6911 Southpoint Drive (B03)
Burnaby, BC
V3N 4X8

November 24, 2025

[redacted]

via email: [redacted]

RE: CEAP IR #18 – [redacted] – Interconnection Feasibility Study

Dear [redacted]

Enclosed is the Interconnection Feasibility Study for the proposed Interconnection Request (IR), [redacted], submitted under Attachment M-2: Transmission Service and Interconnection Service Procedures for Competitive Electricity Acquisition Process (CEAP) of the Open Access Transmission Tariff (OATT). This letter provides a non-binding good faith estimate of the cost and time to construct the facilities required to interconnect your project to BC Hydro's Transmission System, being the Network Upgrades, based on the findings of the Interconnection Feasibility Study.

Open Access Transmission Tariff

The OATT defines Network Upgrades as additions, modifications, and upgrades to BC Hydro's Transmission System required at or beyond the Point of Interconnection to accommodate the interconnection of the Generating Facility to the BC Hydro's Transmission System. Pursuant to the OATT, BC Hydro will design, procure, construct, install, and own the Network Upgrades. While BC Hydro will pay the costs for the Network Upgrades, the Interconnection Customer provides security for such costs.

Interconnection Study Costs

The Interconnection Customer is responsible for paying the full cost of all Interconnection Studies in cash. Interconnection Study costs vary depending on the scope, complexity, and other factors such as whether any scope is shared with another Interconnection Customer (not applicable to this Interconnection Feasibility Study). The deposit amounts specified in the OATT are not proxy Interconnection Study costs. If actual Interconnection Study costs exceed the deposit amount, the Interconnection Customer must pay the remaining balance in cash. Please refer to the answer for question no. 53 in the posted Questions & Answers for 2025 Call for Power for typical study cost ranges.

Cost Estimate

Based on the Interconnection Feasibility Study, the non-binding good faith estimated cost (typical accuracy range of +150%/-50%) for Network Upgrades required to interconnect your project is $66.6 M.

Major Scope of Work Identified:

- Supply and install one 138 kV dead-end pole tap structure on line 1L377
- Supply and install up to three BC Hydro 138 kV disconnect switches and steel pole structures on line 1L377
- Thermal upgrade including reconductoring and structure replacements of 1L377 line section of approximately 11 km from DAW to the Point of Interconnection tap

- Supply and install required Protection, Control and Telecommunications equipment

Exclusions:

- GST
- Permits
- Right-of-Way & property costs

Key Assumptions:

- Construction by contractor
- 24 months of construction is considered
- Execution of early Engineering and Procurement Agreement
- No construction during winter season
- Impact Benefit Agreements with First Nations are not considered
- Condition assessment of 1L377 finds no concerns

Key Risks:

- Transmission scope may be different than assumed, including number of disconnect switches and structure types
- Major equipment delivery presents potential project cost and schedule risks, based on variance in equipment lead times
- No defined supply chain strategy; construction costs may increase depending on delivery method
- Project schedule may be longer than expected, leading to increased overhead costs
- Ground improvements may be required leading to increased construction costs
- Contaminated soil may be encountered leading to increased construction costs
- Cost of materials and major equipment may be affected by market conditions and escalation

Study Limitations and Exclusions

Protection, Control, and Telecommunications

The Interconnection Feasibility Study does not include a detailed review of the protection, control, and telecommunications system requirements specific to your Interconnection Request. Based on a high-level review, we have identified proxy costs for protection, control, and telecom Network Upgrades drawn from comparable interconnection projects with similar scope and complexity; these proxy costs have been included solely for indicative budgeting purposes. The relative interconnection cost determined by the Interconnection Feasibility Study includes a telecommunications component based on an assumed solution to deliver teleprotection and telecontrol circuit requirements necessary for the Interconnection Request. Protection, control, and telecommunications system requirements will be reviewed in detail in the System Impact Study if you are a successful participant of the CEAP and meet applicable requirements.

For Interconnection Feasibility Study purposes, it is assumed that any applicant-proposed works that could obstruct or impair the performance of existing BC Hydro microwave systems or new links from the proposed Interconnection Customer Interconnection Facilities (ICIF) to the BC Hydro microwave system would be identified and either relocated or repositioned as determined in a System Impact Study if you are a successful participant of the CEAP and meet applicable requirements. Such works may include, but are not limited to, towers, turbines, dams, support structures, panels, surface materials deposited or redistributed, water surface changes, or vegetation.

Generation Shedding/Curtailment Scheme and Electromagnetic Transient (EMT) Studies

The generation shedding/curtailment scheme reviews (e.g., Remedial Action Scheme (RAS), and a direct transfer trip for anti-islanding scheme) and EMT studies are completed in a System Impact Study. The outcomes of these studies may result in additional requirements, which could include Network Upgrades or ICIF. Any costs associated with completion of these studies, and resulting requirements, are not included in the Interconnection Feasibility Study cost estimate.

Revenue Metering

Please note that revenue metering requirements have not been determined with the Interconnection Feasibility Study. As such, any costs associated with revenue metering and other interconnection components are not included in the cost estimate provided above. Once these requirements are defined, costs that are attributable to the Interconnection Customer are to be paid in cash. For more details on revenue metering requirements and responsibilities, please refer to:

https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/distribution/standards/ds-rmr-complex-revenue-metering.pdf.

Schedule

Based on the Interconnection Feasibility Study, the non-binding good faith estimated in-service date for your Interconnection Request’s Network Upgrades is Quarter 3 2033 (calendar year). To achieve this timeline, we may need to expedite certain activities, including engineering design and procurement of long-lead equipment.

Timely actions required from you to minimize risks to the schedule:

- Submission of additional technical data required for the System Impact Study and Facilities Study
- Submission of any required information or document such as demonstration of Site Control
- Execution of Combined Study Agreement and Standard Generator Interconnection Agreement
- Financial commitments and securities

Please note that changes to your Interconnection Request or delays in data submission or financial commitments may also impact the target in-service date.

If you have any questions, please contact the BC Hydro CEAP team at ceap2025@bchydro.com.

Sincerely,

[redacted]

[redacted]

Manager, Customer Interconnections

BC Hydro

Encl.: CEAP_2025_IR18_[redacted]_Feasibility_Study.pdf

[redacted]

Interconnection Feasibility Study

BC Hydro EGBC Permit to Practice No: 1002449

2025 CEAP IR # 18

Prepared for: [redacted]

Prepared by: [redacted]

[redacted]

[redacted] P.Eng.
Specialist Engineer, Transmission

Reviewed by: [redacted]

Technical Strategic Principle, Transmission Planning

Accepted by: [redacted]

Division Manager, Transmission Planning

Report Metadata

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Prepared by:	[redacted]
Title:	Specialist Engineer, Transmission Planning
Checked by:	NA
Title:	NA
Reviewed by:	[redacted]
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Revisions

Revision	Date	Description
0	2025 Nov	Initial release

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Specialist Engineer, Transmission Planning

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Section: **Discipline:**

5.4 — Transmission Lines Engineering

Contributed by:

[redacted]

[redacted]

Sr. Engineer, Transmission Lines Engineering

[redacted]

Executive Summary

[redacted] the Interconnection Customer (IC), requests to interconnect its [redacted] - 2025 CEAP IR # 18 - to the BC Hydro system. [redacted] has thirty-two (32) [redacted] type-3 wind turbine generators, adding a total installed capacity of 182.4 MW with a maximum power injection of 175.5 MW into the BC Hydro system at the proposed Point of Interconnection (POI). The IC has proposed to connect their wind project to BC Hydro transmission system at the POI, a tap structure on BC Hydro's 138 kV line 1L377 located at approximately 11 km from the Dawson Creek substation (DAW).

The IC's wind project will be connected via a new 138 kV customer-built transmission line from the POI. The IC's proposed commercial operation date (COD) is Nov 1, 2029.

To interconnect the [redacted] and its facilities to the BCH transmission system at the proposed POI, this Feasibility Study has made the recommendations and conclusions as follow:

1. The proposed POI via a tap connection on the 1L377 is acceptable to interconnect the IC's generating project to the BCH system. Customer-built tap line approximately 0.4 km in length from the proposed generating station to the proposed POI, a tap structure on 1L377, is required to interconnect the IC's generating project to the BCH system.
2. Thermal overloads on the 138 kV line 1L377 (DAW – IC's POI tap) is observed during light load period under system normal condition (P0). Thermal upgrade of 1L377 line section from DAW to IC's POI tap, approximately 11 km with a higher ampacity of 675 amperes minimum summer continuous rating is required.
3. The connection of [redacted] will exacerbate the existing thermal overloads on the 500 kV lines under single contingencies. These overloads can be mitigated by the existing G.M. Shrum Area Gen Shedding Remedial Action Scheme (RAS). Therefore, the [redacted] is required to participate in the G.M. Shrum Area Gen Shedding RAS. In addition, the IC's wind project will potentially overload line 2L308 and Gordon M. Shrum G.S. (GMS) 500/230 kV transformers under applicable single contingency

conditions and will be required to participate and modify the existing Peace Area Wind Farm Gen Shedding RAS. Further RAS details will be studied under System Impact Study (SIS) stage, if applicable.

4. The [redacted] is required to install anti-islanding protection within its facility to disconnect the IC's generating plant from the grid when an inadvertent island with the local load forms. The anti-islanding protection shall be configured in the manner that does not compromise the required ride-through performance.
5. A Direct Transfer Trip (DTT) protection scheme is required to isolate the IC's wind project at the IC's entrance circuit breaker to avoid potential islanding operations with the existing or future BCH loads.
6. The [redacted] is required to have the dynamic reactive power capability at a minimum of +/- 33% of its MPO at the high voltage side of the IC's switchyard over the full MW operating range, per BC Hydro's TIR Section 6.4.2. Based on the IC-submitted PSS/E model, the proposed [redacted] meets the reactive capability requirement above.
7. The "STATCOM option" for the proposed type-3 WTGs is required so that each turbine can provide reactive power capability at zero MW output. BC Hydro recognizes that Type-3 WTGs with the STATCOM option have an inherent limitation—providing only partial reactive power capability during turbine standstill.
8. Fast Frequency Response, also known as Virtual Inertia Control (VIC) in the proposed wind turbines, is required at the [redacted] The proposed wind turbine generators, when equipped with the VIC option, are expected to temporarily boost the MW output to limit the system frequency drop during a major frequency event. The VIC settings should be determined in coordination with BC Hydro in the later stage of the interconnection process.

The above conclusions are made based on the IC's input data and study assumptions listed in Section 4, which represent the best available information on October 14, 2025.

A non-binding good faith cost for required network upgrades and estimated schedule for construction are included in a separate letter to the IC.

Please note that, this Feasibility Study report does not include the descriptions of Protection, Control, and Telecommunications requirements and the associated upgrade scopes; however, as discussed in Section 2 “Purpose and Scopes of Study, the associated cost implications are captured and delivered in the cover letter to the IC”.

Contents

Appendices

Acronyms

The following are acronyms used in this report.

BCH	BC Hydro
BMT	Bear Mountain Terminal
CEAP	Competitive Electricity Acquisition Process
COD	Commercial Operation Date
DTT	Direct Transfer Trip
DAW	Dawson Creek
EGB	East Groundbirch
ERIS	Energy Resource Interconnection Service
FeS	Feasibility Study
IBR	Inverter-Based Resources
IC	Interconnection Customer
IR	Interconnection Request
GMS	Gordon M. Shrum G.S.
LAPS	Local Area Protection Schemes
MPO	Maximum Power Output
NERC	North American Electric Reliability Corporation
NRIS	Network Resource Interconnection Service
OATT	Open Access Transmission Tariff
POI	Point of Interconnection
PRES	Peace Region Electric Supply
RAS	Remedial Action Scheme
SGB	Shell Groundbirch Substation
SBK	South Bank Substation
TIR	BC Hydro “60 KV to 500 kV Technical Interconnection Requirements for Power Generators”
VIC	Virtual Inertia Control
WECC	Western Electricity Coordinating Council
WTG	Wind Turbine Generator

1 Introduction

Table 1-1 below summarizes the project reviewed in this Feasibility Study.

Table 1-1 Summary of Project Information

Project Name	[redacted]	
Name of Interconnection Customer (IC)	[redacted]	
Point of Interconnection (POI)	Tap on 1L377	
IC's Proposed COD	1st November 2029	
Type of Interconnection Service	NRIS ☒	ERIS ☐
Maximum Power Injection (MW)	175.5 MW (Winter)	175.5 MW (Winter)
Number of Turbines	32 x 5.7 MW WTGs	
Plant Fuel	Wind	

[redacted] the Interconnection Customer (IC), requests to interconnect its [redacted] - 2025 CEAP IR # 18 - to the BC Hydro system. [redacted] has thirty-two (32) [redacted] type-3 wind turbine generators, adding a total installed capacity of 182.4 MW with a maximum power injection of 175.5 MW into the BC Hydro system at the proposed Point of Interconnection (POI). The IC has proposed to connect their wind project to BC Hydro transmission system at the POI, a tap structure on BC Hydro's 138 kV line 1L377 located at approximately 11 km from the Dawson Creek substation (DAW).

The IC's wind project will be connected via a new 138 kV customer-built transmission line from the POI. The IC's proposed commercial operation date (COD) is Nov 1, 2029.

The Peace Region transmission system consists of 230 kV and 138 kV transmission infrastructures supplied from Gordon M. Shrum G.S.(GMS) and South Bank substation (SBK), which are the major sources of supply to the Peace Region transmission system. Figure 1-1 shows the Peace region transmission system diagram.

The Dawson Creek-Groundbirch area is supplied from Shell Groundbirch substation (SGB) via two 230 kV lines and multiple radial 138 kV transmission lines, which interconnecting with the two major BC Hydro substations, Bear

Mountain Terminal (BMT) and DAW, serving major oil and gas customer loads. SGB is fed by 230 kV Peace Region Electric Supply project (PRES) lines from Southbank substation and the other 230 kV lines 2L340 and 2L342 with power sourced from GMS.

There are three higher queued transmission generation IRs to be added to the Peace Region: [redacted] and [redacted] wind with installed capacity of 200 MW each, and one additional generating facility with 56 MW installed capacity. The [redacted] will be connected via a tap structure on 1L377, located on the southern portion of the Peace Regional System. The wind farms and connection are shown in Figure 1-1 below.

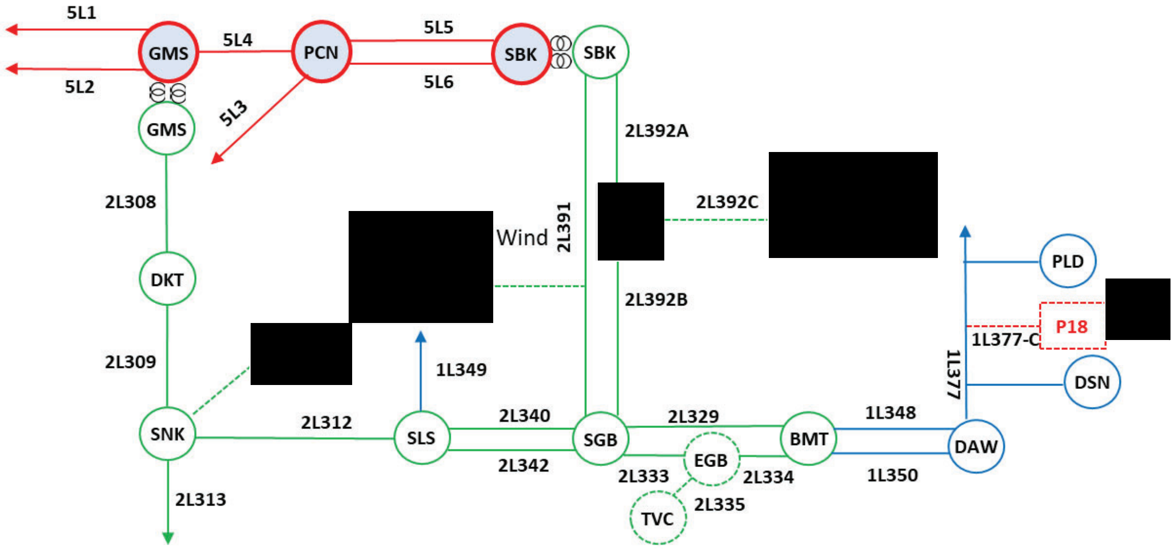

Figure 1-1: Peace Region Transmission System Diagram

2 Purpose and Scopes of Study

This Feasibility Study is a preliminary evaluation of the system impact of interconnecting the proposed project to the BC Hydro system based on power flow and short circuit analysis in accordance with BCH’s Open Access Transmission Tariff (OATT) and produces the estimated cost of required Network Upgrades and the implementation schedule.

Per OATT, the Feasibility Study is performed individually for each of the participating projects in the CEAP process and focuses specifically on the BC Hydro regional transmission system where the proposed generating project is connected and affects.

This is a “limited scope” study which is restricted to power flow studies of P0, P1 and P2 planning events as defined in TPL-001-4 and short circuit analysis. The study does not address other technical aspects such as transient stability and switching transients and impact of multiple contingencies. These subjects will be addressed in subsequent System Impact Study if the project proceeds further. In addition, any potential impacts to the adjacent external systems to BC Hydro would be addressed in subsequent detailed and coordinated studies with the relevant adjacent entities if the proposed generator project proceeds further.

Please note that, due to the compressed study timeline for CEAP 2025 Feasibility Study, this report does not include the descriptions of the Protection, Control, and Telecommunication requirements and the associated upgrade scopes. Instead, the network upgrades associated with Protections, Controls and Telecommunications are incorporated with cost estimates in a separate cover letter to the IC.

3 Standard and Criteria

The Feasibility Study is performed in compliance with the North American Electric Reliability Corporation (NERC) and Western Electricity Coordinating Council (WECC) reliability standards, and the BCH interconnection requirements in the TIR, and upon the ratings of the existing BCH transmission facilities described in Operating Orders, specifically:

- NERC standards: TPL-001-4 and FAC-002-3 relevant to the scope of this Feasibility Study.
- WECC criteria TPL-001-WECC-CRT-4 Transmission System Planning Performance, July 1, 2023.
- BC Hydro's 60 kV to 500 kV Technical Interconnection Requirements for Power Generators, Rev 2.1.1, Effective: Sept 22, 2025.
- BC Hydro Operating Order 5T-10, Ratings for All Transmission Circuits 60 kV or Higher, Sept 17, 2025.
- BC Hydro Operating Order 5T-14, Ratings for All Transmission and Distribution Transformer, Sept 22, 2025.
- BC Hydro System Operating Order 7T-22 System Voltage Control, Sept 19, 2023.

4 Assumptions and Conditions

This Feasibility Study is performed based on the IC's submitted data and information available to BC Hydro on Oct 14, 2025, for the study purpose. Assumptions are made wherever the IC's input is unavailable. Appendix A shows the schematic diagram of the IC's Project used in the study model.

The power flow study cases used in this Feasibility Study are established based upon the BC Hydro's base resource plan and load forecasts available at the time of performing the study, which includes existing and future generators, transmission facilities, and loads in addition to the subject interconnection project in this study. Applicable seasonal conditions and the appropriate study years for the study planning horizon are also incorporated. Additional assumptions are listed as follows.

1) The generation in the Peace region area are dispatched to the patterns that stress the transmission system in the study area. In these patterns, the associated generators are typically set to Maximum Power Outputs (MPO) unless otherwise specified.

2) The 2024 Distribution Substation Load Forecast, 2025 Transmission Voltage Customer (TVC) Load Forecast and 2025 System Peak Forecast are used.

3) September 2024 Base Resource Plan.

4) 200 MW [redacted] will be in service on September 30, 2031, and 200 MW [redacted] will be in service on October 1, 2030.

5) A future 56 MW wind generation interconnection in the Peace region will be in service on October 31, 2028.

6) 31HW, 32HS and 32LS are used as base case in the study to evaluate system impact after [redacted] plant interconnection.

7) The Bear Mountain Terminal T4 will be in service by March 2027.

8) 1L377 is normally open between [redacted] Parkland Substation and [redacted] Tower 03/07 Substation (ET3).

9) All new TVC load interconnection and associated system reinforcements are modeled in this study.

5 System Studies and Results

5.1 Power Flow Study Results

Power flow studies were performed to evaluate whether the IC's generating project would cause any unacceptable system performance (e.g. equipment overloads, steady-state voltage violation and voltage instability) and to determine the system reinforcement requirement based on steady state performance analysis.

The study focuses on the base scenarios — 31HW/32LS/32HS system conditions that includes all the higher-queued generating projects ([redacted] and a future wind project) in the Peace region. These base cases were prepared based on factors such as load conditions, seasonal variation in ambient temperatures, and generation patterns that stress the transmission system.

The studies were performed for system normal conditions and under critical system contingencies specified in the P1 and P2 events by NERC TPL-001-4. Study results are summarized below.

5.1.1 Thermal Overload Analysis

The study shows that the addition of [redacted] causes thermal overloads under system normal condition. Thermal overload on the 138 kV line 1L377 (DAW – IC's POI tap) is observed during light load operating period and under system normal condition (P0). Thermal upgrade of 1L377 line section from DAW to IC's POI tap, approximately 11 km with a higher ampacity of 675 amperes minimum summer continuous rating is required.

Under single contingency conditions, branch overloads were observed on the 500 kV lines following single contingencies. The connection of [redacted] will further aggravate these existing overloads, which is currently addressed by the existing G.M. Shrum Area Gen Shedding Remedial Action Scheme (RAS). So, [redacted] will be required to participate in the G.M. Shrum Area Gen Shedding RAS. In addition, 2L308 potential overload for internal breaker fault of SBK 2CB22 and GMS T13 or GMS T14 potential overloads for loss of GMS T14 or GMS T13 are observed which will require IC to participate in and modify the existing Peace Area Wind Farm Gen Shedding RAS. The detailed RAS requirements will be confirmed during the System Impact Study (SIS) stage, if necessary.

Details of the thermal overload analysis are provided in Appendix B.

5.1.2 Steady-State Voltage Analysis

With the connection of the IC's project, the steady-state voltage performance under system normal and single contingency conditions is acceptable for all the three study scenarios (31HW, 32LS, 32HS). Appendix B shows the details in the steady-state voltage study results.

5.1.3 Reactive Power Capability Evaluation

The BC Hydro TIR requires IBR power plant to have the dynamic reactive power capability at a minimum of +/- 33% of its MPO at the high voltage side of the IC's switchyard over the full MW operating range.

Based on the power flow model data submitted by the IC, the proposed [redacted] would be capable of meeting the BC Hydro's reactive capability requirement at the plant's maximum MW output, which is subjected to further verification in the next stage of the interconnection process.

In addition, according to the IC-provided reactive capability data, the proposed WTG would provide +1.7 MVAr to -1.9 MVAr reactive capability at the zero MW output if the turbine's "STATCOM" function is enabled. This function needs to be re-confirmed if the IC's project proceeds to next stage of the interconnection process.

5.1.4 Anti-Islanding Requirements

[redacted] is not arranged for islanded operation. In addition, the IC is required to install anti-islanding protection within its facility to disconnect the IC's wind farm from the grid when an inadvertent island with the local loads' forms.

A Direct Transfer Trip (DTT) protection scheme is required to isolate the IC's wind project at the IC's entrance circuit breaker to avoid potential islanding operations with the existing or future BC Hydro loads.

5.1.5 Other Performance Requirements

Fast Frequency Response, also known as Virtual Inertia Control (VIC) in the proposed wind turbines, is required at the [redacted] The proposed wind turbine generators, when equipped with the VIC option, are expected to temporarily boost the MW output to limit the system frequency drop during a major frequency event. The VIC settings should be determined in coordination with BC Hydro in the later stage of the interconnection process.

5.2 Fault Analysis

The short circuit analysis in the FeS is based upon the latest BC Hydro system model, which includes the generating facility information and associated impedance data provided by the IC. A more detailed study will be performed at the system impact study stage if needed.

5.3 Stations Requirements

The POI of [redacted] is a tap connection on 1L377.

No station work is required.

5.4 Transmission Line Requirements

At the POI, BCH will design and build a tap that will include a tap structure and up to three switch structures. A 152 kV rated disconnect switch may be installed to isolate the IC’s facilities from the BCH system. Two 152 kV rated disconnect switches may be installed to isolate the trunk circuit on both sides. Additional Right-of-Way (ROW) may be required to accommodate the tap.

Thermal upgrade the overhead circuit 1L377 (DAW – IC’s POI tap) from the existing 575 Amps (30°C ambient summer temperature) to the required 675 Amps by changing from the existing “Merlin” ACSR to new “Hawk” ACSR (at 90°C conductor temperature, 40°C ambient summer temperature) is required. Structure replacements may be required.

6 Cost Estimate and Schedule

The non-binding good faith estimated cost and time to construct the Network Upgrades required to interconnect the proposed project will be provided in a separate letter to the IC.

7 Conclusions

To interconnect the [redacted] and its facilities to the BCH transmission system at the proposed POI, this Feasibility Study has made the recommendations and conclusions as follow:

1. The proposed POI via a tap connection on the 1L377 is acceptable to interconnect the IC's generating project to the BCH system. Customer-built tap line approximately 0.4 km in length from the proposed generating station to the proposed POI, a tap structure on 1L377, is required to interconnect the IC's generating project to the BCH system.
2. Thermal overload on the 138 kV line 1L377 (DAW – IC's POI tap) is observed during light load period under system normal condition (P0). Thermal upgrade of 1L377 line section from DAW to IC's POI tap, approximately 11 km with a higher ampacity of 675 amperes minimum summer continuous rating is required.
3. The connection of [redacted] will exacerbate the existing thermal overloads on the 500 kV lines under single contingencies. These overloads can be mitigated by the existing G.M. Shrum Area Gen Shedding Remedial Action Scheme. Therefore, the [redacted] is required to participate in the G.M. Shrum Area Gen Shedding RAS. In addition, IC's wind project will potentially overload line 2L308 and GMS 500/230 kV transformers under applicable single contingency conditions and will be required to participate and modify the Peace Area Wind Farm Gen Shedding RAS. Further RAS details will be studied under System Impact Study stage, if applicable.
4. The [redacted] is required to install anti-islanding protection within its facility to disconnect the IC's generating plant from the grid when an inadvertent island with the local load forms. The anti-islanding protection shall be configured in the manner that does not compromise the required ride-through performance.
5. A DTT protection scheme is required to isolate the IC's wind project at the IC's entrance circuit breaker to avoid potential islanding operations with the existing or future BCH loads.

6. The [redacted] is required to have the dynamic reactive power capability at a minimum of +/- 33% of its MPO at the high voltage side of the IC’s switchyard over the full MW operating range, per BC Hydro’s TIR Section 6.4.2. Based on the IC-submitted PSS/E model, the proposed [redacted] meets the reactive capability requirement above.

7. The “STATCOM option” for the proposed type-3 WTGs is required so that each turbine can provide reactive power capability at zero MW output. BC Hydro recognizes that Type-3 WTGs with the STATCOM option have an inherent limitation—providing only partial reactive power capability during turbine standstill.

8. Fast Frequency Response, also known as Virtual Inertia Control (VIC) in the proposed wind turbines, is required at the [redacted] The proposed wind turbine generators, when equipped with the VIC option, are expected to temporarily boost the MW output to limit the system frequency drop during a major frequency event. The VIC settings should be determined in coordination with BC Hydro in the later stage of the interconnection process.

Appendix A

Schematic Diagram of the IC’s Project

Figure A-1 shows the schematic diagram for the [redacted] Note that the proposed plant configuration includes 2x4 MVAr switched shunt capacitors on the collector bus.

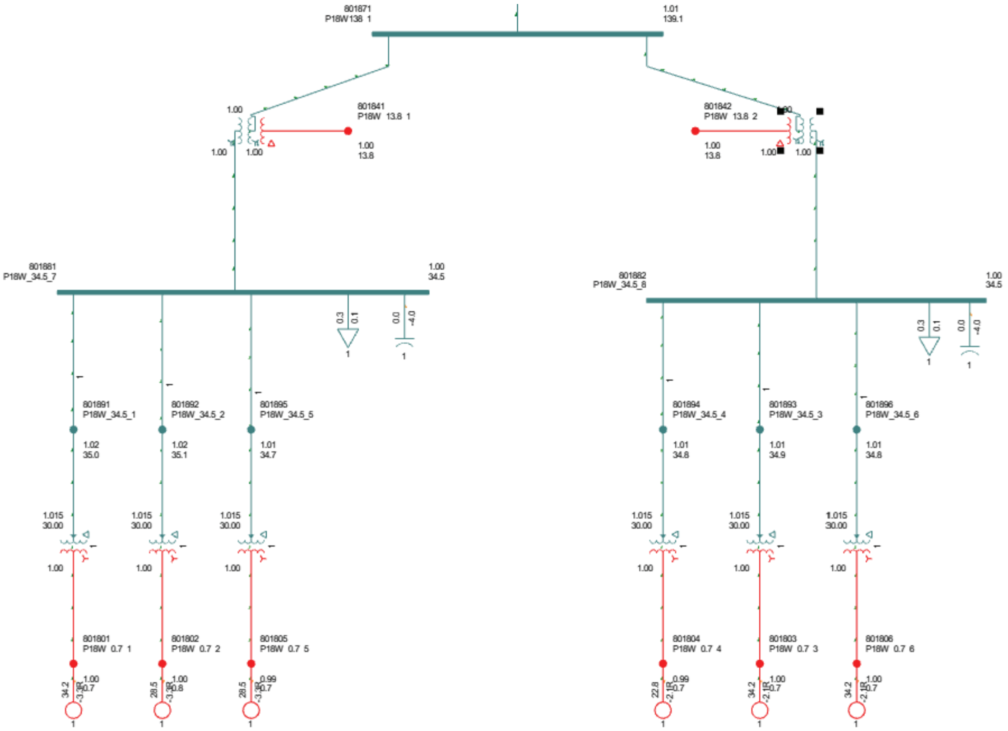

Figure A-1: [redacted] Plant Schematic Diagram.

Appendix B

Power Flow Study Results

Base Scenario (31HW/32HS/32LS)

Table B-1: Steady-State Voltage Study Results

Cases	IC's Gen Output	Contingency		Bus Voltage (PU)		
		Cate.	Description	BMT 230	BMT 138	DAW 138
31hw	Max	P0	System Normal	1.044	1.015	1.031
		P1	BMT T4	1.043	1.013	1.028
		P1	2L392A_SBK-[redacted]	1.043	1.014	1.030
		P1	2L392B_SGB-[redacted]	1.041	1.013	1.028
		P1	GMS T11	1.043	1.015	1.031
		P2	SBK 2CB22	1.043	1.014	1.030
		P1	5L4	1.044	1.016	1.031
32ls	Max	P0	System Normal	1.045	1.015	1.036
		P1	BMT T4	1.044	1.011	1.032
		P1	2L392A_SBK-[redacted]	1.044	1.014	1.035
		P1	2L392B_SGB-[redacted]	1.043	1.013	1.034
		P1	GMS T11	1.045	1.015	1.036
		P2	SBK 2CB22	1.043	1.014	1.035
		P1	5L4	1.045	1.015	1.036
32hs	Max	P0	System Normal	1.040	1.009	1.026
		P1	BMT T4	1.042	1.009	1.026
		P1	2L392A_SBK-[redacted]	1.039	1.009	1.026
		P1	2L392B_SGB-[redacted]	1.039	1.009	1.026
		P1	GMS T11	1.040	1.009	1.026
		P2	SBK 2CB22	1.039	1.009	1.026
		P1	5L4	1.040	1.010	1.027

Table B-2: Thermal Overload Study Results

Cases	IC's Gen Output	Contingency		Branch Loading (Amp./MVA)						
				2L308	2L312	2L392A	1L377	5L3	GMS T14	BMT T1
		Cate.	Description	GMS-DKT	SNK-SLS	SBK- [redacted]	DAW-IC's POI	PCN-KDS	MVA	MVA
Winter Ratings				1359	1351	1667	718	3420	356	178
31hw	Max	P0	System Normal	792.6 58.3%	485.0 35.9%	493.4 29.6%	394.7 55.0%	1815.5 60.5%	136.6 38.4%	16.5 9.3%
		P1	BMT T4	792.6 58.3%	484.9 35.9%	493.4 29.6%	395.0 55.0%	1815.5 60.5%	136.6 38.4%	12.6 7.1%
		P1	2L392A_SBK- [redacted]	909.0 66.9%	369.8 27.4%	N/A	394.8 55.0%	1810.8 60.4%	159.2 44.7%	16.4 9.2%
		P1	2L392B_SGB- [redacted]	797.0 58.6%	478.8 35.4%	475.5 28.5%	395.1 55.0%	1815.5 60.5%	137.4 38.6%	16.1 9.1%
		P1	GMS T11	723.3 53.2%	554.7 41.1%	521.3 31.3%	394.8 55.0%	1817.6 60.6%	246.3 69.2%	16.5 9.3%
		P2	SBK 2CB22	940.1 69.2%	339.6 25.1%	N/A	394.8 55.0%	1809.5 60.3%	165.3 46.4%	16.4 9.2%
		P1	5L4	882.4 64.9%	398.4 29.5%	435.7 26.1%	394.7 55.0%	2080.7 69.4%	153.9 43.2%	16.6 9.3%
Summer Ratings				1073	1066	1343	575	2200	300	150
32ls	Max	P0	System Normal	913.7 85.2%	402.7 37.8%	641.2 47.7%	638.0 111.0%	1940.9 88.2%	166.1 55.4%	29.4 19.6%
		P1	BMT T4	913.7 85.1%	402.4 37.7%	641.1 47.7%	640.1 111.3%	1940.9 88.2%	166.0 55.3%	44.2 29.4%
		P1	2L392A_SBK- [redacted]	1066.0 99.3%	258.7 24.3%	N/A	638.9 111.1%	1934.4 87.9%	195.3 65.1%	29.4 19.6%
		P1	2L392B_SGB- [redacted]	953.5 88.9%	362.7 34.0%	477.2 35.5%	639.0 111.1%	1939.3 88.2%	173.7 57.9%	29.4 19.6%
		P1	GMS T11	832.5 77.6%	482.8 45.3%	678.4 50.5%	638.2 111.0%	1943.6 88.3%	301.1 100.4%	29.4 19.6%
		P2	SBK 2CB22	1111.4 103.6%	218.4 20.5%	N/A	639.0 111.1%	1932.7 87.8%	204.0 68.0%	29.4 19.6%
		P1	5L4	1034.9 96.4%	290.1 27.2%	563.7 42.0%	637.9 110.9%	2295.5 104.3%	189.3 63.1%	29.4 19.6%
32hs	Max	P0	System Normal	841.0 78.4%	472.5 44.3%	540.9 40.3%	420.3 73.1%	1868.2 84.9%	147.4 49.1%	14.1 9.4%
		P1	BMT T4	841.1 78.4%	473.0 44.4%	541.0 40.3%	420.4 73.1%	1868.3 84.9%	147.4 49.1%	14.4 9.6%
		P1	2L392A_SBK- [redacted]	969.2 90.3%	347.5 32.6%	N/A	420.4 73.1%	1863.3 84.7%	172.2 57.4%	14.2 9.5%
		P1	2L392B_SGB- [redacted]	856.9 79.9%	455.2 42.7%	476.5 35.5%	420.4 73.1%	1867.8 84.9%	150.4 50.1%	15.1 10.1%
		P1	GMS T11	767.4 71.5%	545.2 51.1%	572.2 42.6%	420.3 73.1%	1870.4 85.0%	266.8 88.9%	14.1 9.4%
		P2	SBK 2CB22	1004.7 93.6%	313.5 29.4%	N/A	420.4 73.1%	1861.8 84.6%	179.1 59.7%	14.2 9.5%
		P1	5L4	943.8 88.0%	374.0 35.1%	475.2 35.4%	420.3 73.1%	2170.2 98.6%	167.1 55.7%	14.2 9.5%