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Pacific Northern Gas Ltd.  
Certificate of Public Convenience and Necessity for the Western  
Transmission Gas System Reactivation and Recommissioning  
Project Application and Deferral Account Increase Application

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Decision  
and Order C-5-21

November 30, 2021

Before:

T. A. Loski, Panel Chair  
M. Kresivo, QC, Commissioner  
E. B. Lockhart, Commissioner

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## COMMISSION ORDER C-5-21

## APPENDICES

<b>Appendix A</b>	Glossary and Acronyms
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## Executive summary

On March 5, 2021, Pacific Northern Gas Ltd. (PNG) submitted two applications (collectively, the Applications) to the British Columbia Utilities Commission (BCUC):

1. An application pursuant to sections 45 and 46 of the *Utilities Commission Act* (UCA), seeking approval of a Certificate of Public Convenience and Necessity (CPCN) for the Western Transmission Gas System Reactivation and Recommissioning Project (Project) (CPCN Application); and
2. An application regarding Allocation of Reactivated Capacity and Approval of Large Volume Industrial Transportation Rate Request for Increase to Reactivation Project Development Costs Deferral Account (Deferral Account Application).

In the CPCN Application, PNG also sought approval under sections 59 to 61 of the UCA for the following:

1. Four firm Transportation Service Agreements (TSAs) for service to be provided under PNG's Large Volume Industrial Transportation Rate tariff; and
2. Three service agreements for Transportation on Interconnection Facilities (Interconnection Agreements).

By Order G-236-21, dated August 10, 2021, the BCUC approved the TSA's and the Interconnection Agreements. By Order G-237-21 dated August 10, 2021, the BCUC approved the Deferral Account Application. The one decision that remains outstanding, and to which this Decision relates, is the CPCN for the Project.

The objective of the Project is to reactivate and recommission existing assets, as well as to construct new assets on the PNG Western Transmission Gas System that are necessary to meet the demand of new large industrial customers. The Project is scheduled to occur over a four-year period, between 2021 and 2024, with an estimated capital cost of approximately \$88.5 million. The new large industrial customers are Port Edward LNG Ltd. (Port Edward LNG) and Top Speed Energy Canada Holding Ltd. (Top Speed Energy).

On October 13, 2021, PNG filed updates regarding Port Edward LNG's and Top Speed Energy's (collectively, the Shippers) projects.

In regard to the project of one Shipper, Port Edward LNG, PNG explains that a delay in obtaining a permit from the BC Oil and Gas Commission has affected Port Edward LNG's project financing. As a result, PNG and Port Edward LNG have entered into a Forbearance and Amending Agreement, which amends the commencement date of that project from December 2022 to September 2023. Despite this delay, however, PNG submits there is no material change to the project schedule.

In regard to the projects of the second Shipper, Top Speed Energy, PNG states that Top Speed Energy's major shareholder has decided to divest all of the company's works, permits and commercial arrangements developed for the Top Speed Energy projects. PNG has initiated a Critical Shipper Default under the TSAs due to Top Speed Energy's unwillingness to provide the additional security required under the Security Side Letter Agreement, and the agreements between PNG and Top Speed Energy have been terminated. Despite this setback, however, PNG submits that the approvals sought do not require modification from the full scope of the Project to the reduced scope that reflects the loss of the Top Speed Energy Projects. Moreover, PNG submits that allowing for an

outcome that contemplates the Top Speed Energy projects may proceed could increase the likelihood that they will proceed, by reducing risk and uncertainty for project proponents.

In the CPCN Application, PNG considered ten alternate project outcomes in case one or more of the Shippers' projects could not proceed. It assessed that all alternate project outcomes, including Alternate Outcome 7 which reflects the scenario where Top Speed Energy's projects do not proceed, result in a positive net present value (NPV) when considering the required capital, operating and maintenance expenditures, maintenance capital and the associated TSA revenues.

PNG indicates that it will move forward only with that portion of the Project for which the BCUC has approved the TSAs and Interconnection Agreements. PNG further acknowledges that any work required to serve load beyond Alternative Outcome 7 should only take place after PNG has filed and the BCUC has approved new TSAs and Interconnection Agreements.

Having considered matters relevant to the approval of a CPCN, as set out in the BCUC's CPCN Guidelines, the Panel finds that a CPCN for this Project is in the public interest. The Panel is satisfied that the public convenience and necessity require the completion of the Project in the timeframe proposed by PNG. Accordingly, pursuant to sections 45 and 46 of the UCA, the BCUC grants a CPCN to PNG to construct the proposed Project or any of the ten potential alternate project outcomes outlined in the CPCN Application.

The Panel finds there is a need for the Project. PNG's decision to restore the system to its previous operational functionality in order to meet new customer volumes is justified and financially sound. The Panel is satisfied that the identification of alternatives and the evaluation process used by PNG are reasonable and appropriate and is persuaded that PNG's preferred option is the best option available at this time. The Panel considers that PNG has adequately addressed the risks inherent with the Project, and its process to mitigate risks during detailed design and Project execution is reasonable. The Panel is satisfied that the cost estimate for the Project is reasonable, including the proposed accounting treatment of the capital costs.

The Panel is satisfied that PNG has provided adequate information to describe the environmental and archaeological work undertaken to date as well as the risks, mitigation measures and next steps required. The Panel finds that PNG's Indigenous consultation to date has been adequate and is satisfied with the level of its public engagement to date. The Panel finds that the Project is consistent with BC's applicable energy objectives as set out in section 2 of the *Clean Energy Act*. The Panel also finds that the Project is consistent with PNG's most recently filed long-term resource plan.

In addition, the Panel directs various reporting requirements which are set out in the Decision.

## 1.0 Introduction

### 1.1 Background

On March 5, 2021, Pacific Northern Gas Ltd. (PNG) submitted two applications (collectively, the Applications) to the British Columbia Utilities Commission (BCUC)<sup>1</sup>:

1. An application pursuant to sections 45 and 46 of the *Utilities Commission Act* (UCA), seeking approval of a Certificate of Public Convenience and Necessity (CPCN) for the Western Transmission Gas System Reactivation and Recommissioning Project (Project) (CPCN Application); and
2. An application regarding Allocation of Reactivated Capacity and Approval of Large Volume Industrial Transportation Rate Request for Increase to Project Development Costs Deferral Account (Deferral Account Application);

In the CPCN Application, PNG also sought approval under sections 59 to 61 of the UCA for the following:

1. Four firm Transportation Service Agreements (TSAs) for service to be provided under PNG's Large Volume Industrial Transportation Rate (RS 80) tariff that have been executed by PNG to provide service to Port Edward LNG Ltd. (Port Edward LNG) at new facilities to be located in the Port Edward area (Phase I and Phase II), and to provide service to Top Speed Energy Canada Holding Ltd. (Top Speed Energy) at new facilities in the Terrace (Skeena LNG) and Prince Rupert (Totem LNG) areas; and
2. Three service agreements for Transportation on Interconnection Facilities (Interconnection Agreements) executed by PNG, in connection with service to be provided on dedicated interconnection infrastructure for the Port Edward LNG facility and the two Top Speed Energy facilities.

The Panel approved the Deferral Account Application by Order G-237-21, dated August 10, 2021. The Panel also approved the TSAs and Interconnection Agreements by Order G-236-21 dated August 10, 2021. This Decision, therefore, deals with the remaining approval sought, namely the CPCN for the Project.

The Project involves the reactivation and recommissioning of existing assets, as well as the construction of new assets on the PNG Western Transmission Gas System. PNG states that the primary objective of the Project is to restore system capacity to provide service to new industrial customers, using existing assets where possible. According to PNG the planned restoration of capacity and the flow associated with the new industrial demand returns the system to an operational state approaching that in place in the early 2000's, prior to the loss of historic industrial loads.<sup>2</sup>

PNG states that a significant amount of the work identified as necessary to accommodate the new customer demand relates to the reactivation of existing assets and the addition of new assets driven by hydraulic needs.

PNG focused solely on alternatives for five main Project scope elements:

- Reactivate existing compressor stations;
- Construct new compressor stations;

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<sup>1</sup> Exhibit B-1, p. 1.

<sup>2</sup> Ibid., PDF p. 19/556.

- Restore maximum operating pressure (MOP) of existing pipeline segments;
- Construct new interconnection pipelines to customer facilities; and
- Construct a by-pass pipeline to address increased population density in the Terrace area.<sup>3</sup>

The full scope of the Project, which includes three interconnection pipelines, has an estimated capital cost of approximately \$88.5 million in as spent dollars (\$82.0 million in 2020 dollars) to be incurred over a four-year period, between 2021 and 2024.<sup>4</sup> In the CPCN Application, PNG contemplated alternative outcomes where one or more of the Port Edward LNG or Top Speed Energy projects do not proceed.<sup>5</sup> On October 13, 2021, PNG filed an update regarding shippers' projects, indicating that Top Speed Energy has commenced a process to sell its assets, and that it appeared to PNG that Top Speed Energy would not be proceeding with either project.<sup>6</sup>

On October 9, 2020, PNG filed a separate application with the BCUC for a CPCN for the Salvus to Galloway Gas Line Upgrade Project (Salvus to Galloway Project) at an estimated capital cost of \$84.8 million in as-spent dollars. On July 8, 2021, the BCUC granted a CPCN for the Salvus to Galloway Project.<sup>7</sup> PNG observes that the Project is not operationally feasible without the works identified in the Salvus to Galloway Project. Given this fact and in consideration of the materiality of the costs associated with the Salvus to Galloway Project, PNG evaluated the expected impact on average delivery rates of the Project on both a standalone basis, and including the costs associated with the Salvus to Galloway Project.<sup>8</sup>

## 1.2 The Applicant

PNG is a wholly owned subsidiary of TriSummit Utilities Inc. (TSU, formerly AltaGas Canada Inc. (ACI)), the owner of a number of Canadian utilities and renewable power infrastructure.<sup>9</sup>

PNG provides natural gas transmission, distribution and sales services to approximately 20,400 residential, commercial and industrial customers located in communities in northwestern British Columbia via its PNG-West division. PNG-West division's Western Transmission Gas System connects with Enbridge Inc.'s Westcoast Energy Inc. pipeline near Summit Lake, British Columbia, and extends west to the BC coast at Prince Rupert. The PNG-West division also owns and operates lateral transmission lines extending into the various communities served by PNG, the most significant being dual lines extending approximately 57 kilometres from Terrace to Kitimat.

PNG also owns and operates natural gas distribution facilities in the PNG-West division including approximately 950 kilometres of distribution mains and 690 kilometres of service lines to deliver gas from its transmission pipeline system to homes and businesses in Prince Rupert, Port Edward, Kitimat, Terrace, Smithers, Telkwa, Houston, Burns Lake, Fraser Lake, Fort St. James and Vanderhoof.<sup>10</sup>

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<sup>3</sup> Exhibit B-1, PDF 20/556.

<sup>4</sup> Ibid., p. 1

<sup>5</sup> Exhibit B-24, pp. 2–3.

<sup>6</sup> Exhibit B-21, p. 3.

<sup>7</sup> PNG Application for a CPCN for the Salvus to Galloway Gas Line Upgrade Project, Decision and Order C-4-21 dated July 8, 2021.

<sup>8</sup> Exhibit B-1, pp. 8, 126.

<sup>9</sup> Ibid., PDF 31/556.

<sup>10</sup> Ibid., PDF 32/556.

### 1.3 Approvals Sought

In the Deferral Account Application PNG seeks approval, pursuant to sections 59 to 61 of the UCA, for an increase in the expenditures allowed to be captured in the Reactivation Project Development Costs Deferral Account, from the approved amount of \$1.0 million to \$2.5 million. By Order G-237-21 dated August 10, 2021, the Panel approved the Deferral Account Application.

In the CPCN Application, PNG seeks approval of the following three elements of the Project:

- A CPCN for the Project, pursuant to sections 45 and 46 of UCA;
- Four firm Transportation Service Agreements (TSAs) for service to be provided under PNG's Large Volume Industrial Transportation Rate tariff, pursuant to section 59 to 61 of the UCA; and
- Three service agreements for Transportation on Interconnection Facilities (Interconnection Agreements), pursuant to section 59 to 61 of the UCA.

As noted earlier, the Panel previously approved the TSAs and Interconnection Agreements.<sup>11</sup>

PNG requests CPCN approval for the Project no later than November 30, 2021, to accommodate the Project schedule and to enable it to meet anticipated new customer contractual obligations.<sup>12</sup>

### 1.4 Legislative Framework

Section 45(1) of the UCA stipulates that a person must not begin the construction or operation of a public utility plant or system, or an extension of either, without first obtaining from the BCUC a certificate that public convenience and necessity require, or will require, the construction or operation of the plant or system.

Section 46(3) states that the BCUC may issue or refuse to issue a CPCN or may issue a CPCN for the construction or operation of only a part of the proposed facility, line, plant, system or extension, and may attach terms and conditions to the CPCN. Section 46 (3.1) and (3.2) require the BCUC to consider:

- a) the applicable of British Columbia's energy objectives,<sup>13</sup>
- b) the most recent long-term resource plan filed by the public utility under section 44.1, if any, and
- c) the extent to which the application for the certificate is consistent with the applicable requirements under sections 6 and 19 of the *Clean Energy Act* (CEA).<sup>14</sup>

The BCUC's CPCN Guidelines provide general guidance regarding the information that should be included in a CPCN application and the flexibility for an application to reflect the specific circumstances of the applicant, the size and nature of the Project and the issues raised by the application.<sup>15</sup>

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<sup>11</sup> Order G-236-21.

<sup>12</sup> Exhibit B-1, PDF 27/556.

<sup>13</sup> BC's energy objectives are defined in section 2 of the *Clean Energy Act*.

<sup>14</sup> Sections 6 and 19 of the CEA do not apply to PNG.

<sup>15</sup> Order G-20-15, 2015 Certificate of Public Convenience and Necessity Application Guidelines.



## 1.5 Regulatory Process

By Order G-116-21 dated April 19, 2021, the BCUC established a regulatory timetable for the review of the Applications which consisted of public notice, intervener registration and one round of BCUC and intervener information requests (IRs).

On June 10, 2021, PNG requested BCUC approval of the TSAs and Interconnection Agreements by September 1, 2021, and approval of the Deferral Account Application by August 30, 2021. By Order G-189-21 dated June 21, 2021 the Panel granted these requests by establishing an expedited review process. The Panel approved the TSAs by Order G-236-21 dated August 10, 2021, and approved the Deferral Account Application by Order G-237-21 dated August 10, 2021. Therefore, these portions of the Applications have concluded.

Order G-189-21 also dealt with the remainder of the Applications, namely the request for approval of the CPCN, and amended the regulatory timetable to provide for IR No. 3 on the CPCN Application and submissions on further process. By Order G-232-21 dated July 30, 2021, the BCUC further amended the regulatory timetable to provide for final and reply arguments on the CPCN portion of the Application.

The following parties participated as interveners in the proceeding:

- Lax Kw'alaams Band and Metlakatla First Nation participated as a single intervener (Lax Kw'alaams and Metlakatla); and
- BC Sustainable Energy Association (BCSEA).

FortisBC Energy Inc., Port Edward LNG and the BC Oil and Gas Commission (BC OGC) registered as interested parties. The District of Kitimat submitted a letter of comment.

On August 18, 2021, the Gitxaala First Nation (Gitxaala) submitted a request to intervene. On August 19, 2021, Gitxaala submitted a letter of comment, supplemented by a further letter of comment dated August 20, 2021 regarding the adequacy of consultation in respect of the Project.<sup>16</sup> On August 23, 2021, the BCUC issued a letter seeking submissions on the regulatory process to review Gitxaala's request to intervene and the concerns raised by its letters of comment.<sup>17</sup> Following submissions received from PNG, BCSEA, Lax Kw'alaams and Gitxaala,<sup>18</sup> by Order G-270-21 with accompanying reasons, dated September 14, 2021, the BCUC denied Gitxaala's request to intervene.

On August 20, 2021, PNG filed its final argument regarding the CPCN Application. On September 27, 2021, BCSEA filed its final argument, and on October 6, 2021, PNG filed its reply argument to BCSEA.

On October 13, 2021, PNG filed public and confidential updates<sup>19</sup> regarding Port Edward LNG's and Top Speed Energy's (collectively, the Shippers) projects. By Order G-297-21 dated October 14, 2021, the BCUC established

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<sup>16</sup> Exhibits E-2 and E-2-1.

<sup>17</sup> Exhibit A-19.

<sup>18</sup> PNG's submissions are provided in Exhibits B-19 and B-20, dated August 26, 2021 and September 1, 2021, respectively. BCSEA and Lax Kw'alaams submissions are provided in Exhibit C3-8, dated August 30, 2021 and Exhibit C1-5, dated August 30, 2021, respectively. Gitxaala's submission is provided in Exhibit E-2-2, dated September 13, 2021.

<sup>19</sup> Exhibits B-21 and B-21-1 respectively.

further regulatory process regarding the update on Shippers' projects, namely one round of Panel IRs, intervener submissions on the additional evidence and PNG reply submissions.

## **1.6 Decision Framework**

The structure of this Decision largely follows that of the CPCN Application and the BCUC's CPCN Guidelines. Relevant evidence submitted by PNG and interveners is summarized in each section.

Section 2 addresses the Project need and its justification.

Section 3 discusses the alternatives that PNG considered were capable of meeting the overall Project objectives. This section also describes the Project evaluation criteria and methodology.

Section 4 describes the Project, while Section 5 outlines Project costing, accounting treatment, and rate impact.

Sections 6 through 8 address environmental permitting, stakeholder and First Nations consultation, as well as alignment with provincial energy objectives and PNG's internal long-term resource planning.

The Panel's determinations are provided in Section 9, as well as BCUC directives relating to detailed reporting requirements. Section 10 summarizes the Panel's approvals and directives.

## **2.0 Project Need and Justification**

During the period from 2001 to 2010, PNG's three largest customers being served by the Western Transmission Gas System permanently ceased operations. With the loss of this customer demand, PNG states that the system has operated at less than 20 percent of its capacity for longer than a decade, with average and peak flow rates of less than 15 MMSCFD and 25 MMSCFD, respectively.<sup>20</sup>

PNG notes that its remaining customers have borne an increased economic burden through their rates to compensate for the loss of the industrial customer contribution to PNG's system costs. Recent changes in market conditions, particularly in the liquified natural gas (LNG) sector, have revived interest in PNG's transmission pipeline capacity. In response to these changes, in May 2020, PNG initiated a Process for the Allocation of Reactivated Capacity (RECAP), a capacity auction to provide an open, fair, transparent and competitive process to assess the demand for, and value of, the capacity available on its transmission system.<sup>21</sup> Three parties participated in the auction, making a combined total of five bids with an overall requested volume of 163 MMSCFD for delivery to the Prince Rupert, Terrace and Kitimat areas. Following the bid evaluation process, PNG offered two parties TSAs totalling 65 MMSCFD (a total of 45 MMSCFD at Prince Rupert and 20 MMSCFD at Terrace) and offered the remaining party (who declined that offer) a Transportation Reservation Agreement (TRA) for 13 MMSCFD at Kitimat. The table below provides a summary of the auction results.<sup>22</sup>

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<sup>20</sup> Exhibit B-1, p. 20.

<sup>21</sup> Ibid., PDF 18/556.

<sup>22</sup> Ibid., pp. 22, 25.

**Table 1: RECAP Auction Results**

Bidder	Interconnection Location	Requested Capacity (MMSCFD)	Awarded Capacity (MMSCFD)	Contract Term (years)	Contract Type	Requested Commencement Date
Port Edward LNG	Prince Rupert	22.5	20	21.5	TSA	Dec. 1, 2022
Top Speed Energy (Skeena LNG)	Terrace	20.0	20	20	TSA	Sep. 30, 2023
Port Edward LNG	Prince Rupert	22.5	15	20	TSA	Jul. 1, 2024
Top Speed Energy (Totem LNG)	Prince Rupert	10.0	10	20	TSA	Jul. 1, 2024
Other Party <sup>2</sup>	Kitimat	88.0	–	22.5	TRA	Jun. 30, 2027
		163.0	65			

Based on the new customer volumes and locations, PNG reviewed and updated its engineering and hydraulic studies for the Western Transmission Gas System. PNG subsequently identified several existing system asset reactivations and upgrades, and a requirement to incorporate new transmission system assets including compressors and interconnecting pipelines. According to PNG, the proposed Project will effectively return the system to its pre-2005 operational functionality.<sup>23</sup> Further information regarding the capacity and demand following the completion of the Project is shown in the table below.

**Table 2: Western Transmission Gas System Capacity and Demand post-Project<sup>24</sup>**

Capacity in MMSCFD	Total pipeline transmission capacity		Contracted through the RECAP process <sup>(3)</sup>	Demand from existing customers (Peak) <sup>(2)</sup>		Available Capacity
Delivery Point	Current <sup>(1)</sup>	Following completion of the Project		Firm	Interruptible	
	(a)	(b)	(c)	(d)	(e)	(f) = (b) - (c) - (d)
1. Summit Lake to Terrace	35	115	65	22	17	28
2. Terrace to Kitimat	35	50	–	3	8	47
3. Terrace to Prince Rupert	28	50	45	3	6	2

PNG submits the 28 MMSCFD residual capacity on the Summit Lake to Terrace system is a result of designing the system upstream of Terrace such that it can provide the necessary end point pressures and volumes to customers contracted through the RECAP auction process that are located at and downstream of Terrace. PNG notes that any additional loads applied at or downstream of the Galloway station result in a very sharp decline in mainline pressure in the hydraulic model. If the Summit Lake to Terrace system were designed to have zero available capacity, PNG's ability to serve firm customer demand would be significantly reduced during its peak load season. PNG states that designing for zero residual capacity on the system would not result in significant cost savings, because the compressors that are being reactivated are capable of achieving the 87 MMSCFD and the 115 MMSCFD pipeline capacity (i.e. zero or 28 MMSCFD residual capacity).<sup>25</sup>

An overview of PNG's transmission system operation and asset additions as proposed in the CPCN Application is provided in Figure 1, below.

<sup>23</sup> Exhibit B-1, p. 30.

<sup>24</sup> Exhibit B-7, BCUC IR 2.4.

<sup>25</sup> Exhibit B-16, BCUC 48.2, 48.2.1.

**Figure 1: Proposed Western Transmission Gas System Operation and Assets**



## 2.1 Update Regarding Shippers' Projects

As noted above, after the filing of final arguments PNG filed an update regarding Shippers' Projects (Shippers' Update).

PNG notes that Top Speed Energy's major shareholder has decided to divest all of the company's works, permits and commercial arrangements developed for the Skeena LNG and Totem LNG projects. PNG states that it has initiated a Critical Shipper Default under the TSAs due to Top Speed Energy's unwillingness to provide the additional security required under the Security Side Letter Agreement, and the agreements between PNG and Top Speed Energy have been terminated. A bid process for the sale of Top Speed Energy's Assets closed on October 7, 2021 and is expected to conclude in November 2021. PNG has informed Top Speed Energy that it would be willing to enter into non-binding discussions with any potential or actual buyers from the Top Speed Energy sale process, on an expedited basis, for the available capacity.<sup>26</sup>

In the CPCN Application, PNG considered alternate project outcomes in case one or more of the Shippers' projects could not proceed, outlining the assets required to serve each alternate project outcome, the total cost of the project work required under each outcome, and the Net Present Value (NPV) of the customer benefits associated with each alternate outcome. This information is outlined in the table below. PNG estimates the cost of the alternate project outcome where Top Speed Energy's projects do not proceed (Alternate Outcome 7) to be \$39,256,950 and the NPV of the customer benefits to be \$113 million.<sup>27</sup> The Project scope of Alternate Outcome 7 is reduced: the R2 compressor station will not need upgrading or reactivation, the R5 and R6 compressor stations will not need expanding, and the interconnection pipelines to Terrace and Prince Rupert will not be required.<sup>28</sup>

<sup>26</sup> Exhibit B-21, pp. 2, 4.

<sup>27</sup> Ibid., p. 3; Exhibit B-23-1, Panel IR 3.1.1.

<sup>28</sup> Exhibit B-1, Table 6-14.

**Table 3: Summary of Alternate Project Outcomes (in 2020 dollars)<sup>29</sup>**

Project Outcomes		Proposed Project	Alternate Outcomes									
		Base Case	1	2	3	4	5	6	7	8	9	10
		Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11
Terrace Volumes (MMSCFD)		20	20	20	0	20	20	0	0	0	20	0
Prince Rupert / Port Edward Volumes (MMSCFD)		45	30	35	45	20	10	30	35	20	0	10
Customer Demand (MMSCFD)		65	50	55	45	40	30	30	35	20	20	10
<b>Capital Item</b>	<b>Cost (2020 \$)</b>											
R1 Upgrades	9,166,052	X	X	X	X	X	X	X	X	X	X	X
R2 Upgrades and Reactivation	5,729,935	X	X	X	X							
R3 Upgrades and Reactivation	5,959,622	X	X	X	X	X	X	X	X			
R4 Upgrades and Reactivation	5,900,638	X							X			
Mainline from MP 273 to 311 - Restore MOP	10,047,379	X	X	X	X		X	X	X			
R5 Expansion	10,206,008	X	X	X	X							
R6 Expansion	8,358,197	X			X							
R5 to Terrace Junction Pipeline	5,872,286	X	X	X	X	X	X	X	X			
<b>Reactivation and Recommissioning Subtotal</b>		<b>61,240,117</b>	<b>46,981,282</b>	<b>46,981,282</b>	<b>55,339,480</b>	<b>20,997,961</b>	<b>31,045,340</b>	<b>31,045,340</b>	<b>36,945,977</b>	<b>9,166,052</b>	<b>9,166,052</b>	<b>9,166,052</b>
Interconnect to Top Speed - Terrace	1,396,493	X	X	X		X	X				X	
Interconnect to Port Edward LNG - Port Edward	2,310,973	X	X	X	X	X		X	X	X		
Interconnect to Top Speed - Prince Rupert	13,910,502	X	X		X		X	X				X
<b>Interconnecting Pipelines Subtotal</b>		<b>17,617,967</b>	<b>17,617,967</b>	<b>3,707,466</b>	<b>16,221,475</b>	<b>3,707,466</b>	<b>15,306,994</b>	<b>16,221,475</b>	<b>2,310,973</b>	<b>2,310,973</b>	<b>1,396,493</b>	<b>13,910,502</b>
<b>Total Capital (2020 \$)</b>		<b>78,858,085</b>	<b>64,599,250</b>	<b>50,688,748</b>	<b>71,560,954</b>	<b>24,705,426</b>	<b>46,352,334</b>	<b>47,266,814</b>	<b>39,256,950</b>	<b>11,477,025</b>	<b>10,562,545</b>	<b>23,076,554</b>
<b>Net Present Value of Customer Benefits (\$ millions)</b>		<b>\$184</b>	<b>\$145</b>	<b>\$179</b>	<b>\$101</b>	<b>\$167</b>	<b>\$60</b>	<b>\$90</b>	<b>\$113</b>	<b>\$103</b>	<b>\$73</b>	<b>\$23</b>

PNG submits the approvals sought do not require modification from the full scope of the Project to the reduced scope of the Project. It notes that the draft order provided in Appendix A to the CPCN Application contemplated this situation, as follows:

A CPCN is granted to PNG for the Western Transmission Gas System Reactivation and Recommissioning Project to construct the proposed project or any of the ten potential alternate project outcomes for a capital cost up to \$88.5 million (as spent).

PNG submits that allowing for an outcome that contemplates the Top Speed projects may proceed could increase the likelihood that they will proceed, by reducing risk and uncertainty for project proponents. PNG will update the BCUC on the status of discussions with potential proponents for the Top Speed projects or related capacity, and will bring forward any new TSAs or Interconnection Agreements for BCUC approval.<sup>30</sup> PNG believes that the flexibility developed in the CPCN Application to adjust the Project to meet the ultimate customer demand ensures that PNG will only build the assets required to serve the load for which it has BCUC-approved Transportation Service Agreements and Interconnection Agreements.<sup>31</sup>

With respect to the Port Edward LNG project, PNG states that a delay in receiving a BC OGC permit arose because the Port Edward and Top Speed Energy projects were the first small sized LNG projects to be reviewed

<sup>29</sup> Exhibit B-23-1, Panel IR 3.1.1.

<sup>30</sup> Exhibit B-22, Panel IR 2.1.

<sup>31</sup> Ibid., Panel IR 2.3.

by the BC OGC. As a result, PNG explains, the BC OGC took a more detailed look at the operational and safety aspects of the projects, which resulted in the BC OGC permit being issued later than initially anticipated.<sup>32</sup> PNG states that the permitting delay has impacted project financing, and therefore it has entered into a Forbearance and Amending Agreement with Port Edward LNG (the Forbearance Agreement), which delays the provision of securities by Port Edward LNG.<sup>33</sup> The Forbearance Agreement also amends the commencement date for the Port Edward LNG project from December 2022 to September 2023.<sup>34</sup> PNG submits that the change in commencement date does not materially change the required schedule layout for required front end activities such as CPCN approval, advancement of engineering and design, or BC OGC permitting. The new commencement date does, however, afford further schedule allowance and latitude and associated schedule and cost de-risking.<sup>35</sup>

### *Positions of the Parties*

BCSEA supports the issuance of a CPCN for the Project.<sup>36</sup> It submits that “the evidence supports a conclusion that the Project is necessary to serve the two new large customers in the Terrace, Prince Rupert and Port Edward areas.”<sup>37</sup> BCSEA voices concern regarding the level of greenhouse gas (GHG) emissions, and the Panel addresses these concerns in Section 8 of this Decision.

BCSEA states that the Shippers’ Update does not change its support for the Project. If a CPCN is to be granted, BCSEA submits that the scope of the approved Project beyond Alternate Outcome 7 should be conditional on PNG filing, and the BCUC accepting, TSAs and Interconnection Agreements with a Shipper or Shippers for some or all of the pipeline capacity previously allocated to Top Speed Energy.<sup>38</sup>

PNG agrees with BCSEA that any work required to serve load beyond Alternate Outcome 7 should only take place after PNG has filed and the BCUC has approved new TSAs and Interconnection Agreements. PNG submits that approval of the full scope of the Project is the most regulatorily efficient, as well as the most desirable outcome, because it allows time for the Top Speed Energy sale process to unfold and removes uncertainty for potential proponents looking to purchase the additional capacity.<sup>39</sup>

Although Lax Kw’alaams and Metlakatla intervened in the proceeding, they did not file a final argument indicating their position on the CPCN Application. However, Lax Kw’alaams and Metlakatla indicate they have a financial agreement with PNG which is contingent on the date of final decision of the BCUC, and note a delay in that decision will cause Lax Kw’alaams and Metlakatla financial harm.<sup>40</sup>

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<sup>32</sup> Exhibit B-22, Panel IR 1.1.

<sup>33</sup> Exhibit B-21, p. 2.

<sup>34</sup> Ibid., Attachment, p. 2.

<sup>35</sup> Exhibit B-22, BCUC IR 1.2.

<sup>36</sup> BCSEA Final Argument, para 6, PDF 4/10.

<sup>37</sup> Ibid., para 21, PDF 8/10.

<sup>38</sup> Exhibit C3-9, p. 4.

<sup>39</sup> Exhibit B-24, p. 2.

<sup>40</sup> Exhibit C1-5, p. 4.

## *Panel Determination*

**The Panel finds that PNG has established the need for the Project, notwithstanding the Shippers' Update.** In particular, we are satisfied that PNG's decision to restore the system to its previous operational functionality in order to meet new customer volumes is justified. Restoring the system requires PNG to reactivate and upgrade a number of existing system assets, as well as incorporate new transmission system assets including compressors and interconnecting pipelines. Further, we agree that scaling back the Project to reduce residual capacity could create risks to PNG and its customers without significant cost savings.

We note that over the years PNG has had a diminishing customer base on which to provide service, which has led to higher rates for the customers it continues to serve. We accept that PNG has prioritized identifying opportunities to generate additional revenues through the marketing of available system capacity and to increase the use of its deactivated assets. In addition, we accept PNG's assertion that the revenues and margin associated with the new TSAs to be served by the Project will result in delivery rates for all PNG-West customers that are lower than they would otherwise be.

Having already approved the addition of new volume, in the form of the TSAs and Interconnection Agreements, in Order G-236-21, the Panel agrees with PNG that the new demand exceeds the current capacity, and therefore work on the existing system is required, as well as the construction of new assets. In our view, while the loss of the two Top Speed projects reduces the scope of the Project, it does not eliminate the need.

Whether the size of the Project is commensurate with the projected demand, however, has been the Panel's focus in considering the issue of project need and justification. The Panel is satisfied that the Project is sized appropriately for the customer volumes contracted through the RECAP process.

The Panel accepts PNG's submission that BCUC approval of the full scope of the Project will reduce risk and uncertainty with respect to potential proponents interested in the Top Speed Energy projects or available capacity and that this is the most regulatorily efficient approach. The Panel notes that the outcome of the Top Speed sale is not expected to be known until sometime in November 2021, at the earliest, and in fact, there is no guarantee if or when the Skeena LNG or Totem LNG projects will be sold, or the capacity that those projects represent is acquired. Nevertheless, we accept that it is not in any party's interest to adjourn the proceeding pending the outcome of the Top Speed sale, as a delay could jeopardize the commencement date for the Port Edward LNG project.<sup>41</sup>

But for the Shippers' Update, granting the CPCN means that PNG can move forward with the entire Project, as outlined in the CPCN Application, subject to the reporting that the Panel requires. PNG acknowledges, however, that the impact of the Shippers' Update is that it will move forward only with that portion of the Project for which the BCUC has approved the TSAs and Interconnection Agreements. PNG further acknowledges that any work required to serve load beyond Alternative Outcome 7 should only take place after PNG has filed and the BCUC has approved new TSAs and Interconnection Agreements.

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<sup>41</sup>Exhibit B-22, Panel IR 2.3.



The Panel directs PNG to file any new TSAs and Interconnection Agreements for either or both of the Top Speed projects or related capacity, with the BCUC for approval as soon as practicable and within 30 days of full execution of those agreements.

In the event PNG enters into a TSA with a potential customer requesting service at a different location than the Top Speed projects, at a different capital cost, or a different capacity than the Top Speed TSA and /or Interconnection Agreements, the Panel directs PNG to file the following items with the BCUC for approval as soon as practicable and within 30 days of full execution of those agreements:

- The associated TSA(s) and Interconnection Agreement(s);
- The modified scope and associated cost estimate developed to an AACE International Class 3 definition, including a detailed description of the assets required to serve the proposed new load, with supporting analysis of the revenue requirement and rate impacts;
- A detailed description of the alternatives considered for the modified scope proposed, including the associated cost estimates, a detailed description of the assets required and supporting analysis of the revenue requirement and rate impacts under each alternative, and
- If applicable, an updated forecast NPV of customer benefits.

Lastly, in terms of the Port Edward LNG project, the Panel has reviewed the Forbearance Agreement and is satisfied that it does not create additional risk for PNG ratepayers.

### **3.0 Description and Evaluation of Alternatives**

PNG submits that since a significant amount of the work identified as necessary to meet new customer demand and service requirements relates to the reactivation of existing assets, as well as the addition of new assets driven by hydraulic need, it did not identify project alternatives per se. Instead, PNG identified alternatives within the following five main scope elements of the Project:<sup>42</sup>

1. Existing compressor station reactivations;
2. Existing pipeline restoration;
3. New compressor stations;
4. Interconnect facilities; and
5. R5 to Terrace by-pass pipeline.

The Panel notes that the description and evaluation of alternatives, summarized below, reflect the information contained in the CPCN Application, unmodified by the loss of the Top Speed projects, as described in the Shippers' Update. We address the consequences of the reduced scope, however, in the Panel Determination at the end of Section 2.1 of this Decision.

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<sup>42</sup> Exhibit B-1, p. 32.



### **3.1 Description of Alternatives**

PNG considered alternatives within the five main scope elements identified as necessary to deliver capacity increase related to the new industrial customer demand. Table 4, below, summarizes the alternatives evaluated for each scope element.

**Table 4: Project Scope Elements Alternatives Considered<sup>43</sup>**

Scope Element	Alternatives Evaluated	Selected Alternative
Existing Compressor Station Reactivations	<ul style="list-style-type: none"> <li>• Scenario 1 – minimal upgrades other than upgrade to enhanced wet gas seals</li> <li>• Scenario 2 - upgrade turbine and station controls, add emissions management, and upgrade wet gas seals to dry gas seals</li> <li>• Scenario 3 - upgrade turbine and station controls, add emissions management, and upgrade to enhanced wet gas seals</li> </ul>	Scenario 3 - upgrade turbine and station controls, add emissions management, and upgrade to enhanced wet gas seals
Existing Pipeline Restoration	<ul style="list-style-type: none"> <li>• Restoration</li> <li>• Replacement</li> </ul>	Restoration
New Compressor Stations	<b>R5</b> <ul style="list-style-type: none"> <li>• R5A - Electric Drive, Centrifugal Compressor</li> <li>• R5B - Gas Turbine, Centrifugal Compressor</li> <li>• R5C - Electric Drive, Reciprocating Compressor</li> <li>• R5D - Gas Turbine, Reciprocating Compressor</li> </ul>	R5A - Electric Drive, Centrifugal Compressor
	<b>R6</b> <ul style="list-style-type: none"> <li>• R6A - Gas Turbine, Centrifugal Compressor</li> <li>• R6B - Gas Turbine, Reciprocating Compressor</li> </ul>	R6B - Gas Turbine, Reciprocating Compressor
Interconnect Facilities	Port Edward LNG (Prince Rupert) <ul style="list-style-type: none"> <li>• Option 1A - 100 m 6" pipe</li> <li>• Option 1B - 500 m 6" pipe</li> </ul>	Option 1A - 100 m 6" pipe
	Top Speed Energy (Terrace) <ul style="list-style-type: none"> <li>• 150 m 4" pipe</li> </ul>	150 m 4" pipe
	Top Speed Energy (Prince Rupert) <ul style="list-style-type: none"> <li>• Option 2A - 1.7 km 6" pipe (including a 1.5 km subsea horizontal directional drill)</li> <li>• Option 2B - 4 km 6" pipe</li> </ul>	Option 2B - 4 km 6" pipe
R5 to Terrace By-pass Pipeline	<ul style="list-style-type: none"> <li>• Yellow Route - 8.35 km 8" pipe</li> <li>• Purple Route - 4.9 km 8" pipe</li> </ul>	Purple Route - 4.9 km 8" pipe

<sup>43</sup> Exhibit B-1, pp. 36-37, Table 4-1, reformatted by the BCUC.

## 3.2 Evaluation of Alternatives

### 3.2.1 Evaluation Criteria

PNG applied a multi-criteria analysis involving a weighted-scoring methodology to evaluate the performance of each alternative scope in relation to the following three sets of criteria:<sup>44</sup>

1. Operations and Asset Management (Evaluation weighting = 30%)
  - a. Operational Reliability (Evaluation weighting = 50%)
  - b. Operations Requirements (Evaluation weighting = 10%)
  - c. Maintenance (Evaluation weighting = 15%)
  - d. Environmental (Evaluation weighting = 25%)
2. Project Delivery and Stakeholder Impact (Evaluation weighting = 40%)
  - a. Project Delivery (Evaluation weighting = 25%)
  - b. Environmental (Evaluation weighting = 25%)
  - c. Lands and right of way considerations (Evaluation weighting = 20%)
  - d. Consultation and engagement (Evaluation weighting = 25%)
  - e. Socio-economic benefit (Evaluation weighting = 5%)
3. Financial and Customer Impact (Evaluation weighting = 30%):
  - a. NPV of incremental annual revenue requirement (over 25 years 12 post completion to account for a twenty-year operational period and a five-year 13 period thereafter to amortize the remaining plant balance) (Evaluation weighting = 80%)
  - b. Capital cost (Evaluation weighting = 20%)

PNG states that it developed the three main categories of evaluation criteria to provide a broad range of relevant criteria to allow for the comparison across the alternatives. It explains that the evaluation process borrowed from the one developed during PNG's Salvus to Galloway Project process, for which PNG spent considerable time and resources in shaping the applicable categories and subcategories. PNG states that it reconsidered and revised the evaluation factors developed in the Salvus to Galloway Project, as required for the circumstances of the RECAP Project.<sup>45</sup>

PNG explains that it did not prepare a schedule calculating the revenue requirements of the feasible alternatives and the resulting impact on rates. In its analysis, PNG considered that the revenue would remain unchanged and therefore it focused solely on costs in the net present value approach. PNG also states that since it evaluated alternatives for each project element rather than alternative overall projects, the number of scenarios based on the combination of the alternative project components is too numerous to model for each possible permutation and considers this would provide limited value beyond the net present value calculations.<sup>46</sup>

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<sup>44</sup> Ibid., pp. 37-38, p. 42; Corrections to evaluation weighting provided in Exhibit B-7, BCUC IR 10.9.

<sup>45</sup> Exhibit B-7, BCUC IR 10.1.

<sup>46</sup> Ibid., BCUC IR 10.10.

### 3.2.2 Detailed Evaluation of Alternatives

#### Existing Compressor Station Reactivations

For the compressor reactivation, PNG developed three scenarios that considered varying degrees of alternative analysis on four specific elements of related scope, including: compressor seal technology; control systems; fuel management systems; and station controls.<sup>47</sup> PNG states that as it would be significantly more costly, it did not consider making any major physical changes to the existing compressor station sites R1, R2, R3 and R4, or making any fundamental changes to the original operating parameters at the four existing sites.<sup>48</sup>

Using the evaluation criteria described above in Section 3.2.1, PNG evaluated the three compressor station reactivation scenarios.

Reactivation scenario 1 had the lowest overall score and scored the lowest in the operations and asset management and the project execution and stakeholder impact criteria due to the least amount of modernization included in the scope of the scenario. PNG states that given the limited scope, this scenario also had the lowest operational reliability and environmental impact reduction, the lowest NPV,<sup>49</sup> and the lowest estimated cost at \$20.86 million.<sup>50</sup>

Reactivation scenario 2 had the second highest overall score and scored highest on all operation and asset management criteria as the scenario scope included the largest degree of modernization, resulting in higher reliability and the lowest environmental impact. However, this scenario also had the highest NPV<sup>51</sup> and the highest estimated capital cost at \$28.65 million.<sup>52</sup>

Reactivation scenario 3 had the highest overall score. PNG identifies that the scope of this scenario provides the best balance of modernization, environmental best practice and cost, which was estimated at \$24.81 million.<sup>53</sup>

PNG states that based on the underlying analysis and the outcome of the scoring, and the review by subject matter experts, PNG has identified reactivation scenario 3 as the preferred scope alternative for the reactivation of the R1, R2, R3 and R4 compressor stations.<sup>54</sup>

#### Existing Pipeline Restoration

The second scope element involves the restoration of the integrity of a section of the existing mainline pipeline downstream of Terrace in order to operate the pipeline at its originally licensed Maximum Operating Pressure (MOP).<sup>55</sup>

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<sup>47</sup> Exhibit B-1, p. 44.

<sup>48</sup> Ibid., p. 43.

<sup>49</sup> Exhibit B-7, Attachment BCUC IR 11.3.

<sup>50</sup> Exhibit B-1, p. 46.

<sup>51</sup> Exhibit B-7, Attachment BCUC IR 11.3.

<sup>52</sup> Exhibit B-1, p. 46.

<sup>53</sup> Ibid.

<sup>54</sup> Ibid., p. 47.

<sup>55</sup> Ibid.

PNG states that it has not completed a comprehensive alternatives analysis on this scope element as there are no feasible or comparable alternatives to conducting the required improvements and the ongoing operation of the existing NPS 8 mainline. PNG states that it explored in concept a pipeline replacement alternative, however it eliminated this possibility because a screening level cost estimate (AACE International Class 5+) was found to be orders of magnitude more costly and far less certain than the proposed repair solution.<sup>56</sup>

### New Compressor Stations

To meet the capacity requirements of the new customers in the Prince Rupert area, the Project requires two additional compressor stations (R5 and R6) to be situated between the existing R4 compressor station (at Telkwa) and Prince Rupert.<sup>57</sup>

PNG proposes to locate new compressor station R5 at an existing site 9 kilometres south of Terrace. PNG states that it has retained this site for many years as part of its long-term plans in case additional compression is required to serve future downstream loads.<sup>58</sup>

PNG explains that it evaluated four sub-alternatives regarding turbine and compressor designs. Pipeline compressor stations are typically driven by either natural gas engines or electric motors, with the compressor units themselves being either centrifugal or reciprocating technology. PNG reviewed different combinations of electric/gas turbine drivers and centrifugal/reciprocating compression technologies in its evaluation of four alternatives for R5.<sup>59</sup>

PNG determined that alternative R5A – a centrifugal compressor with an electric drive – scored the highest using the evaluation criteria described above in Section 3.2.1, and that this is the preferred alternative. PNG also states that alternative R5A has low lifecycle costs, high reliability, excellent environmental attributes, and reduced noise impacts due to the electric motor drive.<sup>60</sup> Alternative 5A had the second lowest NPV<sup>61</sup> and the second lowest capital cost, at \$6.29 million.

PNG proposes to locate new compressor station R6 approximately 58 kilometres west of Terrace and 61 kilometres down flow from the proposed R5 compressor site.<sup>62</sup>

Similar to the analysis for R5, PNG states that it intended to review different combinations of electric/gas turbine drivers and centrifugal/reciprocating compression technologies for the proposed R6 compressor station. However, British Columbia Hydro and Power Authority (BC Hydro) informed PNG that it was not economically feasible to bring the required electric power to the site because the nearest high voltage transmission line is 56 kilometres away. Therefore, PNG concluded that electrically driven equipment was not viable for R6 and it eliminated the electric drive options for this new compressor station.<sup>63</sup>

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<sup>56</sup> Ibid.

<sup>57</sup> Exhibit B-1, p. 47.

<sup>58</sup> Ibid., p. 48.

<sup>59</sup> Ibid., p. 49.

<sup>60</sup> Ibid., p. 52.

<sup>61</sup> Exhibit B-7, Attachment BCUC IR 11.3.

<sup>62</sup> Exhibit B-1, p. 52.

<sup>63</sup> Ibid., pp. 53-54.

Based on PNG's evaluation of the two remaining R6 alternatives, PNG determined that alternative R6B – a reciprocating compressor with a gas turbine – scored the highest using the evaluation criteria described above in Section 3.2.1, and that this is the preferred alternative. PNG also states that alternative R6B has the lowest NPV<sup>64</sup> and the lowest capital costs at \$5.30 million.<sup>65</sup>

#### Interconnect Facilities

PNG requires interconnection infrastructure to be constructed from PNG's transmission system to the operating sites of the new industrial customers. Three interconnect facilities are required as follows:<sup>66</sup>

1. Port Edward LNG Interconnect Facilities;
2. Top Speed Energy – Terrace Interconnect Facilities; and
3. Top Speed Energy – Prince Rupert Interconnect Facilities.

The Port Edward LNG project is to be located approximately 500 metres downstream (west) of PNG's Galloway Regulating Station and immediately north of PNG's existing NPS 8 mainline. PNG states that given the close proximity of the customer's project to the PNG mainline only two routing options, referred to as Option 1A and 1B, were identified and these had very minor differences.<sup>67</sup>

PNG did not use its evaluation criteria described above in Section 3.2.1, however PNG states that it has selected Option 1A as the preferred routing given that the estimated capital cost of \$1.52 million for this alternative is 36 percent less than the Option 1B cost of \$2.40 million, with no material differences in non-financial considerations.<sup>68</sup>

The Top Speed Energy Terrace project site is located approximately 500 metres northeast of the proposed R5 compressor site. An interconnect pipeline of approximately 150 metres in length is required between the PNG lateral and Top Speed Energy's project site. PNG states that since this project is close to PNG's infrastructure, it did not identify routing alternatives for this interconnect pipeline.<sup>69</sup>

The Top Speed Energy Prince Rupert project site is located on Kaien Island near Zanardi Rapids, approximately 2 kilometres north of the PNG NPS 8 mainline and 4 kilometres west of the PNG 4-inch Prince Rupert Lateral. PNG states that the physical location of this customer site in relation to existing PNG infrastructure and the regional geography present added complexity to the routing of the interconnect facilities. Following a conceptual review and screening, PNG states that two routing alternatives, referred to as options 2A and 2B, were identified as most practicable and were further evaluated for feasibility.<sup>70</sup>

Route option 2A requires construction of a pipeline approximately 1.7 kilometres in length. PNG identifies that this is the most direct routing but involves a 1.5 kilometre subsea crossing installed by horizontal directional

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<sup>64</sup> Exhibit B-7, Attachment BCUC IR 11.3.

<sup>65</sup> Exhibit B-1, p. 56.

<sup>66</sup> Exhibit B-1, p. 57-60.

<sup>67</sup> Ibid., pp. 57-58.

<sup>68</sup> Ibid., p. 58.

<sup>69</sup> Ibid., p. 59.

<sup>70</sup> Ibid., p. 60.

drill. PNG states that to accommodate this routing, new surface leases and pipeline right of way would be required; however, clearing of vegetation would be minimized due to the trenchless crossing. The estimated capital cost of this routing alternative is \$8.43 million. PNG identifies that Fisheries and Oceans Canada and Transport Canada authorization, and strong support by the local Indigenous communities would be required for route option 2A, presenting high permitting and schedule risk with the potential to impact the customer in-service date. Further, PNG identifies risks associated with the horizontal direction drill work required.<sup>71</sup> Route option 2B requires construction of a pipeline approximately 4 kilometres in length. This route follows an existing corridor for most of its length but would still require clearing of vegetation and right of way development in areas of substantial and shallow bedrock. PNG identifies that the estimated capital cost of this routing alternative is \$8.53 million.<sup>72</sup>

Using the evaluation criteria described above in Section 3.2.1, route option 2B had the highest score and therefore, PNG has selected it as its preferred route.<sup>73</sup>

#### R5 to Terrace By-pass Pipeline

A pipeline segment of the Western Transmission Gas System runs through the Thornhill/Terrace area, which PNG states is a community that has grown and increased in population density over the years. PNG states that the population growth in this area has led to a change in the original pipeline class location and a directed MOP downrate on the pipeline segment. PNG states that to meet the new customer demand in the Prince Rupert area, the PNG NPS 8 mainline must be operated at its originally licenced MOP and achieving this operability requires the replacement and upgrade of the pipeline segment, or a by-pass of the area of concern.<sup>74</sup>

PNG has reviewed the replacement of the existing PNG mainline through this area at a screening level and has determined this alternative to not be practical or economic relative to the alternative of constructing a by-pass. PNG states that replacement of the mainline would be a project similar in length to construction of a by-pass; however, replacement would require expensive construction through densely populated areas with considerable logistical challenges and inconvenience to the community as compared to a more remote and less locationally complex by-pass pipeline.<sup>75</sup>

Having screened out the replacement alternative, PNG identified 2 bypass alternatives to reroute the pipeline segment outside of the population dense areas of Terrace and Thornhill: the purple route and the yellow route.<sup>76</sup> The purple route runs east of the Terrace-Kitimat Northwest Regional Airport for a total length of 4.9 kilometres, and the yellow route runs west of the airport for a total length of 8.35 kilometres.<sup>77</sup>

PNG considers the purple route to be the preferred alternative because it is considerably shorter, has a lower capital cost, and it can be situated in an existing PNG pipeline corridor. PNG states that the yellow route was

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<sup>71</sup> Ibid., p. 61.

<sup>72</sup> Exhibit B-21, pp. 61-62.

<sup>73</sup> Ibid., pp. 63-64.

<sup>74</sup> Exhibit B-1, p. 64.

<sup>75</sup> Ibid.

<sup>76</sup> Exhibit B-1, pp. 65-65.

<sup>77</sup> Ibid., p. 65.

screened out during feasibility review as a result of its longer length, high-voltage power line and airport proximity challenges, and the requirement for a new pipeline corridor.<sup>78</sup>

### 3.2.3 Summary of Preferred Alternatives

PNG notes that in establishing the preferred alternative for each of the proposed project scope elements, it has completed multi-criteria analyses, assessed advantages and disadvantages, and undertaken feasibility studies by third-party experts. In addition, PNG states that it has considered a variety of factors including operations and asset management, project delivery and stakeholder impacts and financial and customer impacts.<sup>79</sup> A summary of PNG's preferred alternatives is in Table 5, below.

**Table 5: Summary of PNG's Preferred Alternatives<sup>80</sup>**

Scope Element	Preferred Alternative
Existing Compressor Station Reactivations	Reactivation Scenario 3
Existing Pipeline Restoration	Undertake proposed remediation works
New Compressor Stations	R5A - Electric Drive, Centrifugal Compressor
	R6B - Gas Turbine, Reciprocating Compressor
Interconnect Facilities	Port Edward LNG (Prince Rupert) Option 1A - 100 m 6" pipe
	Top Speed Energy (Terrace) 150 m 4" pipe
	Top Speed Energy (Prince Rupert) Option 2B - 4 km 6" pipe
R5 to Terrace By-pass Pipeline	Purple Route - 4.9 km 8" pipe

#### *Positions of the Parties*

Neither intervener commented on the alternatives that PNG considered for the Project or the evaluation process that it used.

#### *Panel Determination*

**The Panel finds that both (1) the identification of feasible alternatives to reactivate and recommission the system and to build new compressor and pipeline facilities in order to provide the requested service, and (2) the evaluation process used by PNG, are reasonable.** We recognize that the uncertainty surrounding the Top Speed projects means that PNG cannot move forward at this time with all of the corresponding preferred alternatives that it has identified.

The BCUC's CPCN Guidelines stipulate that a proponent should provide "a comparison of the costs, benefits and associated risks of the project and feasible alternatives."<sup>81</sup> PNG explains that rather than identifying alternatives to the Project as a whole, it identified alternatives within the individual scope elements of the Project. PNG's rationale for this is that a significant amount of the work relates to the reactivation of existing assets, as well as

<sup>78</sup> Ibid., pp. 66-67.

<sup>79</sup> Exhibit B-1, p. 67.

<sup>80</sup> Ibid. Table 4-16. Reformatted by the BCUC.

<sup>81</sup> The BCUC's CPCN Guidelines, p. 4.



the addition of new assets driven by hydraulic need. We accept PNG's approach as reasonable and that it meets the intent of the BCUC's CPCN Guidelines.

In our view PNG considered a number of alternatives for various scope elements and applied evaluation criteria, including both financial and non-financial factors, to identify the most prudent path forward. We accept that PNG applied the criteria consistently and methodically, and provided reasonable explanations where it concluded there was not a feasible alternative to a particular scope item.

The BCUC's CPCN Guidelines also stipulate that a proponent should provide "a schedule calculating the revenue requirements of the project and feasible alternatives, and the resulting impacts on customer rates."<sup>82</sup> We note that PNG did not provide estimated rate impacts for the various alternatives, and instead provided an NPV analysis (as outlined in Section 3.2 of this Decision), explaining that the number of alternatives and consequently the number of scenarios it would have to model for rate impacts were too numerous. The Panel is satisfied that the NPV analysis is an appropriate proxy for estimated rate impact in these circumstances.

**Therefore, the Panel accepts the preferred alternatives that PNG has identified for the Project.**

## **4.0 Project Description**

### **4.1 Introduction**

PNG proposes the reactivation and recommissioning of existing assets, as well as the construction of new assets, to meet the new industrial customer demand connecting to its Western Transmission Gas System. Having introduced PNG's preferred alternatives for the Project in the previous section of this Decision, we describe below the full scope of PNG's preferred alternatives to meet new customer demand.

The Panel notes that the Project description summarized below reflects the information contained in the Application, unmodified by the loss of the Top Speed Energy projects. As outlined in Section 2.1 of this Decision, PNG has not modified its approvals sought in the CPCN Application to reflect the Shippers' Update. In response to questions from the Panel, however, PNG addressed the consequences of the reduced scope of the Project, which information is reflected in Sections 4.2, and 4.3.

#### **Existing Compressor Station Reactivation**

PNG proposes to reactivate equipment at existing compressors stations R1, R2, R3 and R4 which have not been in service, in some cases, for approximately 15 years.<sup>83</sup> Reactivation activities include completion of deferred maintenance, as well as equipment upgrades to ensure the compressor stations continue to meet current codes, standards, regulatory requirements and industry best practices.

#### **Existing Pipeline Restoration**

The Terrace to Salvus NPS 8 segment of PNG's Western Transmission Gas System is licensed to operate at a MOP of 9335 kPag, although it currently operates under a pressure limitation to 6756 kPag due to the pressure

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<sup>82</sup> The BCUC's CPCN Guidelines, p. 4.

<sup>83</sup> Exhibit B-1, p. 71.

reduction of an upstream NPS 10 segment of pipeline.<sup>84</sup> According to PNG, in order to meet the additional RECAP customer demand, the Terrace to Salvus segment of pipeline will need to operate at its licensed MOP of 9335 kPag. Following a 2020 in-line inspection of this pipeline segment, PNG identified the need for pipeline integrity repairs.<sup>85</sup> PNG submits that a number of identified pipeline integrity repairs are required to sustain PNG's existing operations up to the current allowable maximum of 6756 kPag, and that an additional number of identified repairs are required to operate up to the licensed MOP of 9335 kPag.<sup>86</sup> The proposed pipeline restoration activities, such as sleeve and cut-out repairs, will address identified pipeline integrity features such as dents, metal loss such as corrosion and gouging, and other pipe wall defects.<sup>87</sup>

PNG plans to build a new by-pass pipeline to address the pressure limitation of the upstream NPS 10 pipeline, details of which we review below.

### **New Compressor Stations**

PNG proposes to build two new compressor stations to overcome transmission-related pressure losses and to satisfy minimum end-point pressure requirements for the new RECAP customer facilities planned in the Prince Rupert and Port Edward areas.<sup>88</sup> One of the new compressor stations, known as R5, will be built 9 km south of Terrace. The other new compressor station, known as R6, will be built 58 km east of Terrace adjacent to the existing Salvus valve site at MP 311.<sup>89</sup>

PNG states that the proposed R5 compressor station will be located at a previously cleared site owned by PNG which is near a BC Hydro substation and adjacent to BC Hydro's high voltage transmission corridor.<sup>90</sup> Due to the sites proximity to BC Hydro's grid network, PNG proposes to install an electrically driven compressor, and associated equipment, at the R5 station.<sup>91</sup>

PNG states that it has confirmed with BC Hydro that electrically driven compressor equipment is not viable at the R6 compressor site, and therefore proposes to install a natural gas driven compressor at that location.<sup>92</sup>

### **Interconnect Facilities**

PNG states that a new interconnecting pipeline is required to connect each new Shipper project site to its Western Transmission system. The Port Edward LNG project site requires a relatively short NPS 6 interconnecting pipeline. The interconnecting pipeline for the Top Speed Energy Terrace project site is a short NPS 4 connection.<sup>93</sup> The Top Speed Energy Prince Rupert project site requires a 4 km NPS 6 interconnecting pipeline. PNG states that the proposed pipeline would connect to PNG's Western Transmission system at the

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<sup>84</sup> Ibid., p. 74.

<sup>85</sup> Exhibit B-7, BCUC IR 18.3

<sup>86</sup> Exhibit B-7, BCUC IR 18.2.

<sup>87</sup> Exhibit B-1, p. 76.

<sup>88</sup> Ibid., p. 31.

<sup>89</sup> Ibid., p. 77.

<sup>90</sup> Ibid, p. 84.

<sup>91</sup> Ibid., p. 78.

<sup>92</sup> Ibid., p. 79.

<sup>93</sup> Ibid., p. 81.

intersection of Highway 16 and Ridley Island Road, and the routing would parallel Ridley Island Road to the project site.

PNG explains that it proposes to install metering for each site on or immediately adjacent to the customer's site.<sup>94</sup>

#### **R5 to Terrace By-pass Pipeline**

PNG proposes to build a 5 km NPS 8 pipeline to by-pass the existing NPS 10 section of the Western Transmission system which has had its MOP derated due to the increase in population density in the Terrace/Thornhill area.<sup>95</sup> PNG states that the pipeline would be installed from the proposed new compressor station R5 to Terrace junction in an existing pipeline corridor that currently connects the two locations with a dormant NPS 6 pipeline that would be of insufficient hydraulic capacity.<sup>96</sup>

### **4.2 Project Schedule**

PNG submits an anticipated construction start for the Project in the fourth quarter of 2021, based on BCUC approval by November 30, 2021.<sup>97</sup> Construction is planned to continue from 2021 to 2024.

PNG states that scheduling of project activities is back calculated from project element in-service dates and that prior to kick-off of any project element's scope, a decision would be made to start based on the status of any RECAP customer projects.<sup>98</sup> For example, in order to commence service to Port Edward LNG Phase I, PNG submits that in addition to the facility interconnect pipe, the reactivation activities at R1 and certain pipeline restoration activities on the Terrace to Salvus segment would need to be completed.<sup>99</sup>

PNG submits that although the delay in the Port Edward LNG project, as discussed in Section 2.1 of this Decision, Shippers' Update, means that it is now working towards a later service commencement date, this does not materially change the required schedule layout for required front end activities such as CPCN approval, advancement of engineering and design, or BC OGC permitting. PNG submits that a BCUC decision on the CPCN Application is required by November 30, 2021 in order to continue advancing works in alignment with the overall Project schedule associated with compressor recommissioning work (most notably the R1 Unit 2 and Unit 3 overhauls) and advancement of other sub-project permitting and designs. PNG acknowledges that the new commencement date does provide for further schedule allowance and de-risking related to, for example, materials lead time and the construction during less favorable and less productive times of the year.<sup>100</sup>

Based on the current scheduling of activities for the PNG's Salvus to Galloway and RECAP Projects, PNG believes that the greatest competition for resources between the projects will be from approximately June 2022 to September 2023.<sup>101</sup> PNG submits that each project will have dedicated internal resources which will be largely separate. PNG also states that any risk of competition for internal resources will be mitigated through early

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<sup>94</sup> Ibid.

<sup>95</sup> Ibid, p. 84.

<sup>96</sup> Exhibit B-1, p. 84.

<sup>97</sup> Ibid., p. 98.

<sup>98</sup> Exhibit B-7, BCUC IR 25.1.

<sup>99</sup> Ibid., BCUC IR 25.2.1.

<sup>100</sup> Exhibit B-22, BCUC IR 1.2.

<sup>101</sup> Exhibit B-8-1, BCUC IR 9.1.

acquisition of necessary staff and through supplemental resources from Lauren Services, PNG's consultant which has committed a dedicated team to these projects.<sup>102</sup> Regarding external resources, PNG submits that it has observed an abundance of capable contractor resources available for the scope and scale of PNG's projects.<sup>103</sup>

### 4.3 Project Risks

As part of the risk review process for the Project, PNG states that it completed several workshops in 2020 to identify risks, quantify impacts and assess potential mitigations. It used the outcomes of this risk analysis to conduct a stochastic (Monte Carlo) analysis in order to determine the cost risk-based contingency for the Project. PNG submits that given the variability in the scope and specific conditions related to each individual Project element, it has elected to assess the appropriate confidence level and associated risk-based contingency for each project element separately.<sup>104</sup> The overall Project contingency is based on the weighted-average value of each project element's cost risk contingency, as shown in Table 6 below<sup>105</sup>.

**Table 6: Project Scope Element Confidence Level and Cost Risk Contingency**

Project Scope Component	P-Value (Confidence Level)	Cost Risk (Contingency)
Reactivate Compressor R1	P60	6%
Reactivate Compressor R2	P60	7%
Reactivate Compressor R3	P60	7%
Reactivate Compressor R4	P60	7%
New Compressor R5	P70	7%
New Compressor R6	P85	11%
Existing Pipeline Restoration (Terrace to Salvus)	P85	28%
R5 to Terrace Junction By-pass	P50	6%
Port Edward LNG Interconnect (Prince Rupert)	P70	15%
Top Speed Energy Interconnect (Prince Rupert)	P85	10%
Top Speed Energy Interconnect (Terrace)	P50	5%
Project Management Office	P50	-3%
Overall Contingency (as Weighted Average)		9%

PNG provides a summary of 17 major identified project risks, which include, for example, delays to permitting or regulatory approvals, currency fluctuations and disturbances to marine species. Regarding the risk of

<sup>102</sup> Ibid., BCUC IR 9.1.

<sup>103</sup> Ibid., BCUC IR 9.1.

<sup>104</sup> Exhibit B-1, p. 94.

<sup>105</sup> Ibid., pp. 92-93, Table 5-10. Reformatted by the BCUC.

construction activities disturbing marine species, PNG states that it has identified the critical least-risk periods for specific marine species and that the Project schedule centres on working during least-risk timing windows.<sup>106</sup> PNG states that cost escalation associated with environmental factors, including least-risk timing constraints, was accounted for in risk allowances and considered as part of the project confidence level (P-Value) determinations.<sup>107</sup>

PNG identifies the need for a pipeline re-pressure test as a potential cost risk related to the Existing Pipeline Restoration project scope element. PNG does not anticipate there will be a need to conduct a re-pressure test of the Terrace to Salvus pipeline segment prior to returning the pipeline operating pressure to the design MOP, although this will be determined during final engineering assessment work. Should a re-pressure test be required, the total estimated cost to conduct the test is \$6.93 million.<sup>108</sup> PNG submits that the cost risk of a pressure test being required was included within its risk register for the Project and is reflected in the overall project contingency.<sup>109</sup>

In addition, PNG submits that it planned for the risk that a customer project may not proceed, and assessed that the alternate project outcomes (as described above under Shippers' Update) result in a positive NPV when taking into account the required capital, operating and maintenance expenditures, maintenance capital and the associated TSA revenues.<sup>110</sup>

Given this resulting positive NPV, should a customer project be cancelled prior to construction, PNG submits it can confidently adjust the scope of the proposed Project to reflect the final outcome with the knowledge and comfort that moving forward with a smaller scope is financially justified.<sup>111</sup>

#### **4.4 Pipeline Integrity**

PNG states that it defined the initial scope of pipeline integrity repairs comprising the existing pipeline restoration component of the Project in January 2021. The scope was then further refined by an engineering assessment on the Terrace to Salvus pipeline segment completed in June 2021.<sup>112</sup> PNG explains that the refined restoration scope incorporates information that had recently become available regarding corrosion growth rates, field inspection data, and the actual material properties.<sup>113</sup>

PNG states that it will continue to refine the scope of pipeline integrity repairs during the course of the Project, based on continued engineering assessment.<sup>114</sup> However, due to the nature of restoration activities available to address the identified pipeline integrity features, PNG confirms that it has accounted for all associated restoration scope costs in the current project cost estimate, and that allowances for all identified project risks with this scope of work are reflected in the 28 percent cost risk contingency driven by the P85 confidence level value.<sup>115</sup>

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<sup>106</sup> Exhibit B-7, BCUC IR 29.1.1.

<sup>107</sup> Ibid., BCUC IR 29.1.2

<sup>108</sup> Exhibit B-7, BCUC IR 19.2.

<sup>109</sup> Ibid., BCUC IR 19.2.

<sup>110</sup> Exhibit B-1, p. 8.

<sup>111</sup> Ibid., p. 9.

<sup>112</sup> Exhibit B-7, BCUC IR 19.4.

<sup>113</sup> Ibid., BCUC IR 19.5.1.

<sup>114</sup> Ibid., BCUC IR 19.5.

<sup>115</sup> Exhibit B-16, BCUC IR 51.5, 51.3.

The engineering assessment study completed in June 2021 states that

Stress Corrosion Cracking (SCC) is a known threat for the NPS 8 mainline between Terrace Junction and Salvus (MP 273 to MP 311)...It is recommended that PNG address the potential risk of cracking and/or SCC for the NPS 8 mainline by considering one of the following...[Developing] a company procedure to be followed to demonstrate conformance or equivalency to the engineering assessment and risk evaluation methodologies outlined in NACE Standard Practice SP0204-2015 Stress Corrosion Cracking (SCC) Direct Assessment Methodology.<sup>116</sup>

PNG intends to follow the NACE Standard Practice Guideline, in conjunction with quantitative risk assessment (QRA), to determine the susceptibility of the Terrace to Salvus pipeline segment to cracking and SCC damage and the probability of pipeline failure due to cracking and SCC.<sup>117</sup> PNG submits that the NACE Standard Practice engineering assessment and the QRA are data intensive processes requiring actual data obtained from field direct assessments. PNG states it is planning to complete the work to address the risk of SCC in Q4 2022 based on field data obtained from integrity digs on the subject pipeline, as well as pipe condition data obtained during the course of the ongoing Salvus to Galloway Remediation project on the adjacent pipeline segment.<sup>118</sup>

PNG states that it does not believe that the tight crack and SCC condition of the Terrace to Salvus pipeline segment pose imminent integrity concern for pressures up to 6756 kPag since the pipeline was operated at as high as this pressure until very recently.<sup>119</sup> However, PNG acknowledges that it must complete the work to address the risk of SCC prior to returning this pipeline segment to its licenced MOP of 9335 kPag.<sup>120</sup>

#### **4.5 GHG Emissions**

PNG states that it is committed to reducing GHG emissions from the Project as much as practical.<sup>121</sup> To that end, PNG has included in the design of the Project technology that reduces GHG emissions, such as the replacement of existing seals on compressors, the replacement of gas starters with electric compressor starters, and the electrification of the R5 compressor.<sup>122</sup> PNG states that it estimates that these measures will mean that the increase in its direct emissions as a result of the Project will be approximately 8.7 ktCO<sub>2</sub>e less than it otherwise would be without those measures.<sup>123</sup>

As a result of the RECAP Project, PNG states that its annual direct GHG emissions will increase by approximately 55 ktCO<sub>2</sub>e due primarily to increased consumption of natural gas by compressors.<sup>124</sup> PNG's total direct GHG emissions in 2019, across its West and NE divisions, were 39.7 ktCO<sub>2</sub>e.<sup>125</sup>

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<sup>116</sup> Exhibit B-16, BCUC IR 51.1.

<sup>117</sup> Exhibit B-7, BCUC IR 19.3 & Exhibit B-16, BCUC IR 51.1.

<sup>118</sup> Ibid., BCUC IR 51.2.

<sup>119</sup> Ibid., BCUC IR 51.2.1.

<sup>120</sup> Ibid., BCUC IR 51.2.1.

<sup>121</sup> Exhibit B-10, BCSEA IR 1.1.

<sup>122</sup> Ibid., BCSEA IR 1.1.

<sup>123</sup> Ibid., BCSEA IR 1.2.

<sup>124</sup> Ibid., BCSEA IR 1.2.

<sup>125</sup> Ibid.

## *Positions of the Parties*

BCSEA notes its concern that PNG's direct GHG emissions will be more than double after implementation of the RECAP Project, however it acknowledges that PNG has examined, and incorporated where feasible, several methods of reducing direct GHG emissions.<sup>126</sup>

## *Panel Determination*

**The Panel finds that the scope of work as proposed for the preferred alternative for each of the Project scope elements is appropriate to address the Project need.** The Panel considers that PNG has adequately addressed the risks inherent with the Project and that its process to mitigate risks during detailed design and Project execution is reasonable. Further, we are satisfied that PNG has adequately accounted for cost risks within its overall project contingency.

We are satisfied that PNG's proposed approach to managing pipeline integrity risk on the Terrace to Salvus segment is reasonable. In addition, we recognize that this type of risk is ongoing, and that PNG will continue to obtain data to inform their risk management operations. **Therefore, the Panel directs PNG to report on its QRA and SCC work as part of the required semi-annual reporting requirements described in Section 9 of this Decision.**

It is important to note that one of the risks that PNG identified, namely that a customer cancels a project, has materialized. In our view, PNG has adequately mitigated that risk by assessing the alternate outcomes such that it is able to adjust the scope of the Project to reflect the final outcome with the knowledge and comfort that moving forward with a smaller scope is financially justified.

The Panel accepts that PNG has adequately addressed the risks of the Project and that its proposed mitigation strategies are reasonable.

## **5.0 Project Costs**

The Panel notes that the description of Project costs reflects the information contained in the CPCN Application, unmodified by the loss of the Top Speed projects, as described in the Shippers' Update. We address the consequences of the reduced scope, and therefore the reduced cost, in Section 5.3 of this Decision.

### **5.1 Project Cost Estimate**

PNG developed an overall cost estimate for the Project,<sup>127</sup> including the three interconnection pipelines, to an Association for the Advancement of Cost Engineering International (AACE International) Class 3 definition. The Project cost is forecast at \$88.5 million in as-spent dollars, which includes a contingency provision of approximately nine percent and a management reserve of three percent to reflect the risks associated with the Project.<sup>128</sup> A summary of the estimated Project capital costs is provided in Table 7.

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<sup>126</sup> BCSEA Final Argument, para 6.

<sup>127</sup> Exhibit B-1, p. 91: In conjunction with Lauren Services.

<sup>128</sup> Ibid., pp. 7, 91, 119.

**Table 7: Summary of Estimated Project Capital Costs (\$ millions)<sup>129</sup>**

<b>Project Scope Element (in millions)</b>	<b>As-Spent \$</b>	<b>2020 \$</b>
Existing Compressor Station Reactivation	\$ 23.2	\$ 21.5
Existing Pipeline Restoration	7.6	7.2
New Compressor Stations	15.6	14.4
Customer Interconnections	15.7	14.4
R5 to Terrace By-pass Pipeline	5.4	5.0
	67.5	62.5
Project Management Office	8.4	7.8
Subtotal	75.9	70.3
Contingency (~9%)	6.7	6.2
Subtotal including Contingency	82.6	76.5
Management Reserve (3%)	2.5	2.3
Total Capital Cost before AFUDC	85.1	78.8
AFUDC*	3.4	3.2
<b>Total Capital Cost with AFUDC</b>	<b>\$ 88.5</b>	<b>\$ 82.0</b>

\*Allowance for Funds Used During Construction

PNG submits that it will use the Project cost estimate as the control budget and will refine it following certain critical project stages such as contractor and materials procurement. PNG states that it will track the performance of the Project against the control budget through implementation of a project-specific cost control and reporting plan.<sup>130</sup>

### *Positions of the Parties*

Neither intervener had submissions regarding the cost estimate for the Project.

### *Panel Determination*

**The Panel finds the Project cost estimate and associated contingency and management reserve are reasonable.** The cost estimate was prepared in accordance with the BCUC's CPCN Guidelines and to an AACE Class 3 level of accuracy. The Panel also considers the proposed contingency and management reserve for the Project are reasonable. The Panel notes that no intervener expressed concern with PNG's cost estimate for the Project and the associated contingency and management reserve.

**The Panel directs PNG to file a material change report with the BCUC of any material change to the Project scope or costs.** In addition, we find it appropriate to define materiality for this directive to provide clarity of expectations. A material change is a change in PNG's plan for the Project that would reasonably be expected to have a significant impact on the schedule, cost, or scope, such that:

- The Project schedule and/or the in-service date is delayed by 3 months or longer;

<sup>129</sup> Exhibit B-1, p. 119.

<sup>130</sup> Ibid., p. 94.



- The total Project cost exceeds 10 percent of the estimated Project cost provided in Table 6-1 of the CPCN Application; or
- There is a change to the Project scope provided in section 4 of the CPCN Application.

**In the event of a material change, the Panel directs PNG to file a material change report with the BCUC explaining the material change with reasons, PNG's consideration of the Project risk and the options available, and actions PNG is taking to address the material change. PNG must file the material change report as described in Section 9 of this Decision as soon as practicable and within 30 days of the date on which the material change occurs.**

## 5.2 Depreciation Rates

PNG proposes two different approaches to depreciating project assets:

### 1. Interconnection Pipelines

PNG proposes to depreciate the interconnection pipeline assets over the life of the respective TSA,<sup>131</sup> rather than using PNG's standard depreciation rates, because these are specific use assets that PNG does not expect to be used and useful after the expiry of the TSAs.<sup>132</sup> PNG acknowledges that the depreciation rates for the interconnecting pipelines are a key input for the demand charge set out in the Interconnection Agreements and therefore, seeks approval of these depreciation rates.<sup>133</sup>

### 2. Project Assets

PNG proposes to depreciate all Project assets other than the interconnection pipelines (Project Assets) using PNG's standard depreciation rates, as set out in PNG's most recent depreciation study, which have previously been approved by the BCUC.<sup>134</sup> PNG states that the standard depreciation rates for the Project Assets are based on useful lives that range from 30 to 75 years,<sup>135</sup> as compared to the longest TSA term of 21.5 years.<sup>136</sup>

PNG considered depreciating the Project Assets over the life of the TSAs; however, PNG expects that many of these common-use facilities will still be used and useful after the expiry of the initial term of the TSAs.<sup>137</sup> PNG's view is that the useful life of an asset should be determined based on the period the asset is required to earn a favourable cash flow.<sup>138</sup> PNG believes that certain Project Assets would generate future cash flows beyond the initial TSA term but is currently unable to determine the specific assets.<sup>139</sup> Under a scenario whereby none of the TSAs are extended beyond the initial term, PNG provides examples of how each Project Asset may continue to

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<sup>131</sup> Exhibit B-1, p. 133.

<sup>132</sup> Exhibit B-7, BCUC IR 36.4; Exhibit B-14, BCUC IR 47.2.

<sup>133</sup> Ibid., BCUC IR 36.2.

<sup>134</sup> Ibid., BCUC IR 36.1.

<sup>135</sup> Ibid., BCUC IR 36.3.

<sup>136</sup> Exhibit B-1, p. 4, Table 1-1.

<sup>137</sup> Exhibit B-7, BCUC IR 36.5.

<sup>138</sup> Ibid., BCUC IR 36.8, 36.9: US GAAP ASC 360-10-35-3 and ASC 350-30-35-3 include factors to be considered when establishing the useful life of an asset.

<sup>139</sup> Ibid., BCUC IR 36.8.1.

be used and useful, such as for system pressure maximization and segment based maintenance or operational needs.<sup>140</sup>

### *Panel Determination – Depreciation Rates*

**The Panel approves PNG’s proposal to depreciate the interconnection pipeline assets over the life of the respective TSA.** The Panel accepts PNG’s submission that these are specific use assets, being constructed for the respective customer, that are unlikely to be used and useful after the expiry of the TSAs.

**The Panel approves PNG’s proposal to depreciate the remaining Project Assets using PNG’s standard depreciation rates, which rates the BCUC has previously approved.** The Panel accepts the use of standard depreciation rates for these common-use assets and notes that there is limited evidence to support the Project Assets not being used and useful after the expiry of the initial term of the TSAs. Further, the Panel notes that PNG’s depreciation rates are routinely reviewed in PNG’s depreciation studies. These depreciation studies are typically filed as support for any request for BCUC approval of changes to PNG’s depreciation rates.

## **5.3 Rate Impact Analysis**

### **5.3.1 Financial Analysis**

PNG provided a financial analysis of the Project over a 29-year period, consisting of a 4-year expected construction phase, the period up to the expiry of the last of the TSAs and a 5-year period over which the remaining undepreciated plant balances are amortized after the expected expiry of the last of the TSAs (Analysis Period).<sup>141</sup> PNG presented the expected rate impacts of the Project on a standalone basis (i.e., excluding the Salvus to Galloway Project costs) and on an integrated basis (i.e., factoring in the costs related to the Salvus to Galloway Project), in order to demonstrate that the Project is financially sound on a standalone basis, as well as with the additional costs from the Salvus to Galloway project.<sup>142</sup> PNG also provided a financial analysis of the various alternatives it considered for each of the main scope elements, as discussed above in Section 3.2.

PNG expects that the revenues and margin associated with the Project will more than offset the combined cost of service impact of both the Project and the Salvus to Galloway Project over the average initial 20-year term of the TSAs. Therefore, PNG states that all PNG-West customers will have lower delivery rates than they otherwise would in the absence of the new revenues and margin.<sup>143</sup>

On a standalone basis, PNG forecasts the Project will result in an average rate decrease of 17 percent compared to PNG’s approved 2021 cost of service, over the Analysis Period.<sup>144</sup>

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<sup>140</sup> Exhibit B-14, BCUC IR 47.1

<sup>141</sup> Exhibit B-1, p. 119; Exhibit B-7, BCUC IR 36.13: PNG is not proposing a 5-year write-off period for the undepreciated plant balances after the expiry of the last TSA. PNG uses this assumption in its financial modelling for the Project to demonstrate that the Project provides benefits to customers even under very conservative assumptions.

<sup>142</sup> Exhibit B-1, pp. 126–127.

<sup>143</sup> Ibid., pp. 8, 32.

<sup>144</sup> Exhibit B-7, BCUC IR 36.6, Table 6-10 and BCUC IR 36.13: This includes the impact of the conservative assumption that the remaining plant balance at the end of the contracts is amortized over a 5-year period.

With the Salvus to Galloway Project costs factored into the analysis, PNG expects the incremental revenue sufficiency from the Project over the Analysis Period will result in an average rate decrease of 15 percent compared to PNG's approved 2021 cost of service.<sup>145</sup>

### **Financial Evaluation of Alternate Project Outcomes**

PNG notes that the customers' TSA obligations are not contingent on commencement or completion of the related customer project (i.e., the individual shipper's project). However, PNG believes it is prudent to plan for the risk that a customer project may not proceed for reasons unrelated to and beyond the control of PNG. Therefore, PNG considered the potential for alternate final outcomes for the Project should one or more of the customer projects not proceed.<sup>146</sup> As noted above in the Shippers' Update, this 'potential' has become a reality.

As noted in Section 2.1 of this Decision, PNG provides a table which evaluates 10 potential alternate project outcomes. For ease of reference, this table is reproduced below.

**Table 3: Summary of Alternate Project Outcomes (in 2020 dollars)<sup>147</sup>**

Project Outcomes		Proposed Project	Alternate Outcomes									
		Base Case	1	2	3	4	5	6	7	8	9	10
		Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11
Terrace Volumes (MMSCFD)		20	20	20	0	20	20	0	0	0	20	0
Prince Rupert / Port Edward Volumes (MMSCFD)		45	30	35	45	20	10	30	35	20	0	10
Customer Demand (MMSCFD)		65	50	55	45	40	30	30	35	20	20	10
<b>Capital Item</b>		<b>Cost (2020 \$)</b>										
R1 Upgrades	9,166,052	X	X	X	X	X	X	X	X	X	X	X
R2 Upgrades and Reactivation	5,729,935	X	X	X	X							
R3 Upgrades and Reactivation	5,959,622	X	X	X	X	X	X	X	X			
R4 Upgrades and Reactivation	5,900,638	X							X			
Mainline from MP 273 to 311 - Restore MOP	10,047,379	X	X	X	X		X	X	X			
R5 Expansion	10,206,008	X	X	X	X							
R6 Expansion	8,358,197	X			X							
R5 to Terrace Junction Pipeline	5,872,286	X	X	X	X	X	X	X	X			
<b>Reactivation and Recommissioning Subtotal</b>		<b>61,240,117</b>	<b>46,981,282</b>	<b>46,981,282</b>	<b>55,339,480</b>	<b>20,997,961</b>	<b>31,045,340</b>	<b>31,045,340</b>	<b>36,945,977</b>	<b>9,166,052</b>	<b>9,166,052</b>	<b>9,166,052</b>
Interconnect to Top Speed - Terrace	1,396,493	X	X	X		X	X				X	
Interconnect to Port Edward LNG - Port Edward	2,310,973	X	X	X	X	X		X	X	X		
Interconnect to Top Speed - Prince Rupert	13,910,502	X	X		X		X	X				X
<b>Interconnecting Pipelines Subtotal</b>		<b>17,617,967</b>	<b>17,617,967</b>	<b>3,707,466</b>	<b>16,221,475</b>	<b>3,707,466</b>	<b>15,306,994</b>	<b>16,221,475</b>	<b>2,310,973</b>	<b>2,310,973</b>	<b>1,396,493</b>	<b>13,910,502</b>
<b>Total Capital (2020 \$)</b>		<b>78,858,085</b>	<b>64,599,250</b>	<b>50,688,748</b>	<b>71,560,954</b>	<b>24,705,426</b>	<b>46,352,334</b>	<b>47,266,814</b>	<b>39,256,950</b>	<b>11,477,025</b>	<b>10,562,545</b>	<b>23,076,554</b>
<b>Net Present Value of Customer Benefits (\$ millions)</b>		<b>\$184</b>	<b>\$145</b>	<b>\$179</b>	<b>\$101</b>	<b>\$167</b>	<b>\$60</b>	<b>\$90</b>	<b>\$113</b>	<b>\$103</b>	<b>\$73</b>	<b>\$23</b>

Based on this analysis, PNG assessed that all alternate Project outcomes result in a positive NPV when considering the required capital, operating and maintenance expenditures, maintenance capital and the associated TSA revenues. Given this result, should a customer project be cancelled prior to construction, PNG states that it can adjust the scope of the Project to reflect the final outcome with the knowledge and comfort that moving forward with a smaller scope is financially justified.<sup>148</sup>

<sup>145</sup> Exhibit B-7, BCUC IR 36.6, Table 6-11 and BCUC IR 36.13: This includes the impact of the conservative assumption that the remaining plant balance at the end of the contracts is amortized over a 5-year period.

<sup>146</sup> Exhibit B-1, p. 8.

<sup>147</sup> Exhibit B-23-1, BCUC Panel IR 3.1.1.

<sup>148</sup> Exhibit B-1, pp. 8–9; Exhibit B-23-1, BCUC Panel IR 3.1.

PNG notes that Alternate Outcome 7 in Table 3 represents the outcome should neither Top Speed Energy project proceed and should the Top Speed Energy capacity not be acquired by another party. Under this outcome, PNG states it would deliver 35 MMSCFD to Port Edward LNG, with a total project cost estimate of \$39,256,950 and the NPV of the customer benefits is estimated to be \$113 million. Further, PNG is hopeful that a proponent will purchase one or both Top Speed Energy projects or another party will come forward and purchase the available capacity.<sup>149</sup>

### *Panel Determination*

**The Panel finds the financial analysis to be reasonable.** The Panel notes that the financial analysis for the Project demonstrates a positive NPV under all alternate project outcomes, as well as the base case, and indicates that rates will be lower than they otherwise would be in the absence of the Project. Specifically, we note that PNG's current reality, Alternate Outcome 7, which represents the loss of both Top Speed projects, demonstrates a positive NPV.

#### **5.3.2 Rate Impact Mitigation**

In BCUC Order G-35-20 with reasons for decision,<sup>150</sup> the BCUC approved the Large Volume Industrial Deferral Account (LVIDA) to capture a portion of revenues collected from RS 80 shippers. The purpose of the deferral account is to mitigate future rate volatility and the potential for rate shock associated with the Project.<sup>151</sup> PNG expects to transfer sufficient RS 80 revenues over time to the LVIDA to protect ratepayers should a RS 80 customer leave the system before the end of the service term or in the unexpected event of any write-off of stranded assets after the TSA's expire.<sup>152</sup> PNG plans to seek BCUC approval in future revenue requirements applications (RRAs) to fund or amortize the LVIDA as a mechanism to provide rate stability.<sup>153</sup> In Table 6-12 of the CPCN Application, PNG provides an illustrative example of how the LVIDA could be used to mitigate rate volatility, which shows a constant annual rate increase of 1.8 percent for customers with new industrial customer revenues in excess of the Project's cost of service being captured in the LVIDA.<sup>154</sup>

PNG believes that over the term of the TSAs, the LVIDA will be a valuable tool to help provide stability to future rate changes and to help mitigate the rate impact when TSAs expire.<sup>155</sup> Currently, PNG believes that it has limited ability to avoid rate shock as the TSAs expire without the use of the LVIDA.<sup>156</sup>

PNG states that its customers will likely not experience a rate decrease in the foreseeable future, due to cost pressures outside of the Project and the Salvus to Galloway Project. However, PNG submits that customers will see substantial benefits from the Project because rates will be lower than they otherwise would have been in the absence of the Project.<sup>157</sup>

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<sup>149</sup> Exhibit B-21, p. 3; Exhibit B-23-1, BCUC Panel IR 3.1.1.

<sup>150</sup> Order G-35-20 with reasons for decision dated February 28, 2020, PNG Application Regarding Process for Allocation of Reactivated Capacity and Approval of Large Volume Industrial Transportation Rates

<sup>151</sup> Exhibit B-1, p. 130.

<sup>152</sup> PNG Final Argument on CPCN Application, p. 9; Exhibit B-7, BCUC IR 36.13.

<sup>153</sup> Exhibit B-1, p. 131.

<sup>154</sup> Ibid.

<sup>155</sup> Exhibit B-16, BCUC IR 53.1.

<sup>156</sup> Ibid., BCUC IR 53.3.

<sup>157</sup> Ibid., BCUC IR 53.1.

As events unfold and additional certainty is obtained, PNG states that it will refine its rate stability strategies and will seek BCUC approval to implement the strategies in future RRAs which will reflect all revenue and cost of service items at the time of submission. However, PNG provides an overview of the rate stability mechanisms that it is considering, including the use of the LVIDA to mitigate future rate volatility.<sup>158</sup>

### *Panel Determination*

**The Panel finds that PNG has demonstrated that the Project is financially sound, whether on a standalone basis, excluding the Salvus to Galloway Project costs, or on an integrated basis, factoring in the costs related to the Salvus to Galloway Project.**

The Panel acknowledges, however, that the impact on rates has the potential to be volatile. Indeed, the BCUC accepted PNG's submissions during the RECAP Application, that the RECAP auction process had the potential for future rate volatility due to the timing of associated revenues and underlying costs. As a result, the BCUC approved establishment of the LVIDA as a mechanism to benefit ratepayers by way of rate smoothing to mitigate future rate volatility and the potential for rate shock.<sup>159</sup>

**The Panel directs PNG to file a rate impact mitigation plan, outlining PNG's refined rate stability strategies to mitigate the potential rate volatility as a result of the Project in its 2022 RRA as part of an Evidentiary Update to the RRA.**

The Panel accepts PNG's potential rate impact mitigation approach using the LVIDA, recognizing that PNG's specific rates and use of deferral accounts will be determined in subsequent RRAs.

## **6.0 Environment and Archaeology**

PNG submits it has performed desktop-based overview assessments to assess the potential for environmental and archaeological impacts arising from the Project. PNG has concluded that the Project is expected to have minimal irreversible or deleterious environmental and archaeological impact.<sup>160</sup> PNG further states that identified potential impacts can and will be mitigated through implementation of site and activity specific management plans and best practices. PNG plans to continue its investigations through the detailed design and pre-construction phases to gain a greater understanding of the potential risk to various species and habitats and traditional and cultural values.

### **6.1 Environment**

In the period between 2018 to 2020, PNG contracted both Triton Environmental Consultants Ltd. (Triton) and Khtada Environmental Services (Khtada) to undertake environmental analysis of various components of the proposed Project scope. Specifically, Triton was engaged to prepare an Environmental Constraints Report (ECR) focusing on the reactivation of R1, R2, R3, R4 and the restoration work required to return the NPS 8 pipeline from Terrace Junction to Salvus (MP273-311) to its original licenced MOP. Khtada was engaged in 2018 to

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<sup>158</sup> Exhibit B-1, pp. 130, 132; PNG Final Argument on CPCN Application, pp. 8–9.

<sup>159</sup> Exhibit B-1, p. 130.

<sup>160</sup> Ibid., p. 137.

prepare a similar ECR focusing on the on the construction of new assets associated with the Project including compressor stations R5 and R6, the R5 to Terrace by-pass pipeline and the interconnections to the new customer sites. Khtada also prepared a 2021 update memorandum based on the changes to the customer location and interconnecting pipeline alignment. For both these assessments, Triton and Khtada undertook desktop studies to identify baseline information available for the identified project elements.<sup>161</sup>

PNG submits that future studies in the areas that are considered to have low environmental sensitivity will be completed in accordance with PNG's Environmental Standard Practice Procedures. Further, work in areas that are considered to have a greater level of environmental sensitivity or require more unique and complex mitigations will be completed in accordance with BC OGC, Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD), Fisheries and Oceans Canada (DFO) and/or other regulatory body permit conditions and a project-specific environmental protection plan.<sup>162</sup>

PNG notes that certain key regulatory permitting requirements and processes at both the federal and provincial level are likely to apply to the Project, under the *Fisheries Act*, *Petroleum and Natural Gas Act*, *Oil and Gas Activities Act*, *Wildlife Act*, *Forest Act*, *Transportation Act*, *Heritage Conservation Act* and *Water Sustainability Act*.<sup>163</sup>

## 6.2 Archaeology

PNG engaged Roy Northern Land & Environmental to undertake desktop archaeology reviews. These studies assessed the Project site for areas of archaeological and cultural potential and proximity to known archaeological sites. The desktop reviews indicated that areas of archaeological potential and known archaeological sites exist within the project footprint and that PNG should obtain a Section 14 Heritage Conservation Act Heritage Inspection Permit, and further that a targeted Preliminary Field Reconnaissance be conducted focusing on the identified areas of archaeological potential. The desktop review also recommended that an Archaeological Impact Assessment (AIA) be completed before any clearing or other land remediation activities are undertaken in the identified areas. PNG notes that work on the AIA commenced in August 2020.<sup>164</sup> PNG submits that the results from the AIA process will be used to develop site-specific mitigation plans to address any potential impacts associated with project work. PNG will also provide detailed archaeological specifications, including PNG's Chance Find Procedure, to contractors working on the project sites. Where appropriate, PNG will engage Indigenous communities for archaeological and cultural monitoring during work in sensitive areas.<sup>165</sup>

### *Positions of the Parties*

BCSEA states that it is not aware of any evidence inconsistent with PNG's assertion that the Project is expected to have minimal irreversible or deleterious environmental and archaeological impact. Further, BCSEA notes that the environmental and archaeological impacts of the Project are subject to ongoing requirements supervised by the BC OGC.<sup>166</sup>

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<sup>161</sup> Ibid., p. 138.

<sup>162</sup> Ibid.

<sup>163</sup> Ibid., pp. 142-143.

<sup>164</sup> Ibid., p. 149.

<sup>165</sup> Ibid., p. 153.

<sup>166</sup> BCSEA Final Argument, para 24, PDF 8/10.

## Panel Determination

The Panel is satisfied with the information that PNG has provided to describe the environmental and archaeological work undertaken to date as well as the risks, mitigation measures and next steps required. The Panel also considers that information regarding material changes to the environmental and archaeological impacts that PNG has identified will be useful to the BCUC. If there is such a material change, **the Panel directs this information to be included in a Material Change Report as described in Section 9 of this Decision.**

The Panel recognizes that the detailed environmental studies have not been completed. PNG acknowledges its obligation to continue to engage in consultation throughout the Project, as more detailed environmental assessments and related information become available. Further, PNG will require permits from several other government bodies, including the BC OGC, which applications will require detailed and rigorous plans.

The next key date for PNG in the TSA agreements is June 2022, by which time PNG must have various permits in place. **Accordingly, the Panel directs PNG to report on the status of its permits as part of the semi-annual reporting described in Section 9 of this Decision.**

## 7.0 Consultation and Engagement

Section 3 of the BCUC's CPCN Guidelines outlines the information expected from an applicant regarding consultation with First Nations and engagement with the public, which includes: a description of consultation activities; issues and concerns raised; the applicant's assessment of the sufficiency of the consultation process; and a statement of planned future consultation.<sup>167</sup>

Key components of PNG's project development process include consultation and engagement with Indigenous communities, identified stakeholders, and the general public and maintaining two-way communication with affected and interested parties.<sup>168</sup>

The following subsections provide an overview of PNG's consultation activities with stakeholders such as local governments, landowners and customers, and Indigenous communities.

### 7.1 Indigenous Consultation

Section 3 of the BCUC's CPCN Guidelines specifically requires that project proponents identify those First Nations potentially affected by the application, including the feasible project alternatives and the information considered to identify these First Nations, and provide a summary of the consultation to date for each potentially affected First Nation.<sup>169</sup>

PNG considered all Indigenous communities whose traditional territories overlap the project footprint to be potentially impacted by the proposed Project. PNG's review and evaluation identified the following 18 Indigenous communities:<sup>170</sup>

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<sup>167</sup> The BCUC's CPCN Guidelines, Section 3, pp. 5-7.

<sup>168</sup> Exhibit B-1, p. 154.

<sup>169</sup> The BCUC's CPCN Guidelines, Section 3.

<sup>170</sup> Exhibit B-1, p.165.

- Gitga'at First Nation;
- Gitxaala Nation;
- Kitselas First Nation;
- Kitsumkalum First Nation;
- Lax Kw'alaams Band;
- Lheidli T'enneh First Nation;
- Metlakatla First Nation;
- McLeod Lake Indian Band;
- Nadleh Whu'ten;
- Nak'azdli Whut'en First Nation;
- Nee-Tahi-Buhn First Nation;
- Office of the Wet'suwet'en Hereditary Chiefs;
- Saik-uz First Nation;
- Stellat'en First Nation;
- Ts'il Kaz Koh First Nation (Burns Lake Indian Band);
- West Moberly First Nations;
- Wet'suwet'en First Nation; and
- Yekooche First Nation.

PNG submits that it proactively engaged with each Indigenous community identified as being potentially impacted by the Project, with engagement commencing in November 2020. PNG sent out an introductory letter and Project Fact Sheet to individual Indigenous communities, who were encouraged to review the material and to respond with any questions or concerns they may have, and were also offered a virtual meeting in which a project overview would be presented. Reminder emails were sent in late November 2020 and mid-January 2021 to those Indigenous communities that did not respond.<sup>171</sup>

On a confidential basis, PNG has filed a communications log that includes all correspondence with all 18 Indigenous communities since engagement commenced in November 2020. The log includes email content as well as information forwarded to the Indigenous communities for review. PNG will continue to update this log as it advances through various permitting phases with regulatory agencies and engages with Indigenous communities.<sup>172</sup>

In addition, also on a confidential basis, PNG filed a log outlining questions, concerns and comments made by Indigenous communities in regard to the overview presentations and PNG responses.<sup>173</sup>

PNG submits that there are no substantive outstanding issues related to engagement with Indigenous communities at the time of application. PNG says the Indigenous communities engaged to date all recognize the

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<sup>171</sup> Exhibit B-1, p. 167.

<sup>172</sup> Ibid., p. 168.

<sup>173</sup> Ibid.



importance of the proposed Project in bringing new demand to the PNG system which will positively impact all customer rates. PNG has committed to continuing engagement on environmental impacts of the Project ahead of permit applications when more detailed information is available. PNG observes that several of the Indigenous communities expressed an interest in how they could assist with project activities. PNG notes that, to date, crews from the various Indigenous communities have been involved in pre-project archaeological and environmental works. Going forward, PNG will endeavor to employ environmental monitors from the Indigenous communities and is committed to identifying and helping to provide other local contracting opportunities to Indigenous community-owned and affiliated businesses.<sup>174</sup>

Lax Kw'alaams and Metlakatla note they have a financial agreement with PNG, which is contingent on the date of the BCUC's decision.<sup>175</sup>

## **7.2 Public Engagement**

In the development of the Communication and Engagement Plan for the Project, PNG identified key stakeholders and assessed the potential impact of the Project to each stakeholder. PNG has already engaged or will engage as the Project advances the following public stakeholders:<sup>176</sup>

- General Public – residents, businesses, industrial customers, new industrial customers, as well as landowners that will be directly impacted by the Project;
- British Columbia Provincial Government Agencies – BC OGC; BC Parks; BC Archaeology Branch, FLNRORD; Ministry of Environment; Ministry of Transportation & Infrastructure (MOTI); and Ministry of Energy, Mines and Petroleum Resources;
- Federal Agencies – Transport Canada and DFO;
- Municipal and Regional Governments – City of Prince Rupert, District of Port Edward, North Coast Regional District, Town of Smithers, Village of Telkwa, District of Vanderhoof, Bulkley Nechako Regional District, District of Houston, Village of Fraser Lake, District of Fort St. James, District of Kitimat, City of Terrace, Kitimat Stikine Regional District, North Coast Regional District, Village of Burns Lake, Village of Granisle and Fraser Fort-George Regional District; and
- Federal MPs and Provincial MLAs in whose constituencies the Project works are located.

PNG used a number of two-way communication channels to share project information with the public and to receive input. Channels included: two virtual information sessions; Facebook posts where the public posted comments or questions regarding the Project; and a project email and telephone line for the public to ask questions. During the virtual information sessions potential suppliers/contractors who were interested in providing services to the Project were directed to the registry for contractors, suppliers and employment listed on the project page established on PNG's website.

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<sup>174</sup> Exhibit B-1, p. 168.

<sup>175</sup> Exhibit C1-5, p. 4.

<sup>176</sup> Exhibit B-1, p. 156.

PNG identified, engaged, and solicited feedback from stakeholders and the general public and provided them with information on the Project as well as opportunities for discussion. PNG states that at the time it filed the CPCN Application, there were no outstanding issues or concerns raised with PNG.<sup>177</sup>

PNG submits that it will continue to engage with stakeholders and the general public as the Project advances and will maintain open dialogue with all interested parties. Communication will continue throughout the construction phases of the Project on matters such as schedule/timelines, construction spaces, and also on potential impacts to natural gas service or possible traffic disruptions.<sup>178</sup>

### *Positions of the Parties*

BCSEA does not have a submission regarding PNGs consultation activities.

### *Panel Determination*

**The Panel finds that PNG's Indigenous consultation to date has been adequate.** The Panel considers that the fact that Lax K'walaams and Metlakatla have a financial agreement with PNG, which is contingent on the date of final decision of the BCUC (see Section 9 below), indicates that at least those consultation efforts to date have been productive. Aside from the concerns raised by Gitxaala First Nation, no other Indigenous community has raised concerns with the BCUC about the Project.

The Panel is also satisfied with PNG's public engagement. PNG notified the general public of the Project, including customers, residents, business and stakeholder groups, using a range of media, and it conducted two virtual information sessions. The Panel is satisfied that PNG has properly documented the concerns of stakeholders and that its responses to those concerns are adequate.

The Panel also notes PNG's stated commitment to continue with its engagement and consultation efforts throughout the Project execution. **Accordingly, the Panel directs PNG to report on its consultation efforts as part of the semi-annual reporting requirements described in Section 9 of this Decision.** The Panel also considers that material changes to engagement and consultation activities would be useful information for the BCUC. If there is such a material change, **the Panel directs this information to be included in a Material Change Report as described in Section 9.**

## **8.0 Consideration of Provincial Energy Objectives and PNG's Long-Term Resource Plan**

### **8.1 BC Energy Objectives**

BC's Energy Objectives are set out in section 2 of the CEA. PNG considers that objectives (h) and (k) are relevant to the Project.<sup>179</sup>

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<sup>177</sup> Exhibit B-2, p. 164.

<sup>178</sup> Exhibit B-2, p. 165.

<sup>179</sup> Exhibit B-1, p. 170.

Objective (h) is “to encourage the switching from one kind of energy source or use to another that decreases greenhouse gas emissions in British Columbia.”<sup>180</sup> PNG states that it has selected an electric powered compressor unit for proposed new compressor station R5 rather than a unit powered by natural gas. PNG states that the use of electricity in place of natural gas at the R5 compressor station will result in a reduction of GHG emissions by approximately 4455 tonnes of CO<sub>2</sub>e per year.<sup>181</sup>

Objective (k) is “to encourage economic development and the creation and retention of jobs.”<sup>182</sup> PNG submits that the Project will provide local employment as well as positive benefits to the local and provincial economy during the construction phase. Further, PNG submits that the Project directly supports new large industrial customers to establish operations in British Columbia, which will in turn will provide additional employment and financial benefits to the regional and provincial economies.<sup>183</sup>

As noted below, BCSEA expresses concerns regarding GHG emissions arising from the Project. Objective (g) relates to the reduction of GHG emissions in BC. PNG estimates an increase to its direct GHG emissions of approximately 55 ktCO<sub>2</sub>e per year as a result of the increased capacity of the PNG-West transmission system resulting from the Project. PNG’s total direct emissions once the Project is completed and all RECAP customers have commenced service are forecast to be 94.7 ktCO<sub>2</sub>e per year. However, PNG is committed to reducing the GHG emissions from the Project as much as practical. In the design of the Project, PNG has included technology that reduces the emissions that would otherwise occur, such as the replacement of existing seals on compressors, the replacement of gas starters with electric compressor starters, and the electrification of the R5 compressor. PNG estimates that these measures will mean that the increase in its direct emissions as a result of the Project will be approximately 8.7 ktCO<sub>2</sub>e less than it otherwise would be without those measures.<sup>184</sup>

## 8.2 Long-Term Resource Plan

As previously stated, section 46 (3.1) of the UCA provides that in deciding whether to issue a CPCN, the BCUC must consider the most recent long-term resource plan filed by the public utility under section 44.1, if any.<sup>185</sup> In addition, the BCUC’s CPCN Guidelines provide that an application for a CPCN should include information relating the project to the applicant’s approved long-term resource plan filed, including the extent to which the Project was considered in the plan, and, if applicable, a discussion explaining how the plan provides support and justification for the need for the project.<sup>186</sup>

PNG’s most recent long-term resource plan is the 2019 Consolidated Resource Plan (CRP), which PNG filed with the BCUC on October 31, 2019. The 2019 CRP was a combined filing by PNG and Pacific Northern Gas (N.E.) Ltd. By Order G-265-20 and accompanying reasons, dated October 23, 2020, the BCUC found that the 2019 CRP was in the public interest and accepted it in accordance with section 44.1(6) of the UCA.<sup>187</sup>

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<sup>180</sup> *Clean Energy Act*, Section 2 (h).

<sup>181</sup> Exhibit B-1, p. 170.

<sup>182</sup> *Clean Energy Act*, Section 2 (k).

<sup>183</sup> Exhibit B-1, p. 170.

<sup>184</sup> Exhibit B-10, BCSEA IR 1.2.

<sup>185</sup> *Utilities Commission Act*.

<sup>186</sup> The BCUC’s CPCN Guidelines, 2(vi).

<sup>187</sup> Decision and Order G-265-20, Application for Acceptance of 2019 Consolidated Resource Plan and for Acceptance of Energy Conservation and Innovation (ECI) Portfolio Funding for 2020 to 2022. p. 40.

PNG notes that the 2019 CRP identified the reactivation and remediation work that is the subject of this Application, although the 2019 CRP did not reflect any outcomes of the RECAP in the forecasting scenarios. PNG explains that, at that time, it had no clear indication of the outcome of the RECAP auction process and that it would not speculate on any likely uptake of spare capacity.<sup>188</sup> In Order G-265-20 and accompanying reasons, the BCUC found that the exclusion of RECAP volumes from PNG's demand forecast was reasonable.<sup>189</sup>

PNG submits that the Project remains generally consistent with the representations made in the 2019 CRP.<sup>190</sup>

### *Positions of the Parties*

BCSEA is concerned that PNG's direct GHG emissions will be more than doubled after the Project is implemented. Nevertheless, BCSEA states that it is "satisfied with PNG's explanation that electric power for R6 was examined but did not prove feasible. Similarly, BCSEA is satisfied that PNG did examine the potential to convert the R1, R2, R3 and R4 compressor stations to electrically driven compressors in order to reduce GHG emissions, but that this did not prove feasible."<sup>191</sup>

### *Panel Discussion*

**The Panel finds that the Project supports the applicable objectives of the CEA.** In particular, the selection of an electric powered compressor unit instead of one powered by natural gas, as well as including in the design of the Project other technology that reduces GHG emissions, are consistent with the objective of low-carbon fuel switching (objective h). In addition, both the construction of the Project and consequent expansion of PNG's operational assets will create employment, as will the operations at the new large industrial customers once the Project is completed. We agree with PNG that Sections 6 and 19 of the CEA are related to electricity and do not apply to the Project.

**The Panel also finds that the Project is consistent with PNG's most recently filed long-term resource plan.** In addition, we note that the BCUC in Order G-265-20 agreed with PNG that the actual impacts of reactivating, as a result of RECAP, existing and under-utilized capacity on the PNG-West system's ability to serve current and future loads and impacts on customers are best addressed in the context of future applications for approval of CPCNs, section 44.2 UCA expenditure schedules or RRAs.<sup>192</sup>

## **9.0 CPCN Approvals and Directives**

### *Positions of the Parties*

BCSEA supports issuance of a CPCN for the Project.<sup>193</sup>

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<sup>188</sup> Exhibit B-1, p. 171.

<sup>189</sup> Decision and Order G-265-20, Application for Acceptance of 2019 Consolidated Resource Plan and for Acceptance of Energy Conservation and Innovation (ECI) Portfolio Funding for 2020 to 2022, p. 19.

<sup>190</sup> Exhibit B-1, p. 171.

<sup>191</sup> BCSEA Final Argument, para 28 p. 8.

<sup>192</sup> Decision and Order G-265-20, Application for Acceptance of 2019 Consolidated Resource Plan and for Acceptance of Energy Conservation and Innovation (ECI) Portfolio Funding for 2020 to 2022, p. 19.

<sup>193</sup> BCSEA Final Argument, para 29, p. 8.

Lax K'walaams and Metlakatla note that "they have a financial agreement with PNG, which is contingent on the date of final decision of the BCUC."<sup>194</sup>

### *Panel Determination*

**The Panel finds that public convenience and necessity require the construction of the Project as proposed by PNG. In light of the Shippers' Update, we direct PNG not to commence any work required to serve load beyond Alternative Outcome 7 until it has obtained BCUC approval, as set out in Section 2 of this Decision.**

The Panel accepts that the Project is needed to restore pre-2005 operational capacity on the Western Transmission Gas System and to ensure the continued safe, reliable delivery of natural gas to PNG's customers, including the new large industrial customers. The Panel is satisfied that the identification of alternatives and the evaluation process used by PNG is reasonable and appropriate and is persuaded that PNG's preferred option is the best option available at this time. The Panel considers that PNG has adequately addressed the risks inherent with the Project, and its process to mitigate risks during detailed design and Project execution is reasonable. The Panel is satisfied that the cost estimate for the Project is reasonable, including the proposed depreciation of the capital costs for both the Project Assets and the Interconnection Assets.

The Panel is satisfied that PNG has provided adequate information to describe the environmental and archaeological work undertaken to date as well as the risks, mitigation measures and next steps required. The Panel finds that PNG's Indigenous consultation to date has been adequate, and is satisfied with the level of its public engagement to date.

The Panel finds that the Project is consistent with BC's applicable energy objectives as set out in section 2 of the CEA. The Panel also finds that the Project is consistent with PNG's most recently filed long-term resource plan.

**Accordingly, pursuant to sections 45 and 46 of the UCA, the BCUC grants a CPCN to PNG for the Project, to construct the proposed Project or any of the ten potential alternate project outcomes.**

Given the magnitude of the Project and the extended timeline for its implementation, **the Panel directs PNG to provide regular reporting to the BCUC for the duration of the Project, as detailed below.**

#### **1. Semi-annual Progress Reports on the Project**

**Each report must detail:**

- **Actual costs incurred to date compared to the CPCN estimate highlighting variances with an explanation and justification of significant variances;**
- **Updated forecast of costs, highlighting the reasons for significant changes in Project costs anticipated to be incurred;**
- **The status of Project risks, highlighting the status of identified risks, changes in and additions to risks, the options available to address the risks, the actions that PNG is taking to deal with the risks and the likely impact on the Project's schedule and cost;**
- **An update on PNG's QRA and SCC assessment work;**

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<sup>194</sup> Exhibit C1-5, para 11, p. 4.

- An update on the status of all applicable permits; and
- The status of ongoing consultation efforts with the public and Indigenous communities.

PNG must file semi-annual progress reports within 30 days of the end of each semi-annual reporting period, with the first report covering the period ending June 30, 2022.

## 2. Material Change Report

A material change (Material Change) is a change in PNG's plan for the Project that would reasonably be expected to have a significant impact on the schedule, cost or scope, such that:

- The Project schedule and/or the in-service date is delayed by 3 months or longer;
- The total Project cost exceeds 10 percent of the estimated Project cost provided in Table 6-1 of the Application; or
- There is a change to the Project scope provided in section 6 of the Application.

In the event of a Material Change, PNG must file a Material Change report with the BCUC explaining the reasons for the Material Change, PNG's consideration of the Project risk and the options available, and actions PNG is taking to address the Material Change. PNG must file the Material Change report as soon as practicable and in any event within 30 days of the date on which the Material Change occurs.

## 3. Final Report

A Final Report within three months of substantial completion of the Project, including the scenario where proceeds with the Project as Alternative Outcome 7. The report is to include:

- the final cost of the Project, including a breakdown of the final costs;
- a comparison of these costs to the estimates provided in Table 6-1 of the CPCN Application and an explanation of all material cost variances for any of the cost items provided in Table 6-1 that exceed 10 percent; and
- details of any further consultation conducted, any issues raised, and measures undertaken by PNG to resolve the identified issues.

## 10.0 Summary of Approvals and Directives

	Directive	Page(s)
1.	The Panel finds that PNG has established the need for the Project, notwithstanding the Shippers' Update.	9
2.	The Panel directs PNG to file any new TSAs and Interconnection Agreements for either or both of the Top Speed projects or related capacity, with the BCUC for approval as soon as practicable and within 30 days of full execution of those agreements.	10

	Directive	Page(s)
3.	<p>In the event PNG enters into a TSA with a potential customer requesting service at a different location than the Top Speed projects, at a different capital cost, or a different capacity than the Top Speed TSA and /or Interconnection Agreements, the Panel directs PNG to file the following items with the BCUC for approval as soon as practicable and within 30 days of full execution of those agreements:</p> <ul style="list-style-type: none"> <li>• The associated TSA(s) and Interconnection Agreement(s);</li> <li>• The modified scope and associated cost estimate developed to an AACE International Class 3 definition, including a detailed description of the assets required to serve the proposed new load, with supporting analysis of the revenue requirement and rate impacts;</li> <li>• A detailed description of the alternatives considered for the modified scope proposed, including the associated cost estimates, a detailed description of the assets required and supporting analysis of the revenue requirement and rate impacts under each alternative, and</li> <li>• If applicable, an updated forecast NPV of customer benefits.</li> </ul>	10–11
4.	The Panel finds that both (1) the identification of feasible alternatives to reactivate and recommission the system and to build new compressor and pipeline facilities in order to provide the requested service, and (2) the evaluation process used by PNG, are reasonable.	18
5.	Therefore, the Panel accepts the preferred alternatives that PNG has identified for the Project.	19
6.	The Panel finds that the scope of work as proposed for the preferred alternative for each of the Project scope elements is appropriate to address the Project need.	25
7.	Therefore, the Panel directs PNG to report on its QRA and SCC work as part of the required semi-annual reporting requirements described in Section 9 of this Decision.	25
8.	The Panel finds the Project cost estimate and associated contingency and management reserve are reasonable.	26
9.	The Panel directs PNG to file a material change report with the BCUC of any material change to the Project scope or costs.	26
10.	In the event of a material change, the Panel directs PNG to file a material change report with the BCUC explaining the material change with reasons, PNG's consideration of the Project risk and the options available, and actions PNG is taking to address the material change. PNG must file the material	27

	Directive	Page(s)
	change report as described in Section 9 of this Decision as soon as practicable and within 30 days of the date on which the material change occurs.	
11.	The Panel approves PNG's proposal to depreciate the interconnection pipeline assets over the life of the respective TSA.	28
12.	The Panel approves PNG's proposal to depreciate the remaining Project Assets using PNG's standard depreciation rates, which rates the BCUC has previously approved.	28
13.	The Panel finds the financial analysis to be reasonable.	30
14.	The Panel finds that PNG has demonstrated that the Project is financially sound, whether on a standalone basis, excluding the Salvus to Galloway Project costs, or on an integrated basis, factoring in the costs related to the Salvus to Galloway Project.	31
15.	The Panel directs PNG to file a rate impact mitigation plan, outlining PNG's refined rate stability strategies to mitigate the potential rate volatility as a result of the Project in its 2022 RRA as part of an Evidentiary Update to the RRA.	31
16.	The Panel directs material changes to environmental and archaeological impacts to be included in a Material Change Report as described in Section 9 of this Decision.	33
17.	Accordingly, the Panel directs PNG to report on the status of its permits as part of the semi-annual reporting described in Section 9 of this Decision.	33
18.	The Panel finds that PNG's Indigenous consultation to date has been adequate.	36
19.	Accordingly, the Panel directs PNG to report on its consultation efforts as part of the semi-annual reporting requirements described in Section 9 of this Decision.	36
20.	The Panel directs material changes to engagement and consultation activities to be included in a Material Change Report as described in Section 9.	36
21.	The Panel finds that the Project supports the applicable objectives of the CEA.	38
22.	The Panel also finds that the Project is consistent with PNG's most recently	38



	Directive	Page(s)
	filed long-term resource plan.	
23.	The Panel finds that public convenience and necessity require the construction of the Project as proposed by PNG.	38
24.	We direct PNG not to commence any work required to serve load beyond Alternative Outcome 7 until it has obtained BCUC approval, as set out in Section 2 of this Decision.	38
25.	Accordingly, pursuant to sections 45 and 46 of the UCA, the BCUC grants a CPCN to PNG for the Project, to construct the proposed Project or any of the ten potential alternate project outcomes.	39
26.	<p>The Panel directs PNG to provide regular reporting to the BCUC for the duration of the Project, as detailed below.</p> <p style="text-align: center;"><b>1. Semi-annual Progress Reports on the Project</b></p> <p>Each report must detail:</p> <ul style="list-style-type: none"> <li>Actual costs incurred to date compared to the CPCN estimate highlighting variances with an explanation and justification of significant variances;</li> <li>Updated forecast of costs, highlighting the reasons for significant changes in Project costs anticipated to be incurred;</li> <li>The status of Project risks, highlighting the status of identified risks, changes in and additions to risks, the options available to address the risks, the actions that PNG is taking to deal with the risks and the likely impact on the Project's schedule and cost;</li> <li>An update on PNG's QRA and SCC assessment work;</li> <li>An update on the status of all applicable permits; and</li> <li>The status of ongoing consultation efforts with the public and Indigenous communities.</li> </ul> <p>PNG must file semi-annual progress reports within 30 days of the end of each semi-annual reporting period, with the first report covering the period ending June 30, 2022.</p> <p style="text-align: center;"><b>2. Material Change Report</b></p> <p>A material change (Material Change) is a change in PNG's plan for the Project that would reasonably be expected to have a significant impact on the schedule, cost or scope, such that:</p> <ul style="list-style-type: none"> <li>The Project schedule and/or the in-service date is delayed by 3 months or longer;</li> </ul>	39–40

	Directive	Page(s)
	<ul style="list-style-type: none"> <li>• The total Project cost exceeds 10 percent of the estimated Project cost provided in Table 6-1 of the Application; or</li> <li>• There is a change to the Project scope provided in section 6 of the Application.</li> </ul> <p>In the event of a Material Change, PNG must file a Material Change report with the BCUC explaining the reasons for the Material Change, PNG's consideration of the Project risk and the options available, and actions PNG is taking to address the Material Change. PNG must file the Material Change report as soon as practicable and in any event within 30 days of the date on which the Material Change occurs.</p> <p style="text-align: center;"><b>3. Final Report</b></p> <p>A Final Report within three months of substantial completion of the Project, including the scenario where proceeds with the Project as Alternative Outcome 7. The report is to include:</p> <ul style="list-style-type: none"> <li>• the final cost of the Project, including a breakdown of the final costs;</li> <li>• a comparison of these costs to the estimates provided in Table 6-1 of the CPCN Application and an explanation of all material cost variances for any of the cost items provided in Table 6-1 that exceed 10 percent; and</li> <li>• details of any further consultation conducted, any issues raised, and measures undertaken by PNG to resolve the identified issues.</li> </ul>	

**DATED** at the City of Vancouver, in the Province of British Columbia, this 30<sup>th</sup> day of November 2021.

*Original signed by:*

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T. A. Loski  
Panel Chair / Commissioner

*Original signed by:*

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M. Kresivo, QC  
Commissioner

*Original signed by:*

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E. B. Lockhart  
Commissioner



**ORDER NUMBER**

**C-5-21**

IN THE MATTER OF

the *Utilities Commission Act*, RSBC 1996, Chapter 473

and

Pacific Northern Gas Ltd.

Certificate of Public Convenience and Necessity for the Western Transmission Gas System Reactivation and  
Recommissioning Project Application and Deferral Account Increase Application

**BEFORE:**

T. A. Loski, Panel Chair  
M. Kresivo, QC, Commissioner  
E. B. Lockhart, Commissioner

on November 30, 2021

**CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY**

**WHEREAS:**

- A. On March 5, 2021, Pacific Northern Gas Ltd. (PNG) submitted two applications (collectively, the Applications) to the British Columbia Utilities Commission (BCUC):
1. An application pursuant to sections 45 and 46 of the *Utilities Commission Act* (UCA), seeking approval of a Certificate of Public Convenience and Necessity (CPCN) for the Western Transmission Gas System Reactivation and Recommissioning Project (Project) (CPCN Application); and
  2. An application regarding Allocation of Reactivated Capacity and Approval of Large Volume Industrial Transportation Rate Request for Increase to Reactivation Project Development Costs Deferral Account (Deferral Account Application);
- B. In the CPCN Application, PNG also seeks approval under sections 59-61 of the UCA for the following:
1. Four firm Transportation Service Agreements (TSAs) for service to be provided under PNG's Large Volume Industrial Transportation Rate tariff; and
  2. Three service agreements for Transportation on Interconnection Facilities (Interconnection Agreements);
- C. In the CPCN Application, PNG has proposed capital works necessary to provide service to two new industrial customers at three project sites. PNG has identified ten potential alternate project outcomes with a capital cost up to \$88.5 million (as spent) that could materialize, including project outcomes as a result of one or more of the customer projects being cancelled;
- D. By Order G-116-21 dated April 19, 2021, the BCUC established a public hearing and a regulatory timetable for the review of the Applications;

- E. The following parties registered as interveners in the proceeding:
1. BC Sustainable Energy Association; and
  2. Lax Kw'alaams Band and Metlakatla First Nation;
- F. The regulatory process for the review of the CPCN Application consisted of three rounds of written information requests (IRs), written final arguments by PNG and interveners, one round of Panel IRs, and further submissions by PNG and interveners;
- G. By Order G-236-21, dated August 10, 2021, the BCUC approved the TSAs and the Interconnection Agreements. By Order G-237-21 dated August 10, 2021, the BCUC approved the Deferral Account Application; and
- H. The BCUC has considered the Applications, evidence and submissions from all parties and finds that public convenience and necessity require that the Project proceed and the following determinations to be warranted.

**NOW THEREFORE** pursuant to sections 45 to 46 of the UCA and the Decision issued concurrently with this order, the BCUC orders as follows:

1. A CPCN is granted to PNG for the Project, to construct the proposed Project or any of the ten potential alternate project outcomes outlined in the CPCN Application.
2. PNG is directed to comply with all the directives outlined in the Decision issued concurrently with this order.

**DATED** at the City of Vancouver, in the Province of British Columbia, this 30<sup>th</sup> day of November 2021.

BY ORDER

*Original signed by:*

T. A. Loski  
Commissioner

Pacific Northern Gas Ltd.  
Certificate of Public Convenience and Necessity for  
the Western Transmission Gas System Reactivation and  
Recommissioning Project Application and Deferral Account Increase Application

**GLOSSARY AND ACRONYMS**

<b>ACRONYM / GLOSSARY</b>	<b>DESCRIPTION</b>
AACE International	Association for the Advancement of Cost Engineering International
ACI	AltaGas Canada Inc.
AIA	Archaeological Impact Assessment
Analysis Period	TSAs and a 5-year period over which the remaining undepreciated plant balances are amortized after the expected expiry of the last of the TSAs
BC OGC	BC Oil and Gas Commission
BCSEA	BC Sustainable Energy Association
BCUC	British Columbia Utilities Commission
CEA	<i>Clean Energy Act</i>
CPCN	Certificate of Public Convenience and Necessity
CPCN Application	An application for a Certificate of Public Convenience and Necessity for the Western Transmission Gas System Reactivation and Recommissioning Project
CRP	Consolidated Resource Plan
Deferral Account Application	An application regarding Allocation of Reactivated Capacity and Approval of Large Volume Industrial Transportation Rate Request for Increase to Reactivation Project Development Costs Deferral Account
ECR	Environmental Constraints Report
Forbearance Agreement	Forbearance and Amending Agreement with Port Edward LNG
GHG	Greenhouse Gas
Gitxaala	Gitxaala First Nation
Interconnection Agreements	Transportation on Interconnection Facilities
IR	Information Request

ACRONYM / GLOSSARY	DESCRIPTION
Lax Kw'alaams	Lax Kw'alaams Band
LNG	Liquified Natural Gas
LVIDA	Large Volume Industrial Deferral Account
Metlakatla	Metlakatla First Nation
MMSCFD	Million standard cubic feet per day
MOP	Maximum Operating Pressure
NPV	Net Present Value
PNG	Pacific Northern Gas Ltd.
Port Edward LNG	Port Edward LNG Ltd.
Project	Western Transmission Gas System Reactivation and Recommissioning Project
QRA	Quantitative Risk Assessment
RECAP	Process for the Allocation of Reactivated Capacity
Salvus to Galloway Project	Salvus to Galloway Gas Line Upgrade Project
SCC	Stress Corrosion Cracking
Shippers	Port Edward LNG Ltd. and Top Speed Energy Canada Holding Ltd.
Shippers' Update	Update regarding Shippers' Projects
Top Speed Energy	Top Speed Energy Canada Holding Ltd.
TRA	Transportation Reservation Agreement
Triton	Triton Environmental Consultants Ltd.
TSAs	Transportation Service Agreements
TSU	TriSummit Utilities Inc.
UCA	<i>Utilities Commission Act</i>

Pacific Northern Gas Ltd.  
 Certificate of Public Convenience and Necessity for  
 the Western Transmission Gas System Reactivation and  
 Recommissioning Project Application and Deferral Account Increase Application

**EXHIBIT LIST**

<b>Exhibit No.</b>	<b>Description</b>
<i>COMMISSION DOCUMENTS</i>	
A-1	Letter dated April 1, 2021 – Appointing the Panel for the review of PNG’ Certificate of Public Convenience and Necessity for the Western Transmission Gas System Reactivation and Recommissioning Project and Deferral Account Increase Application
A-1-1	Letter dated April 19, 2021 – Update to the Panel Appointment letter (Exhibit A-1)
A-2	Letter dated April 19, 2021 – BCUC Order G-116-21 establishing the regulatory timetable for the review of the Applications
A-3	Letter dated May 6, 2021 – BCUC request to PNG for additional information
A-4	Letter dated May 6, 2021 – BCUC Invitation to the BC Oil and Gas Commission to intervene in the proceeding
A-5	Letter dated May 6, 2021 – BCUC Notice to Parties
A-6	Letter dated May 13, 2021 – BCUC Information Request No. 1 on the CPCN Application to PNG
A-7	<b>CONFIDENTIAL</b> - Letter dated May 13, 2021 – BCUC Information Request No. 1 to PNG
A-8	Letter dated May 13, 2021 – BCUC Information Request No. 1 on the Deferral Account Application to PNG
A-9	Letter dated May 28, 2021 – Panel Amendment
A-10	Letter dated June 14, 2021 – Amending the Panel for the review of the Applications
A-11	Letter dated June 21, 2021 – BCUC Order G-189-21 issuing a further regulatory timetable
A-12	Letter dated June 25, 2021 – BCUC Information Request No. 2 on the CPCN Application to PNG
A-13	Letter dated June 25, 2021 – BCUC Information Request No. 2 on the Deferral Account Application to PNG
A-14	Letter dated July 7, 2021 - BCUC Information Request No. 3 on the CPCN Application to PNG

- A-15      **CONFIDENTIAL** - Letter dated July 7, 2021 – BCUC Confidential Information Request No. 2 to PNG
- A-16      Letter dated July 30, 2021 – BCUC Order G-232-21 establishing a further regulatory timetable
- A-17      Letter dated August 10, 2021 – BCUC Order G-236-21 approving the Transportation Service Agreements and Interconnection Agreements
- A-18      Letter dated August 20, 2021 – BCUC submission request to Gitxaala First Nation regarding Letter of Comment
- A-19      Letter dated August 23, 2021 – BCUC Request for Submissions on Gitxaala First Nation’s request to intervene
- A-20      Letter dated September 14, 2021 – BCUC Order G-270-21 with Reasons for Decision regarding Gitxaala First Nation’s request to intervene
- A-21      Letter dated September 29, 2021- BCUC response regarding BCSEA Late Final Argument
- A-22      Letter dated October 14, 2021 – BCUC Order G-297-21 establishing a further regulatory timetable
- A-23      Letter dated October 14, 2021 – Panel Information Request No. 1 to PNG
- A-24      **CONFIDENTIAL** - Letter dated October 14, 2021 – Panel Confidential Information Request No. 1 to PNG

*APPLICANT DOCUMENTS*

- B-1      **PACIFIC NORTHERN GAS LTD. (PNG)** - Certificate of Public Convenience and Necessity (CPCN) for the Western Transmission Gas System Reactivation and Recommissioning Project Application dated March 5, 2021
- B-1-1      **CONFIDENTIAL** – Letter dated March 5, 2021 – PNG CPCN for the Western Transmission Gas System Reactivation and Recommissioning Project and Application Confidential Appendices
- B-1-2      Letter dated May 10, 2021 – PNG submitting Redacted Application Appendices B, E and F previously confidential
- B-2      Letter dated March 5, 2021 – PNG Application regarding Allocation of Reactivated Capacity and Approval of Large Volume Industrial Transportation Rate Request for Increase to Reactivation Project Development Costs Deferral Account
- B-3      Letter dated April 29, 2021 – PNG submitting Supplemental NPV Information regarding Tables 4-8, 4-10 and 4-12



- B-3-1 **CONFIDENTIAL** - Letter dated April 29, 2021 – PNG submitting Confidential Tables 4-8, 4-10 and 4-12
- B-4 Letter dated May 10, 2021 – PNG submission of Information on Right of Way Agreements
- B-5 Letter dated May 13, 2021 – PNG response regarding Panel member
- B-6 Letter dated June 3, 2021 – PNG response regarding appointment of Additional Panel Member
- B-7 Letter dated June 10, 2021 – PNG Submitting responses to BCUC Information Request No. 1
- B-8 **CONFIDENTIAL** - Letter dated June 10, 2021 – PNG Submitting responses to BCUC Confidential Information Request No. 1
- B-8-1 Letter dated June 10, 2021 – PNG Submitting non-confidential responses to BCUC Confidential Information Request No. 1
- B-9 Letter dated June 10, 2021 – PNG Submitting responses to BCUC Information Request No. 1 on the RECAP Deferral
- B-10 Letter dated June 10, 2021 – PNG Submitting responses to BCSEA Information Request No. 1 on Reactivation CPCN
- B-11 Letter dated June 10, 2021 – PNG Submitting responses to Lax Kw'alaams-Metlakatla Information Request No. 1 on Reactivation CPCN
- B-11-1 **CONFIDENTIAL** - Letter dated June 10, 2021 – PNG Submitting confidential responses to Lax Kw'alaams-Metlakatla Information Request No. 1 on Reactivation CPCN
- B-12 Letter dated June 23, 2021 – PNG comment regarding Regulatory Timetable
- B-13 Letter dated July 5, 2021 – PNG submitting response to BCUC Information Request No. 2 on RECAP Deferral
- B-14 Letter dated July 5, 2021 – PNG submitting response to BCUC Information Request No. 2 on RECAP Agreement
- B-14-1 **CONFIDENTIAL** - Letter dated July 5, 2021 – PNG submitting Confidential response to BCUC Information Request No. 2 on RECAP Agreement
- B-15 Letter dated July 5, 2021 – PNG submitting response to BCSEA Information Request No. 2 on RECAP Deferral
- B-16 Letter dated July 26, 2021 – PNG response to BCUC Information Request No. 3
- B-17 **CONFIDENTIAL** - Letter dated July 26, 2021 – PNG confidential response to BCUC Confidential Information Request No. 2

- B-18 Letter dated July 26, 2021 – PNG response to BCSEA Information Request No. 3
- B-19 Letter dated August 26, 2021 – PNG response on Gitxaala First Nation’s request to intervene
- B-20 Letter dated September 1, 2021 – PNG reply to Intervener responses on Gitxaala First Nation’s request to intervene
- B-21 Letter dated October 13, 2021 – PNG submitting public update on Shipper Projects
- B-21-1 **CONFIDENTIAL** - Letter dated October 13, 2021 – PNG submitting confidential update on Shipper Projects
- B-22 Letter dated October 19, 2021 – PNG submitting responses to Panel Information Request No. 1
- B-23 **CONFIDENTIAL** - Letter dated October 19, 2021 – PNG submitting responses to Confidential Panel Information Request No. 1
- B-23-1 Letter dated October 19, 2021 – PNG submitting Public response to confidential Panel Information Request No. 1 Question 3
- B-24 Letter dated October 26, 2021 – PNG submitting reply on Additional Evidence and Panel Information Requests

*INTERVENER DOCUMENTS*

- C1-1 **LAX KW’ALAAMS BAND (LAX KW’ALAAMS)** - Letter dated May 4, 2021 – Request for Intervener Status by Jeff Nicholls, Ratcliff LLP
- C1-2 **UPDATED - METLAKATLA FIRST NATION (METLAKATLA)** – Letter dated May 5, 2021 – Request for Intervener Status by Jeff Nicholls, Ratcliff LLP – Now joined with Lax Kw’alaams registration
- C1-3 Letter dated May 20, 2021 – Lax Kw’alaams and Metlakatla Information Request No. 1 to PNG
- C1-4 Letter dated May 20, 2021 – Lax Kw’alaams and Metlakatla response regarding Panel Member
- C1-5 Letter dated August 30, 2021 - Lax Kw’alaams and Metlakatla response on Gitxaala First Nation’s request to intervene
- C3-1 **BC SUSTAINABLE ENERGY ASSOCIATION (BCSEA)** – Letter dated May 11, 2021 Request to Intervene by Thomas Hackney and William Andrews
- C3-2 Letter dated May 16, 2021 – BCSEA response regarding Panel member
- C3-3 Letter dated May 20, 2021 – BCSEA Information Request No. 1 to PNG

- C3-4 Letter dated June 23, 2021 – BCSEA comment regarding Regulatory Timetable
- C3-5 Letter dated June 25, 2021 – BCSEA Information Request No. 2 to PNG
- C3-6 Letter dated July 7, 2021 – BCSEA do not intend to submit Intervener Evidence
- C3-7 Letter dated July 7, 2021 – BCSEA Information Request No. 3 to PNG
- C3-8 Letter dated August 30, 2021 – BCSEA response on Gitxaala First Nation’s request to intervene
- C3-8-1 Letter dated September 2, 2021 – BCSEA correction to response on Gitxaala First Nation’s request to intervene
- C3-9 Letter dated October 22, 2021 – BCSEA submission on PNG’s additional evidence and responses to Panel IR’s

#### *INTERESTED PARTY DOCUMENTS*

- D-1 **FORTISBC ENERGY INC. (FEI)** – Submission dated April 8, 2021 – Request for Interested Party status by Diane Roy
- D-2 **PORT EDWARD LNG LTD. (PORT EDWARD)** - Submission dated April 13, 2021 – Request for Interested Party status by Chris Hilliard
- D-3 **BC OIL AND GAS COMMISSION. (BCOGC)** – Submission dated May 7, 2021 – Request for Interested Party status by Lauren Krakau

#### *LETTERS OF COMMENT*

- E-1 DISTRICT OF KITIMAT (KITIMAT) – Letter dated May 14, 2021 submitted by Warren Waycheshen, Chief Administrative Officer
- E-2 GITXAALA FIRST NATION (GITXAALA) – Letter dated August 18, 2021 submitted by Malcolm Macpherson, Legal Counsel
- E-2-1 GITXAALA – Additional Letter of Comment dated August 20, 2021
- E-2-2 GITXAALA – Additional Letter of Comment dated September 13, 2021