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V3N 4X8

November 24, 2025

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

via email: [REDACTED]

**RE: CEAP IR #37– [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 \$336.9 M.

### **Major Scope of Work Identified:**

- Thermally upgrade 1L205 line section from Savona substation (SVA) to Highland substation (HLD); significant structure replacements are required
- Thermally upgrade 1L205 line section from SVA to HLD

- At SVA, upgrade 1D25 line disconnect switch and 1L203 line jumper
- At HLD, upgrade all sections of 1L205 line jumper
- Upgrade required substation facilities, infrastructures, and bus work to support new station equipment at SVA and HLD
- 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
- No construction during winter season
- Execution of early Engineering and Procurement Agreement
- No expansion of existing stations or control buildings to accommodate new equipment
- A certificate of public convenience and necessity (CPCN) requirement will be exempt
- Impact Benefit Agreements with First Nations are not considered
- 90% of transmission line structures on both 1L203 (SVA to POI) and 1L205 (SVA to HLD) to be replaced
- 100% of transmission lines 1L203 (SVA to POI) and 1L205 (SVA to HLD) to be reconducted, with assemblies replaced

**Key Risks:**

- Transmission scope may be different than assumed, including number of structure replacements
- Expansion of the existing control building may be required leading to increased costs and/or a longer project schedule
- 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
- If a CPCN is required for the project, it may impact project cost and schedule risks

**Indirect Interconnection**

Your IR involves an indirect interconnection to the BC Hydro Transmission System. Under the OATT Attachment M-1: Standard Generator Interconnection Procedures (SGIP) and the Standard Generator Interconnection Agreement (SGIA), the party executing the SGIA must be the owner of the Interconnection Customer Interconnection Facilities up to the Point of Interconnection. Depending on the scope of required Network Upgrades, this execution may occur years before the Commercial Operation Date.

## 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](mailto:ceap2025@bchydro.com).

Sincerely,

[Redacted signature]

[Redacted name]

Manager, Customer Interconnections

BC Hydro

Encl.: CEAP\_2025\_IR37-[Redacted ID]-Feasibility\_Study.pdf



# Interconnection Feasibility Study

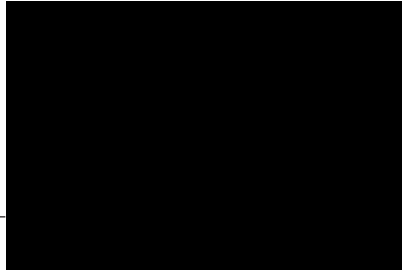
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**2025 CEAP IR # 37**

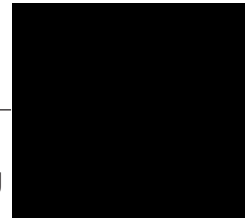
Prepared for:



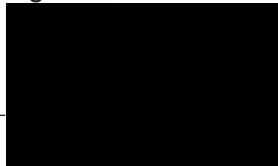
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Senior Engineer, Transmission Planning

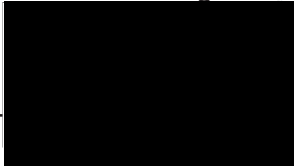


Reviewed by:



Engineering Team Lead, Transmission  
Planning

Accepted by:



Manager, Transmission Planning

## Report Metadata

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Revision	Date	Description
0	2025 Nov	Initial release

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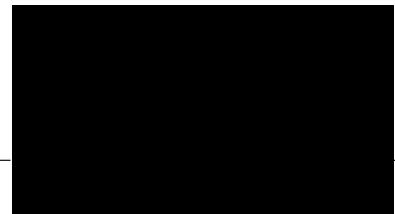
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except those  
listed below

**Discipline:**  
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Contributed by:



Senior Engineer, Transmission  
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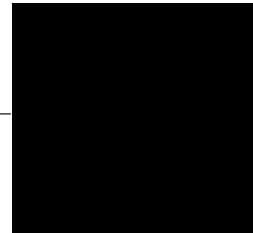
**Section:**  
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**Discipline:**  
Stations Planning

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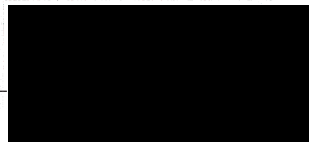
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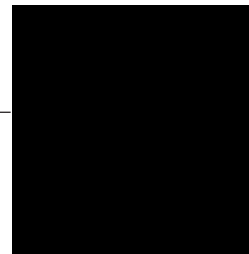
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## Executive Summary

██████████ the interconnection customer (IC), requests to connect its ██████████ (2025 CEAP Project Code: # 37) to the BC Hydro (BCH) system. The Project includes twenty-eight (28) ██████████ solar photovoltaic (PV) inverters, rated 4.4 MVA each, adding a total capacity of 100.7 MW into the BCH system.

The Phase 1 of the ██████████ is one of the ██████████ and will be interconnected via a tap-off from BCH's existing 138 kV transmission line 1L203, approximately 17 km from Highland Substation (HLD). The IC proposed Point of Interconnection (POI) is the same as that planned for the Phase 1 project, located on 1L203 line. The proposed Phase 2 project's collector system will connect to IC's 138 kV station bus, and the planned 138 kV interconnecting tie-line will be shared between Phase 1 and Phase 2. The project's proposed commercial operation date (COD) is September 30, 2031.

To interconnect the ██████████ and its facilities to the BCH Transmission System at the proposed POI, this Feasibility Study has identified the following recommendations and conclusions:

1. The Project's proposed connection to the ██████████ Phase 1 138 kV station bus is acceptable.
2. The Project does not cause any voltage performance violation under system normal conditions.
3. The 1L203 line section from Savona Substation (SVA) to ██████████ line tap shall be thermally upgraded to achieve a summer normal rating of 950A or higher at 30°C ambient. The 1L205 line section from SVA to HLD shall be thermally upgraded to achieve a summer normal rating of 560A or higher at 30°C ambient.
4. For single contingency (N-1) conditions, the study has observed potential thermal overloads on 1L203 (SVA to ██████████ line tap to HLD), 1L205 (SVA to HLD), 1L243 (██████████ to NIC), 1L204 (SVA to DUG), 1L206 (SVA to WKA), and SVA T3 230/138 kV transformer. To resolve the post contingency overloading concerns, gen-shedding at the

project site is required. The function scope will be specified in the System Impact Study (SIS).

5. The Project 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.
6. The Project 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 BCH's TIR Section 6.4.2.
7. The "Night Reactive Mode" function for the solar inverters is required so that each inverter can provide reactive power capability at zero MW output including during nighttime.

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.

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## Appendices

Appendix A	Schematic Diagram of the IC's Project
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
IBR	Inverter-Based Resources
IC	Interconnection Customer
IR	Interconnection Request
MPO	Maximum Power Output
NERC	North American Electric Reliability Corporation
NRIS	Network Resource Interconnection Service
OATT	Open Access Transmission Tariff
POI	Point of Interconnection
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)	The same as [REDACTED] [REDACTED] (formerly [REDACTED]) POI, which is on 138 kV 1L203 line, 17 km from Highland Substation (HLD)	
IC's Proposed COD	September 30, 2031	
Type of Interconnection Service	NRIS <input checked="" type="checkbox"/>	ERIS <input type="checkbox"/>
Maximum Power Injection (MW)	100.7 (Summer)	100.7 (Winter)
Number of Inverters	28	
Plant Fuel	Solar	

[REDACTED], the interconnection customer (IC), requests to connect its [REDACTED] (2025 CEAP Project Code: # 37) to the BC Hydro (BCH) system. The Project includes twenty-eight (28) [REDACTED] solar photovoltaic (PV) inverters, rated 4.4 MVA each, adding a total capacity of 100.7 MW into the BCH system.

The [REDACTED] is one of the [REDACTED] projects and will be interconnected via a tap-off from BCH's existing 138 kV transmission line 1L203, approximately 17 km from Highland Substation (HLD). The IC proposed Point of Interconnection (POI) is the same as that planned for the Phase 1 project, located on 1L203 line. The proposed Phase 2 project's collector system will connect to IC's 138 kV station bus, and the planned 138 kV interconnecting tie-line will be shared between Phase 1 and Phase 2. The project's proposed commercial operation date (COD) is September 30, 2031.

For clarity and conciseness, the [REDACTED] and [REDACTED] [REDACTED] Projects will hereafter be referred to as [REDACTED] and [REDACTED] respectively, throughout this document.



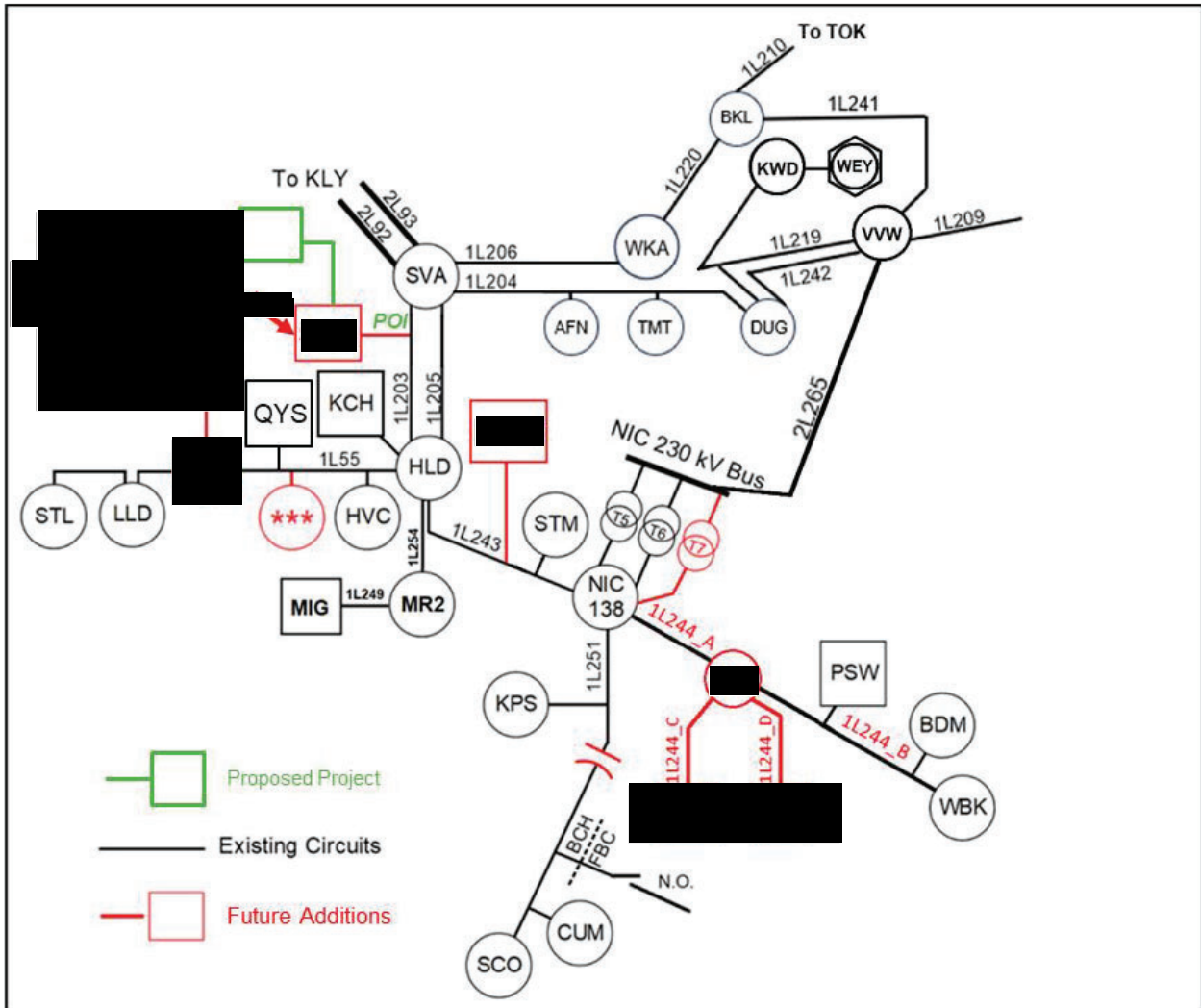


Figure 1-1: Nicola-Highland-Savona 138 kV Transmission System Diagram

## 2 Purpose and Scopes of Study

This Feasibility Study is a preliminary evaluation of the system impact of interconnecting the proposed project to the BCH 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 BCH 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 BCH 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 BCH on October 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 IC's project used in the study model.

The power flow study cases used in this Feasibility Study are established based upon the BCH'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 following 2024 CEAP projects in the study area are included in the study:
  - [REDACTED]
  - [REDACTED]
  - [REDACTED]
  - [REDACTED]
  - [REDACTED] (formerly [REDACTED]) ([REDACTED])
- 2) In this study, it is assumed that the addition of Nicola Substation 230/138 kV transformer T7 and the reconductoring of 138 kV line 1L243 will be completed prior to [REDACTED] Project entering service.
- 3) The regional generations are set to maximum values to most stress the transmission system in the study area but no overload transmission elements before the interconnection of the [REDACTED] Project.

## 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 focus on the 2031 heavy winter (31HW), 2032 light summer (32LS), and 2032 heavy summer (32HS) system conditions, taking into considerations 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 Thermal Overload Analysis

Table 5-1 summarizes the thermal overload concerns identified in the study and the proposed solutions. Appendix B contains the details of thermal overload analysis results.

Table 5-1: Thermal Overload Concerns and Proposed Solutions

Equipment subject to overloads	Conditions observed	Contingencies that result in overloads (Examples)	Solution Proposed
Under system normal conditions			
1L203 between SVA- [REDACTED] line tap	LS, HW, HS	P0: System Normal	Thermal upgrade to achieve a summer normal rating of 950A or higher at 30°C ambient.
1L205 between SVA-HLD	LS, HS	P0: System Normal	Thermal upgrade to achieve a summer normal rating of 560A or higher at 30°C ambient.
1L243 between [REDACTED]-NIC	LS	P0: System Normal	Generation redispatch during light summer/minimum load condition. Will be further evaluated in SIS.

Equipment subject to overloads	Conditions observed	Contingencies that result in overloads (Examples)	Solution Proposed
Under contingencies			
1L203 between HLD- [REDACTED] [REDACTED] line tap	LS, HW, HS	P2.1: 1L203 Open at SVA	Gen-shedding at the project site
1L203 between SVA- [REDACTED] [REDACTED] line tap	LS, HW, HS	P2.1: 1L243 Open at NIC	Gen-shedding at the project site
1L205 between SVA-HLD	LS, HW, HS	P2.1: 1L203 Open at SVA P2.1: 1L243 Open at NIC	Gen-shedding at the project site
1L243 between [REDACTED]-NIC	LS, HS	P2.1: 1L203 Open at SVA	Gen-shedding at the project site
1L204 between SVA-[REDACTED]	LS, HW, HS	P1: 1L206 OOS P2.1: 1L243 Open at NIC	Gen-shedding at the project site
1L206 between SVA-WKA	HS	P2.1: 1L204 Open at SVA	Gen-shedding at the project site
SVA T3	LS, HS	P2.1: 1L243 Open at NIC	Gen-shedding at the project site

Under system normal (N-0) conditions, the study identifies potential thermal overloads on 138 kV lines 1L203 (25 km line section between SVA-[REDACTED] [REDACTED] tap) and 1L205 (42 km line between SVA-HLD). To mitigate these thermal overloads, the following system reinforcements are required:

- The 1L203 line section from SVA to [REDACTED] line tap shall be thermally upgraded to achieve a summer normal rating of 950A or higher at 30°C ambient.
- The 1L205 line section from SVA to HLD shall be thermally upgraded to achieve a summer normal rating of 560A or higher at 30°C ambient.

For single contingency (N-1) conditions, the study identifies potential thermal overloads on 138 kV lines 1L203 (SVA to [REDACTED] line tap to HLD), 1L205 (SVA to HLD), 1L243 ([REDACTED] to NIC), 1L204 (SVA to DUG), 1L206 (SVA to WKA), as well as on SVA T3 230/138 kV transformer.

To resolve the post contingency overloading concerns, gen-shedding at the project site is required. The function scope will be specified in the System Impact Study (SIS).

### **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 (32LS, 32HS, and 31HW), the voltage performance under system normal condition (P0) and single contingencies is acceptable. Appendix B shows the details in the steady-state voltage study results.

### **5.1.3 Reactive Power Capability Evaluation**

The BCH 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] Project would be capable of meeting the BCH's reactive capability requirement at the plant's maximum MW output, which is subjected to further verification in the next stage of the call 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. According to the IC-provided solar capability curve, each inverter has +/- 2.6 Mvar reactive capability at zero MW output with "Night Reactive Mode", which means the solar farm can meet the reactive power requirement at 0 MW. This will need to be re-confirmed if the IC's project proceeds further.

### **5.1.4 Anti-Islanding Requirements**

The IC is required to install anti-islanding protection within its facility to disconnect the IC's solar farm from the grid when an inadvertent island with the local load

forms. The anti-islanding protection shall be configured in the manner of not compromising the required ride-through performance.

## 5.2 Fault Analysis

The short circuit analysis in the Feasibility Study is based upon the latest BCH 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 following stations upgrades are required:

- At Savona Substation (SVA):
  - Upgrade 1D25 line disconnect switch to at least 950A rating.
  - Upgrade 1L203 line jumper to at least 950A for both summer and winter ratings.
- At Highland Substation (HLD):
  - Upgrade all sections of 1L205 line jumper to at least 560A summer rating.

## 5.4 Transmission Lines Requirements

The following transmission lines upgrades are required:

- Thermally upgrade the overhead circuit 1L203 (between SVA and [REDACTED] line tap) to 950A rating under summer condition by reconductoring the existing Hawk ACSR conductor to new SP-926.7-45/7 ACSR conductor. The reconductoring may require significant structure replacements.
- Thermally upgrade the overhead circuit 1L205 (between SVA and HLD) to 560A rating under summer condition by reconductoring the existing Partridge ACSR conductor to new IBIS ACSR conductor. The reconductoring may require significant structure replacements.

## 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] Project and its facilities to the BCH Transmission System at the POI, this Feasibility Study has identified the following conclusions and requirements:

1. The Project's proposed connection to the [REDACTED] 138 kV station bus is acceptable.
2. The Project does not cause any voltage performance violation under system normal conditions.
3. The 1L203 line section from SVA to [REDACTED] line tap shall be thermally upgraded to achieve a summer normal rating of 950A or higher at 30°C ambient. The 1L205 line section from SVA to HLD shall be thermally upgraded to achieve a summer normal rating of 560A or higher at 30°C ambient.
4. For N-1 conditions, the study has observed potential thermal overloads on 1L203 (SVA to [REDACTED] line tap to HLD), 1L205 (SVA to HLD), 1L243 ([REDACTED] to NIC), 1L204 (SVA to DUG), 1L206 (SVA to WKA), and SVA T3 230/138 kV transformer. To resolve the post contingency overloading concerns, gen-shedding at the project site is required. The function scope will be specified in the System Impact Study (SIS).
5. The Project 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.
6. The Project 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 BCH's TIR Section 6.4.2.
7. The "Night Reactive Mode" function for the solar inverters is required so that each inverter can provide reactive power capability at zero MW output including during nighttime.

## Appendix A

### Schematic Diagram of the IC's Project

Figure A-1 shows the schematic diagram for the [REDACTED] Project.

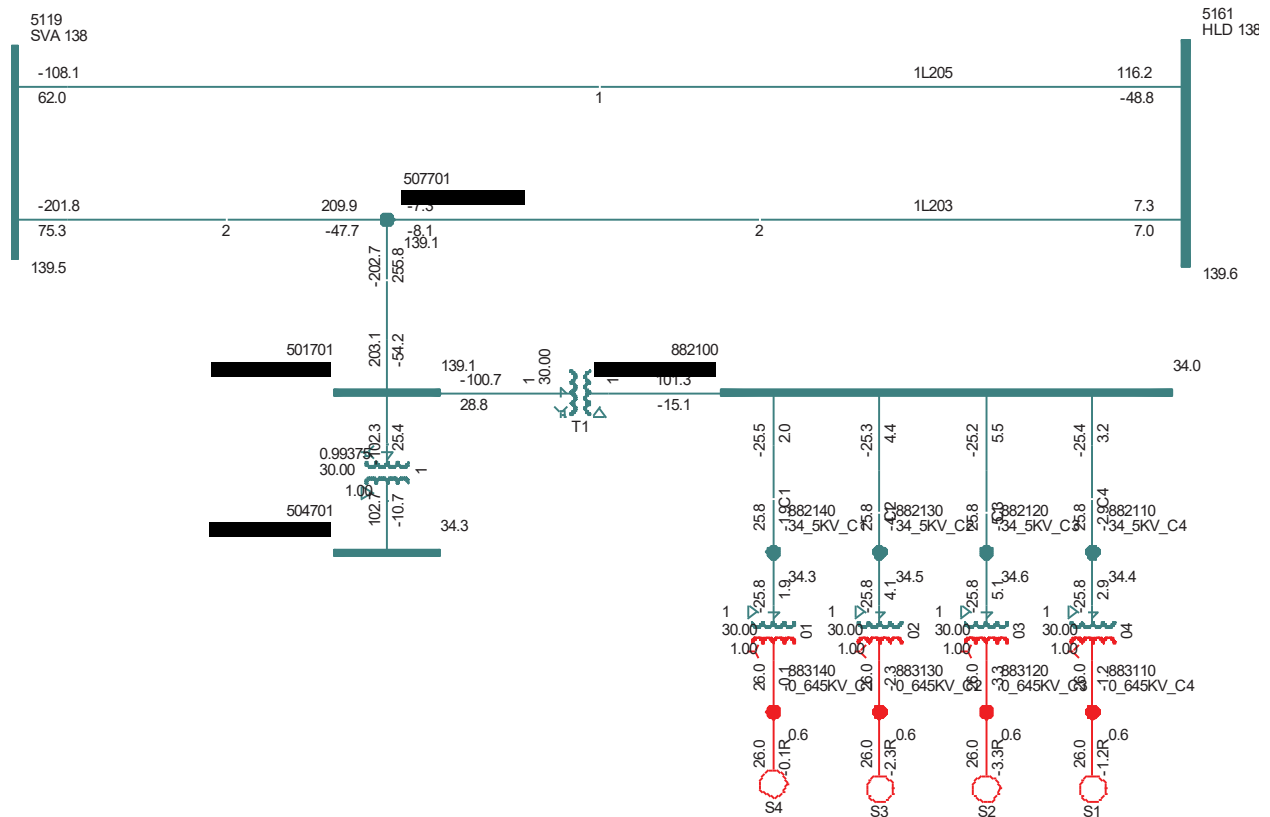


Figure A-1: [REDACTED] Project Schematic Diagram

## Appendix B Power Flow Study Results

### Base Scenario (32LS, 31HW, 32HS)

Table B-1: Thermal Overload Study Results

Case	Bulk Generation Pattern	Contingency Identified		Branch Loading (MVA / % of its seasonal normal rating)													
		Category	Description	1L203 HLD-OI	1L203 SVA- [redacted]	1L204 SVA-AFN Tap	1L205 (SLD-SVA)	1L206 (SVA-WKA)	1L243 HLD- [redacted]	1L243 [redacted]-STM	1L243 NIC-STM	SVA T1	SVA T3				
32LS	High Columbia	P0	System Normal	12.3 MVA 7%	215.6 MVA 123.9%	53.1 MVA 36.6%	128.1 MVA 107%	43.3 MVA 25.4%	37.4 MVA 14.1%	177.3 MVA 66.8%	176.5 MVA 66.2%	117.9 MVA 70.2%	125.2 MVA 83.5%				
		P2.1	1L203 Open at SVA	203.6 MVA 117.7%	0	27.3 MVA 18.8%	257.2 MVA 216.4%	23.1 MVA 13.5%	117.7 MVA 44.5%	254.7 MVA 96.3%	253.8 MVA 95.7%	96.9 MVA 57.7%	102.9 MVA 68.6%				
		P2.1	1L243 Open at NIC	99.2 MVA 57%	301 MVA 174.2%	98.4 MVA 68.4%	210.5 MVA 176.2%	81.4 MVA 48.1%	135.3 MVA 51.2%	1.7 MVA 0.6%	0	164.3 MVA 97.8%	174.5 MVA 116.3%				
32LS	High Peace	P0	System Normal	10.3 MVA 6%	217.1 MVA 125.3%	131.6 MVA 90.9%	128.2 MVA 107.9%	105.7 MVA 62%	140.7 MVA 53.2%	276.6 MVA 104.6% [1]	275.6 MVA 104% [1]	49.9 MVA 29.7%	53 MVA 35.3%				
		P2.1	1L203 Open at SVA	205.6 MVA 119.5%	0	105.3 MVA 72.6%	257.2 MVA 218.2%	84 MVA 49.2%	223.1 MVA 85%	356.2 MVA 135.1%	355.4 MVA 134.5%	41.7 MVA 24.8%	44.3 MVA 29.5%				
		P2.1	1L243 Open at NIC	149.6 MVA 86.6%	352.3 MVA 206%	198.9 MVA 139.5%	259.3 MVA 218.8%	164.1 MVA 97.9%	133.7 MVA 50.6%	1.7 MVA 0.6%	0	127.4 MVA 75.8%	135.2 MVA 90.2%				
31HW	High Columbia	P0	System Normal	9.5 MVA 4.9%	209.5 MVA 108.7%	69.4 MVA 47.9%	120.6 MVA 79.6%	72.8 MVA 37.7%	20.8 MVA 6.8%	148.3 MVA 48.3%	146.7 MVA 47.7%	86.7 MVA 43.4%	92 MVA 51.7%				
		P2.1	1L203 Open at SVA	209.4 MVA 109%	0	44.5 MVA 30.7%	246.3 MVA 163.5%	52.7 MVA 27.3%	93 MVA 30.7%	225.9 MVA 73.7%	224.1 MVA 73.1%	67.2 MVA 33.6%	71.3 MVA 40.1%				
		P2.1	1L243 Open at NIC	76.1 MVA 39.3%	284.2 MVA 147.9%	107.3 MVA 74.1%	192.1 MVA 126.8%	103.3 MVA 53.5%	136.7 MVA 44.5%	1.8 MVA 0.6%	0	130.2 MVA 65.1%	136.3 MVA 77.7%				
31HW	High Peace	P0	System Normal	17.7 MVA 9.2%	194 MVA 100.4%	116.4 MVA 79.9%	105.4 MVA 69.6%	109.8 MVA 56.6%	46.4 MVA 15.2%	181.4 MVA 59%	180 MVA 58.5%	32.1 MVA 16.1%	34.1 MVA 19.1%				
		P1	1L206 OOS	27.4 MVA 14.2%	183.5 MVA 95.1%	174.7 MVA 120.3%	95.6 MVA 63.2%	0	64.7 MVA 21.3%	199.7 MVA 65%	198.2 MVA 64.4%	46.7 MVA 23.4%	49.6 MVA 27.8%				
		P2.1	1L203 Open at SVA	209.3 MVA 109%	0	93.6 MVA 64.5%	219.9 MVA 146%	91.9 MVA 47.5%	119 MVA 39.3%	252.6 MVA 82.4%	251 MVA 81.8%	20 MVA 10%	21.2 MVA 11.9%				
32HS	High Columbia	P0	System Normal	10.8 MVA 6.2%	215.3 MVA 123.6%	60.2 MVA 41.5%	126 MVA 105.1%	59.7 MVA 35%	22 MVA 8.6%	150.9 MVA 58.5%	149.5 MVA 57.9%	102.5 MVA 61%	108.8 MVA 72.5%				
		P2.1	1L203 Open at SVA	209.4 MVA 120.6%	0	34.5 MVA 23.8%	255.2 MVA 213.8%	39.1 MVA 22.9%	97.5 MVA 38.3%	230.4 MVA 89.5%	228.7 MVA 88.9%	82.2 MVA 48.9%	87.3 MVA 58.2%				
		P2.1	1L243 Open at NIC	83.1 MVA 47.5%	291.3 MVA 167.7%	100 MVA 69%	198.8 MVA 165.6%	91.7 MVA 53.7%	136.8 MVA 53.1%	1.6 MVA 0.6%	0	147.2 MVA 87.6%	156.3 MVA 104.2%				

Case	Bulk Generation Pattern	Contingency Identified		Branch Loading (MVA / % of its seasonal normal rating)										
		Category	Description	1L203 HLD-	1L203 SVA-	1L204 SVA-AFN Tap	1L205 (SLD-SVA)	1L206 (SVA-WKA)	1L243 HLD-	1L243 STM	1L243 NIC-	SVA T1	SVA T3	
32HS	High Peace	P0	System Normal	22.3 MVA 12.8%	188.8 MVA 108.1%	134 MVA 91.9%	100.3 MVA 83.7%	118.1 MVA 68.8%	71 MVA 27.8%	206.3 MVA 80.1%	204.7 MVA 79.4%	19.5 MVA 11.6%	20.7 MVA 13.8%	
		P1	1L206 OOS	32.9 MVA 18.8%	177.9 MVA 101.9%	196.8 MVA 135.2%	90.1 MVA 75.2%	0	91 MVA 35.6%	225.9 MVA 87.7%	224.2 MVA 87.1%	31.1 MVA 18.5%	33 MVA 22%	
		P2.1	1L203 Open at SVA	209.2 MVA 120.6%	0	111.8 MVA 76.9%	211.6 MVA 177.5%	100.5 MVA 58.7%	142.4 MVA 56.1%	275.4 MVA 107.1%	273.5 MVA 106.5%	24.7 MVA 14.7%	26.2 MVA 17.5%	
		P2.1	1L204 Open at SVA	35.4 MVA 20.3%	175.4 MVA 100.5%	0	87.6 MVA 73.2%	182.5 MVA 106.4%	96.2 MVA 37.7%	231.2 MVA 89.8%	229.5 MVA 89.1%	34.5 MVA 20.5%	36.6 MVA 24.4%	
		P2.1	1L243 Open at NIC	84.1 MVA 48%	292.7 MVA 168.4%	184 MVA 126.6%	199.9 MVA 166.4%	159 MVA 93%	136.8 MVA 53.1%	1.6 MVA 0.6%	0	80.5 MVA 47.9%	85.5 MVA 57%	

Note: [1] Generation redispatch is feasible to mitigate the potential 1L243 overload during light summer/minimum load condition, and will be further evaluated in the SIS.



Table B-2: Steady-State Voltage Study Results

Case	Bulk Generation Pattern	Contingency Identified		Bus Voltage (PU)		
		Category	Description	HLD 138	NIC 138	SVA 138
32LS	High Columbia	P0	System Normal	1.01	1.02	1.01
		P1	1L203 OOS	1.02	1.02	1.03
		P1	1L205 OOS	1	1.02	1.02
		P1	1L243 OOS	1.01	1.02	1.01
		P2.1	1L203 Open at SVA	1	1.02	1.01
		P2.1	1L243 Open at NIC	1.01	1.03	1
32LS	High Peace	P0	System Normal	1	1.02	1.01
		P1	1L203 OOS	1.01	1.02	1.02
		P1	1L205 OOS	0.99	1.01	1.02
		P1	1L243 OOS	1.01	1.03	1.01
		P2.1	1L203 Open at SVA	0.99	1.02	1.01
		P2.1	1L243 Open at NIC	1	1.03	0.99
31HW	High Columbia	P0	System Normal	1.01	1.03	1.01
		P1	1L203 OOS	1.02	1.03	1.02
		P1	1L205 OOS	1.01	1.02	1.02
		P1	1L243 OOS	1.01	1.03	1.01
		P2.1	1L203 Open at SVA	1.01	1.02	1.01
		P2.1	1L243 Open at NIC	1.01	1.03	1.01
31HW	High Peace	P0	System Normal	1.01	1.03	1.02
		P1	1L203 OOS	1.02	1.02	1.02
		P1	1L205 OOS	1.01	1.03	1.02
		P1	1L243 OOS	1.01	1.03	1.01
		P2.1	1L203 Open at SVA	1.01	1.03	1.01
		P2.1	1L243 Open at NIC	1.01	1.03	1.01
32HS	High Columbia	P0	System Normal	1.01	1.03	1.01
		P1	1L203 OOS	1.02	1.03	1.02
		P1	1L205 OOS	1.01	1.02	1.02
		P1	1L243 OOS	1.01	1.03	1.01
		P2.1	1L203 Open at SVA	1.01	1.02	1.01
		P2.1	1L243 Open at NIC	1.01	1.03	1.01
32HS	High Peace	P0	System Normal	1.01	1.02	1.02
		P1	1L203 OOS	1.02	1.03	1.03
		P1	1L205 OOS	1.01	1.02	1.02
		P1	1L243 OOS	1.01	1.03	1.01
		P2.1	1L203 Open at SVA	1.01	1.02	1.01
		P2.1	1L243 Open at NIC	1.01	1.03	1.01