

Exclusions:

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

Key Assumptions:

- Construction by contractor
- 12 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

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 4 2030 (calendar year). To achieve this timeline, we may need to expedite certain activities, including engineering design and procurement of long-lead equipment.

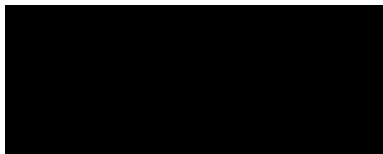
Timely actions required from you to minimize risks to the schedule:

- 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,



Manager, Customer Interconnections

BC Hydro

Encl.: CEAP_2025_IR80__Feasibility_Study.pdf


Interconnection Feasibility Study

BC Hydro EGBC Permit to Practice No: 1002449

2025 CEAP IR #80

Prepared for:

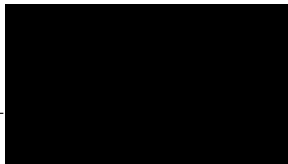


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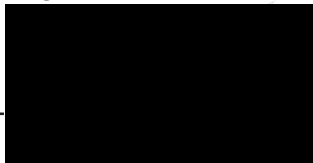
E.I.T, Transmission Planning

Reviewed by:



Principal Engineer, Transmission Planning

Accepted by:



Manager, Transmission Planning

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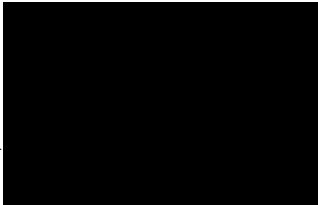
Contributors

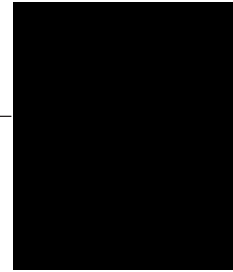
The following accept responsibility for the content in the specified sections. Professionals apply their signature and/or seal as appropriate.

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The entire report
except those
listed below

Discipline:
Transmission Planning

Contributed by:


Principal Engineer, Transmission
Planning



Section:
5.2, 5.3

Discipline:
Substations Growth and Sustainment

Contributed by:


Sr. Engineer, Substations Growth and
Sustainment

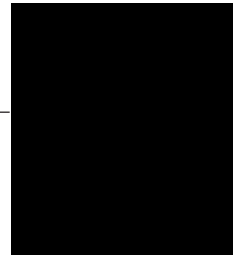


Section:
5.4

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Contributed by:


Sr. Engineer, Transmission Lines
Engineering



Study, the associated cost implications are captured and delivered in the cover letter to the IC”.

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Appendices

Appendix A	Plant Single Line Diagram Used for Power Flow Study
Appendix B	Power Flow Study Results

Acronyms

The following are acronyms used in this report.

BCH	BC Hydro
CEAP	Competitive Electricity Acquisition Process
COD	Commercial Operation Date
DTT	Direct Transfer Trip
ERIS	Energy Resource Interconnection Service
FeS	Feasibility Study
FVO	Fraser Valley Office
IBR	Inverter-Based Resources
IC	Interconnection Customer
IR	Interconnection Request
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
RAS	Remedial Action Scheme
SIO	South Interior Office
TIR	BC Hydro “60 kV to 500 kV Technical Interconnection Requirements for Power Generators”
WECC	Western Electricity Coordinating Council

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)	2L86, 22.5km from KLY	
IC's Proposed COD	1st October 2030	
Type of Interconnection Service	NRIS <input checked="" type="checkbox"/>	ERIS <input type="checkbox"/>
Maximum Power Injection ¹ (MW)	91 (Summer)	91 (Winter)
Number of Generator Units	30 MW WTGs	
Plant Fuel	Solar	

[REDACTED] the interconnection customer (IC), requests to interconnect its [REDACTED] - 2025 CEAP IR #80 - to the BC Hydro system. The project consists of 30 generators rated 0.65 kV, 3.6 MVA/3.077 MW, each with a 0.65/34.5 kV step-up transformer rated 3.6 MVA; 3 – 34.5 kV collector feeders with 10 generators per feeder; a single main transformer rated 34.5/230 kV, 100 MVA; and a 0.5 km 230 kV transmission line from the IC's 230 kV substation to a tap in 2L86 KLY-HMH 22.5 km from KLY. The IR has a total installed capacity of 92.3 MW, +/- 56.1 MVAR. The IC's proposed commercial operation date (COD) is COD is 1st October, 2030.

The northern South Interior West and southern Central Interior areas of the BCH transmission system are supplied by 3 circuits: 2L86 KLY-HMH, 2L94 KLY-Soda Creek(SCK) substation and 2L352 HMH-SCK. The 2025 CEAP – IR #80, a 92.3 MW generating station interconnected to 2L86 via a 0.5 km transmission line with a POI approximately 22.5 km from KLY, has been proposed within this area. Circuit 2L86 primarily supplies HMH, the northern portion of HMH-Bridge River G.S. #1 (BR1) 60 kV system and a portion of the SCK regional transmission system.

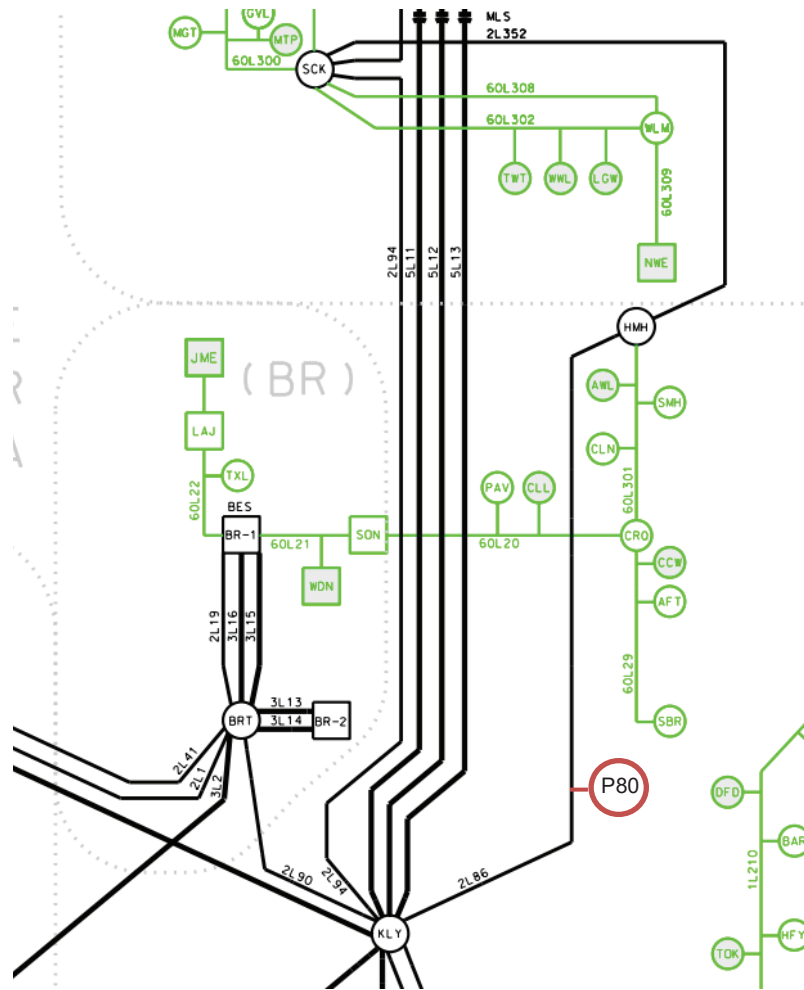


Figure 1-1: South Interior West Transmission 2030/31 System Diagram with the Proposed [Redacted] Interconnection

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). A non-binding good faith estimated cost of required Network Upgrades and estimated time to construct will be provided in a separate letter to the IC.

Per OATT, the feasibility study is performed individually for each of the participating projects in the CEAP and focuses specifically on the BC Hydro regional transmission system where the proposed generating project is proposed to be constructed. An assessment of the incremental effect on the 500kV bulk transmission system is beyond this study scope.

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 would be addressed in subsequent System Impact Study if the project is a Successful Participant of the CEAP.

In case impact to the adjacent external systems to BC Hydro is observed, such impact would be addressed in subsequent detailed and coordinated studies with the relevant adjacent entities if the proposed interconnection proceeds further.

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, 16 July 2025.
- BC Hydro Operating Order 5T-14, Ratings for All Transmission and Distribution Transformer, 18 August 2025.
- BC Hydro System Operating Order 7T-22 System Voltage Control, September 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 October 14th, 2025 for the study purpose. Appendix A shows the plant single line diagram for the IC's project used in the study model. Certain assumptions were, as set out below, made to the extent required.

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 generations, transmission facilities, and loads in addition to the subject interconnection project in this study. Future generation projects and transmission system facilities are also incorporated.

Additional assumptions is listed as follows.

- 1) The generation in the study 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 their Maximum Power Outputs (MPO) unless otherwise specified.

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 reinforcement requirement based on steady state performance analysis.

The studies have been conducted with the focus on the 2033 light summer (33LS), the 2032 heavy winter (32HW) and 2033 heavy summer (32HS) system condition, taking into consideration factors such as load conditions, seasonal variation in ambient temperatures, and generation patterns that stress the transmission system.

The studies are 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 Branch Loading Analysis

Appendix B-1 contains the details of thermal overload analysis results.

The study shows that the addition of [REDACTED] would not cause any new thermal overloads under system normal conditions and various system contingencies.

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 load conditions (33LS, 33HS, 32HW). Appendix B-2 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] [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.

Furthermore, the BCH TIR requires the IC's project to provide sufficient reactive power capability over full MW operating range including at zero MW output level.

The reactive capabilities of the IPP's plant and their adequacy to meet BCH requirements is subject to confirmation in the next stage of studies if this project is selected to move forward in the 2025 CEAP selection process.

5.1.4 Anti-Islanding Requirements

[REDACTED] is not allowed for islanded operation. Anti-islanding protection installed within IC's facility shall be configured in the manner that does not compromise the required ride-through performance.

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

No station work is required.

5.4 Transmission Line Requirements

At the Point of Interconnection (POI), approximately 22.5km from KLY on 2L086, BC Hydro will design and build the tap that may include a non-standard tap structure and up to three non-standard switches and structures, two structures adjacent to the switch structures converted to deadends, and a deadend structure as the demarcation point between BC Hydro and the customer. Up to three 253kV rated disconnect switches may be installed to isolate/ sectionalize the IC's facilities and BC Hydro's system. Additional Right-of-Way (ROW) may be required to accommodate the tap.

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

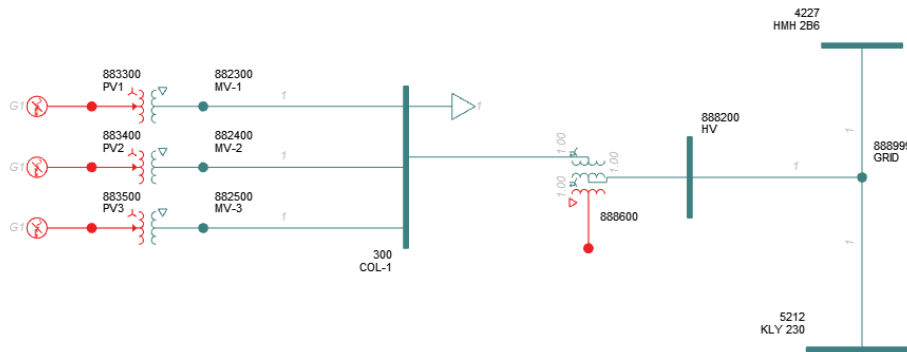
To interconnect the [REDACTED] and its facilities to the BCH Transmission System at the proposed POI, this Feasibility Study has identified the following conclusions and requirements:

1. Upon a collaborative decision from the BCH study team, a tap connection on 2L86 is acceptable to interconnect the IC's generating project to the BCH system.
2. The connection of [REDACTED] does not cause any performance violation (i.e. thermal overload, voltage performance violation or voltage stability concern) under system normal conditions and various system contingencies.
3. 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 including zero MW output, per BC Hydro's TIR Section 6.4.2.

Appendix A

Plant Single Line Diagram Used for Power Flow Study

Figure A-1 shows [REDACTED] single line diagram used for power flow study.



As per the diagram above, the [REDACTED] has 3 – 34.5 kV collector feeders; a single main transformer rated 34.5/230 kV, 100 MVA; and a 0.5 km 230 kV transmission line from the IPP’s 230 kV substation to a tap in 2L86 KLY-HMH 22.5 km from KLY.

Appendix B

Power Flow Study Results

Base Scenario (32HW/33HS/33LS)

Table B-1: Thermal Overload Study Results

Case	Contingency Identified		Branch Loading			
			2L86	2L352	60L301	2L86
	Category	Description	IPP-HMH	HMH-SCK	HMH-SMH	IPP-KLY
32HW	P0	System Normal	53.6MVA 17 %	4.4MVA 1 %	5.9 MVA 13 %	84.7 MVA 27%
	P1	2L94 OOS	56.0MVA 20 %	20.4 MVA 4 %	5.8 MVA 13 %	88.2 MVA 28%
	P1	2L352 OOS	52.0MVA 16 %	-	6.2 MVA 13 %	101.5 MVA 31%
	P2	2L86 open-ended At HMH side	-	49.4 MVA 10 %	3.6 MVA 8%	118.7 MVA 37%
33HS	P0	System Normal	28.2MVA 10 %	5.7 MVA 1 %	1.3 MVA 4 %	96.1 MVA 30%
	P1	2L94 OOS	31.5MVA 10 %	16.1 MVA 4 %	1.3 MVA 4 %	100.0 MVA 31%
	P1	2L352 OOS	28.2MVA 8 %	-	2.0 MVA 7 %	109.7 MVA 34%
	P2	2L86 open-ended At HMH side	-	25.2 MVA 6 %	3.0 MVA 10%	118.8 MVA 37%
33LS	P0	System Normal	13.2MVA 7 %	8.1 MVA 3 %	0.6 MVA 2 %	105.4 MVA 33%
	P1	2L94 OOS	6.6MVA 3 %	19.6 MVA 2 %	0.6 MVA 2 %	113.2 MVA 35%
	P1	2L352 OOS	15.7 MVA 5 %	-	0.6 MVA 2 %	112.4 MVA 35%
	P2	2L86 open-ended At HMH side	-	19.9 MVA 4%	1.4 MVA 4%	118.4 MVA 37%

Table B-2: Steady-State Voltage Study Results

Case	Contingency		Bus Voltage (pu)		
	Category	Description	HMH 230	SCK 230	HMH 66
32HW	P0	System Normal	1.03 pu	1.03 pu	0.99 pu
	P1	2L94 OOS	1.03 pu	1.03 pu	1.00 pu
	P1	2L352 OOS	1.03 pu	1.03 pu	1.01 pu
33HS	P2	2L86 open-ended At HMH side	1.01 pu	1.02 pu	1.01 pu
	P0	System Normal	1.03 pu	1.04 pu	1.00 pu
	P1	2L94 OOS	1.03 pu	1.03 pu	1.00 pu
33LS	P2	2L86 open-ended At HMH side	1.03 pu	1.04 pu	1.01 pu
	P1	2L352 OOS	1.03 pu	1.04 pu	1.02 pu
	P0	System Normal	1.04 pu	1.04 pu	1.01 pu
	P1	2L94 OOS	1.04 pu	1.03 pu	1.01 pu
	P1	2L352 OOS	1.04 pu	1.04 pu	1.01 pu
	P2	2L86 open-ended At HMH side	1.04 pu	1.04 pu	1.01 pu