.1, pp. 101-102
2020 Planned – Non-Recurring Capital Expenditures – High Voltage Alternating Current Mitigation**

On pages 101 and 102 of the Amended Application, PNG states:

A high-voltage power line is being installed over a PNG-West in-service 6" pipeline in Kitimat. In order to mitigate the effects of alternating current (AC) on this pipeline, a grounding system must be purchased and installed to reduce the predicted induced voltage down to safe levels.

- 54.1 Please provide a table with the forecast and actual (where applicable) capital costs for each year with project expenditures, including years other than the 2020 and 2021 test period. Please provide a summary of the scope of work expected to be completed in each year
- 54.2 Please elaborate which utility or company is responsible for the installation of the high-voltage power line.
- 54.3 Please clarify PNG's standard practices with respect to the installation of high-voltage power lines in proximity to its pipelines.
- 54.4 Has PNG pursued, received or expects to receive any compensation for having to mitigate the induced voltage on its pipeline?

¹ https://www.bcuc.com/Documents/Proceedings/2018/DOC_52226_G-151-18-PNGW-RRA-Reasons-for-Decision-Redacted.pdf

55.0 Reference: RATE BASE
Exhibit B-2, Section 2.13.1.1.1, pp. 102, 103 and 110
2020 and 2021 Planned – Non-Recurring Capital Expenditures – MP 195.9 Exposed Pipe Lowering and MP 297 Exposed Pipe Remediation and MP 208 Rock Armoring

On page 102 of the Amended Application, PNG states, “the exposed pipe is under a regular monitoring program and is planned for remediation via lowering.”

On page 103 of the Amended Application, PNG states “The intent of the first phase of this remediation project is to perform the front-end engineering analysis, options and feasibility assessments, detailed design, and permitting to execute remediation works in the following year”.

On page 110 of the Amended Application, PNG states:

A short segment of transmission pipeline at MP 208 is at risk of exposure and destabilization as a result of river bank migration and bank erosion. The area is under a current monitoring program but river hydrology and ongoing erosion suggests future action to protect and reinforce the asset will be required.

55.1 For each of the MP 195.9 Exposed Pipe Lowering, the MP 297 Exposed Pipe Remediation and the MP 208 Rock Armoring projects, provide the total project costs by year and the scope of work to be completed in each year.

56.0 Reference RATE BASE
Exhibit B-2, Section 2.13.1.1.1, p. 102.
2020 Planned – Non-Recurring Capital Expenditures – Information & Data Management Systems – Management of Change

On page 102 of the Amended Application, PNG states:

PNG has also commenced a management of change (MOC) initiative to further develop and update PNG’s current management of change (MOC) system. In 2020, \$96,000 has been budgeted for project activities that include document and standard development, electronic platform implementation, and company wide training. PNG anticipate that the improved platform will enable it to plan, track, and audit any system changes and to process safety risks with a capability that is aligned with industry best practices and API RP 1173.

56.1 Please elaborate on the MOC initiatives and the activities to update the current MOC system.

56.2 Please provide a breakdown of the total project costs by year and between expenses and capital costs.

57.0 Reference: RATE BASE
Exhibit B-2, Section 2.13.1.1.1, pp. 98, 107
2020 and 2021 Planned – Non-Recurring Capital Expenditures – Computer Hardware/Software

The forecast Computer Hardware/Software capital expenditures are \$218,297 in 2020 and \$192,700 in 2021.

57.1 Please identify the 2020 and 2021 computer hardware/software capital expenditures that relate to specific projects.

**58.0 Reference: RATE BASE
Exhibit B-2, Section 2.13.1.1.2, p. 105
2021 Planned – Recurring Capital Expenditures – Mobile/Heavy Equipment**

On page 105 of the Amended Application, PNG states, “Seven replacement vehicles will be acquired during Test Year 2021 all of which meet PNG-West’s established criteria of 8 years or 160,000 kms.”

- 58.1 Please provide a breakdown of the decision and actual 2015 to 2019 and forecast 2020 and 2021 Mobile/Heavy equipment costs between mobile and heavy equipment purchases.
- 58.2 Please discuss any risks associated with delaying the planned 2020 and 2021 heavy equipment purchases.
- 58.3 Please discuss if PNG’s vehicle replacement criteria include mobile equipment and if so, the specific criteria that are applicable.

**59.0 Reference: RATE BASE
Exhibit B-2, Section 2.13.1.1.2, p. 108
2021 Planned – Non-Recurring Capital Expenditures – Transmission Mainline Repairs and Assessments**

On page 108 of the Amended Application, PNG states:

Key EMAT ILI runs and analysis planned for 2021 are:

Description	Amount
EMAT ILI Run from R4 to MP 209 (Final Report)	\$214,000
EMAT ILI Run from R2 to R3 (Final Report)	\$287,000
EMAT ILI Run from PLS to MP 273 (Final Report)	\$165,000
EMAT ILI Runs - R1 - R2 12" Loop	\$915,000
EMAT ILI Runs - R2 - R3 12" Loop	\$915,000
EMAT ILI Runs - R3 - R4 12" Loop	\$397,000

- 59.1 Please provide the length (km) of the ILI runs planned for 2021.
- 59.2 Please elaborate on the scope of the Final Report deliverable. Please provide a breakdown of the Final Report costs forecasted in the table above. Please provide a sample report from a recent EMAT ILI Run.

**60.0 Reference: RATE BASE
Exhibit B-2, Section 2.13.1.1.2, p. 109
2021 Planned – Non-Recurring Capital Expenditures – Compressor Station Upgrades**

On page 109 of the Amended Application, PNG states:

A number of compressor station upgrades across the PNG-West system that have been deferred, but must now proceed to keep the facilities in a safe operating condition. Required activities identified for 2021 include...replacement of R1 gas actuated valves (\$775,000).

- 60.1 Please clarify whether further upgrades, besides those activities listed in this RRA, are necessary to keep the R1 facility in a safe operating condition.
- 60.2 Please elaborate on the replacement of gas actuated valves activity. Has this upgrade activity been mandated by a regulatory authority as part of an emission reduction effort?

60.3 Please provide in table format the decision and actual capital and operating costs related to Compressor Station Upgrade projects for years 2015 to 2019, with an explanation for any variances.

61.0 Reference: RATE BASE
Exhibit B-2, Section 2.13.1.1.2, p. 110
2021 Planned – Non-Recurring Capital Expenditures – New/Replacement Tools and Equipment

On page 110 of the Amended Application, PNG states:

These costs pertain to the purchase of a compressor pumpdown to reduce blowdown volumes...The pumpdown compressor reduces GHG emissions by removing volume of gas from the section to be blown down to the other side of a block valve. Therefore more gas is retained inside the piping system.

61.1 Please elaborate on the impact the purchase of a pumpdown compressor will have on PNG's annual unaccounted for gas estimates, if any.

62.0 Reference RATE BASE
Exhibit B-2, Section 2.13.1.1.2, p. 111.
2021 Planned – Non-Recurring Capital Expenditures – Information & Data Management Systems – Synergi Gas

On page 111 of the Amended Application, PNG states:

The remainder of the provision in this category for 2021 is to replace or supplement the existing modelling system with Synergi Gas (or similar) (\$128,000). PNG's current hydraulic modelling system is aged and seen to be limited in its efficiency and use for future interfacing with PNG's other system such as GIS and advanced and more completely attributed digital system maps.

62.1 Please discuss the alternatives to current modelling system that are being considered and the pros and cons of each.

62.2 Please discuss the modelling system favoured by PNG's industry peers.

62.3 Please discuss the risks with maintaining PNG's existing modelling system, the age of the current system and its estimated useful life.

62.3.1 Please provide the expected cost savings PNG will realize as a result of this system.

63.0 Reference: RATE BASE
Exhibit B-2, Section 2.13.1.1.2, p. 111
2021 Planned – Non-Recurring Capital Expenditures – Piping Modification for Gas Blowdown Reduction

On page 111 of the Amended Application, PNG states:

In order to reduce PNG emissions during blowdowns for maintenance work, PNG is proposing to make piping modifications to allow a pumpdown compressor to be used.

63.1 Please clarify the scope of piping modifications proposed in this capital expenditure activity, including the number of individual piping modifications that are forecasted to be completed in this test year.

**64.0 Reference: RATE BASE
Exhibit B-2, Section 2.13.1.1.2, p. 112
2021 Planned – Non-Recurring Capital Expenditures – High Voltage Alternating Current Mitigation**

On page 112 of the Amended Application PNG states:

For 2020, PNG-West has indicated it will be conducting the first phase of a project to mitigate the effects of the induced AC on the 10" pipeline that feeds Kitimat...estimated 2021 costs of \$63,000 will be for implementation...

PNG-West will also be conducting phase 1 of a project to mitigate the effects of the induced AC voltage on the 10" line that comes across the Telkwa Pass. This phase of the project has estimated costs of \$100,000 for the design and procurement of the long lead items in anticipation of installation in 2022.

64.1 Please clarify the overall schedule for both the Kitimat and Telkwa Pass induced AC mitigation projects and the scopes of work forecasted to be completed in 2020.

64.1.1 If the project schedules extend beyond 2020, please confirm the expected Capital Expenditures and scopes of work for each project in future years.

**65.0 Reference: RATE BASE
Exhibit B-2, Section 2.13.1.1.2, pp. 112 and 113
2021 Planned – Non-Recurring Capital Expenditures – Port Edward Storage Bottle Removal and Methanex Lateral at Kitimat River Crossing Repair**

On page 112 of the Amended Application, PNG states:

This initial phase consists of upfront engineering and permitting activities in order to execute the project in 2022

On page 113 of the Amended Application, PNG states, "Detailed design, permitting, and execution would be proposed for completion in future years."

65.1 Please confirm the total project costs to complete this multi-year activity by year.

**66.0 Reference CAPITAL STRUCTURE AND RETURN ON CAPITAL
Exhibit B-2, Section 2.14.2, p. 118
Credit Rating**

On page 118 of the Amended Application, PNG states:

For the purposes of this Application for both Test Year 2020 and Test Year 2021, PNG-West has used the Decision 2019 approved rate of return on common equity (ROE) of 9.50% and common equity thickness of 46.50 % following the issuance of the Stage 2 GCOC Decision in 2014 and the Decision on the Fortis BC Energy Inc.'s (the Benchmark Utility) Application for its Common Equity Component and Return on Equity for 2016.

66.1 Please provide PNG's current credit rating, and comment on any changes in rating over the last five years.

66.2 Please provide PNG's credit rating reports for 2018 and 2019. Please file confidentially, as necessary.

**67.0 Reference CAPITAL STRUCTURE AND RETURN ON CAPITAL
Exhibit B-2, Section 2.9, p. 78; Section 2.14, p. 116; Section 3.2.1.4, p. 142; Section 3.2.2.4, pp. 149-150
Financing Costs**

Table 42 of page 116 includes PNG's capital structure and Table 42 includes interest expense.

- 67.1 Please provide a table with the approved and decision interest rate and debt balance for short term and long-term debt for each year between 2015 and 2019 and the forecast for 2020 and 2021.
- 67.2 Please expand Table 41 to include the following information:
- Columns for Decision 2015 to 2018
 - Rows for total short-term debt, long-term debt and return on common equity components of cost of service
- 67.3 Please provide the actual short-term debt balance as a component of total debt for each year between 2015 and 2019.
- 67.3.1 With reference to the information provided in the preceding IR response, please elaborate on why 5 percent of rate base is appropriate for the short-term debt component of the capital structure.

On page 117 of the Amended Application PNG submits that:

Since PNG was unable to locate a source of independent forecasts of short-term debt interest rates for 2021, it has used the 2020 forecast for that year as well.

- 67.4 With consideration of any changing economic conditions since the Amended Application was filed, please provide any updates to the forecast short-term and long-term interest rates and the resulting impact on the 2020 and 2021 cost of service that is currently available.

On page 78 of the Amended Application PNG states:

The short term interest deferral account records the impact of differences between the underlying customer security deposit and short term operating line interest rates. The long term interest deferral account records the impact of differences between the underlying long term forecast interest rates and actual interest rates.

On pages 142 and 149 of the Amended Application, PNG discusses the variance between actual and decision interest expense on short term debt for 2018 and 2019.

Further, on pages 142 and 150 of the Amended Application, PNG discusses the variances between actual and decision interest on long term debt for 2018 and 2019. In both years the interest expense was lower than forecast, primarily due to PNG-West having less long-term debt and more common equity in its actual capital structure than forecast.

- 67.5 Please explain the measures PNG is taking to reduce the proportion of common equity from 63.83 percent in 2019 to the deemed equity of 46.50 percent in 2020 and 2021.
- 67.6 Please discuss how PNG having a greater common equity component in its actual capital structure as compared to its deemed structure impacts the shareholder and ratepayers. Include discussion on both the return on equity and interest expense.

K. PROPOSED RATE CHANGES

**68.0 Reference PROPOSED RATE CHANGES
Exhibit B-2, Section 2.15.3, p. 120
RSAM Rate Rider**

On page 120 PNG provides rationale for the increase in forecast RSAM rate rider and states:

The increase in the forecast RSAM debit rate rider reflects the increases in the 2018 and 2019 RSAM pools as a result of warmer weather experienced to date during the past two years, the forecast lower use per account, as well as the recovery of the historical RSAM balances through the current rider.

68.1 Please explain whether the RSAM Rate Rider tracks variances of revenue in use per account as well as variances in number of customers. If not, why not.

**69.0 Reference PROPOSED RATE CHANGES
Exhibit B-2, Section 2.15.3, p. 120
Rates are Just and Reasonable**

On page 120 of the Amended Application PNG states:

PNG-West's rates are competitive with other energy sources and thereby provide a reasonable probability of preventing declining recovery of margin due to customers converting to alternative energy sources or reducing gas consumption;

69.1 Please elaborate on the market comparators and/or peers that were used to determine that PNG-West's rates were competitive and discuss why these comparators were selected.

**70.0 Reference PROPOSED RATE CHANGES
Exhibit B-2, Section 2.15.6, p. 121; Tab 6, p. 5
Bill Comparison**

On page 5 of Tab 6 in the Amended Application, PNG presents the comparison of the projected annual gas bills for residential and small commercial customers using rates effective October 1, 2019 and rates proposed effective January 1, 2020.

On page 121 of the Amended Application, PNG states:

The bill comparison focuses on the delivery rate increase that is required to recover the forecast 2020 and 2021 revenue deficiencies (including the Company use gas cost). PNG-West has also included the indicative gas supply cost related rates for January 1, 2020 which are subject to the BCUC's review as part of PNG-West's fourth quarter 2019 gas cost report.

70.1 Please discuss whether PNG considers that the bill impact ranging between 11 and 13 percent for the residential and small commercial customers constitutes rate shock. If not, please discuss why not. If yes, please discuss any measures undertaken by PNG to mitigate this.

70.2 Please provide the bill impact for any other PNG-West customer class that exceeds ten percent. Discuss how PNG will address concerns for the bill impacts that are greater than ten percent.

L. CAPITAL EXPENDITURE REPORTING – ACTUAL VS DECISION

- 71.0 Reference: CAPITAL EXPENDITURE REPORTING – ACTUAL VS DECISION
Exhibit B-2, Section 3.1.1, p. 125
2018 Capital Expenditure Variance Analysis – Unspecified Mainline Repairs**

On page 125 of the Amended Application, PNG states:

In concert with asset and infrastructure additions on Ridley Island directly associated with the RIPET service request, a number of system integrity and otherwise betterment activities were realized as a result of synergies with the RIPET project...

[Regarding Cathodic Protection Improvements] Improvement directly realized by existing pipeline system assets were attributed to a directly associated and apportioned amount of the overall CP system cost...

[Regarding Distribution Pressure Pipeline System Improvements] Cost exclusively associated with existing DP system and customer service improvement were attributed to an associated betterment project...

[Regarding High Pressure Pipeline System Improvements] Costs were incurred for existing high pressure asset system betterment associated with integrity risk reduction, asset longevity (remaining service life), and improved ability to respond to future load growth on Ridley Island...

- 71.1 With reference to variances between historic actual and decision costs for unspecified mainline repairs, please discuss any issues associated with the current forecast methodology and whether PNG has considered developing the forecast based on specific capital work that is expected to be undertaken or some other methodology.
- 71.2 For each of the Ridley Island Cathodic Protection Improvements, Ridley Island Distribution Pressure Pipeline System Improvements and Ridley Island High Pressure Pipeline System Improvements, please discuss if these expenditures would have been required in the absence of the Ridley Island Propane Export Terminal project.
- 71.2.1 If yes, for each of the three projects identified in the preceding IR, please discuss how the capital expenditures provide benefit to PNG's overall transmission system and PNG's ratepayers.
- 71.2.2 If not, please discuss if a contribution in aid of construction was received in relation to the three projects identified above and if not, why not.
- 71.3 What was the total cost for each of the three Ridley Island integrity improvement projects (Cathodic Protection, Distribution Pressure Pipeline System, High Pressure Pipeline System)?
- 71.3.1 Please provide any engineering design, feasibility and risk assessment reports regarding these projects. If not included in these reports, please provide a schematic drawing or map to show scope boundary between the RIPET project and these three integrity improvement projects.
- 71.4 Please elaborate how the high-pressure pipeline system improvement scope of work described above was not directly associated with the RIPET service request.

**72.0 Reference: CAPITAL EXPENTIDURE REORTING – ACTUAL VS DECISION
Exhibit B-2, Section 3.1.1, p. 128
2018 Capital Expenditure Variance Analysis – Compressor Station Upgrades (greater than approved by \$685,000)**

On page 128 of the Amended Application, PNG states:

This project involved a series of compressor upgrades across the PNG-West system that have been deferred, but now must proceed to keep the facilities in a safe operation condition. The overall variance is due to the sum of a number [of] individual variances...

PNG-West had planned to install new station valves at compressor station R1...additional costs were incurred for extra engineering work necessary to provide accurate measurements for the length and height of the pipework to ensure ease of construction...

PNG-West had also planned to remove lead paint and to paint above ground piping at compressor station R2 (\$375,000), however this project costs were greater than budget by \$182,000. As the lead paint was removed at the site, cracks in the pipework became evident and had to be assessed and addressed.

- 72.1 Please elaborate on why the issues which led to the additional costs were not included in the original forecast.
- 72.2 Please discuss any measures PNG has implemented in order to address the compressor station upgrade cost variances and how these have been factored into the Test Year 2020 and 2021 costs.

**73.0 Reference: CAPITAL EXPENTIDURE REORTING – ACTUAL VS DECISION
Exhibit B-2, Section 3.1.2, p. 130
2019 Capital Expenditure Variance Analysis – Carryforward Projects**

On page 130 of the Amended Application PNG presents Table 45, a portion of which is included below:

Carryforward Projects					
Ridley Island Propane Export Terminal (RIPET) Gas Supply	NB	465	757,063	-	(757,063)
Kleanza Creek Crossing Repair	SB	465	746,172	-	(746,172)
Highway 16/37 Skeena Station Relocation	SB	463	673,496	-	(673,496)
Final Report on 2018 EMAT ILLI MP 0-66.7 R1-R2	SB	465	334,188	-	(334,188)
Copper River MP 250 Repair	SB	465	51,286	-	(51,286)
Subtotal			2,562,204	-	(2,562,204)
Total Capital Expenditures excluding Overhead and Approved CPCN Projects			9,303,510	5,146,710	(4,156,800)
CPCN Projects without Overhead					
Pembina Watson Island Gas Supply	NB	463/465	971,158	3,142,000	2,170,842
LNG Canada Let Down Station #2 Gas Supply	NB	472/477	1,222,332	1,558,800	336,468
Subtotal			2,193,489	4,700,800	2,507,311
Total Capital Expenditures without Overhead			11,496,999	9,847,510	(1,649,489)

* SB = System Betterment; NB = New Business; GP = General Plant; GP-I = General Plant - Intangibles

- 73.1 Please identify any measures that have been undertaken by PNG in its capital project planning and scheduling process to address timing issues with its capital projects.
- 73.2 For each for the carryforward projects and CPCN projects identified in the preamble, please provide the forecast and actual total project costs.

**74.0 Reference: CAPITAL EXPENDITURE REPORTING – ACTUAL VS DECISION
Exhibit B-2, Section 3.1.2, p. 132
2019 Capital Expenditure Variance Analysis – Structure Improvements**

On page 132 of the Amended Application, PNG states:

The cost variance for this expenditure classification can be attributed to PNG incurring approximately \$996,000 on tenant improvements to modify the leased space. These costs were offset in part by a tenant inducement allowance of \$346,000. The costs incurred were based on a fixed-price design build contract to minimize the risk due to tendering costs and scheduling risk, and are consistent with per square foot costs for tenant improvement projects.

74.1 Please provide further information to justify that the structure improvement costs are consistent with per square foot costs for tenant improvement projects.

M. COST OF SERVICE REPORTING – ACTUAL VS DECISION

**75.0 Reference COST OF SERVICE REPORTING – ACTUAL VS DECISION
Exhibit B-2, Section 3.2.2.1, p. 145
Account 685 – General Operations 2019 Variance**

On page 145 of the Amended Application, PNG states:

The actual costs for 2019 included in this account are \$993,000 or 32.9% lower than those approved under Decision 2019. This variance can be attributed to a number of factors, including GIS-related costs of \$275,000 budgeted for 2019 as an operating cost that were capitalized. Similarly, there were \$254,000 in Maximo licensing costs budgeted as an operating cost in 2019 that were subsequently capitalized. Lastly, there were savings realized from staff vacancies during 2019.

75.1 Please confirm that the total 2019 costs previously budgeted as operating costs and subsequently capitalized are \$529,000. If not confirmed, please provide details of any 2018 and 2019 costs that were previously classified as expense items and have been subsequently capitalized.

75.1.1 Please confirm or explain otherwise that the 2019 costs were expensed and recovered in rates and clarify if these costs will subsequently be recovered through depreciation.

75.2 Please describe the nature of the GIS-related costs that are referenced in the preamble.

75.3 Please explain the reasons why the GIS-related costs and Maximo licensing costs were previously treated as expenses and why they are now being capitalized.

75.4 Please provide the 2019 variance amount that is related to staff vacancies, the reasons for the staff vacancies and whether these vacancies have since been filled.

**76.0 Reference COST OF SERVICE REPORTING – ACTUAL VS DECISION
Exhibit B-2, Section 3.2.2.1, p. 145
Account 725 – Employee Benefits 2019 Variance**

On page 145 of the Amended Application, PNG states:

The actual costs for 2019 included in this account are \$378,000 or 10.6% lower than those approved under Decision 2019. This variance is primarily attributable to the

recovery of \$319,493 in costs pertaining to services provided to affiliate entities.

76.1 Please explain how the recovery of 2019 costs pertaining to services provided to affiliate entities was recorded and whether the recovery was to the account of PNG’s shareholder or the ratepayer.

N. IDENTIFIED SERVICE QUALITY METRICS

**77.0 Reference: IDENTIFIED SERVICE QUALITY METRICS
Exhibit B-2, Section 3.3, p. 151; PNG-West 2018-2019 RRA proceeding, Exhibit B-3, BCUC IR 54.1;
Identified Service Quality Metrics**

In response to BCUC IR 54.1 in the PNG-West 2018-2019 RRA proceeding, regarding specific benchmarks that PNG works towards with respect to the key service quality metrics, PNG provided the following response:

PNG is a member of the Canadian Gas Association and compares its quality service metrics to those of other utilities across Canada, where applicable. Each utility has its own unique influences that affect their metrics. For example, PNG is one of the smallest utilities and is spread over a very large geographical area and this influences response times to customers in remote areas. A larger utility may have many resources in a heavily populated area, which may provide a different impact on response times. PNG monitors the metrics regularly for change and then address accordingly. The Lost-time Injury Frequency Rate is also a key metric that has benchmarking with the CGA.

77.1 Please confirm or explain otherwise, that PNG continues to benchmark the key service quality metrics on page 151 of the Amended Application to other utilities which are members of the Canadian Gas Association.

77.1.1 If confirmed, please discuss whether PNG-West is considered to be performing well based on these metrics compared to other utilities in Canada overall. Please outline any specific metrics which require significant improvement compared to benchmarks.

PNG provided the following key service metrics on page 151 of the Amended Application:

Service Quality Metric	2019	2018	2017	2016	2015
Number of Emergency Calls	331	302	301	417	410
Average Response Time per Call	17 minutes	20 minutes	19 minutes	15 minutes	18 minutes
Number of Calls with a Response Time over 40 Minutes	45	39	39	35	52
Number of Underground Leaks	14	27	27	15	11
Number of Reportable Environmental Incidents	–	–	–	–	1
Lost-time Injury Frequency Rate *	0.90	2.08	2.07	2.84	1.01
Customer Complaints to the BCUC **	4	3	2	0	3

77.2 Please explain any factors that contributed to the increase in the number of emergency calls in 2019 as compared to 2018 by 29 calls.

- 77.2.1 Please discuss any risks associated with the factors identified and measures PNG has undertaken to mitigate these risks.
- 77.3 Please explain why there were 6 more calls in 2019 with a response time over 40 minutes compared to 2018.

O. OTHER MATTER TO BE ADDRESSED FROM PRIOR YEAR DECISIONS

**78.0 REFERENCE: OTHER MATTER TO BE ADDRESSED FROM PRIOR YEAR DECISIONS
Exhibit B-2, Section 3.4.1.1, pp. 153-154
Reporting on Significant Capital Projects – Focus on Non-recurring Expenditures**

On page 153 of the Amended Application, PNG states:

PNG proposes that the reporting on forecast capital expenditures be limited to planned non-recurring capital projects. Expenditures classified as planned non-recurring projects would capture system extensions, new facilities and significant system modifications or additions. Planned non-recurring projects would also capture items that pertain to the maintenance and operation of existing assets such as the 2018 Copper River MP 250 emergency repair, or other non-discretionary items such as capital expenditures necessary to respond to BC Ministry of Transportation and Infrastructure (MoTI) directives to relocate facilities within the public right of way.

- 78.1 Please explain if new IT systems, or upgrades to existing systems, will be included in planned non-recurring capital expenditures. If not, why not.
- 78.2 Please describe the process that PNG undertakes in order to classify capital expenditures as non-recurring or recurring and the criteria for including capital expenditures as recurring items.

**79.0 REFERENCE: OTHER MATTER TO BE ADDRESSED FROM PRIOR YEAR DECISIONS
Exhibit B-2, Section 3.4.1.1, pp. 154
Reporting on Significant Capital Projects – Recommended Minimum Dollar Threshold**

On page 154 of the Amended Application, PNG states:

PNG proposes a cumulative minimum total capital project expenditure of \$500,000 for project reporting purposes. PNG considers that capital projects of lesser amounts would not warrant further examination through a separate review process.

- 79.1 Please explain how the threshold for the minimum capital project expenditure was derived and any specific factors that were considered in proposing this amount.
- 79.2 Please provide a table that shows the proposed threshold of \$500,000 as a percentage of actual capital expenditures for each year between 2015 and 2019. Please discuss if the total amount of historic capital expenditures was considered in determining the threshold.
- 79.2.1 Please discuss other thresholds that may have been considered, and why they were ultimately not selected.
- 79.2.2 Please discuss the pros and cons of having separate thresholds for different types of capital expenditures (i.e. IT project, transmission project, distribution project).
- 79.2.3 Please provide a table that shows the proposed threshold of \$500,000 as a percentage of actual IT capital expenditures for each year between 2015 and 2019. Based on the results, please discuss the benefits of having a different threshold for IT capital expenditures.

- 79.3 Please clarify whether the minimum dollar threshold applies to the annual forecast capital expenditure or the total project costs.
- 79.4 Please provide a complete listing of the 2017, 2018 and 2019 non-recurring capital expenditures by project and indicate which projects would have been reported based on a \$500,000 threshold.
- 79.4.1 For each year, please provide the capital project expenditures above the threshold as a percentage of the total capital expenditures.
- 79.5 Beyond a dollar threshold, please discuss whether other project characteristics were considered in determining which projects should be included in any annual reporting on capital expenditures (i.e. public interest).
- 79.5.1 For each characteristic, please comment on why it was ultimately not included as a reporting criterion.
- 79.6 Please explain how PNG will define an individual project for capital reporting purposes.
- 79.7 Please discuss the pros and cons of establishing a minimum dollar threshold above which PNG would expect to file a CPCN or section 44.2 expenditure schedule with the BCUC.
- 79.7.1 From PNG's perspective, what are the relevant factors that should be considered in setting a minimum threshold for CPCN or section 44.2 expenditure schedules.
- 79.7.2 If a minimum threshold for filing CPCNs and 44.2 applications with the BCUC were set, please discuss what PNG would propose and why. Please provide the alternatives considered, and why the proposed minimum threshold was ultimately selected.
- 79.7.3 Please provide a table that shows projects with forecast expenditures above the proposed minimum threshold for each year between 2015 and 2019.

80.0 REFERENCE: OTHER MATTER TO BE ADDRESSED FROM PRIOR YEAR DECISIONS
Exhibit B-2, Section 3.4.1.1, pp. 154
Reporting on Significant Capital Projects – Forecast Base

On page 154 of the Amended Application, PNG states:

The base for reporting on forecast planned non-recurring expenditures would be the BCUC approved or test year amounts for the forecast period. For example, the forecast period presented in the Capital Report included in the 2019 Annual Report would commence with 2020 and PNG would present 2020 capital expenditures as applied for in its 2020-2021 Revenue Requirements Application as the forecast base.

- 80.1 Please clarify what is meant by “forecast base” and explain how it influences the reporting of significant capital expenditures.

81.0 REFERENCE: OTHER MATTER TO BE ADDRESSED FROM PRIOR YEAR DECISIONS
Exhibit B-2, Section 3.4.1.1, pp. 155
Reporting on Significant Capital Projects – Report Format and Historic Expenditures

On page 155 of the Amended Application, PNG illustrates the proposed capital reporting format in the following table:

Table 55: Reporting on Significant Capital Expenditures – Report Format

Capital Project Description	Project Type *	Plant in Service Account Number	AACEI Estimate Class	Test Year 2020	Project Cost (Excluding Overhead)							
					Actual	Forecast						
					To 2019	2020	2021	2022	2023	2024+	Total	
Planned - Non-recurring												
<u>Approved/Test Year Projects</u>												
Project A	GP	487	1	\$ 671,126	\$ 441,424	\$ 700,000	\$ 410,000	\$ -	\$ -	\$ -	\$ 1,551,424	
Project B	GP	472/482	1	602,820	-	610,000	-	-	-	-	610,000	
Project C	SB	465	1	566,323	361,442	500,000	-	-	-	-	861,442	
Project D	GP	487	2	295,015	270,906	292,000	199,000	149,000	149,000	-	1,059,906	
<u>Anticipated New Projects</u>												
2020 - New Project #1	GP	4XX	2	-	-	1,000,000	600,000	600,000	400,000	-	2,600,000	
2020 - New Project #2	SB	4XX	2	-	-	600,000	-	-	-	-	600,000	
2020 - New Project #3	SB	4XX	3	-	-	400,000	300,000	-	-	-	700,000	
2020 - New Project #4	SB	4XX	4	-	-	250,000	300,000	-	-	-	550,000	
2021 - New Project #1	GP	4XX	4	-	-	-	720,000	1,000,000	200,000	-	1,920,000	
2021 - New Project #2	SB	4XX	5	-	-	-	500,000	-	-	-	500,000	
Other Projects <\$500,000	Various	Various		2,135,284 781,633	1,073,772	2,102,000	2,859,000	2,569,000	1,749,000	600,000	10,952,772	
Total - Planned - Non-recurring					\$2,916,917	\$1,073,772	\$2,102,000	\$2,859,000	\$2,569,000	\$1,749,000	\$ 600,000	\$10,952,772

* SB = System Betterment; NB = New Business; GP = General Plant; GP-I = General Plant - Intangibles

Further on page 155, PNG states:

PNG’s proposed reporting on historic expenditures would compromise a variance analysis of capital expenditures for the preceding calendar year.

81.1 Please explain whether the report format can be expanded to include:

- (a) a column for the original budgeted costs, and a discussion of significant variances between the original budget and total (actual plus forecast) costs.
- (b) a column for the estimated construction commencement date for each project.
- (c) a column indicating whether the project would be filed as a CPCN or section 44.2 expenditure schedule with the BCUC

81.2 Based on the reporting format could there be projects that commences construction prior to the report being filed with the BCUC? If so, how does PNG propose to address this.

81.3 Please confirm, or explain otherwise, that the reporting format will include all known capital projects that meet the reporting criteria regardless of how far in the future they are planned.

**82.0 REFERENCE: OTHER MATTER TO BE ADDRESSED FROM PRIOR YEAR DECISIONS
Exhibit B-2, Section 3.4.1.1, pp. 156
Reporting on Significant Capital Projects – Supplemental Reporting**

PNG states on page 156 of the Amended Application:

PNG notes that given the nature of operating natural gas distribution and transmission facilities, there will be the need for unplanned or urgent capital projects to maintain ongoing safety, integrity, reliability, and compliance to codes, standards and regulations. These may be due externalities not anticipated. While PNG aims to minimize such occurrences, the BCUC should expect some unplanned projects that are not within the annual forecast. In such instances, where circumstances warrant consideration of the necessity for a CPCN for such projects, PNG commits to making the BCUC aware of the identified projects on an ad hoc and timely basis.

82.1 Please explain how much advance notice PNG will provide the BCUC prior to the construction commencement date for unplanned or urgent projects.

83.0 REFERENCE: OTHER MATTER TO BE ADDRESSED FROM PRIOR YEAR DECISIONS
Exhibit B-2, Section 3.4.1.1, p. 155
Reporting on Significant Capital Projects – Regulatory Review Process

On page 155 of the Amended Application, PNG states:

PNG anticipates that the BCUC review would be completed on a timely basis, ideally within 30 days of submission, such that the review process would not hold up planned capital activities. On completion, as evidence of the review, the BCUC would provide PNG with a letter stating acceptance of the Capital Report.

83.1 Please clarify if PNG considers that acceptance of any annual report on capital expenditures implies BCUC approval of forecast expenditures.

84.0 REFERENCE: OTHER MATTER TO BE ADDRESSED FROM PRIOR YEAR DECISIONS
Exhibit B-2, Section 3.4.1.4, pp. 161, 163.
GIS / ARM Benefit Analysis

On page 161 of the Amended Application, PNG states “At this stage of the project, PNG submits that it is therefore premature to assign any estimates to the costs that can be avoided by the introduction of the GIS.”

On page 163, PNG states:

PNG expects to realize these and other benefits once its GIS project is completed at the end of 2020. At that time, PNG may be in a position to associate a cost with these benefits.

On page 163, PNG also states:

...PNG anticipates increased pressure on its operating costs related to engineering projects critical to PNG’s ongoing compliance with heightened industry standards and pipeline-related regulations. PNG submits that its GIS, along with its ARM initiative will enable it to meet these challenges in the most cost effective manner possible, and avoid incurring costs for staff or contract resources that would otherwise be required to create and manage information most appropriately retained in a GIS.

84.1 Please elaborate on whether PNG expects to be able to quantify the cost savings associated with the GIS and ARM project benefits at the end of 2020. If not, please discuss the factors that prevent this.

84.2 Please quantify the dollar impact from the increased pressures PNG expects from the engineering projects critical to PNG’s ongoing compliance with heightened industry standards and pipeline regulations.

84.3 Please provide anticipated avoided costs for staff or contract resources that would otherwise be required to create and manage information most appropriately retained in a GIS. Please include supporting calculations.

84.3.1 Please identify any other ways that the GIS system will enable PNG to address engineering projects in a cost-effective manner and discuss whether these benefits can be quantified. If not, please discuss why not.

Lastly on page 163, PNG states:

...ARM project will result in the increased reliability of recalled information, will help minimize opportunity for error, will reduce risk associated with legacy information and assets, will improve emergency response performance, will provide step change to the reconciliation of pipeline system records between PNG and technical regulators, and will provide a foundational piece for improved system integrity management and management of change. It can easily be argued that each of these individual benefits, along with their aggregate sum, provide significant cost savings through the lifetime of an operating asset by affecting incremental step change in work efficiency, risk management, and incident avoidance.

84.4 Please provide the expected annual cost savings for each individual benefit noted above and the aggregate sum of benefits from the ARM project.

**85.0 Reference: OTHER MATTER TO BE ADDRESSED FROM PRIOR YEAR DECISIONS
Exhibit B-2, Section 3.4.1.7, p. 171
Automotive Cost Allocation – Evaluation of Historic Allocation Methodology - Capital**

On page 171 of the Amended Application, PNG states that “Allocating Automotive costs based solely on labour hours has not achieved optimal results for all divisions.”

Further on the same page PNG states it completed a test of the reasonableness of the historic approach for the allocation of forecast and actual Automotive costs to capital and prepared the following summary to illustrate recent experience with over (under) allocations to capital.

Automotive - Capital Cost Over (Under) Allocation (\$)	2015	2016	2017	2018	2019	Total	Average
Historic Divisional Allocation Methodology							
PNG-West	(1,511)	23,423	3,176	(24,008)	(46,530)	(45,450)	(9,090)
FSJ/DC	1,052	23,460	6,601	7,873	20,943	59,929	11,986
TR	(122)	(3,482)	(1,071)	(252)	(345)	(5,272)	(1,054)
	(581)	43,401	8,706	(16,387)	(25,932)	9,207	1,841

Based on these results PNG states on page 171:

As can be seen from the data presented, the historical allocation methodology for capital has resulted in over (under) allocations in the range of \pm \$122 to \$46,530 over

the past five years, however, based on the five-year average, allocations have fallen within a reasonably narrow range of \pm \$1,054 to \$11,986 during this period.

Given this narrow range in over (under) allocation, PNG is satisfied that it is appropriate to continue with the current budgetary conventions it has in place for forecasting and allocating Automotive costs to capital.

85.1 Based on the summary, please explain why there appears to be a consistent over allocation of Automotive costs to the FSJ/DC division and under allocation to the PNG-West and TR divisions in 2018 and 2019.

85.2 Please confirm, or explain otherwise, that forecasting and allocating Automotive costs to capital is based on labour costs.

85.2.1 If confirmed, please discuss why allocating Automotive costs to capital based solely on labour is appropriate given the over/under allocation in the recent actual results.

86.0 REFERENCE: OTHER MATTER TO BE ADDRESSED FROM PRIOR YEAR DECISIONS
Exhibit B-2, Section 3.4.1.7, pp. 172-173
Automotive Cost Allocation – Proposed Automotive Cost Allocation

On pages 172 and 173 of the Amended Application, PNG states:

The average divisional allocation of forecast costs for 2015 to 2019 was: 60% PNG-West; 35% FSJ/DC; and 5% TR. The actual divisional allocation of costs for 2015 to 2019 were distributed: 66% PNG-West; 32% FSJ/DC; and 2% TR.

As a test of using historic results to predict future costs, PNG recast the forecast operating Automotive costs for 2015 to 2019 using the five-year actual average percentage distributions noted. This proposed allocation methodology for operating expense reduces the range of over (under) allocations for the past five years to \pm \$176 to \$28,479, considerably lower than the forecast error of the historic methodology. Further, the bias for over allocating Automotive costs to PNG(NE) has dissipated. These results are presented in the table that follows.

Automotive - Operating Cost Over (Under) Allocation (\$)	2015	2016	2017	2018	2019
Proposed Divisional Allocation Methodology					
PNG-West	(10,122)	(9,414)	28,479	(2,103)	(6,839)
FSJ/DC	8,418	1,587	(24,116)	7,096	7,015
TR	1,704	7,827	(4,363)	(4,992)	(176)
	0	-	0	(0)	0
Improvement From Historic Methodology					
PNG-West	(43,522)	(45,517)	(40,157)	(46,278)	(48,577)
FSJ/DC	26,323	27,529	24,287	27,989	29,380
TR	17,199	17,988	15,869	18,288	19,197
	(0)	(0)	(0)	(0)	(0)

86.1 Please provide the total and five-year average of each division’s percentage distribution of operating Automotive costs.

86.2 Please explain the difference in allocation methodology between the “Proposed Divisional Allocation Methodology” and “Improvement from Historic Methodology” as presented in the above table.

87.0 REFERENCE: OTHER MATTER TO BE ADDRESSED FROM PRIOR YEAR DECISIONS
Exhibit B-2, Section 3.4.1.7, pp. 173.
Automotive Cost Allocation – Recommendations – Capital Allocation

On page 173 of the Amended Application, PNG states:

Continue to apply the current administrative convention of allocating actual Automotive costs to capital, whereby a 15% factor is applied to capital labour costs and capitalized.

87.1 Please explain what the 15 percent factor used in the allocation of actual capital Automotive costs is based on.

87.2 Please discuss the results of the over (under) allocations to capital if the overhead capitalization rates were applied.

88.0 REFERENCE: OTHER MATTER TO BE ADDRESSED FROM PRIOR YEAR DECISIONS
Exhibit B-2, Section 3.4.1.7, p. 174
Automotive Cost Allocation – Proposed Forecasting of Consolidated Automotive Cost Pool

On page 174 of the Amended Application, PNG states:

...in consideration that historic costs may be reflective and predictive of future costs, PNG analysed historic results and, setting 2015 as a base year, applied an inflation factor of 2% to each year in forecasting the subsequent year’s costs. PNG compared the forecasts using this inflationary approach with actual costs and found that though there continued to be a consistent over forecast in amounts, the range decreased to \$5,970 to \$137,085 and the average decreased to approximately \$57,000 on a consolidated basis.

Further on page 174 of the Amended Application PNG presents the following table summarizing its historic and proposed methodology for forecasting the consolidated pool of Automotive costs.

Automotive - Consolidated Cost Pool Over (Under) Budget (\$)	2015	2016	2017	2018	2019	Total	Average
Historic Forecast Methodology							
Forecast	929,151	1,063,615	1,085,120	1,034,019	1,053,535	5,165,440	1,033,088
Actual	862,306	884,078	829,604	980,052	995,720	4,551,760	910,352
	66,845	179,537	255,516	53,967	57,815	613,680	122,736
Proposed Methodology							
Forecast	929,151	947,734	966,689	986,022	1,005,743	4,835,339	967,068
Actual	862,306	884,078	829,604	980,052	995,720	4,551,760	910,352
	66,845	63,656	137,085	5,970	10,023	283,579	56,716
Improvement In Forecasting	-	115,881	118,431	47,997	47,792	330,101	66,020

- 88.1 Please explain why 2015 was selected at the base year.
- 88.2 Please re-create the above table to adjust the proposed methodology by using the 2015 actual, rather than forecast, as the base and applying the inflation factor to actual costs for subsequent years.

Further on the same page PNG states:

PNG recommends that the consolidated Automotive cost pool for Test Year 2020 be forecast based on forecast 2019 actual costs with a 2% provision for inflation. PNG has reflected this recommendation in this Application. Test Year 2021 costs have been forecast at the Test Year 2020 amount inflated by 2% for inflation.

- 88.3 Please explain what is meant by “forecast 2019 actual costs.”
- 88.4 Please comment on the strengths and weaknesses of using historic allocations of Automotive costs as a predictor of future allocations for the operating and consolidated forecast.
- 88.5 Please explain why a five-year actual average was selected for the allocation of operating costs and consolidated forecast costs.
- 88.6 Please explain whether PNG considered creating a forecast Automotive cost for each division based on expected costs. Please comment on the pros and cons of this approach and why it was not selected.

P. OTHER DIRECTIVES

**89.0 Reference OTHER DIRECTIVES
Exhibit B-2, Appendix C, p. 3
Business Risk Assessment**

On page 3 in Appendix C of the Amended Application PNG filed an updated business risk assessment based on the consolidated entity for PNG-West and PNG(NE) (collectively PNG).

Page 3 of Appendix C states:

Given PNG's smaller size and resources, the numerous requirements for dealing with various aspects of Indigenous Rights represent a much more resource intensive effort. The assessment of this risk continues to remain consistent with that made in 2018, but with an increasing trend given recent court cases and the recent introduction of UNDRIP legislation.

89.1 Please comment on how the recent introduction of UNDRIP will impact PNG operations over the Test Period and any plans PNG has in place to address the impact.