Small-scale renewable energy projects in Chile

Name of the project	*Small-scale renewable energy projects in Chile*
Project holder	*Natural Assets SpA (EnergyLab)*
Account holder	*Cristian Mosella*
Legal representative	*Cristian Mosella*
Project holder's contact information	*cmosella@energylab.cl* *+56 9 8828 7578* *Fidel Oteiza 1941, of. 504, Providencia.*
Other project participants	*PARQUE SOLAR QUETENA S.A.*
Version	*4.0*
Date	*23/01/2026*
Project type	*Renewable Energy*
Grouped project	*The project corresponds to a grouped project*
Applied Methodology (ies)	*AMS-I.D "Grid connected renewable electricity generation" Version 18.0*
Project location (City, Region, Country)	*The project is located in Chile.* *The initial instance is located in:* *Calama Commune, Antofagasta Region.*

Starting date	23.09.2021
Quantification period of GHG emissions reduction	23.09.2021 to 22.09.2031
Estimated total and average annual GHG emission reduction/removals amount	*The total amount of estimated GHG emissions reductions during the quantification period is 136, 081 tCO2.* *The estimated average annual amount of GHG emission reductions is 13, 608 tCO2/year.*
Sustainable Development Goals	*SDG7* *SDG8* *SDG13*
Special category, related to co-benefits	*The project does not apply to special categories*

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1 Project type and eligibility

1.1 Scope in the BCR Standard

The scope of the BCR Standard is limited to:	
The following greenhouse gases, included in the Kyoto Protocol: Carbon Dioxide (CO_2), Methane (CH_4) and Nitrous Oxide (N_2O).	X
GHG projects using a methodology developed or approved by BioCarbon, applicable to GHG removal activities and REDD+ activities (AFOLU Sector).	
Quantifiable GHG emission reductions and/or removals generated through implementation of GHG removal activities and/or REDD+ activities (AFOLU Sector).	
GHG projects using a methodology developed or approved by BioCarbon, applicable to activities in the energy, transportation and waste sectors.	X
Quantifiable GHG emission reductions generated through implementation of activities in the energy, transportation and waste sectors.	X

Table 1: Scope in the BCR Standard

This project is eligible under the scope of the BCR Standard V4.0, as it generates electricity through Non-Conventional Renewable Energies (NCRE) and provides quantifiable Greenhouse Gas (GHG) emission reductions, using the methodology AMS-I.D "Grid connected renewable electricity generation" Version 18.0.

1.2 Project type

Activities in the AFOLU sector, other than REDD+	
REDD+ Activities	
Activities in the energy sector	X
Activities in the transportation sector	
Activities related to Handling and disposing of waste	

Table 2: Project type

1.3 Project scale

This is a grouped project that contains only renewable energy instances that have an output capacity up to 15 MW each (or an appropriate equivalent), which means only Type I Small-Scale project activities as stated in the Glossary of CDM terms.

2 General description of the project

The Small-Scale Renewable Energy Projects in Chile is a grouped project programme designed to promote the adoption of grid-connected renewable energy initiatives across the country. This programme is restricted to technologies and measures that qualify under the methodology AMS-I.D "Grid-Connected Renewable Electricity Generation" (Version 18.0), hereinafter referred to as AMS-I.D.

The higher-level and long-term additional purpose of this grouped project is to reinforce Chile's renewable energy promotion policies by establishing a platform that supports the transition to a low-carbon economy. This is achieved through the mobilization of additional financial resources for renewable energy, leveraging national and/or international carbon markets.

To meet these objectives, the programme includes renewable energy projects that harness natural resources to produce electricity. Consequently, all electricity generated will derive from clean, renewable sources, ensuring that no greenhouse gas emissions are produced by the projects included.

This grouped project is undertaken as a voluntary initiative. The Project Holder is Natural Assets SpA (trade name: Energylab), which is responsible for developing and promoting the grouped project in Chile. In this role, the entity collaborates with project developers or owners to incorporate their projects into the GP, thereby supporting them in overcoming local barriers related to project development and financing, while simultaneously fostering the adoption of renewable energy generation across Chile.

The clean electricity is supplied to one of the Chilean grids are described as follows.

By now, the Chilean electricity market consists of three main unconnected electricity networks. From north to south, the networks are as follows: National Electric System (SEN, for its acronym in Spanish), Electric System of Aysén (SEA, for its acronym in Spanish), and Electric System of Magallanes (SEM, for its acronym in Spanish). Also has

two other small electric systems in Los Lagos and Isla de Pascua. Each network has particular characteristics concerning size, energy supply/demand, matrix composition, and energy sources, the SEN being the main grid in Chile with an installed capacity of more than 99% of the national total.

It is important to know that other systems exist for regulation purposes and group subsystems that are not connected, so an analysis was carried out to determine if they were considered isolated systems in line with the definition presented in TOOL07 "Tool to calculate the emission factor for an electricity system" Version 7.0 (hereinafter referred to as TOOL07):

"Is an electricity system supplying electricity to household users, and if applicable, industries and commercial areas that are not connected to any other electrical network (e.g., national/regional or interconnected power system) and meet one of the following conditions:

(i) Any grid located in a Least Developed Country (LDC) or small island development State (SIDS) where at least 65 per cent of the power installed capacity is based on fossil fuel sources - solid, liquid or gaseous;

(ii) Any grid where 65 per cent of the power installed capacity is based on liquid fossil fuel sources;

(iii) Any grid with a maximum power installed capacity of 1000 MW and at least 80 per cent of the power installed capacity is based on fossil fuel sources, solid, liquid, or gaseous;"

The following table shows the different systems in Chile and whether they meet the conditions mentioned above, as of April 2025:

System	Subsystem	Capacity (MW)	Liquid FF sources (%)	FF sources (%)	Isolated?
SEN		35,584	11.0	32.3	NO
SEA	Aysén	59.7	53.4	53.4	NO
	Cisnes	1.7	82.0	82.0	YES (ii,iii)
	Gral. Carrera	5.1	87.4	87.4	YES (ii,iii)
	Palena	7.4	81.0	81.0	YES (ii,iii)
SEM	P. Arenas	100.8	5.1	88.5	YES (iii)
	P. Natales	14.4	29.4	100	YES (iii)

	P. Williams	2.4	100	100	YES (ii,iii)
	Porvenir	11.1	54.9	100	YES (iii)
Los Lagos	Cochamó	5.9	75.1	75.1	YES (ii)
	Hornopirén	3.8	80.1	80.1	YES (ii,iii)
Isla de Pascua		4.3	100	100	YES (ii,iii)

Table 3: Characteristics of Chilean electric systems

As a result, each system has its own emission factor, whereas this grouped project considers activities located in the SEN and the Aysén subsystem in the SEA.

Data extracted from the National Energy Commission (CNE, for its acronym in Spanish) with information from April 2025, the SEN has an installed capacity of 35,584 MW composed of 48.6% of renewable energies (31.1% solar, 14.2% wind, 1.7% small hydro, 1.1% renewable biomass, 0.2% geothermal, 0.2% renewable biogas) and 51.4% of conventional energies, composed by 32.0% of fossil fuel based energy (10.7% diesel, 10.6% natural gas, 10.5% carbon, 0.2% others) and 19.4% hydraulic energy (9.9% with reservoir, 9.4% run-of-river).[1]

As for the distribution for the Aysén subsystem, it has an installed capacity of 57.9 MW composed of 46.7% of renewable energies (5.0% Solar, 3.0% Wind, 38.7% run-of-river hydro) and 53.3% conventional energies, being composed of 100% diesel generation.[2]

All these values are determined considering the CNE interpretation of renewable energies in its database, which is based on Law 20,257, in which hydraulic energy is classified outside renewable energy, and has a maximum capacity of 20,000 kW.[3]

The first project included in this grouped project is Quetena Solar Park, photovoltaic project located in Calama, Chile, with peak installed capacity of 9.94 MWp and connected to the SEN. This Project is own by PARQUE SOLAR QUETENA S.A., that maintains a collaboration agreement with EnergyLab for its participation in this grouped project. The technical details of this instance will be presented in *Section 2: General Description of the Project.*

1 Calculated from "Capacidad instalada de generación" SEN, April 2024 https://www.cne.cl/normativas/electrica/consulta-publica/electricidad/
2 Calculated from "Capacidad instalada de generación" Aysén, April 2024 https://www.cne.cl/normativas/electrica/consulta-publica/electricidad/
3 Law 20,257. https://www.bcn.cl/leychile/navegar?idNorma=270212

Chile has substantial potential for the development of renewable energy, including unused capacity for hydroelectric energy, high levels of solar radiation for solar energy, unutilized wind power in the Andes mountains (among other prospective areas), great potential for geothermal energy for its high volcanic and tectonic activity, and unutilized tidal power from the country's extensive coastline. The government of Chile has declared that it aims to achieve carbon neutrality by 2050. In this way, local policymakers intend to address global warming by reducing CO_2 emissions from the Chilean energy matrix (among others).

There are some policy instruments in Chile with legal force to promote renewable energy sources, of which the most significant are:

- Law No. 19,940 (13.03.2004), known as "Short Law I"
- Law No. 20,018 (19.05.2005), known as "Short Law II"
- Law No. 20,257 (01.04.2008), modified by Law 20.698, known as "Non-Conventional Energy Sources" (ERNC, by its Spanish acronym)
- Law No. 21,118 (17.11.2018)
- Law No. 21,455 (13.06.2022)

While the Chilean regulatory framework provides incentives for the development of renewable energy, it is important to highlight that none of these pieces of legislation require project developers to invest in renewable energies. Investment decisions continue to face financial and market barriers. Therefore, additional revenues from carbon markets are a crucial mechanism to improve the viability of these projects and accelerate Chile's transition toward a cleaner energy matrix, aligned with its carbon neutrality goals.

This grouped project aims to reduce GHG emissions by displacing CO_2 emissions attributable to the generation of electricity which would have otherwise been partially generated from the operation of fossil fuel-fired power plants connected to the above mentioned systems and will be composed of different instances of renewable energy generation, initially solar power instances but with the possibility to include other kinds of renewable energy, like wind or hydro, in the future.

The project does not apply to any special category.

The activities included in this grouped project will contribute at least to the SDGs 7 "Affordable and clean energy", 8 "Decent Work and Economic Growth ", and 13

"Climate action", with the possibility of including future instances that could contribute to SDGs beyond those already mentioned.

The initial instance "Quetena Solar Park" will reduce approximately 13, 608 tCO_2/y.

Future instances included under this grouped project could approximately reduce between 1,000 and 15,000 tCO_2/y depending on the technology, size, location, and efficiency.

2.1 GHG project name

Small-scale renewable energy project in Chile.

2.2 Objectives

The Small-scale renewable energy project in Chile aims to contribute in the following ways:

- Achieve GHG emission reductions by incorporating projects related to the production of non-conventional renewable energy, specifically by means of solar, wind and hydro power. The initial instance is expected to reduce approximately 13,608 tCO_2/y, while future instances could approximately reduce between 1,000 and 15,000 tCO_2/y depending on the technology, size, location, and efficiency.
- Support, facilitate, and encourage the development of small grid-connected renewable energy projects in Chile, by helping project developers to overcome local barriers related to development and finance through the inclusion of their activities in this grouped project.
- Contribute to the sustainable development in Chile through environmental, social, economic, and technological benefits, such as the use of renewable energy resources to produce non-conventional renewable energy, generating direct employment and income generation opportunities.
- The higher-level and long-term additional purpose of this grouped project is to strengthen Chile's renewable energy promotion policies by providing a platform that facilitates the transition to a low-carbon economy through the generation of additional financial support for renewable energy via national and international carbon markets.

2.3 Project activities

All the instances under this project use renewable energy technologies, as detailed below. In cases where a specific technology may support future instances, a general description is provided to account for this.

This clean electricity is supplied to the SEN or Aysén subsystem. The facilities are physically connected to the electricity system and may consider the inclusion of energy storage systems to optimize the management and delivery of the generation of electricity to them. The renewable energy instances promoted by this project contribute to the reduction of greenhouse gas emissions by displacing CO_2 emissions attributable to the generation of electricity, which would have otherwise been generated from the operation of fossil fuel-fired power plants, which are the main source of greenhouse gases.

a. Solar instances:

Instances under this category will include greenfield projects with an installed capacity of no more than 15 MW and capacity addition projects that add no more than 15 MW of new capacity to an existing facility.

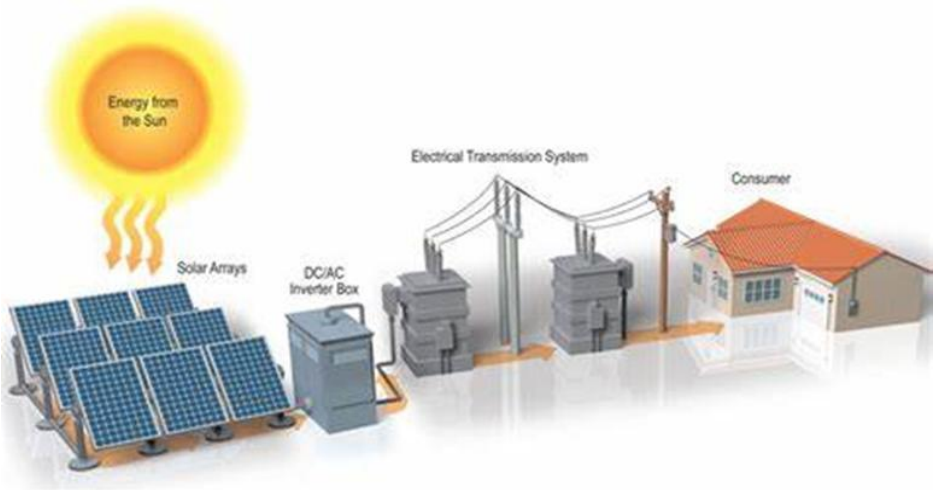
A photovoltaic power plant consists of several solar photovoltaic panels. Solar photovoltaic project activities generate electricity by converting solar radiation into electricity using semiconductors that exhibit the photovoltaic effect. Solar photovoltaic project activities consist of an array of solar panels or photovoltaic modules (composed of several cells containing a photovoltaic material) as well as mechanical and electrical connections and means of regulating and/or modifying the electrical output, to be able to export electricity to the national grid. Typically, a solar PV facility (usually named solar PV power plant) includes the following equipment and systems which will allow the generation of electricity and delivery of the electricity to the grid: a) solar modules; b)

inverters; c) mounting structures; d) sun trackers (optional); e) power transformer; f) control room and measurement equipment; g) substation and h) transmission line.

Figure 1: Solar photovoltaic energy diagram[4]

A solar thermal energy facility consists of an array of solar collectors designed to generate thermal energy (heat). Solar thermal project activities operate by absorbing the sun's electromagnetic radiation and transferring it to a working fluid (such as water, air, or an antifreeze solution).

This thermal energy is then used directly for applications such as domestic hot water (DHW), space heating, or industrial process heat, thereby displacing thermal energy that would otherwise be generated by burning fossil fuels. Typically, a solar thermal facility



includes the following primary equipment and systems:

a) Solar collectors (which may include flat-plate, evacuated tube, or unglazed collectors); b) Storage system (usually an insulated accumulation tank); c) Piping and pumping system for fluid circulation; d) A heat exchanger (to transfer heat from the working fluid to the end-use water); and e) A control system.

[4] https://medium.com/@solar.dao/how-energy-travels-what-happens-with-pv-solar-power-16a047dbe87e

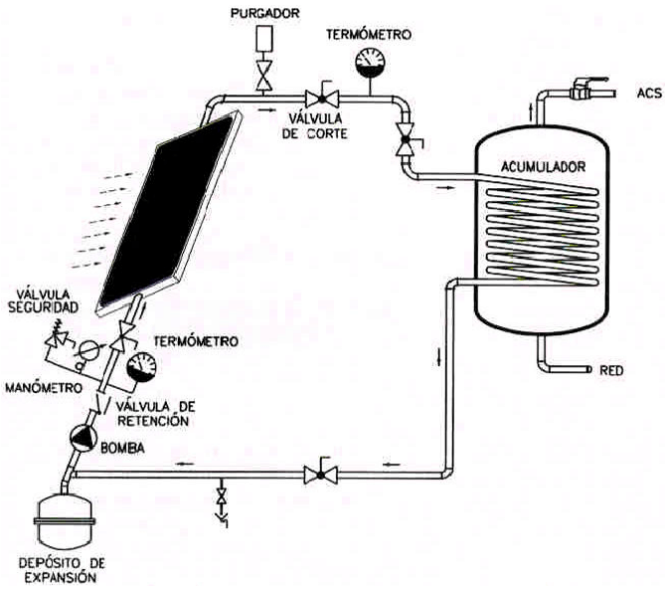


Figure 2: Solar thermal energy diagram[5]

A Concentrated Solar Power (CSP) plant generates electricity indirectly by using solar radiation to produce heat. The operating principle involves using a field of mirrors or lenses (such as heliostats, parabolic troughs, or Stirling dishes) to concentrate electromagnetic radiation from a large area onto a receiver.

This concentrated energy heats a heat-transfer fluid (HTF) to very high temperatures, which is then used to generate steam. This steam drives a conventional power cycle (commonly a steam turbine) connected to a generator to produce electricity for export to the grid. Typically, a CSP plant includes the following equipment and systems:

a) The solar field (the array of mirrors or lenses and their support structures); b) The solar receiver; c) A thermal energy storage (TES) system (optional, but common, often using molten salts); d) The power block (including the turbine, generator, and condensation system); e) Power transformer; f) Control room and measurement equipment; and g) Substation and transmission line.

[5] https://www.researchgate.net/figure/Esquema-general-de-una-instalacion-de-energia-solar-para-agua-caliente-sanitaria-2_fig1_259470624

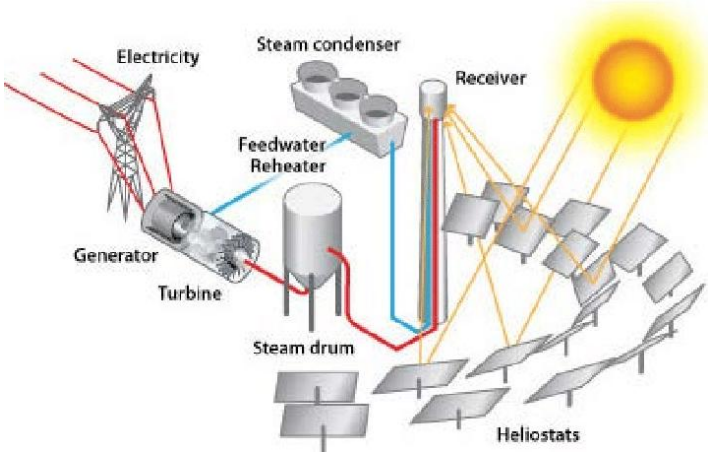


Figure 3: CSP diagram[6]

Furthermore, the list of components and their characteristics from the initial instance "Quetena Solar Park" is below.

- Quetena Solar Park

Quetena Solar Park has a peak installed capacity of 9.94 MW and is connected to the SEN. The principal components of this instance and their characteristics can be seen in the tables below:

Solar panels

Parameter	Value	
Manufacturer	LONGi Solar	
Model	LR5-72HBD-530M	LR5-72HBD-535M
Dimensions	2,256*1,133*35 mm	
Module Type	Bifacial	
Bifaciality	70±5%	
Module efficiency	20.7%	20.9%
Maximum power (STC)	530 W	535 W
Voltage at maximum power (STC)	41.35 V	41.50 V
Current at maximum power (STC)	12.82 A	12.90 A
Quantity installed	6,216	12,432

6 https://www.researchgate.net/figure/Central-receiver-CSP-steam-plant-working-principle_fig1_303824522

Compliance	IEC 61215, IEC 61730, UL 61730, ISO 9001:2015, ISO 14001: 2015, TS62941, ISO 45001: 2018

Table 4: Characteristics of solar panels in Quetena Solar Park

Inverters

Parameter	Value
Manufacturer	Sungrow Power Supply Co., Ltd.
Model	SG3125HV-30
Dimensions	6,058*2,896*2,438 mm
Max PV input voltage	1,500 V
Max PV input current	3,997 A
AC output power	3,125 kVA @ 50 °C / 3,437 kVA @ 45 °C
Power factor at nominal power	>0.99
Efficiency (Max. / Euro.)	99.0% / 98.7%
Quantity installed	3
Compliance	CE, IEC 62109, IEC 61727, IEC 62116, IEC 62271-202, IEC 62271-200, IEC 60076

Table 5: Characteristics of inverters in Quetena Solar Park

Electricity meter

Parameter	Value
Manufacturer	Schneider Electric
Model	ION7400
Dimensions	98*112*78.5 mm
Sampling rate	256 samples/cycle
Memory capacity	512 MB
Measurement current	50-10000 mA
Measurement voltage	57-400 V AC 42-69 Hz between phase and neutral 100-690 V AC 42-69 Hz between phases
Measurement accuracy	Current +/- 0.1% Voltage +/- 0.1% Active energy +/- 0.2%
Accuracy class	IEC 62053-22 Class 0.2S Active energy ANSI C12.20 Class 0.2 Active energy IEC 61557-12 Class 0.2 Active energy
Quantity installed	1 unit
Compliance	IEC 62053-22, IEC 62052-11, IEC 62053-24, IEC 61557-12, IEC 61326-1, IEEE 1588, IEC 62586

Table 6: Characteristics of the electricity meter in Quetena Solar Park

Based on simulation studies, the expected annual energy production injected into the grid is 26,667 MWh/year. This translates to an annual greenhouse gas emissions reduction of approximately 13,608 tCO_2e/year, considering a grid emission factor of 0.5103 tCO_2e/MWh.

b. Wind instances:

Instances under this category will include greenfield projects with an installed capacity of no more than 15 MW and capacity addition projects that add no more than 15 MW of new capacity to an existing facility.

A wind power plant consists of several wind turbines that convert the kinetic energy of the wind into electrical energy. Wind turbines work on a simple principle: instead of using electricity to make wind, like a fan, wind turbines use wind to make electricity. Wind turns the propeller-like blades of a turbine around a rotor, which spins a generator to create electricity. Typically, a wind power plant includes the following components and systems to generate and deliver electricity to the grid: a) Wind turbine blades; b) Rotor hub; c) Gearbox; d) Generator; e) Power converter; f) Nacelle; g) Cables and wiring; h) Tower; and i) Foundation. Wind turbines can be installed on land or offshore in large bodies of water like oceans and lakes. Offshore wind turbines are typically larger and can capture stronger and more consistent winds.

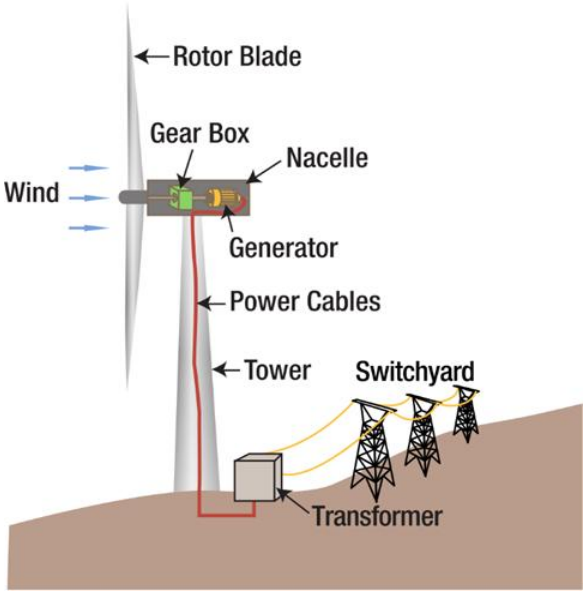


Figure 4: Wind energy[7]

Details related to specific technologies will be provided at the time of inclusion of any future instance related to this type of energy.

c. Small-scale hydro instances:

Instances under this category will include greenfield projects with an installed capacity of no more than 15 MW and capacity addition projects that add no more than 15 MW of new capacity to an existing facility. The project does not include hydro instances with reservoirs.

A power plant consists of one or more hydro turbines using the potential energy of water to generate electricity. A typical hydropower plant without a reservoir is a run-of-river (ROR) hydropower plant, which is a type of hydroelectric generation whereby considerably smaller water storage, called "pondage", or none is used to supply a power station (in comparison to typical reservoirs from hydro dam projects). Run-of-river power plants are classified as being with or without pondage. A plant without pondage has no storage and is therefore subjected to seasonal river flows. A plant with pondage can regulate water flow (to a certain extent). ROR projects divert a river's water flow through

[7] https://renewableenergypei.wordpress.com/2015/02/02/wind-energy/

a pipe and/or tunnel leading to electricity-generating turbines. Then the water is returned to the river downstream.

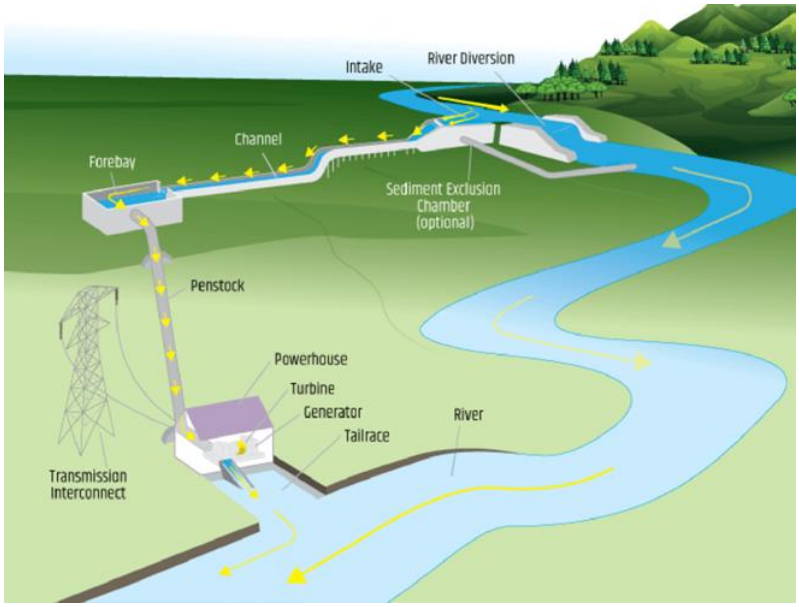


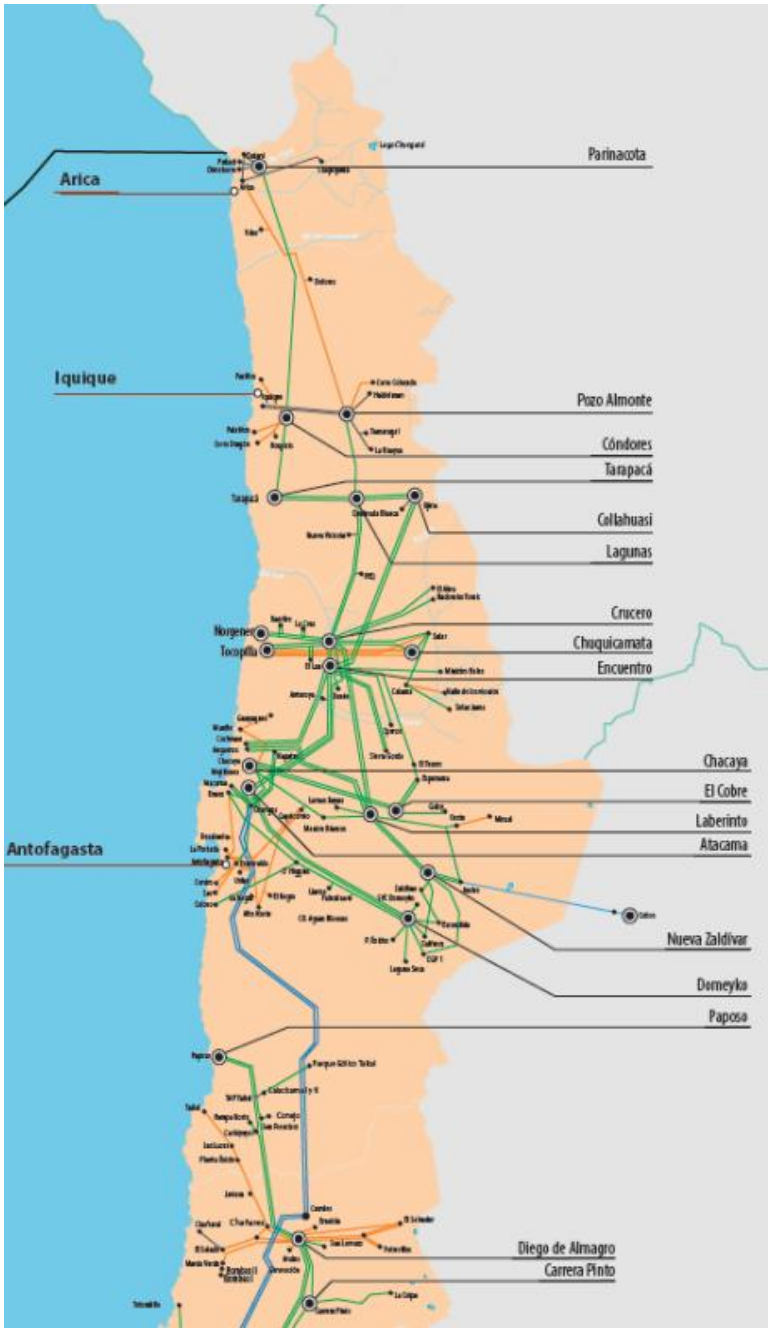
Figure 5: Run-of-river hydro power[8]

Details related to specific technologies will be provided at the time of inclusion of any future instance related to this type of energy.

2.4 Project location

The boundary of the project, in terms of a geographical area within which all instances included in the project are implemented, encompasses the geographical boundary of Chile, specifically those instances connected to the SEN and Aysén subsystem. Chile extends between 17° 30' 00'' and 56° 30' 00'' south latitude, and its central meridian is 70° 30' 00'' west longitude.

[8] https://www.energy.gov/eere/water/types-hydropower-plants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Encuentro
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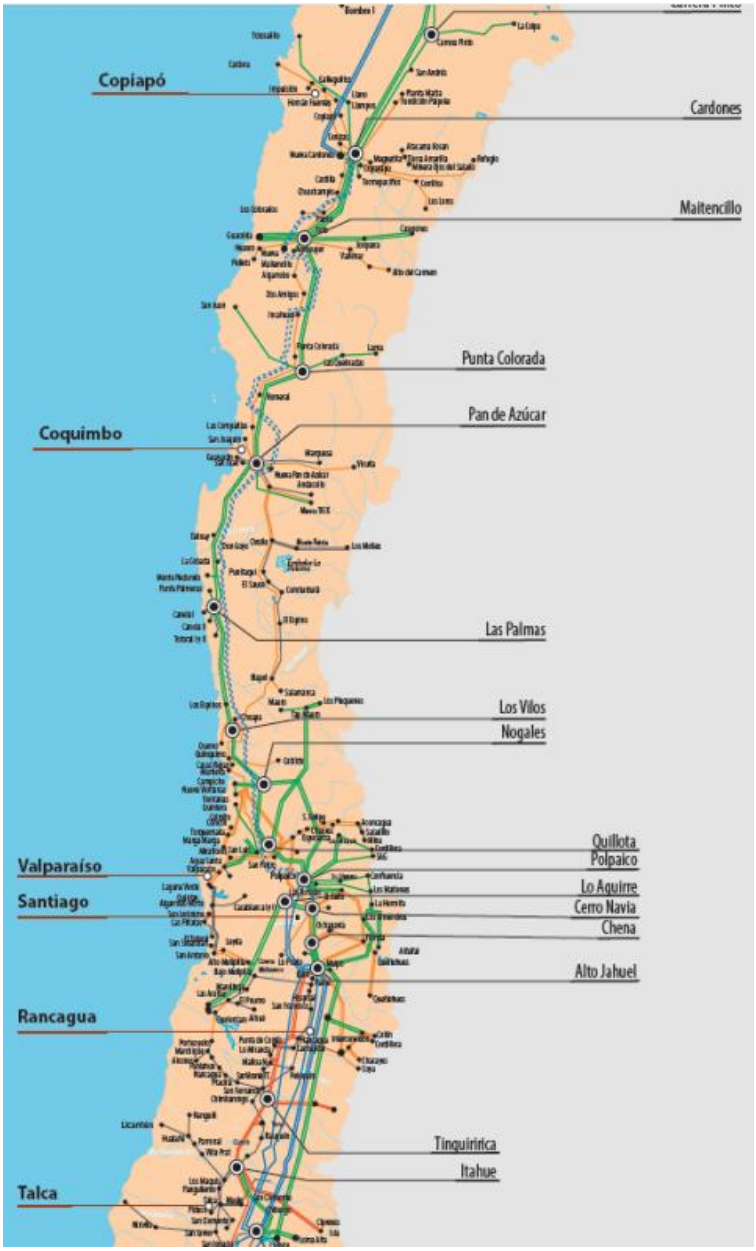
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Lo Aguirre
Santiago
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Chena
Alto Jahuel
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Tinguiririca
Itahue
Talca

Figure 6: National Electric System (SEN), adapted from Cigre (2021)

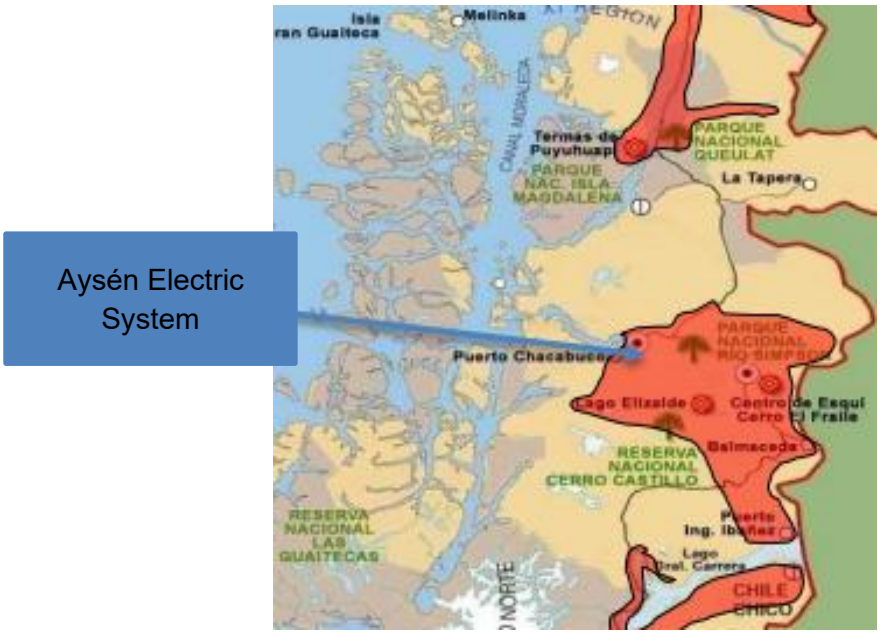

Figure 7: Aysén Electric System , adapted from Grupo SAESA

The physical boundary of each instance is restricted to the geographical area of each one. All applicable national and/or sectoral policies and regulations of Chile within that chosen boundary will be taken into consideration and correspondingly referenced.

Furthermore, the location of the initial instance, "Quetena Solar Park", is the following.

- **Quetena Solar Park**

This instance is in Chile, in the Antofagasta Region, El Loa province, Calama Commune, in a rural area just 1 km west of the city of Calama and 196 km northeast of Antofagasta, the regional capital.

Figure 8: Quetena Solar Park and route from Calama's airport

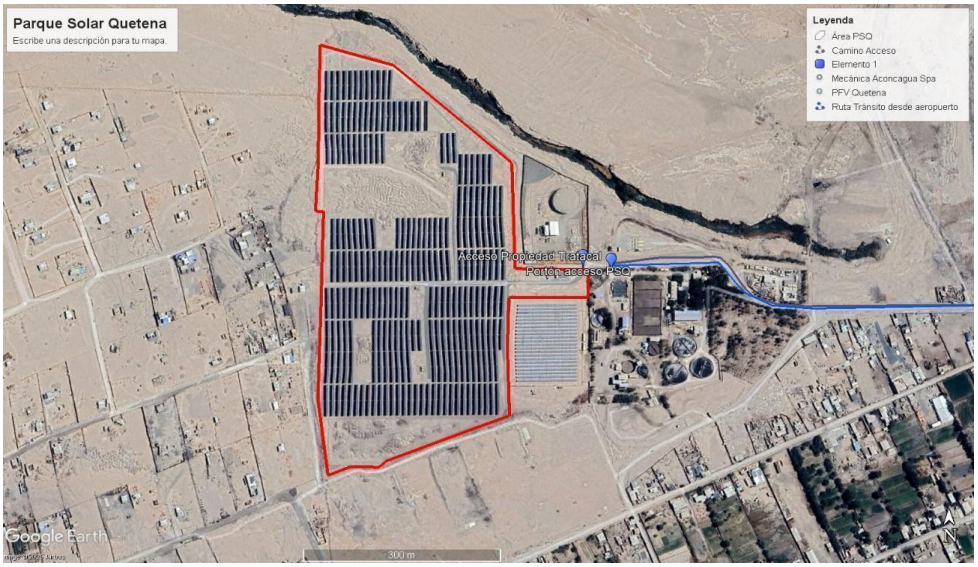

Figure 9: Quetena Solar Park installations

The following table lists the general coordinates of the project, inside which the different components of the project are located:

Installations	Vertices	UTM Coordinates H 19S DATUM WGS-84		Area (ha)
		East	North	
Quetena Solar Park	1	503,809	7,517,081	18.00
	2	503,920	7,517,048	
	3	504,100	7,516,887	
	4	504,103	7,516,717	
	5	504,199	7,516,716	
	6	504,224	7,516,723	
	7	504,400	7,516,722	
	8	504,483	7,516,654	
	9	504,476	7,516,646	
	10	504,398	7,516,713	
	11	504,225	7,516,713	
	12	504,214	7,516,709	
	13	504,215	7,516,668	
	14	504,094	7,516,668	
	15	504,094	7,516,481	
	16	503,807	7,516,381	
	17	503,792	7,516,570	

Table 7: Quetena Solar Park coordinates

2.5 Additional information about the GHG Project

Not applicable.

3 Quantification of GHG emissions reduction

3.1 Quantification methodology

The methodology used to quantify GHG emissions reductions corresponds to the approved methodology AMS-I.D "Grid connected renewable electricity generation" Version 18.0 (hereinafter referred to as AMS-I.D).

According to the methodology, TOOL07 in its latest version must be used to calculate the combined margin of the CO_2 emission factor for grid-connected power generation. For this project, the latest version is Version 7.0.

Emission reductions are estimated based on the small-scale methodology AMS-I.D para. 43 equation (9), and are calculated on an instance-by-instance basis as follows:

$$ER_y = BE_y - PE_y - LE_y \qquad \text{Equation (1)}$$

Where:

- ER_y = Emission reductions in year y (t CO2/y).
- BE_y = Baseline Emissions in year y (t CO2/y).
- PE_y = Project emissions in year y (t CO2/y).
- LE_y = Leakage emissions in year y (t CO2/y).

3.1.1 Applicability conditions of the methodology

This grouped project comprises renewable energy generation units that supply electricity to the SEN and SEA grids, in accordance with the scope of the applied methodology AMS-I.D: Grid-connected renewable electricity generation (Version 18.0), section 2.2, paragraph 4. In addition, the project follows TOOL07: Tool to calculate the emission factor for an electricity system. The table below presents and justifies compliance with the applicability conditions of these documents.

Conditions of applicability	**Applicability of the project activity**
AMS-I.D	
This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass: a) Supplying electricity to a national or a regional grid; or b) Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.	Instances under this project will be renewable energy generation units: solar, run-of-river hydro or wind grid-connected, complying with either requirement (a) or (b).

Conditions of applicability	Applicability of the project activity
This methodology is applicable to project activities that: (a) Install a Greenfield plant; (b) Involve a capacity addition in (an) existing plant(s); (c) Involve a retrofit of (an) existing plant(s); (d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or (e) Involve a replacement of (an) existing plant(s).	Instances under this project will comprise of greenfield renewable energy power plants or capacity additions to existing renewable energy power plants/units only. Points (c), (d) and (e) are not applicable under this project.
Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology: The project activity is implemented in an existing reservoir with no change in the volume of reservoir; The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the project emissions section, is greater than 4 W/m2; The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the project emissions section, is greater than 4 W/m2.	The project does not include hydro power plants with reservoirs
If the new unit has both renewable and non-renewable components (e.g. a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.	The eligibility limit of 15 MW for a small-scale CDM project activity applies.

Conditions of applicability	Applicability of the project activity
Combined heat and power (co-generation) systems are not eligible under this category.	Not applicable. Co-generation instances are not eligible to be part of this project.
In the case of project activities that involve the capacity addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.	Instances under this project may include the addition of renewable energy generation units at an existing renewable power generation plant. The capacity added by the new units will be lower or equal to 15MW and will be physically distinct from the existing units.
In the case of retrofit, rehabilitation or replacement, to qualify as a small-scale project, the total output of the retrofitted, rehabilitated or replacement power plant/unit shall not exceed the limit of 15 MW.	Not applicable. Instances will apply to greenfield renewable power plants and capacity additions only.
In the case of landfill gas, waste gas, wastewater treatment and agro-industries projects, recovered methane emissions are eligible under a relevant Type III category. If the recovered methane is used for electricity generation for supply to a grid, then the baseline for the electricity component shall be in accordance with procedure prescribed under this methodology. If the recovered methane is used for heat generation or cogeneration other applicable Type-I methodologies such as "AMS-I.C.: Thermal energy production with or without electricity" shall be explored.	Not applicable. Instances will apply to greenfield renewable power plants and capacity additions only.
In case biomass is sourced from dedicated plantations, the applicability criteria in the tool "Project emissions from cultivation of biomass" shall apply.	Not applicable. Instances will apply to greenfield renewable power plants and capacity additions only.
TOOL07	

Conditions of applicability	Applicability of the project activity
This tool may be applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity that is where a project activity supplies electricity to a grid or a project activity that results in savings of electricity that would have been provided by the grid.	Instances under this project will exclusively deliver electricity to either the SEN or Aysén grids.
Under this tool, the emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off-grid power plants.	Instances under this project will exclusively grid power plans that deliver electricity to either the SEN or Aysén grids.
In case of CDM projects the tool is not applicable if the project electricity system is located partially or totally in an Annex I country.	Instances under this project will be located in Chile, not an Annex I country.
Under this tool, the value applied to the CO_2 emission factor of biofuels is zero.	Not applicable.

Table 8: Methodology applicability conditions

3.1.2 Methodology deviations (if applicable)

Not applicable. This grouped project includes small-scale renewable energy generation projects in Chile, following the AMS-I.D methodology "Small-scale Methodology: Grid-connected renewable electricity generation," Version 18.0.

3.2 Project boundaries, sources and GHGs

The project boundaries according to the methodology AMS-I.D are described as follows:

"The spatial extent of the project boundary includes the project power plant, and all power plants connected physically to the electricity system that the CDM project power plant is connected to."

For the initial instances, their physical scope is described in Section 2.4 above.

3.2.1 *Spatial limits of the project*

As stated in the methodology AMS-I.D:

The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to.

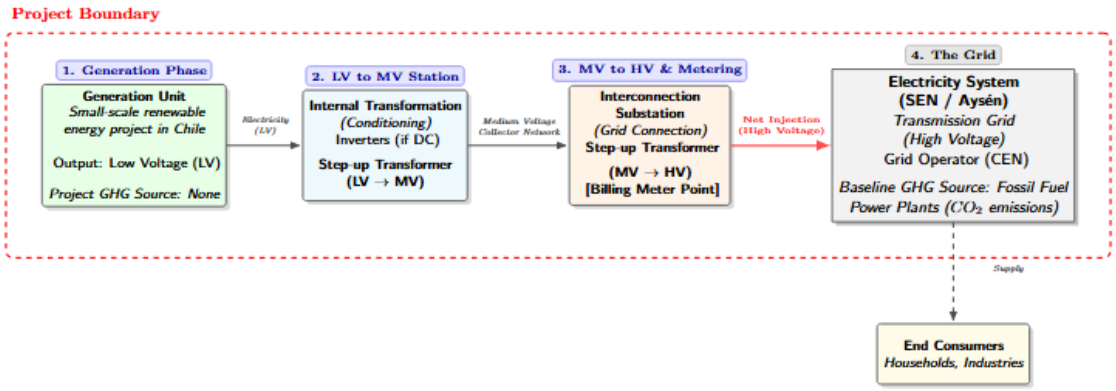

Figure 10: Project boundary diagram

3.2.2 *Carbon reservoirs and GHG sources*

The are no carbon reservoirs included in the project.

Source	GHG	Included (Yes/No/ Optional)	Justification
(Baseline) CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity	CO_2	Yes	Main emission source. Electricity generation in fossil-fuel fired power plants on the grid.
	CH_4	No	Minor emission source.
	N_2O	No	Minor emission source
(Project activity)	CO_2	No	Not Applicable.

On-site combustion of fossil fuels	CH_4	No	Not Applicable.
	N_2O	No	Not Applicable.

Table 9: Carbon Reservoirs

3.2.3 Time limits and analysis periods

The project timeframe corresponds to a ten-year period for quantifying GHG emission reductions, with no option to renew it, considering that its length will not exceed the end of the project activities.

3.2.3.1 Project start date

The start date of the first instance "Quetena Solar Park" is 23.09 .2021 , which for energy plants is the commercial operation date (COD) , meeting the maximum retroactivity of five years to the first validation of the project as per official exemption authorized by BioCarbon Standard dated 02.10.2025[9], following section 11.4.1 "Prior consideration" of the BCR Standard V4.0.

3.2.3.2 Quantification period of GHG emission reductions/removals

As stated in section 3.2.3, the quantification period for GHG emission reductions is ten years, not renewable. The starting date corresponds to the Commercial Operation Date (COD) informed by National Electricity Coordinator (Coordinador Eléctrico Nacional)

For the first instance Quetena Solar Park the quantification period is from 23.09.2021 to 22.09.2031.

3.2.3.3 Monitoring periods

The first monitoring period will cover from 23.09.2021 to 31.12.2024. Future verification for this project will be held every 3 years at maximum.

3.3 Identification and description of the baseline or reference scenario

As per the methodology AMS-I.D:

i. For greenfield projects: "The baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise been generated by the

[9] Reference document: Official Exemption Letter issued by BioCarbon Standard, available in the project's evidence files as "02.10.2025_Oficio EnergyLab.pdf"

operation of grid-connected power plants and by the addition of new generation sources into the grid.".

ii. For projects that involve capacity addition the baseline scenario is calculated as follows: "If the project activity is a capacity addition to existing grid-connected renewable energy power plant/unit, the baseline scenario is the existing facility that would continue to supply electricity to the grid at historical levels, until the time at which the generation facility would likely be replaced or retrofitted ($DATE_{BaselineRetrofit}$), and electricity delivered to the grid by the added capacity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources. From that point of time onwards, the baseline scenario is assumed to correspond to the project activity, and no emission reductions are assumed to occur."

For the case of the instances under this project, the baseline corresponds to the quantity of emissions that would have been generated by the SEN or Aysén subsystem in absence of them.

3.4 Additionality

Each instance part of this grouped Project must comply with the eligibility requirements, and its additionality must be demonstrated at the instance level to be included.

Instances must assess additionality by following the provisions stated in the BCR Tool "Identification of a baseline scenario and demonstration of additionality " Version 1.0.

Section 9.1 *Eligibility for Simplified Procedures* establishes the applicability criteria required to comply with the simplified version of additionality for small-scale projects. For activities other than AFOLU, compliance shall be ensured with the following provisions:

(a) The project qualifies as small-scale, as defined by the BIOCARBON STANDARD. Specifically, the project shall meet at least one of the following thresholds:

i. Installed capacity does not exceed 15 megawatts (MW) (for renewable energy generation projects);

ii. Annual energy savings do not exceed 60 gigawatt-hours (GWh) (for energy efficiency projects); or

iii. Annual greenhouse gas emission reductions or removals do not exceed 60,000 tCO_2-e.

(b) The project is not part of a bundle or aggregation of activities intentionally designed to remain under the applicable threshold for small-scale eligibility.

(c) The project has not applied another simplified additionality approach (e.g. automatic additionality, positive lists) under any other framework or program, for the same activity.

Since all instances included in this Grouped Project are energy generation units with an installed capacity of up to 15 MW, they comply with criterion a) i. Furthermore, none of the instances form part of a bundle or aggregation of activities intentionally designed to remain below the applicable threshold for small-scale eligibility. This will be demonstrated during the validation processes for new instances, thereby ensuring compliance with criterion b). Finally, the projects included in this grouped project have not applied to other simplified additionality approach under any other frameworks or programmes and therefore meet criterion c).

Prior the application of the steps, the tool requires identifying a baseline scenario, selecting the most plausible option to ensure the project is compared against a credible reference case. To this end, the following alternative scenarios are analyzed:

Alternative Scenario 1: The proposed project undertaken without being registered in BioCarbon Standard or any other credit carbon scheme.

Alternative Scenario 2: Continuation of current situation. As described on Section 3.3 Identification and Description of the Baseline or Reference Scenario of this document, where methodology AMS-I.D is followed to establish the baseline scenario for greenfield projects as the situation in which the electricity delivered would have been generated by the operation of grid-connected power plants. This is the most plausible situation, as it reflect a realistic and credible scenario in the absence of this project.

Once applicability has been demonstrated and baseline scenario is correctly defined, additionality will be established by following the steps outlined in Annex B of the referenced Tool, as detailed below:

Step 1 – Barrier or investment test

The instances under this grouped project will demonstrate that the activity:

1. Is not legally required under existing national or subnational laws or regulations.
2. Faces at least one of the following additional barriers:
    a. Regulatory barrier
    b. Technological barrier
    c. Investment unattractiveness

The demonstration for this grouped project will be carried out primarily under point (c) Investment unattractiveness barrier option, based on a comparison between the simple payback period and the established benchmark for each project type, as defined in Table 1 (Payback Period Benchmarks) of Annex B of the Tool .

Step 2 – Common practice analysis

The instances under this grouped project will demonstrate that, at the time of the decision date, they were not a commonly adopted technology, following the stepwise approach of the tool. This is done by identifying other activities in the same sector (energy production) that were implemented 10 years prior to the instance decision date and are not registered under crediting programs, and then calculating the aggregate magnitude of similar activities, ensuring that they do not represent over 20% of the total energy production capacity installed.

For projects in the energy sector, penetration will be evaluated based on installed capacity (MW), using the formula provided in the BCR Tool *"Identification of a Baseline Scenario and Demonstration of Additionality" (Version 1)*

$$F = 1 - \frac{Mdiff}{Mall} \qquad \text{Equation (2)}$$

Where:

$Mdiff$: Magnitude of similar activities with essential differences

$Mall$: Aggregate magnitude of all comparable activities

The stepwise approach is followed as stablished in the Tool:

Sub-step 4a: Define the applicable measure and scope of comparison

The project holder shall identify the measure applied by the project (e.g., fuel switch, technology upgrade, methane capture, reforestation) and define the applicable geographic area based on the same area used in Steps 1–3.

Unless otherwise justified by the methodology or national conditions, the applicable geographic area is the entire host country. A smaller geographic area may be used only if the project holder demonstrates that implementation conditions differ significantly from the rest of the country (e.g., due to infrastructure, policies, climate, or economic context).

The analysis shall focus on similar activities, which are defined as those that:

(a) Provide the same or comparable outputs or services;
(b) Use the same or functionally similar technology or practices;
(c) Are implemented under comparable market, policy, and institutional conditions;
(d) Are of a similar scale and purpose;
(e) Have entered commercial operation before the public disclosure of the project activity.

Note: Technologies shall be considered equivalent if they provide the same or similar service or environmental benefit under comparable operating conditions, even if they differ in specific design, scale, or manufacturer. Minor technical variations shall not be used to exclude otherwise comparable activities.

Sub-Step 4b: Identify Similar Activities and Market Penetration

The project holder shall identify a representative set of similar activities within the relevant sector and geographic region. These activities shall be comparable in terms of:

(a) Services delivered, outcomes generated, or land-use objectives pursued (e.g., energy production, waste management improvements, avoided deforestation, ecosystem restoration, etc.);
(b) Technological approach, land management strategy, or intervention type;
(c) Temporal and spatial context, including timing of implementation and applicable regional conditions;
(d) Not registered under the BIOCARBON STANDARD or another carbon crediting program.

This reference set shall include activities implemented in the past 5 to 10 years and shall be justified using verifiable sources such as public databases, registries, national inventories, spatial datasets, or relevant sectoral studies.

The aggregate magnitude of these similar activities shall be referred to as Mall (representing the total market share of similar activities, expressed in terms of installed capacity, treated volume, area covered, or another relevant metric depending on the sector).

From this set, the project holder shall identify which activities differ in essential ways from the proposed project, due to factors such as:

(a) Significantly different feedstock, energy source, or technology design;
(b) Implementation under uniquely favorable policy conditions;
(c) Access to preferential financing not available to the proposed project;
(d) Scale, purpose, or location that makes the comparison invalid.
(e) For AFOLU activities:
i. Land tenure arrangements or legal conditions that materially affect feasibility (e.g., state vs. communal or private ownership);
ii. Agroecological conditions or biophysical constraints (e.g., rainfall regime, soil productivity, fire risk);
iii. Landscape context and proximity to markets or infrastructure (e.g., remoteness, accessibility);
iv. Degree of enforcement of land-use regulations (e.g., forest code enforcement, protected area status);
v. Degree of degradation or land-use history affecting restoration feasibility or cost.

The number of projects that differ in essential aspects shall be referred to as Mdiff.

It's important to note that in Chile, projects with less or equal than 9 MW of injectable power are subject to the option of adopting a pricing system called "Stabilized price scheme", in which the selling price of energy differs from the marginal cost. This is a differentiating feature that is to be considered at the moment of comparing similar activities.

The additionality analysis of the initial instance "Quetena Solar Park" is explained below.

- Quetena Solar Park

Simplified additionality demonstration applicability

The project capacity is below 15 MW, it operates independently from other energy sources and is not part of a larger installation, nor has it been included in any other credit generation program.

Step 1 – Barrier or investment test

Sub-step 1: The decision date for this instance is 12.11 . 2020. This project is not legally required under existing laws or regulations.

Sub-step 2 – Investment unattractiveness test

The parameters used for the calculation of the instance's Simple Payback Period are the following:

Parameters	Unit	Value or range	Supporting evidence
Instance Lifespan	years	25	EPC contract
Capacity installed	MWp	9.94	EPC contract
Generation Objective	MWh/year	26,667	PVSyst simulation report
Energy Price	USD/MWh	36-49	EnergyLab price projections
Power Price	USD/kW/year	84	EnergyLab price projections
CAPEX	USD	8,532,475	EPC contract
OPEX	% CAPEX	1	Rocky Mountain Institute (2019)
Equipment Depreciation	years	10	Useful life of assets – Chilean Internal Revenue Service (SII)
Chilean Tax Rate	%	27	Corporate income tax

Table 10: Quetena Solar Park principal parameters for calculations

The investment analysis parameters are based on signed contracts, official regulatory reports, and standard industry benchmarks, as detailed below:

- Instance Lifespan & Capacity: Defined according to the technical specifications of the EPC Contract signed for the project construction.

- Generation Objective: Calculated using PVSyst software simulations, considering local irradiation data and equipment characteristics.
- CAPEX: Corresponds to the total investment cost established in the EPC Contract.
- OPEX: The OPEX is estimated at 1% of CAPEX, reflecting the industry standard for renewable energy projects as validated by the Rocky Mountain Institute
- Equipment Depreciation: Based on the useful life for electrical generation assets authorized by the Chilean Internal Revenue Service (SII).
- Chilean Tax Rate: Corresponds to the statutory Corporate Income Tax rate according to current Chilean Tax Law.

The project's revenue projections are based on a methodology designed to replicate the regulatory pricing mechanics of the SEN, utilizing the official public data available at the time of the analysis from the CNE and the National Electric Coordinator (CEN). For this instance, the stabilized price scheme is determined to be the Short-Term Node Price, in accordance with Supreme Decree N° 244[10] (DS244), which explicitly establishes that the stabilized energy prices for this regime are defined by the applicable Short-Term Node Prices.

The energy price forecast follows a three-stage approach:

- Phase 1 (Years 1–8): The calculation follows the Short-Term Node Price methodology. The model utilizes the official projections used for the Definitive Technical Report of Short-Term Node Prices - Second semester 2020, published by the CNE. To account for the final discretionary adjustments performed using non-public information, the model applies a historical adjustment factor. This factor is calculated as the average scaling factor observed between preliminary model outputs and the final published node prices over a representative historical period prior to the evaluation date.
- Phase 2 (Years 9–19): Since specific nodal input data is limited to a medium-term horizon, the projection is extended using the price trend derived from the "2020 annual transmission expansion proposal" published by the CEN.

[10] https://www.bcn.cl/leychile/navegar?idNorma=246461&idVersion=2020-10-08

- Phase 3 (Years 20–25): Due to the absence of official public forecasts beyond the 18-year horizon, the methodology applies a fixed value assumption, maintaining the price of Year 18 flat until Year 25. This approach avoids introducing unfounded volatility or speculative trends into the final period of the financial assessment, given the high uncertainty of long-term market variables.

For the capacity revenue component, in accordance with Supreme Decree No. 62 (2006) and its amendment through Supreme Decree No. 42 (2020), the authority defines the capacity (sufficiency) price for each node and period in the official Short-Term Node Price Report. As no official forward projections are available, the most recent reported capacity node price, corresponding to the second semester of 2020 and published by the CNE, is assumed to remain constant throughout the entire analysis period.

The same decree also establishes the methodology to determine the percentage of capacity eligible for this payment, which depends on the technology type, node, and other technical criteria. As no official projections are available for this parameter either, publicly available data from the official report *"Cálculo Definitivo de Potencia de Suficiencia 2019 SEN"*, published on October 12, 2020, was used. As a reference, a group of six solar power plants of similar scale, located in the northern zone and with comparable technical characteristics, was analyzed. The average sufficiency factor for this group was rounded to 15%. Consequently, the projected capacity revenue is calculated by applying this 15% factor to the plant's installed capacity and multiplying the result by the constant capacity node price.

The result of the investment analysis is that the simple payback period of the project is 8 years, meaning that it is above the 4-5 years benchmark established by the BCR Tool. Based on that, this instance goes on to step 2.

Step 2 – Common practice analysis

Sub-step 4a: Define the applicable measure and scope of comparison

The applicable measure is defined as an energy generation activity and the geographical area is defined as the host country, Chile.

Then, the included activities for the comparison scope based on each criterion are:

(a) Generation projects supplying electricity to the SEN to meet consumption demand.

(b) Grid-connected electricity generation facilities. All technologies are included, as they all fulfill the function of generating electricity and delivering power to the system. This is supported by the note in Sub-step 4a: *"Technologies shall be considered equivalent if they provide the same or similar service or environmental benefit under comparable operating conditions (…)"*
(c) Projects operating under the General Electric Services Law (LGSE).
(d) Activities that operate in a market of equivalent scale and purpose, meaning facilities intended for the commercial sale of electricity to the system that are regulated by the CEN.
Generation for self-consumption or net-billing are excluded, as these facilities lack the primary purpose of commercial sale of electricity to the system under the coordination of the CEN. This is supported by the note in Sub-step 4a: *"Technologies shall be considered equivalent if they provide the same or similar service or environmental benefit under comparable operating conditions even if they differ in specific design, scale, or manufacturer. (…) "*.
(e) All generating plants that commenced commercial operation prior to the decision date for this activity

Based on this analysis, the list of activities that comply with all the criteria described above is identified as the list of all generating plants that are actively generating electricity to the SEN, which are officially listed by the CEN[11].

The aggregated magnitude of this set is 33,956.7 MW and is composed of 1,107 power plants.

Sub-Step 4b: Identify Similar Activities and Market Penetration

M_{all} is obtained applying the tool criterion, including activities that:

(a) Produce and inject electricity into the system.
(b) Consist of technologies synchronized to the electrical grid that deliver an equivalent product in terms of voltage and frequency that guarantee the security of the system.
(c) Projects implemented within the SEN that entered into commercial operation during the 10 years preceding the activity decision date, operating under the common regulatory framework.
(d) Are not registered under the BioCarbon Standard, CDM, Verra, Gold Standard, etc.

[11] https://infotecnica.coordinador.cl/instalaciones/centrales

The aggregated magnitude of this set (M_{all}) is 7,987.0 MW and is composed of 389 power plants.

Then, to obtain M_{diff}, the following distintions were applied:

(a) All thermal power plants (coal, natural gas, diesel), hydroelectric plants (reservoir and run-of-river), wind, geothermal, and Concentrated Solar Power (CSP) plants are excluded. These differ essentially from the photovoltaic project activity in terms of their energy source (fossil fuels, water resources, wind resources, or geological resources) or their operating mechanism (as CSP does not use photovoltaic panels). Likewise, projects that differ from a technological design standpoint are eliminated, such as photovoltaic systems without solar tracking, given that this feature directly impacts both the costs and the generation of the project.
(b) Projects with a capacity equal to or less than 3 MW are excluded since they are generally exempt from the mandatory entry into the Environmental Impact Assessment System (SEIA). This general exemption grants them favorable conditions in terms of environmental regulatory risks; therefore, they are considered different.
(d) Solar plants exceeding 9 MW effective injection capacity are excluded based on regulatory scale differences. Under Supreme Decree No. 244, projects up to this capacity limit benefit from a specific pricing scheme that does not apply to larger facilities.

Therefore, the aggregate magnitude of the different activities (M_{diff}) is 7,626.5 MW and is composed of 345 power plants.

Finally, market penetration is calculated using these parameters according to equation (2). The result is $F = 4.5\%$. Since this value is below the 20% threshold required to consider the activity a common practice, the proposed instance is deemed not common practice and, therefore, additional.

3.5 Uncertainty management

All the approximations and calculations related to the methodology AMS-I.D are carried out transparently and conservatively, as the methodology itself explains in section 5.5, and in TOOL07.

The equipment used at all instances is calibrated and maintained in accordance with the Chilean Technical Norm of Security and Service Quality (NTSyCS)[12], which is the most relevant regulation in terms of operational safety, service quality, and the technical standards that generation, transmission, and distribution facilities must comply with when connected to the national grid.

The Technical Annex of this norm states that the coordinated companies shall carry out periodic verification of the measuring equipment, in accordance with the following minimum frequency:

Meter Age	Verification Period
≤ 7 years	7 years
> 7 years and ≤ 10 years	5 years
> 10 years	3 years

Table 11: Verification period for measuring equipment in Chile.

Data relating to the net electricity supplied by the instances to the grid is monitored continuously, electronically recorded, and consolidated regularly. This information is managed and securely stored either by the operator or by external authorized entities, following the guidelines and requirements established by the competent authority.

This dataset constitutes the primary source of information for the project. Both the data and the systems used for its management are subject to review and audit, ensuring transparency, traceability, and compliance with national standards.

In the event that information from this source is not available, a backup strategy has been structured, and the basis for the calculation shall follow this hierarchy, applying each subsequent level only if the preceding one is not available.

[12] CNE. Technical Annex. Chilean Technical Norm of Security and Service Quality (NTSyCS) https://www.cne.cl/wp-content/uploads/2015/06/Anexo-NT-Sistemas-de-Medidas-para-Transferencias-Econ%C3%B3micas.pdf

- Primary: Data stored by the operator or by an authorized entity, in full compliance with Chilean regulations.
- Secondary: Invoice reports emitted by the authorized entity or business, to be used only when primary data source is not available.
- Tertiary: Information on monitoring extracted directly from the grid coordinating entity, to be used exceptionally only when neither primary nor secondary data sources are available, since generation monitoring is reported directly to it.

For instances with capacity addition, the following data will be used:

- Primary: Data stored by the operator or by an authorized entity, in full compliance with Chilean regulations.
- Secondary: Information on monitoring extracted directly from the grid coordinating entity, to be used only when primary data source is not available.

The monitoring data for capacity addition instances will be cross-checked with the invoice reports for the electricity sales when applicable as stated in the methodology AMS-I.D, and the value of the one with lower electricity generation will be used as a conservative approach. In cases where invoices report the total net electricity supplied by the entire facility, a prorating method will be applied to determine the specific generation attributable to the added capacity.

Usually, the net electricity generation is directly measured. However, if a facility chooses to measure its gross generation and on-site consumption separately, and consumption data are missing for a given period, the highest recorded consumption value from the respective analysis year should be used as a conservative estimate for each period with missing data.

In case a bidirectional electricity meter is used, the site's self-consumption is already deducted from the gross generation. Therefore, applying the consumption value must be applied only during intervals where injection is measured as zero (meaning net consumption), since applying it for all measurements would result in double-counting of consumption during net injection hours.

The information is reviewed by EnergyLab as the Project Holder and crosschecked against invoice reports (secondary information source) or public report from grid coordinating entity (tertiary information source) when available.

If net electricity generation is unavailable from all possible sources for a given period, the project shall not claim any GHG emission reductions to that timeframe.

If no consumption data are available for the entire analysis year, a justified conservative assumption based on technical specifications, operating records, or comparable periods should be applied and properly documented.

Uncertainty, error propagation and adjustments on GHG reductions are calculated following the provisions of the BCR Tool "Conservative Approach and Uncertainty Management".

The error propagation was calculated in each document that requires it, that is the Emission Factor calculation spreadsheet for the SEN and for the Aysén subsystem, and the Baseline Emissions calculation spreadsheet.

All error propagation calculations were based on the data relating to each spreadsheet and were calculated using the guidance provided in the Tool abovementioned:

Addition of uncertain quantities (Rule A):

$$U_{total} = \sqrt{(U_1)^2 + (U_2)^2 \pm \ldots + (U_n)^2} \qquad \text{Equation (3)}$$

Combined uncertainty for multiplication or division (Rule B):

$$U_{total} = \sqrt{(U_{r1})^2 + (U_{r2})^2 \pm \ldots + (U_{rn})^2} \qquad \text{Equation (4)}$$

The relative half-width of the confidence interval is calculated as the relative uncertainty of the parameter.

Regarding error propagation for the baseline emission factor calculations, a relative uncertainty value was assigned to each fuel and electricity-related parameter. Standard error propagation rules, represented by Equations (3) and (4), were applied according to the calculation type (addition/subtraction or multiplication/division) to derive the

uncertainty for every calculated variable ($FC_{i,m,y}$, $NCV_{i,y}$, $EF_{CO_2,i,y}$, $EG_{m,y}$, $EF_{EL,m,y}$, $EF_{OMsimple,y}$, $EF_{grid,BM,y}$, $EF_{grid,CM,y}$).

The uncertainties for all fuel and electricity-related parameters are detailed in the table below:

Fuel type / Generation	ε NCV	ε FUEL CONSUMPTION	ε GENERATION
Biogas	1%	1%	
Biomass	1%	2%	
Coal	1%	2%	
Natural gas	1%	1%	
LPG	1%	1%	
LNG	1%	1%	
Petcoke	1%	2%	
Diesel fuel	1%	1%	
Oil No. 6	1%	0,50%	
Electricity generation			0,2%

Table 12: Parameter uncertainty

3.6 Leakage and non-permanence

As per the methodology AMS-I.D, paragraph 42 states "General guidance on leakage in biomass project activities shall be followed to quantify leakages pertaining to the use of biomass residues.". Based on the above, it is confirmed that leakages in the project are zero, as the project does not contain any activities related to the use of biomass.

The project will present periodical verifications that ensure the permanence of project activities.

3.7 Mitigation results

All mitigation results are measured and calculated based on the provisions of the methodology AMS-I.D.

Furthermore, the emission reductions are calculated as described in section 3.1 above:

$$ER_y = BE_y - PE_y - LE_y \qquad \text{Equation (5)}$$

Where:

- ER_y = Emission reductions in year y (tCO_2)
- BE_y = Baseline emissions in year y (tCO_2)
- PE_y = Project emissions in year y (tCO_2)
- LE_y = Leakage emissions in year y (tCO_2)

3.7.1 Eligible areas within GHG project boundaries (AFOLU sector projects)

Not applicable.

3.7.2 Stratification (Projects in the AFOLU sector)

Not applicable.

3.7.3 GHG baseline emissions.

i. Justification of applicable scenarios

The baseline emissions for greenfield generation units, as described in AMS-I.D are the product of the electrical energy baseline expressed in MWh of electricity produced by the relevant renewable generation unit multiplied by the grid emission factor. The calculation procedure is shown in subsection ii, below.

For instances under this Project document involving capacity addition, the baseline emissions, as described in AMS-I.D, are determined based on the electricity generated by existing plants/units, and it is assumed that the addition of new capacity does not significantly affect the electricity generation of the renewable power plant/unit.

The calculation procedure is shown in subsection ii., below. As per the technologies encompassed in this grouped project, paragraphs 26, 27, 28, and 31 of the methodology apply.

The grid emission factor calculations are carried out in a transparent and conservative manner for the grid, according to TOOL07, and as described in the AMS-I.D.

ii. Relevant equations

For either greenfield generation projects or capacity addition instances, AMS-I.D baseline and monitoring methodology is used for estimation of baseline emissions. Calculation of the quantity of electricity generation that is produced and fed into the grid because of the implementation of the project activity is different for greenfield and capacity addition projects, where equations (4), (5), and (6) are applicable.

For capacity addition in solar or wind instances, it is assumed that the additions do not affect the electricity generated by existing plants/units. Therefore, the electricity generated by the newly added power plants could be directly metered and used to determine $EG_{PJ,y}$ provided that the electricity generated by the added power plant/units is metered separately. Thus, the baseline emissions are calculated as follows:

$$BE_y = EG_{PJ,y} \cdot EF_{grid,y} \quad \text{Equation (6)}$$

Where:

- BE_y = Baseline emissions in year y (tCO2)
- $EG_{PJ,y}$ = Quantity of net electricity supplied to the grid because of the implementation of the project activity in year y (MWh)
- $EF_{grid,y}$ = CO2 emission factor of the grid in year y (tCO2/MWh)

Greenfield power plants:

$$EG_{PJ,y} = EG_{PJ,facility,y} \quad \text{Equation (7)}$$

Capacity addition in solar or wind power plants:

$$EG_{PJ,y} = EG_{PJ,add,y} \quad \text{Equation (8)}$$

Where:

- $EG_{PJ,facility,y}$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh).
- $EG_{PJ,add,y}$ = Quantity of net electricity generation supplied to the grid in year y by the project plant/unit that has been added under the project activity (MWh).

The calculation procedure described below shall be used for estimation of electricity generation ($EG_{PJ,y}$) for hydro power instances under this project. This ensures that the baseline electricity generation is conservative and that the calculated emissions reductions are attributable to the project activity. This will address the associated uncertainty, considering historical generation data of the existing plant/units, including the standard deviation:

Capacity addition for hydro power:

$$EG_{PJ,y} = \{max(EG_{PJ,facility,y} - (EG_{historical} + \sigma_{historical}), 0), until\ \ DATE_{BaselineRetrofit}\ 0, after\ DATE_{BaselineRetrofi} \quad \text{Equation (9)}$$

Where:

- $EG_{historical}$ = Annual average historical net electricity generation by the existing renewable energy plant that was operated at the project site prior to the implementation of the project activity (MWh);
- $\sigma_{historical}$ = Standard deviation of the annual average historical net electricity supplied to the grid by the existing renewable energy plant that was operated at the project site prior to the implementation of the project activity (MWh);
- $DATE_{BaselineRetrofit}$ = Annual average historical net electricity generation by the existing renewable energy plant that was operated at the project site prior to the implementation of the project activity (MWh).

The average of historical net electrical energy levels delivered by the existing facility, spanning all data from the most recent available year (or month, week, or other time period) to the time at which the facility was constructed, retrofit, or modified in a manner that significantly affected output (i.e., by 5% or more), shall be used.

To determine $EG_{historical}$, the instance implementer may choose between the following two historical periods:

a) The three last calendar years (in case of hydro power plants five years) prior to the implementation of the instance; or
b) The time period from the calendar year following $DATE_{hist}$, up to the last calendar year prior to the implementation of the project, as long as this time span includes at least five calendar years, where $DATE_{hist}$ is the latest point in time-between:

    i. The commercial commissioning of the plant/unit

    ii. If applicable: the last capacity addition to the plant/unit; or

    iii. If applicable: the last retrofit of the plant/unit

The relevant parameter(s) and parameters fixed ex-ante are listed and described in section 16. The CO2 emission factor of the grid will be calculated according to the TOOL07.

Grid emission factor:

The grid emission factor is calculated based on "Tool to calculate the emission factor for an electricity system", version 7.0 for each instance. Six steps in the calculation procedure (Option (a) ex-ante) will be applicable, as follows:

- Step 1: Identify the relevant electricity systems.
- Step 2: Choose whether to include off-grid power plants in the project electricity system (optional).
- Step 3: Select a method to determine the operating margin (OM).
- Step 4: Calculate the operating margin emission factor according to the selected method.
- Step 5: Calculate the build margin (BM) emission factor.
- Step 6: Calculate the combined margin (CM) emission factor.

a) Step 1. Identify the relevant electricity systems.

For determining the relevant project electricity system, the project participants may choose among the following options:

1. Option 1. A delineation of the project electricity system and connected electricity systems published by the Designated National Authority (DNA) or the group of the DNAs of the host country(ies). In case a delineation is provided by a group of

DNAs, the same delineation should be used by all the project participants applying the tool in these countries.

2. Option 2. A delineation of the project electricity system defined by the dispatch area of the dispatch center responsible for scheduling and dispatching electricity generated by the project activity. Where the dispatch area is controlled by more than one dispatch center, i.e. layered dispatch area, the higher-level area shall be used as a delineation of the project electricity system (e.g. where regional dispatch centers are required to comply with dispatch orders of the national dispatch center then area controlled by the national dispatch center shall be used).
3. Option 3. A delineation of the project electricity system defined by more than one independent dispatch area, e.g. multi-national power pools.

In the case of the initial instances, the electricity system is defined by Option 2.

b) Step 2: Choose whether to include off-grid power plants in the project electricity system (optional).

All instances under this Project document will be grid-connected renewable power plants; therefore, Option I is chosen:

Option I: Only grid power plants are included in the calculation.

c) Step 3: Select a method to determine the operating margin (OM).

The calculation of the OM emission factor is based on one of the following methods:

(i) Simple OM; or
(ii) Simple adjusted OM; or
(iii) Dispatch data analysis OM; or
(iv) Average OM.

The chosen method will depend on the data requirements and conditions to be met to apply a specific OM method. Those requirements are presented in the following figure:

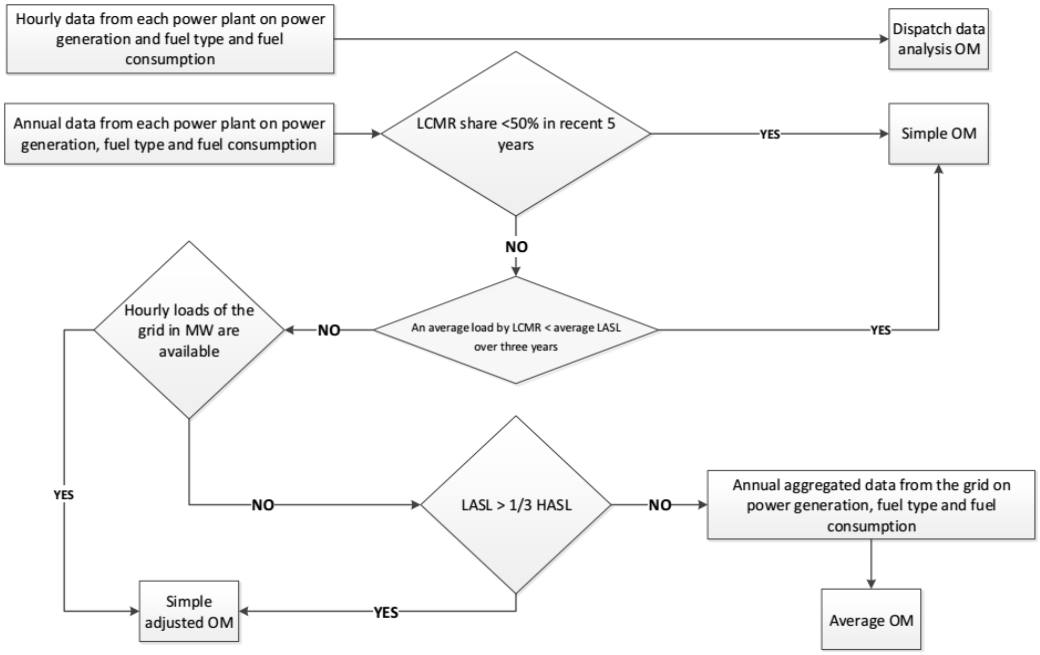

Figure 11: CDM TOOL07 requirements for determining the operating margin method

The simple OM method can only be used if any one of the following requirements is satisfied:

"(a) Low-cost/must-run resources constitute less than 50 per cent of total grid generation (excluding electricity generated by off-grid power plants) in: 1) average of the five most recent years, and the average of the five most recent years shall be determined by using one of the approaches described below; or 2) based on long-term averages for hydroelectricity production (minimum time frame of 15 years); or"

To calculate the average of five most recent years, the following equations are applicable:

- Approach 1:

$$Share_{LCMR} = average\left[\frac{EG_{LCMR,y-4}}{total_{y-4}}, \ldots, \frac{EG_{LCMR,y}}{total_{y}}\right] \quad \text{Equation (10)}$$

- Approach 2:

$$Share_{LCMR} = \frac{average\left(EG_{LCMR,y-4}, \ldots, EG_{LCMR,y}\right)}{average\left(total_{y-4}, \ldots, total_{y}\right)}$$ Equation (11)

Where:

- $Share_{LCMR}$ = Share of the low cost/must run resources (per cent).
- $EG_{LCMR,y}$= Electricity generation supplied to the project electricity system by the low cost/must run in year y (MWh).
- $total_y$ = Total electricity generation supplied to the project electricity system in year y (MWh).
- y = The most recent year for which data is available.

The resources considered as LCMR are hydro, geothermal, wind, biomass and solar Calculations and disaggregated information of generation for each system can be found in the files "LCMR calculations (Aysen[13]/SEN[14]).xlsx" in the complementary files folder. Information on the original sources can be found in the same files.

The tables below show each system $Share_{LCMR}$ based on Approach 1:

Year	Total Generation (GWh)	LCMR Generation (GWh)	LCMR/Total
2020	77,696	35,888	46.2%
2021	81,443	36,779	45.2%
2022	83,210	45,956	55.2%
2023	83,392	52,909	63.4%
2024	85,332	59,257	69.4%
$Share_{LCMR}$			**55.9%**

Table 13: Proportion of LCMR resources in the SEN

[13] Source: Generación bruta SSMM. https://www.cne.cl/normativas/electrica/consulta-publica/electricidad/

[14] Source: Generación bruta SEN. https://www.cne.cl/normativas/electrica/consulta-publica/electricidad/

Year	Total Generation (MWh)	LCMR Generation (MWh)	LCMR/Total
2020	152,923	98,763	64.6%
2021	162,678	86,936	53.4%
2022	166,271	89,429	53.8%
2023	175,153	108,223	61.8%
2024	181,259	105,455	58.2%
$Share_{LCMR}$			**58.4%**

Table 14: Proportion of LCMR resources in the Aysén subsystem

Approach 2 do not change the $Share_{LCMR}$ calculated greatly. Based on that and the calculations above, both systems go on to requirement (b):

"(b) The average amount of load (MW) supplied by low-cost/must-run resources in a grid in the most recent three years is less than the average of the lowest annual system loads (LASL) in the grid of the same three years (i.e. average of LASLy, LASLy-1, LASLy-2)."

Only information on LASL for the SEN is available:

Year	System load (MW)	LASL (MW)	Average system load[15] (MW)	Average LASL (MW)
2022	5,246.1	7,155.7	6,016.8	7,173.6
2023	6,039.9	7,416.9		
2024	6,764.4	6,948.3		
Avg load < Avg LASL?			**TRUE**	

Table 15: LASL information for the SEN

As shown above in calculations related to requirement (a) and (b), the Simple OM method is applicable for the SEN, but not for the Aysén subsystem, so it goes on to the following requirement. To apply the Simple adjusted OM method, data of hourly loads of the grid in MW must be available, or the following condition shall be met:

- The lowest annual system loads (LASL) > 1/3 highest annual system loads (HASL).

[15] Source: Hourly Historical Energy Generation https://www.coordinador.cl/reportes-y-estadisticas/

No data on LASL is available for the Aysén subsystem, meaning that none of the above conditions are met for the Aysén subsystem and therefore, the Average OM method shall be used based on the annual aggregated data from the grid on power generation, fuel type and fuel consumption.

Additionally, for simple OM, simple adjusted OM and average OM, the emission factor can be calculated either of the following options:

- Ex-ante option: the emission factor is determined once the validation stage and no monitoring and recalculation is needed during the crediting period. For grid power plants, use a 3-year generation-weighted average, based on the most recent data available at the time of submission; or
- Ex-post option: the emission factor is determined for the year in which the project activity displaces grid electricity, requiring the emission factor to be updated annually during monitoring.

The data vintage chosen is ex-ante for both electricity systems, which will be consistently applied to all instances connected to a given one.

Dispatch data analysis OM is not applicable to historical data; thus, this method can only be used for grid power units where there is hourly data from each power plant on power generation, fuel type and fuel consumption.

d) Step 4: Calculate the operating margin emission factor according to the selected method.

A. Simple OM ex-ante:

The Simple Operating Margin (OM) is calculated ex-ante using the equations (12) to ((14) (when applicable) of the TOOL07, as follows

The Simple OM is calculated using preferably Option A, as follows:

Option A – Calculation based on average efficiency and electricity generation of each plant:

$$EF_{OMsimple,y} = \frac{\sum_m \quad EG_{m,y} \cdot EF_{EL,m,y}}{\sum_m \quad EG_{m,y}} \qquad \text{Equation (12)}$$

Where:

- $EF_{OMsimple,y}$ = Simple operating margin CO2 emission factor in year y (tCO2/MWh).
- $EG_{m,y}$ = Net quantity of electricity generated and delivered to the grid by power unit m in year y (MWh).
- $EF_{EL,m,y}$= CO2 emission factor of power unit m in year y (tCO2/MWh).
- m = All power units serving the grid in year y except low-cost/must-run power units.
- y = The relevant year as per the data vintage chosen in Step 3.

Determination of $EF_{EL,m,y}$

As described in the methodology (TOOL07), the emission factor of each power unit \$m\$ should be determined in the order of preference: Option A1, Option A2, and Option A3.

For this project, Option A1 is selected as data on fuel consumption and electricity generation is available for the power units serving the grid. Consequently, Options A2 and A3 are not applied

- Option A1. If for a power unit m data on fuel consumption and electricity generation is available, the emission factor ($EF_{EL,m,y}$) should be determined as follows:

$$EF_{EL,m,y} = \frac{\sum_i FC_{i,m,y} \cdot NCV_{i,y} \cdot EF_{CO_2,i,y}}{EG_{m,y}} \quad \text{Equation (13)}$$

Where:

- $EF_{EL,m,y}$ = CO2 emission factor of power unit m in year y (tCO2/MWh).
- $FC_{i,m,y}$ = Amount of fossil fuel type i consumed by power unit m in year y (Mass or volume unit).
- $NCV_{i,y}$ = Net calorific value (energy content) of fossil fuel type i in year y (GJ/mass or volume unit).
- $EF_{CO_2,i,y}$ = CO2 emission factor of fossil fuel type i in year y (tCO2/GJ).
- $EG_{m,y}$ = Net quantity of electricity generated and delivered to the grid by power unit m in year y (MWh).

- m = All power units serving the grid in year y except low-cost/must-run power units.
- i = All fossil fuel types combusted in power unit m in year y.
- y = The relevant year as per the data vintage chosen in Step 3.

Calculation of $EG_{m,y}$

For grid power plants, $EG_{m,y}$ will be determined as per the provisions in the monitoring tables.

Average OM:

The average OM emission factor is calculated as the average emission rate of all power plants serving the grid, as stated for the Simple OM, but including the LCMR power plants in all equations.

e) Step 5: Calculate the build margin (BM) emission factor.

The build margin emission factor is calculated ex-ante using Option 1, according to the guidelines of the TOOL07 para. 72(b). This option does not require monitoring the emission factor during the crediting period. Capacity additions from retrofits of power plants are not included in the calculation of the build margin emission factor. The BM is calculated as follows:

$$EF_{grid,bm,y} = \frac{\sum_m EG_{m,y} \cdot EF_{EL,m,y}}{\sum_m EG_{m,y}} \quad \text{Equation (14)}$$

Where:

- $EF_{grid,bm,y}$ = Build margin CO2 emission factor in year y (tCO2/MWh).
- $EG_{m,y}$ = Net quantity of electricity generated and delivered to the grid by power unit m in year y (MWh).
- $EF_{EL,m,y}$ = CO2 emission factor of the power unit m in year y (tCO2/MWh).
- m = Power units included in the build margin.
- y = Most available historical year for which electricity generation data is available.

The selection of samples of the power units considered in the calculation will be determined as per the following procedure, according to the Tool:

a. Identify the set of five power units, excluding power units registered as CDM project activities, which started to supply electricity to the grid most recently and determine their annual electricity generation.
b. Determine the annual electricity generation of the project electricity system, excluding power units registered as CDM project activities. Then, identify the set of power units that started to supply electricity to the grid most recently and comprised 20% of the total generation.
c. From this set selected, the set of power units that comprises the larger annual electricity generation and:
    i. If none of the power units started supplying electricity to the grid more than 10 years ago, then calculate the BM directly; otherwise,
    ii. Exclude from the set the power units that started to supply electricity more than 10 years ago and include in the set the power units registered as CDM project activities, until the electricity generation of the set comprises 20% of the generation. If the annual generation of the set comprises 20% of the annual generation of the project system, use the sample group to calculate the BM. Otherwise,
    iii. Include in the sample group resulted from sub-step (ii) the power units that started to supply electricity to the grid more than 10 years ago until the electricity generation of the set comprised 20% of the annual generation of the project electricity system. Use this sample group to calculate the BM.

Determination of the sample group for the Build Margin (BM):

According to the "Tool to calculate the emission factor for an electricity system", the sample group of power units used to calculate the build margin must be determined by comparing the annual electricity generation of the five most recent power units ($AEG_{set-5-units}$) with the set of power units that comprises 20% of the system generation ($AEG_{set-\geq 20\%}$), excluding power units registered as project activities in carbon standards. The set with the larger annual generation must be selected. In case of Aysén Subsystem, power units of more than 10 years are included in ($AEG_{set-\geq 20\%}$), and the inclusion of project activities registered in carbon standards is not sufficient to meet the 20% of annual generation $(AEG_{SET-sample-CDM})$, so for this case the activities registered as project activities and power units of more than 10 years must be included in the set $(SET_{sample-CDM-\geq 10yrs})$.

The following tables summarize the comparison and selection for the SEN and the Aysén subsystem:

Parameter	Description	Value (MWh)
$AEG_{set-5-units}$	Annual generation of the 5 most recent power units	21,423
$AEG_{set-\geq 20\%}$	Annual generation of the set comprising ≥ 20% of total generation	14,590,285
Selection	Set selected (Larger annual generation)	$Set \geq 20\%$
10 year power unit check	No power units of more than 10 years are included in the set. Final set selected is the 20% set	

Table 16: Build Margin Sample Selection for SEN

Parameter	Description	Value (MWh)
$AEG_{set-5-units}$	Annual generation of the 5 most recent power units	25,200
$AEG_{set-\geq 20\%}$	Annual generation of the set comprising ≥ 20% of total generation	53,305
Selection	Set selected (Larger annual generation)	$Set \geq 20\%$
10 year power unit check	There are units that started to supply electricity more than 10 years ago, $AEG_{SET-sample-CDM}$ is calculated including registered project activities	30,065
Final set	Registered project activities and units of more than 10 years are included, generating the set $SET_{sample-CDM-\geq 10yrs}$	58,170

Table 17: Build Margin Sample Selection for Aysén

Based on the results above, the set of power units comprising at least 20% of the system generation was selected for the SEN, and for the Aysén subsystem the set $SET_{sample-CDM-\geq 10yrs}$ is selected, and both are used to calculate the $EF_{grid,BM,y}$.

f) Step 6: Calculate the combined margin (CM) emission factor.

Combined margin (CM) emission factor for the grid:

The calculation of the Combined Margin (CM) emission factor ($EF_{grid,CM,y}$) for the grid is conducted at instance level based on equation 15 of TOOL07 as follows:

(a) Weighted average CM;

(b) Simplified CM.

Weighted average CM is the preferred option, since all requirements needed to calculate it can be met.

The combined margin emissions factor is calculated as follows:

$$EF_{grid,cm,y} = EF_{grid,OM,y} \cdot W_{OM} + EF_{grid,BM,y} \cdot W_{BM} \quad \text{Equation (15)}$$

Where:

$EF_{grid,cm,y}$ = Build margin CO2 emission factor in year y (tCO2/MWh).

$EF_{grid,OM,y}$ = Operating margin CO2 emission factor in year y (tCO2/MWh).

W_{OM} = Weighting of operating margin emissions factor (%).

W_{BM} = Weighting of build margin emissions factor (%).

The following default values should be used for W_{OM} and W_{BM}:

- Wind and solar power generation project activities: W_{OM} = 0.75 and W_{BM} = 0.25 (due to their intermittent and non-dispatchable nature) for the first crediting period and for subsequent crediting periods.

- All other projects: WOM = 0.5 and WBM = 0.5 for the first crediting period, and WOM = 0.25 and WBM = 0.75 for the second and third crediting period

The following tables indicate the emission factor calculated for the operating margin, build margin and the combined margin for the SEN and Aysén subsystem:

	SEN			Aysén		
Year	**Generation (MWh)**	$EF_{OM,y}$ **(tCO2/MWh)**	$EF_{BM,y}$ **(tCO2/MWh)**	**Generation (MWh)**	$EF_{OM,y}$ **(tCO2/MWh)**	$EF_{BM,y}$ **(tCO2/MWh)**
2022	37,337,493	0.6993		165,632	0.3138	
2023	30,759,610	0.6646		175,156	0.2506	
2024	25,812,196	0.6713	0.0004772	181,721	0.2788	0.3162
EF_{OM} & EF_{BM}	0.6802		0.0004772	0.2804		0.3162

Table 18: EF_{OM} and EF_{BM} for the SEN and Aysén

First period EF_{CM}				
Technology	w_{OM}	w_{BM}	$EF_{CM,SEN}$	$EF_{CM,Aysén}$
Solar	0.75	0.25	0.5103	0.2894
Wind	0.75	0.25	0.5103	0.2894
Hydro	0.5	0.5	0.3404	0.2983

Table 19: EF_{CM} for the SEN and Aysén

3.7.4 GHG project emissions

i. Justification of applicable scenarios

According to the methodology AMS-I.D most renewable energy projects will have zero project emissions ($PE_y = 0$) irrespective of the grid to which the generated electricity will be delivered. This condition is applicable to any solar, wind or hydro without reservoirs renewable instance.

3.7.5 GHG leakages.

As per AMS-I.D para. 42, leakage will be considered only for biomass project activities. Hence, no leakage emissions are considered for any instances under this project document.

Information on estimated emissions reductions for the initial instance "Quetena Solar Park" is below.

- Quetena Solar Park:

The generation objective for this instance is 26,667 MWh/y, a value that translates to an estimated emissions reduction of 13,608 tCO2/y, considering a grid emission factor of 0.5103, starting from 23.09.2021, as this is the instance's commissioning date. This means that for 2021, the estimated emission reductions are 3,728 tCO2, for 2031 are 9,880 tCO2and for the remaining years are 13,608 tCO2.

The following table indicates the total estimated emission reductions during the project's quantification period and the estimated annual average:

Period	GHG emission reductions/ removals in the baseline scenario (tCO2e)	GHG emission reductions/ removals in the project scenario (tCO_{2e})	GHG emissions attributable to leakages (tCO_{2e})	Estimated Net GHG reduction/ removals (tCO_{2e})
23.09.2021 to 31.12.2021	3,728	**0**	**0**	**3,728**
2022	13,608	0	0	**13,608**
2023	13,608	0	0	**13,608**
2024	13,608	0	0	**13,608**
2025	13,608	0	0	**13,608**
2026	13,608	0	0	**13,608**
2027	13,608	0	0	**13,608**
2028	13,608	0	0	**13,608**
2029	13,608	0	0	**13,608**

Period	GHG emission reductions/ removals in the baseline scenario (tCO2e)	GHG emission reductions/ removals in the project scenario (tCO_{2e})	GHG emissions attributable to leakages (tCO_{2e})	Estimated Net GHG reduction/ removals (tCO_{2e})
2030	13,608	0	0	**13,608**
01.01.2031 to 22.09.2031	9,880	0	0	**9,880**
Total	**136,081**	**0**	**0**	**136,081**

Table 20: Estimated emission reductions for Quetena Solar Park

4 Compliance with Laws, Statutes and Other Regulatory Frameworks

In Chile there are legal and environmental frameworks that regulate the implementation of new projects in the country:

- Law 19.300[16] "Law on general bases of the environment", in effect since 1994, establishes the legal framework for the proposal, evaluation, and implementation of projects that may generate an environmental impact in Chile.

- Decree No. 40 of 2012[17] approves the Regulation of the Environmental Impact Assessment System (RSEIA). This decree establishes the provisions by which the Environmental Impact Assessment System and Community Participation in the Environmental Impact Assessment process will be governed.

  The RSEIA establishes the provisions and procedures for evaluating the environmental impact of projects and activities in Chile. The objective of the RSEIA is to ensure that projects are developed sustainably and with the least possible impact on the environment and the vulnerable groups in the area, including indigenous groups.

[16] Source: https://www.bcn.cl/leychile/navegar?idNorma=30667

[17] Source: https://www.bcn.cl/leychile/navegar?idNorma=1053563&idVersion=2024-02-01&idParte=9369908

If a new renewable energy project has an installed capacity of less than 3 MW, it may not be required to undergo through the Environmental Impact Assessment process, either through a full Environmental Impact Study (EIA for its acronym in Spanish) or a Declaration of Environmental Impact (DIA for its acronym in Spanish). Instead, it is sufficient to submit a Letter of Pertinence, which, once reviewed and approved by the environmental authority, certifies that the project is not subject to mandatory environmental assessment.

The instances of this grouped project comply with environmental regulations either by entering the Environmental Impact Assessment System through a DIA or an EIA, obtaining the corresponding Environmental Sectorial Permits (PAS), and securing a favorable Environmental Qualification Resolution (RCA), or, for smaller projects below 3 MW, by submitting a Letter of Pertinence approved by the relevant authority. A regulatory review will be conducted every two years to assess whether new or amended legislation may affect the project or any of its individual instances.

On the other hand, the technical and legal regulatory framework applicable to the electricity sector is established primarily through the following laws and regulations:

- Decree with Force of Law No. 4 of 2006 – General Electricity Services Law (LGSE).
- Law No. 20.936 – Establishes a new electricity transmission system and creates an independent coordinating body for the National Electric System.
- Law No. 20.571 – Regulates the remuneration scheme for residential electricity generators.
- Supreme Decree No. 125 of 2017 – Regulation on the Coordination and Operation of the National Electric System.

- Supreme Decree No. 229 of 2005 – Regulation on the Valuation and Expansion of the Medium-Size Systems established under the LGSE.

These legal provisions are implemented through a series of technical standards and regulatory guidelines issued and periodically updated by the National Energy Commission (CNE).[18]

[18] https://www.cne.cl/normativas/electrica/normas-tecnicas/

All instances of this grouped project comply with the applicable technical regulations through the grid-connection approval letter issued by the CNE, which authorizes project construction and interconnection to the electrical system. During the operational phase, the power plants must comply with CNE guidelines and respond to information requests through the official reporting and communication channels established by the authority. The information for the initial instance "Quetena Solar Park" is below.

- Quetena Solar Park

i. DIA presented
ii. Sectorial permits obtained.

    - PAS 138 (Permit for the construction, repair, modification, and expansion of any public or private work intended for the evacuation, treatment, or final disposal of sewage and wastewater of any nature.)
    - PAS 140 (Permit for the construction, repair, modification, and expansion of any garbage and waste treatment plant of any kind or for the installation of any place intended for the accumulation, sorting, processing, sale, or final disposal of garbage and waste of any kind.)
    - PAS 142 (Permit for any site intended for the storage of hazardous waste.)
    - PAS 160 (Permit to subdivide and develop rural land or for construction outside urban limits.)

iii. Favorable RCA No. 0122 (04.07.2019)
iv. Yearly compliance with Annual Sworn Statement (DJA) from the Pollutant Release and Transfer Register (RETC).
v. Approval letter for connection to SEN, from National Electric Coordinator.
vi. National Electric Coordinator communication through official channels.

5 Carbon ownership and rights

5.1 Project holder

Individual or organization	***Natural Assets SpA***
Contact person	*Cristián Mosella*
Job position	*Managing Director*
Address	*Fidel Oteiza 1941, of.504, Providencia*
Phone number	*+56 9 8828 7578*
Email	*cmosella@energylab.cl*

Table 21: Project holder information

5.2 Other project participants

Individual or organization	***PARQUE SOLAR QUETENA S.A.***
Contact person	*Alberto Falcone*
Job position	*Deputy project manager*
Address	*Augusto Leguía Sur 160, of. 51, Las Condes*
Phone number	*+56 9 9917 8798*
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Table 22: Other project participants information

5.3 Agreements related to carbon rights

All agreements related to carbon rights are presented in this section. Specifically for the initial instance “Quetena Solar Park”, the following agreements were made:

- Quetena Solar Park

An agreement between Natural Assets SpA and PARQUE SOLAR QUETENA S.A. was executed on 03.09.2025 under the grouped project "Small-scale renewable energy projects in Chile".

The agreement establishes a fixed distribution of the verified carbon credits (VCCs) generated from 23.09.2021 to 22.09.2031 and includes the recognition and transfer of the corresponding carbon rights.

The responsibilities of both parties were defined, with Natural Assets SpA acting as Project Holder and PARQUE SOLAR QUETENA S.A. as Instance Implementer, each fulfilling their respective roles in project coordination, implementation, monitoring, and reporting.

Any disputes arising between the parties will be addressed through direct communication and, if needed, resolved according to the procedures established in the agreement.

Quetena Solar Park, as stated in its DIA and recognized by the Environmental Impact Assessment System (SEIA) through the corresponding favorable RCA, is not located within a populated area, and therefore no agreements with local communities or indigenous groups were required.

5.4 Land tenure (Projects in the AFOLU sector)

Not applicable.

6 Climate change adaptation

The BCR Standard V4.0 presents criteria that the instances must comply with related to climate change adaptation as follows:

> (a) consider one or more of the strategic lines proposed in the National Climate Change Policies and/or focuses aspects outlined in the regulations of the country where the project is implemented;

(b) improve conditions for the conservation of biodiversity and its ecosystem services, in the areas of influence, outside the project boundaries; i.e., natural cover on environmentally key areas, biological corridors, water management in watersheds, among others;

(c) implement activities that generate sustainable and low-carbon productive landscapes;

(d) propose restoration processes in areas of specific environmental importance;

(e) design and implement adaptation strategies based on an ecosystem approach;

(f) strengthen the local capacities of institutions and/or communities to take informed decisions to anticipate negative effects derived from climate change (recognition of conditions of vulnerability); as well as to take advantage of opportunities derived from expected or evidenced changes.

The instances under this grouped project contribute to criteria (a) and (c) established by the BCR Standard V4.0, as described below:

(a) Chile aims to achieve and maintain greenhouse gas (GHG) emission neutrality no later than 2050, as established by Law 21,455 (Framework Law on Climate Change, enacted in 2022). In this context, the development of new renewable energy instances contributes to the national decarbonization objectives and aligns with Chile's Nationally Determined Contribution (NDC), which sets a target of an electricity matrix composed of 70% renewable energy by 2030 and an absolute GHG reduction of 25–30% below 2016 levels.

(c) The grouped project promotes the implementation of small-scale renewable energy facilities (below 15 MW) that contribute to the decarbonization of Chile's electricity mix, fostering low-carbon productive landscapes in line with national climate and energy policies.

With respect to criteria (b), (d), (e) and (f), the grouped project generally does not fall within their scope. All instances must comply with Chilean environmental regulations, including the submission of an Environmental Impact Declaration (DIA) or a pertinence letter to the Environmental Assessment Service (SEA). Given their limited scale and

location, generally in areas without pre-existing economic, residential, or cultural activities, their environmental and social footprint is minimal.

Therefore, additional conservation measures beyond project boundaries (criterion b) or restoration actions (criterion d) are not foreseen. Likewise, ecosystem-based adaptation strategies (criterion e) are not applicable, as the instances do not significantly alter natural systems or generate climate vulnerability conditions. Finally, since the instances do not produce direct social or environmental impacts requiring adaptive responses, capacity-building actions under criterion (f) are not deemed necessary.

Nevertheless, if any future instance meeting the eligibility criteria of this grouped project presents particular characteristics that differ from the general conditions described above, it may still be included, provided it demonstrates how it aligns with or contributes to the intent of the relevant adaptation criteria (e.g., through environmental management measures, coordination with local stakeholders, or initiatives supporting ecosystem stability).

Overall, the grouped project contributes to sustainability by generating clean energy and supporting national climate objectives while maintaining compliance with applicable environmental procedures and avoiding adverse impacts on surrounding ecosystems and communities. Any future instances included under this grouped project will be assessed to confirm their continued alignment with these criteria.

- Quetena Solar Park

This instance contributes to criteria (a) and (c) as described before. Other criteria are not applicable.

7 Risk management

Implementers assessed and managed the risks related to their corresponding instances in their construction, operation, and closing phases.

Identified risks and corresponding mitigation measures will be presented across environmental, financial, and social categories, in accordance with the BCR Tool "Permanence and Risk Management" V.2.0. All instances will follow a continuous improvement approach that allows for the identification and consideration of new

environmental or social risks during its operation. This process complements BCR's Sustainability Development Safeguards (SDSs) tool by addressing potential risks that may arise beyond those initially identified.

Identified risks and mitigation measures for the initial instance "Quetena Solar Park" are listed in the table below,

- Quetena Solar Park:

Risk Category	Identified risks	Mitigation
Environmental	Atmospheric emissions	Atmospheric emissions are primarily generated during the construction phase but are considered non-significant. Additionally, mitigation measures have been implemented, such as limiting vehicle speed and prohibiting the burning of materials within the instance area. This risk is considered low.
	Waste Generation	Waste generation is considered only during the construction phase. All solid waste is segregated and temporarily stored in designated safe zones until its final disposal by authorized companies. No liquid waste is generated, as chemical toilets are used, and their contents are ultimately processed by authorized companies. This risk is considered low.
	Noise Pollution	The noise levels generated during the construction and operation phases remain below the maximum limits set by Chilean regulations and are considered safe to wildlife. This risk is considered low.
Financial	Market risk – Interest rate risk	Quetena Solar Park has a low exposure to interest rate risk, given its policy of predominantly long-term fixed interest rates, achieved through structured loans. This risk is considered low.
Social	Impact on local groups	This instance does not interfere with or restrict the free circulation of local groups or their access to natural resources used for

		financial livelihood or any other traditional purpose. Additionally, there is no relocation of indigenous groups, nor any impact on the free expression of traditions, culture, or interests. This risk is considered low.

Table 23: Identified risks

7.1 Reversal Risk

Since this project only contains renewable energy generation instances, there is no risk of reversal associated with the emission reductions achieved. The project does not involve carbon storage or sequestration in biomass or soils; instead, it avoids greenhouse gas emissions by displacing electricity generation from fossil fuel sources. Once the renewable electricity is generated and delivered to the grid, the corresponding emission reductions are permanent and cannot be reversed, as they represent avoided emissions rather than temporary carbon removals.

As stated in the "Permanence and Risk Management" Tool, BioCarbon's system automatically discounts a reserve of 10% of the total quantified GHG emission reductions for each verified period.

7.1.1 Loss Event Report

Not applicable at this stage.

8 Sustainable development safeguards (SDSs)

The BCR Tool "Sustainable Development Safeguards, SDSs" will be completed for each individual instance. For the first instance is included in Annex 2.

Below are the summarized safeguard analyses for the "Quetena Solar Park" instance.

- **Quetena Solar Park**

Environment:

a) Land use: Resource efficiency and pollution prevention and management

Activities related to this instance are related to the generation of electricity by means of solar energy, in other words, there are no impacts on human health and the environment, no pollution is generated. Also, this instance is in a desertic zone, with low to no existence of animal or vegetal life, so no considerable impact is generated.

b) Water

The activities do not consider extraction of water from underground reservoirs and do not generate liquid waste that could pollute them or water streams nearby.

c) Biodiversity and ecosystems

This instance studied the biodiversity and ecosystems in the affected area before the construction phase and concluded that the zone is devoid of flora and with highly impacted fauna, given that this is a desert environment near an urban center. In response to the identification of *Microlophus theresioides* and other terrestrial vertebrates in the baseline studies, the project implemented a specific Controlled Disturbance Plan prior to the construction phase.

The plan consisted of a controlled intervention to induce the gradual displacement of fauna towards safe adjacent areas. Specific actions included displacement of low-mobility wildlife from the intervention zone towards receptor habitats, coupled with habitat enrichment measures, specifically the construction of artificial rock shelters to facilitate the settlement and protection of displaced individuals.

To validate the effectiveness of the mitigation, a follow-up monitoring campaign was conducted. The assessment focused on species richness, abundance, and the displacement degree of *Microlophus theresioides*. Key findings include:

First campaign (June 22-24, 2021):

- A total of 22 individuals of *M. theresioides* were recorded. Significantly, the vast majority were observed in an adjacent sector, directly associated with the habitat enrichment structures (rock piles) implemented during the controlled disturbance. In contrast, only a single specimen was recorded

within the active construction/works area, demonstrating the high effectiveness of the displacement methodology.

- The monitoring also identified natural predators such as the *Geranoaetus polyosoma* and external threats like the presence of domestic dogs in the area.

Second campaign (December 20-22, 2021)

- The follow-up monitoring confirmed the long-term success of the measure. The population in the enrichment zones increased to 38 individuals (indicating successful reproduction/settlement), while zero individuals were recorded within the project's operational area.

These results demonstrate that the fauna was effectively relocated and did not return to the site.

The full reports of these monitoring campaigns were officially submitted to the Superintendence of the Environment (SMA) and the Agricultural and Livestock Service (SAG) confirming compliance with the environmental commitments established in the RCA. d) Climate change

This instance, as explained in section 6, contribute to generating sustainable and low-carbon productive landscapes by generating electricity from solar energy, reducing Chile's reliance on fossil fuels and contributing to its energy matrix goals.

Social:

a) Human rights

- Labor and working conditions: This instance is regulated by Chilean work laws, preventing forced labor and child labor, discrimination in respect to employment and occupation, and providing a safe work environment and freedom of association.

  Nevertheless, unsafe working conditions may arise, exposing project stakeholders to potential hazards or accidents before, during, and after the implementation of the activities. Therefore, compliance with legislation is monitored to mitigate such risks.

- Gender equality and women empowerment: This instance promotes an inclusive work environment that provides opportunities and space within the company for everyone, regardless of their personal conditions, based exclusively on personal merit.
- Land acquisition, restrictions on land use, displacement, and involuntary resettlement: This instance does not generate relocation of human groups, as is located in a site with no human or indigenous groups present. Also, the area affected does not represent a traditional, medicinal, spiritual or cultural zone and no community uses it as an economic livelihood. Land usage is legally authorized through a signed lease agreement between the instance implementer and the landowner.
- Indigenous people and cultural heritage: As stated in the previous answer, the area affected does not represent a traditional, medicinal, spiritual or cultural zone. The instance location is not near indigenous land and does not register heritage-related elements.
- Community health and safety: All the waste generated in the construction phase was disposed of properly and no waste that could generate potential impact on the community's health or safety is produced during the operation phase. All phases in the life cycle of this instance comply with the health and safety regulations for workers and operators. The photovoltaic park has a perimeter fence with the purpose of restricting access to unauthorized individuals and always ensures security, both for the park and for the people.

b) Corruption

The instance implementer regulates its internal processes through, for example, internal audits, preventing consequences such as misuse of funds, fraudulent reporting, conflict of interest, lack of transparency, weak regulatory oversight, lack of accountability mechanisms, environmental permitting corruption and subcontractor corruption.

c) Economic impact

During all phases, the instance implementation has created opportunities for employment for the local community, contributing to the economic development of the region. There are no agreements made with local communities, as there is

no presence of people in the influence zone nor use of the land for any kind of activity.

Governance and compliance:

This instance operates in compliance with all applicable laws and regulations. The Environmental Impact Declaration (DIA) related to this instance is publicly available and demonstrates transparency in the decision-making process, and its annexes contain information on how diverse perspectives were considered while the instance was in the assessment phase.

9 Stakeholder engagement and consultation

In Chile, generation projects that install an effective capacity of more than 3 MW and those which install less than 3 MW but generates or presents at least one of the effects, characteristics or circumstances established in article 11 of the Law 19,300, are required to identify relevant stakeholders, including governmental authorities and possibly affected communities, to whom project information must be communicated and whose inquiries or concerns must be addressed. By engaging these stakeholders, the project complies with national regulations regarding stakeholder consultation and simultaneously fulfills the BioCarbon Standard requirements.

For generation instances with installed capacity below 3 MW that do not trigger any of the effects, characteristics, or circumstances established in Article 11 of Law 19,300, stakeholder consultation is not legally mandatory due to their limited scale and associated impacts. Nevertheless, relevant parties, such as entities involved in land-use agreements and local electricity distributors, are included in the consultation process. Any future instances with similar characteristics will follow the BioCarbon Standard stakeholder engagement and consultation guidelines.

Engagement with global stakeholders is required under section 16.3(a) of the BCR Standard only when projects "may affect transboundary ecosystems, involve globally significant biodiversity, or raise international concerns."

This project is restricted to small-scale (≤ 15 MW) renewable energy projects. Given their limited scale, the eligible technologies (e.g., solar, wind, run-of-river hydro), and their typical locations within Chile (such as desert regions or sparsely populated areas with no significant ecosystemic or cultural importance), the instances are not expected to trigger

any of these conditions. In any case, all instances will be screened to confirm that it is not located within or near areas that could affect transboundary ecosystems or sites of globally significant biodiversity.

The stakeholder consultation for the initial instance "Quetena Solar Park" is described below.

Quetena Solar Park:

The instance's name and information were published in the Official Gazette the day 01.06.2018, and, as established by the RSEIA, five radio announcements were broadcast through Radio Topater FM (Frequency 105.7 in Calama), a local broadcasting station. These announcements were broadcast once a day on days 4, 5, 6, 7 and 8 of June 2018, and contained the following message:

"Trivento SpA, through its legal representative Mr. Pedro Ewing, informs the community that it has submitted the Environmental Impact Declaration (DIA) for the project named "Parque Solar Quetena" to the Environmental Impact Assessment System. The project will be located in the municipality of Calama, in the Province of El Loa, Antofagasta Region, specifically 1 km west of Calama. It will have a lifespan of 30 years and will be developed over an area of 18 hectares. The project consists of the construction and operation of a photovoltaic solar park with an installed capacity of 9.9 MWp and a 300-meter-long, 23 kV transmission line to generate electricity and connect to the Local Distribution System.

According to Article 10 of Law 19.300, the project's entry classification corresponds to section (c), which covers power generation plants exceeding 3 MW. The Environmental Impact Declaration is available for consultation in digital format on the website www.sea.gob.cl and in physical format at the offices of the Environmental Assessment Service of the Antofagasta Region, located at Avenida República de Croacia 0336, on business days, Monday to Friday, from 9:00 AM to 2:00 PM, in continuous hours, Antofagasta.

If the project generates environmental burdens for nearby communities, a citizen participation process may be initiated, provided that at least two legally recognized civic organizations, through their representatives, or a minimum of ten directly affected individuals submit a written request to the Environmental Assessment Service by June 15, 2018."

Also, the DIA was submitted for comments from the State Administration bodies with environmental competence, which, in accordance with current regulations, participate in the environmental impact assessment process, and a meeting with Human Groups Belonging to Indigenous Peoples (GHPPI for its acronym in Spanish) was held on June 7, 2018 at the *Red de Mujeres del Loa* Community Center, in the city of Calama, during which concerns were raised regarding potential risks associated with the implementation of the instance. These comments and concerns were documented in the meeting minutes, and the Environmental Assessment Service, as the authority responsible for collecting and channeling any questions not addressed during the meeting or submitted in writing by participants, did not report any relevant comments, observations or written inquiries related to the Parque Solar Quetena project. Consequently, these did not lead to any modifications in the instance's structure or planning.

9.1 Summary of comments received

The summary of comments received for the initial instance "Quetena Solar Park" is below.

Quetena Solar Park:

The consultation resulted in observations and questions from some of the State Administration Bodies, mostly clarifications based on the DIA, which the instance implementer considered and addressed through an addendum. After that, a revision of said addendum was made by the State Administration bodies and resulted in new questions and comments, which were again considered and addressed through a complementary addendum.

Although a revision of the public environmental impact record confirms that no relevant comments, observations, opinions or questions were received from individuals or civic organizations in relation to the radio broadcast or Official Gazette publication, a voluntary agreement was settled with the community Likan Tatay, located near the project site, as part of the instance implementer's voluntary social engagement and community involvement efforts, in which the instance implementer commits to installing a surveillance system to improve the safety of the community's communal headquarters.

9.2 Consideration of comments received

Consideration of comments received for the initial instance "Quetena Solar Park" is below.

Quetena Solar Park:

As stated in the previous section, comments received were considered and addressed through an addendum and subsequently by a complementary addendum. The answers satisfactorily resolved the questions as the project was later approved by means of obtaining its corresponding favorable RCA.

The agreement with the community Likan Tatay was fulfilled and was documented through a letter signed by a representative of the community.

10 Sustainable Development Goals (SDGs)

This grouped project aims to contribute to reducing GHG emission by incorporating projects related to the production of non-conventional renewable energy, specifically solar, wind or hydro energies. It also contributes to the sustainable development in Chile through environmental, social, economic and technological benefits, such as the deployment of clean energy sources, creation of local employment opportunities, stimulation of local economies, and technology transfer from both international and urban centers to rural areas. Furthermore, this grouped project aims to facilitate and encourage the development of small-sized grid-connected renewable energy projects in Chile, by helping instance implementers overcome local barriers related to development and financing through inclusion under this grouped project.

Instances under this grouped project will, at a minimum, report contribution to the following SGDs:

- SDG 7 "Affordable and clean energy"
- SDG 8 "Decent Work and Economic Growth "
- SDG 13 "Climate action"

The target and indicator related to each SDG will be identified and reported for each instance using the BCR Tool for Determining the Contributions of GHG Projects to Achieving the Sustainable Development Goals (SDGs).

Furthermore, for the initial instance "Quetena Solar Park", the reported contributions and indicators are presented below.

a. Quetena Solar Park

Contribution to SDG 7 (Target 7.2 - Indicator 7.2.1): "Renewable energy share in the total final energy consumption". This instance contributes by providing verifiable data on the total amount of solar electricity produced and injected into the grid.

Contribution to SDG 8 (Target 8.3 - Indicator 8.2.1): "Annual growth rate of real GDP per employed person.". This instance creates jobs in the construction and operation, promoting economic growth and improving proportion of formal employment.

Contribution to SDG 13 (Target 13.2 - Indicator 13.2.1):"Number of countries that have communicated the establishment or operationalization of an integrated policy/strategy/plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)". While this indicator applies at the national level, the project supports Chile's implementation of its climate strategy and NDC targets by avoiding GHG emissions, as quantified in this document.

11 REDD+ Safeguards (For REDD+ projects)

Not applicable

12 Special categories, related to co-benefits (optional)

The project will not apply to special categories.

13 Grouped projects (if applicable)

This project considers the possibility of inclusion of:

1. Greenfield or capacity addition photovoltaic small-scale projects
2. Greenfield or capacity addition wind small-scale projects
3. Greenfield or capacity addition hydro small-scale projects (without reservoirs)

The BCR standard V4.0 indicates that activities in the energy, transportation and waste sectors may develop grouped projects that shall meet the following requirements:

BCR Standard V4.0 Criteria	**Criteria for the addition of new instances**	**Applicability for first instance (Quetena Solar Park)**
a) Identify during the validation process, the geographical area(s) within which (initial and additional) instances of the project are developed and define the criteria for the addition of new cases.	**Geographical Area:** The geographical area within which every additional instance is developed is the territory of Chile, specifically connected to the SEN or Aysén subsystem. **Criteria for Greenfield instances:** Must have an installed capacity of up to 15 MW and connect to the SEN or Aysén subsystem. This applies to solar, wind, and hydro (without reservoirs) instances. **Criteria for Capacity Addition instances:** The added capacity must be lower than 15 MW, physically distinct from existing units, and connected to the SEN or Aysén subsystem. This applies to solar, wind, and hydro (without reservoirs) instances.	The first instance "Quetena Solar Park" is a greenfield solar photovoltaic project located in the Calama Commune, Antofagasta Region, Chile. It is physically connected to the National Electric System (SEN). The capacity is 9.94MW. This complies with BCR Standard V4.0 Sec. 11.2 regarding project location availability within any country and AMS-I.D V18.0 para. 2(a), as it is a renewable energy generation unit supplying electricity to a national grid.
b) Comply with the guidelines of the BCR Standard, in their most recent version.	All additional instances will comply with the guidelines of the BioCarbon Standard in	The first instance complies with the Principles (Sec. 8) and General Requirements (Sec. 11) of the BioCarbon Standard V4.0.

	force at the time of their inclusion.	Specifically, it aligns with Sec. 11.1.4 for Non-Conventional Renewable Energy (NCRE) activities, Sec. 11.3 for Small-Scale projects, and Sec. 11.7 regarding compliance with national laws and regulations (e.g., Environmental Impact Declaration and Sectoral Permits described in Sec. 4 of this project document).
c) Comply with all the provisions of the BioCarbon methodological documents they apply, in their latest release.	All additional instances will fully comply with the provisions of the methodology AMS-I.D "Grid connected renewable electricity generation" and the applicable Tools (e.g., TOOL07) in their latest valid versions.	The first instance applies the methodology AMS-I.D "Grid connected renewable electricity generation" Version 18.0 and the "Tool to calculate the emission factor for an electricity system" (TOOL07) Version 07.0. This is in full compliance with BCR Standard V4.0 Sec. 10, which mandates the use of approved methodologies (including CDM methodologies for energy sectors) in their entirety.
d) Include emission reductions only for validated project activities.	Emission reductions will be included only for validated project activities.	The first instance includes emission reductions exclusively from the validated solar photovoltaic generation activity $(EG_{PJ,facility,y})$, as defined in AMS-I.D V18.0 para. 26 (Greenfield power plants). This aligns with BCR Standard V4.0 Sec. 11.1.4, covering activities in the Energy Sector (NCRE) that generate energy from solar sources.
e) Implement the GHG emission reduction activities described in the validated project document.	The GHG emission reduction activities described in the validated project document will be implemented.	The first instance implements the construction and operation of a 9.94 MW photovoltaic solar park as described in Sec. 2.3 of the Project Document. This activity displaces grid electricity in accordance with the baseline scenario defined in AMS-I.D V18.0 para. 19 for Greenfield power plants, complying with the environmental integrity principles of BCR Standard V4.0 Sec. 11.

f) Demonstrate that the new instances meet the conditions of applicability described in the methodology applied.	All new instances will demonstrate compliance with the applicability conditions of the methodology AMS-I.D "Grid connected renewable electricity generation". Specifically, they will be renewable energy generation units (Solar, Wind, Hydro) supplying electricity to the grid (SEN or Aysén).	The first instance meets all applicability conditions of AMS-I.D V18.0: 1. It is a renewable energy generation unit (Solar PV) supplying electricity to a national grid (para. 2(a)). 2. It constitutes a Greenfield plant (para. 4(a)). 3. It is not a co-generation system (para. 7). 4. It has an installed capacity of 9.94 MW, complying with the <15 MW limit.
g) Demonstrate that geographic areas (to be included in the project boundaries) in which there are no initial instances are subject to the same baseline scenario conditions and additionality as the areas in which the initial instances are.	The geographic area where new instances could take place is the same as the initial instances, in other words, Chilean territory and the SEN and Aysén subsystem, so any new instances would have the same baseline scenario conditions. Without prejudice to the foregoing, additionality will be evaluated individually for each instance, prior to the decision to add them to the project.	The first instance is located in the SEN. Its baseline is determined by the Grid Emission Factor ($EF_{grid,y}$) of the SEN calculated via TOOL07 V7.0, consistent with BCR Standard V4.0 Sec. 12.2. Additionality was demonstrated using the BCR "Baseline and Additionality Tool", confirming it faces standard market barriers (Investment Analysis) and is not common practice in the Chilean market, as required by BCR Standard V4.0 Sec. 11.6.
h) Provide evidence of the start date activities in the new instances, demonstrating that this date is later than the start date of the GHG emission reduction activities in the cases included in the validation (initial instances).	Project holders will provide evidence that the start date of any new instance is later than 23.09.2021 (the start date of the initial instance).	The start date of the first instance ("Quetena Solar Park") is 23.09.2021 (Start of construction). This date is documented and complies with BCR Standard V4.0 Sec. 11.4 (Project start date) and Sec. 11.4.1 regarding prior consideration and the allowed retroactive period for validation.
i) The baseline scenario shall be determined for each instance, in accordance with the applicable methodology.	The baseline scenario for each new instance will be determined following AMS-I.D and TOOL07, applying the Emission Factor corresponding to the grid	The baseline scenario for the first instance was determined using AMS-I.D V18.0 para. 22 and TOOL07 V7.0 Step 6, calculating the Combined Margin Emission Factor for the SEN using official

	where it is connected (SEN or Aysén subsystem).	data from the CNE/CEN. This adheres to BCR Standard V4.0 Sec. 12.2 requirements for establishing a transparent and conservative baseline.
j) Additionality shall be assessed at the instance level as required by the applicable methodology. Within the eligibility criteria set at the time of registration for the inclusion of new project activity instances, criteria regarding the additionality requirements for inclusion shall be defined.	Additionality for each new instance will be assessed at the instance level prior to inclusion, following the "Baseline and Additionality Tool" and the specific criteria defined in this project document (Investment and/or Barrier Analysis).	Additionality for the first instance was assessed at the instance level using the BCR "Baseline and Additionality Tool", demonstrating it is not the most attractive option (Investment Analysis) and not common practice. This complies with BCR Standard V4.0 Sec. 11.6, which requires demonstrating that project outcomes are additional to legal requirements and business-as-usual scenarios.
k) Confirm that each instance complies with all methodology applied provisions, including the capacity limits set out in the methodologies applicable to the project type.	Each new instance will confirm compliance with the small-scale capacity limit set by the methodology AMS-I.D, which is an installed capacity of up to 15 MW .	The first instance has an installed capacity of 9.94 MW, which is below the 15 MW eligibility limit established by AMS-I.D V18.0 para. 6 for Small-Scale projects. This confirms compliance with BCR Standard V4.0 Sec. 11.3 (Project scale) regarding non-AFOLU small-scale thresholds.

Table 24: Grouped project requirement

14 Other GHG program

No instance under this grouped project has been registered, submitted for registration, or certified under any other GHG program (e.g., CDM, Verra, Gold Standard, Cercarbono). Furthermore, no instance has sought or received environmental crediting certifications from other standards.

To ensure alignment with the BCR Standard V4.0, the following has been verified for all project instances:

- No Dual Registration: No instance is currently (or has been previously) registered in another GHG program, eliminating the need for cancellation.
- Exclusive Claim to GHG Reductions: All projected GHG reductions/removals are solely attributed to this initiative and are not counted toward any other program or project.
- Legal and BCR Alignment: All instances comply with Chile's national legal framework and the BCR Standard Operating Procedures.

Additionally, no instance has been rejected by or withdrawn from another GHG program.

15 Double counting avoidance

As provided by the BCR Tool "Avoiding Double Counting (ADC)" in its latest version, there are scenarios in which double counting could happen:

1) Double issuance of VCC
2) Double use of VCC
3) Double claiming
4) Duplicate certification or serialization
5) Improper attribution for financial or benefit purposes

The project holder ensures that none of the above will be met at any point during the project life cycle by complying with the provisions of the BCR Standard V4.0, for example, a fraction of the VCCs (10%) will be contributed to the general reserve account.

BCR standard is the only GHG program that this project and its instances have applied to.

- Quetena Solar Park

EnergyLab manages the registered CDM PoA 9411. While this PoA and the current BioCarbon grouped project share a similar scope (small-scale renewable energy) and technical applicability, this specific project instance is exclusively assigned to the BioCarbon Standard.

To ensure no double counting, the following exclusionary control is enforced:

- Registry Cross-Check: The instance's unique geographic coordinates are cross-referenced with the list of Component Project Activities (CPAs) registered under CDM PoA 9411.

- Exclusivity Declaration: The Project Holder explicitly declares that this instance is not, and will not be, included in the CDM PoA 9411 or any other GHG program. The emission reductions generated by this asset are claimed solely under the BioCarbon Standard.

16 Monitoring plan

16.1 Description of the monitoring plan

The monitoring plan will be carried out according to the methodology and separately for each instance under this project. Each instance implementer has overall responsibility for monitoring and reporting to the project holder of all parameters at the instance site.

As stated in the methodology, the variables to be monitored are the grid emission factor and the net quantity of electricity generation supplied by each instance to the grid. For the monitoring of the emission factor, it is stated in section 3.7.3 that this factor is calculated ex-ante using the provisions in TOOL07 and fixed for the entire period, so in this case no monitoring is needed.

In relation to the net electricity supplied to the grid, monitoring procedures, data management, equipment calibration and maintenance schedules comply with the relevant national standards.

To secure accurate and timely collection of all the relevant data for an instance under this project, the electricity supplied by the instance to the grid will be measured by an electricity meter that complies with the national standards. The parameters will be monitored at the electricity delivery point or another point defined by the grid operator. The net electricity generation monitoring data is archived electronically and kept for at least 10 years after the end of the corresponding quantification period.

The equipment used at all instances is calibrated and maintained in accordance with the Chilean Technical Norm of Security and Service Quality (NTSyCS), which is the most relevant regulation in terms of operational safety, service quality, and the technical

standards that generation, transmission, and distribution facilities must comply with when connected to the grid.

Calibration information and monitoring data sources hierarchy for calculation is described in section 3.5 Uncertainty Management.

Uncertainty, error propagation and adjustments on GHG reductions are calculated following the provisions of the BCR Tool "Conservative Approach and Uncertainty Management".

If any activity of any instance generates emissions due to consumption of fossil fuels, data/parameters to be monitored will follow the procedures, frequency and QA/QC procedures described in TOOL03.

Specific procedure for Capacity Addition instances:

In cases involving capacity additions where the installation of a dedicated revenue-grade meter for the new units is implemented, the monitoring will rely on the certified global billing meter that measures the total net electricity supplied to the grid by the entire facility (existing plus new capacity). To determine the specific generation attributable to the added capacity $(EG_{PJ,add,y})$, a proration method will be applied.

This method uses data from internal operational meters (e.g., inverters, power conversion equipment, or SCADA systems) which can differentiate between the generation of the existing units and the new units. A conservative proportionality factor is calculated based on these internal readings, accounting for the associated measurement uncertainty. This factor is then applied to the total net generation recorded by the global billing meter to accurately allocate the share of electricity generated by the project activity, ensuring compliance with the conservativeness principle of the methodology.

Roles, responsibilities and procedures

The Project Holder is Natural Assets SpA, which is responsible for developing and promoting the grouped project in Chile. In this role, the entity collaborates with project developers or owners to incorporate their projects into the grouped project, thereby supporting them in overcoming local barriers related to project development and financing, while simultaneously fostering the adoption of renewable energy generation across Chile.

EnergyLab appoints a general program coordinator and a technical team responsible for planning, supervising, and coordinating activities, ensuring technical consistency and alignment with the criteria set forth in the program document and the standard, as well as carrying out operational execution, information gathering, and report preparation.

Each instance appoints a Project Coordinator and a team responsible for the technical and administrative management of the project, including the implementation of activities, the monitoring of indicators, and communication with the central program. In addition, they provide technical inputs and ensure the traceability of information, contributing to the transparent and verifiable integration of the project results into the program.

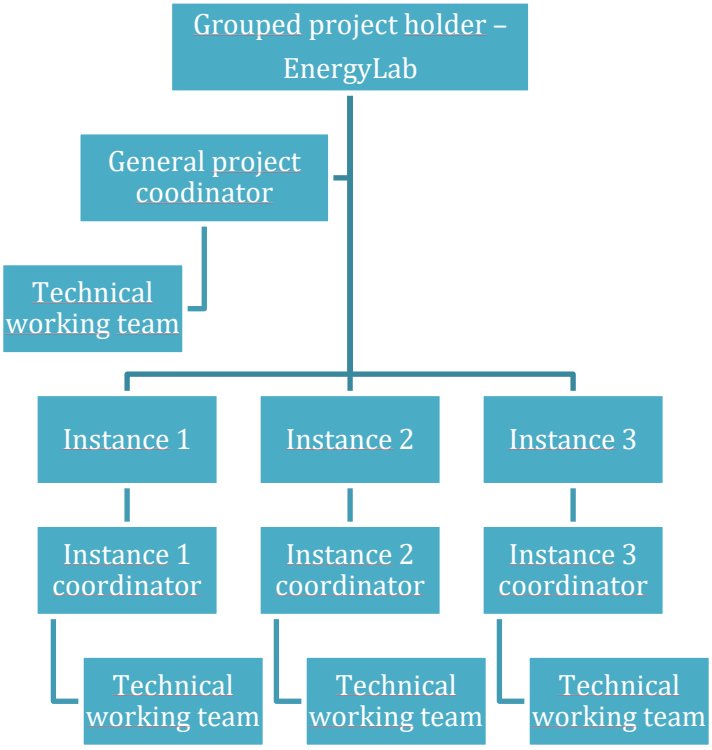

Figure 12: Participants and roles

Documents, databases, and other information will be provided by the designated coordinator and technical team for each instance. EnergyLab, will review the material and prepare the reports and documentation required for validation and verification. When

possible, it will cross-check this information against public sources as quality control and assurance to guarantee the reliability of the data.

The project meets all requirements established in the BCR Tool. Monitoring, Reporting and Verification (MRV) Version 2.0, ensuring that the monitoring structure, data flows, and control procedures follow the methodological standards defined in the tool. Ongoing follow-up will be carried out using the most current version of the BCR Tool, maintaining alignment with any updates to its criteria, parameters, or reporting expectations.

For GHG reductions calculation the following step will be followed:

- Energy generation data will be monitored following Chilean laws and regulatory obligations, that establish monitoring frequency and data storage procedures.
- Yearly data will be collected by each instance from official sources by each instance. A prioritization of data sources has been structured, and the basis for the calculation shall follow this hierarchy, applying each subsequent level only if the preceding one is not available.
    - For greenfield projects, the following data will be used:
        - Primary: Data stored by the operator or by an authorized entity, in full compliance with Chilean regulations.
        - Secondary: Invoice reports emitted by the authorized entity or business, to be used only when primary data source is not available.
        - Tertiary: Information on monitoring extracted directly from the grid coordinating entity, to be used exceptionally only when neither primary nor secondary data sources are available, since generation monitoring is reported directly to it.
    - For instances with capacity addition, the following data will be used:
        - Primary: Data stored by the operator or by an authorized entity, in full compliance with Chilean regulations.
        - Secondary: Information on monitoring extracted directly from the grid coordinating entity, to be used only when primary data source is not available.
- The information is reviewed by EnergyLab as the Project Holder and crosschecked against invoice reports (secondary information source) or public report from grid coordinating entity (tertiary information source) when available.
- In the event of discrepancies, the lowest measurement is applied to maintain conservative criteria.

- EnergyLab then calculates the GHG reductions following the methodology described in the project document.

All information used for monitoring and reporting is supported by Chilean legislation and regulatory obligations applicable to the project owner and operator. In addition, EnergyLab applies its internal Document Management Protocol, which organizes and regulates the handling, storage, and traceability of project data and documents.

The project establishes a clear process to detect and manage any deviations from the monitoring plan or the expected performance of mitigation activities. Monitoring data are regularly reviewed against the plan to identify inconsistencies or anomalies. If a deviation is detected, a corrective action is triggered, which includes:

1. Documenting the deviation and its potential impact;
2. Assessing the root cause and determining the necessary corrective measures;
3. Recording the resolution and updating the monitoring records to maintain traceability.

This process ensures that all potential deviations are managed proactively, maintaining the integrity of the monitoring plan and the reliability of the emission reductions reported by the project.

Environment and stakeholder impact assessment

EnergyLab, as the project holder, reviews the environmental and stakeholder related information for each new project to verify compliance with Chilean regulations. This review includes checking the documents submitted to the Environmental Impact Assessment System, either an Environmental Impact Study (EIA) or a Declaration of Environmental Impact (DIA). It also confirms that the project has the required Environmental Sectorial Permits (PAS) and a favorable Environmental Qualification Resolution (RCA), which together certifies regulatory and environmental compliance.

For smaller projects under 3 MW, compliance is confirmed through a Letter of Pertinence approved by the competent authority.

Each facility included in this grouped project presents distinct characteristics, which means that the monitoring variables will depend on the assessment conducted at the time of its inclusion. Upon incorporating a new facility, the corresponding monitoring variables

will be defined and formally reported, ensuring full compliance with the most up-to-date versions of the BioCarbon Standard criteria and the BCR Sustainability Development Safeguards (SDSs) tool.

Currently, no instances under this grouped project involve Local Communities (LCs) or Indigenous Peoples (IPs) as relevant stakeholders. If, in the future, an instance is developed in territories belonging to or involving LCs or IPs, these groups will be engaged as part of the project's implementation process. All communications and interactions with them will be properly documented and reported in the corresponding monitoring reports.

SDGs assessment and parameters

As outlined in Chapter 10 on Sustainable Development Goals (SDGs), the project contributes to the following goals:

- SDG 7 "Affordable and clean energy" (Target 7.2 - Indicator 7.2.1)
- SDG 8 "Decent Work and Economic Growth" (Target 8.3 - Indicator 8.3.1)
- SDG 13 "Climate action" (Target 13.2 - Indicator 13.2.1)

All renewable energy projects included under this initiative meet the criteria for contributing to SDGs 7 and 13, as they generate clean energy and displace fossil-fuel based sources that produce GHG emissions. For SDG 8, 'Decent Work and Economic Growth,' the condition is that the project must create employment opportunities during the construction and/or operational phases. This is monitored through the following indicator.

Co-benefits monitoring

The project will not apply to special categories.

16.2 Data and parameters determined at registration and not monitored during the quantification period, including default values and factors:

Data / Parameter	$EF_{grid,CM,y}$
Data unit	*tCO2/MWh*

<table>
<tr><td>Description</td><td>Combined margin emission factor for grid connected power generation in year y for the SEN and Aysén subsystem.</td></tr>
<tr><td>Source of data used</td><td>Calculated by the project participant using data of 2022, 2023 and from the following official sources:
National Electric System (SEN):
• Fuel Consumption: "Consumo de combustibles SEN", Comisión Nacional de Energía (CNE).[19]
• List of Power Plants: "Listado de centrales generadoras", Coordinador Eléctrico Nacional.[20]
URL:
• Hourly Generation: "Generación Horaria por central", Coordinador Eléctrico Nacional.[21]

Aysén Subsystem:
• Fuel Consumption: "Consumo de combustibles SSMM", Comisión Nacional de Energía (CNE).[22]
• List of Power Plants: "Capacidad instalada de generación", Comisión Nacional de Energía (CNE).[23]
• Generation: "Generación bruta SSMM" Comisión Nacional de Energía (CNE).[24]</td></tr>
<tr><td>Value (s)</td><td>
<table>
<tr><td>Technology</td><td>$EF_{SEN,CM,y}$</td></tr>
<tr><td>Solar and wind</td><td>0.5103</td></tr>
<tr><td>Hydro</td><td>0. 3404</td></tr>
</table>
<table>
<tr><td>Technology</td><td>$EF_{Aysen,CM,y}$</td></tr>
<tr><td>Solar and wind</td><td>0.2894</td></tr>
</table>
</td></tr>
</table>

[19] *https://www.cne.cl/normativas/electrica/consulta-publica/electricidad/*
[20] *https://infotecnica.coordinador.cl/instalaciones/centrales*
[21] *https://www.coordinador.cl/reportes-y-estadisticas/*
[22] *https://www.cne.cl/normativas/electrica/consulta-publica/electricidad/*
[23] *https://www.cne.cl/normativas/electrica/consulta-publica/electricidad/*
[24] *http://energiaabierta.cl/?lang=&s=aysen&t=datasets-estadistica*

	Hydro	*0.2983*
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	*Calculation of the baseline emission reductions.*	
Justification of choice of data or description of measurement methods and procedures applied	*As per procedures of TOOL07*	
Additional comments	*Fixed value during the 1st crediting period and updated for the next crediting periods.*	

Table 25: Combined margin emission factor

Data / Parameter	$EG_{m,y}$
Data unit	*MWh*
Description	*Net quantity of electricity generated and delivered to the grid by power unit m in year y. For the first instance the years included are 2022, 2023 and 2024.*
Source of data used	*From operational statistics and yearbooks of the electricity/energy sector, and/or from official records from the regulator.* *SEN:* *Official database from the Coordinador Eléctrico Nacional (CEN) - the Independent System Operator. Specific Report: "Generación Real del Sistema" / "Generación Horaria por Central" (Hourly Generation by Plant).*[25] *Aysén Subsystem:*

[25] *https://www.coordinador.cl/reportes-y-estadisticas/*

	Generation: "Generación bruta SSMM" Comisión Nacional de Energía (CNE).[26]
Value (s)	*Provided in the monitoring report.*
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	*Calculation of the baseline grid emission factor.*
Justification of choice of data or description of measurement methods and procedures applied	*Official data provided by the dispatch center and/or the regulator for all plants connected to the grid.*
Additional comments	*The information is stored for 10 years from the end of the quantification period as per the MRV Tool .*

Table 26 Net quantity of electricity generated

Data / Parameter	$FC_{i,m,y}$
Data unit	*Mass or volume unit*
Description	*Amount of fuel type i consumed by power plant/unit m in year y*
Source of data used	*Official data provided by the Comisión Nacional de Energía (CNE) through its regulatory platform:* *1. For the National Electric System (SEN) and Medium Systems (SSMM):* ● *Report: "Cuadros de consumo de combustibles" (Fuel Consumption Tables). Section: Normativa Eléctrica / Fijación de Precios de Nudo.*[27] *2. Cross check with invoices or public information when available.*

[26] *http://energiaabierta.cl/?lang=&s=aysen&t=datasets-estadistica*
[27] https://www.cne.cl/normativas/electrica/consulta-publica/electricidad/

Value (s)	*Provided in the monitoring report.*
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	*Calculation of the baseline grid emission factor.*
Justification of choice of data or description of measurement methods and procedures applied	*Official data provided by the regulator for all plants connected to the grid.*
Additional comments	*The information is stored for 10 years from the end of the quantification period as per the MRV Tool*

Table 27: Fuel consumption

Data / Parameter	$NCV_{i,y}$
Data unit	GJ/m^3 *or* GJ/ton
Description	*Net calorific value (energy content) of fossil fuel type i in year y.*
Source of data used	*From operational statistics and yearbooks of the electricity/energy sector and from official records from the regulator.* *Primary Source:* • *National Energy Balance 2023 (BNE 2023), published by the Ministry of Energy.*[28] *Secondary Sources (for conversion factors):* • *2006 IPCC Guidelines for National Greenhouse Gas Inventories, Vol. 2, Chapter 1.*[29] *URL:* • *GHG Protocol Guidance for the Pulp and Paper Sector (WRI).*[30]

[28] *http://energiaabierta.cl/categorias-estadistica/balance-energetico/*
[29] *https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf*
[30] *https://ghgprotocol.org/sites/default/files/2023-03/Pulp_and_Paper_Guidance.pdf*

Value (s)	*Data provided by the regulator is gross value. Therefore, values will be amended as per 2006 IPCC Guidelines for National Greenhouse Inventories vol 2 p.1.16.* *Biogas = 0.021* *Biomass = 13.397* *Coal = 27.824* *Natural Gas = 0.035* *LPG = 45.564* *NGL = 0.036* *Petroleum Coke = 32.196* *Diesel = 43.325* *Fuel Oil = 41.735*
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	*Calculation of the baseline grid emission factor.*
Justification of choice of data or description of measurement methods and procedures applied	*Gross Calorific Values (GCV) are extracted directly from the most recent National Energy Balance (BNE 2023). Since national data is reported in Gross values (kCal/kg or kCal/m³), a conversion to Net Calorific Values (NCV) is applied using the following criteria:* *1. Fossil Fuels (Coal, Diesel, Fuel Oil, Petcoke, Natural Gas):* *Values are converted to NCV following the 2006 IPCC Guidelines (Vol 2, Ch 1, p. 1.19), which imply reducing GCV by 5% for solid and liquid fuels and by 10% for Natural Gas.* *2. Biogas:* *As the IPCC Guidelines do not specify a GCV-to-NCV conversion factor for Biogas, it is assumed to follow the same behavior as other gaseous fuels (approximating the value used for the rest of gases).* *3. Biomass:*

	The conversion from GCV to NCV is calculated based on the methodology provided in the "Calculation Tools for Estimating Greenhouse Gas Emissions from Pulp and Paper Mills" (GHG Protocol, WRI), specifically detailed on pages 8 and 9. *Final values are adjusted to standard units (GJ/ton or GJ/m³) using the conversion factor: 1 kCal = 4.184 kJ.*
Additional comments	*The information is stored for 10 years from the end of the quantification period as per the MRV Tool*

Table 28: Net calorific value of fossil

Data / Parameter	$EF_{CO2,i,y}$
Data unit	*tCO2/GJ*
Description	*CO2 emission factor of fossil fuel type i in year y.*
Source of data used	*2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2 (Energy), Chapter 1 (Introduction), Table 1.4 "Default CO2 Emission Factors for Combustion".*[31]
Value (s)	*Fuel Oil = 0.0755* *Diesel = 0.0726* *Coal* = 0.0895* *Petcoke = 0.0829* *Natural Gas = 0.0543* *LNG = 0.0583* ** The type of coal according to table 1.4 of Chapter 1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories is " Other B ituminous Coal"*
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	*Calculation of the baseline grid emission factor.*

[31] *https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf*

Justification of choice of data or description of measurement methods and procedures applied	*Values from the fuel supplier of the power plants (in invoices) are not available for the project participant. There are no regional or national average default values in the energy statistics/energy balance.* *Justification for Coal Type Selection:* *- The steps used to calculate the EF OM have been included in the PD, and only Option A1 has been applied, with Options A2 and A3 excluded as required.* *- The results of the OM and BM have been stated and corrected in the PDD.* *- The coal type selected is "Other Bituminous Coal", justified by national and international technical evidence. Specific values from fuel suppliers are not available to the project participant, and no national CO_2 emission factors exist in the national energy balance. Therefore, IPCC default values (lower limit of the 95% confidence interval) are applied as a conservative approach. Furthermore, the official document Resolución Exenta N° 69 – Informe de Costos de Tecnologías de Generación (CNE, 2017) explicitly defines the standard fuel for coal-fired power plants in the National Electric System as "Bituminous Coal."* *- Based on this, the FE for the SEN has been adjusted accordingly. An Excel file in English has been attached, integrating all calculations and supporting evidence for OM, BM, and CM, including this adjustment. For Other Fuels (Diesel, Fuel Oil, Natural Gas, etc.): The emission factors are selected directly from the corresponding categories in Table 1.4 of the 2006 IPCC Guidelines.*
Additional comments	*The information is stored for 10 years from the end of the quantification period as per the MRV Tool*

Table 29: CO2 emission factor of fossil fuel

16.3 Data and parameters monitored

Estimation of GHG emission removals or reductions

Based on AMS-I.D, the following data and parameters will be monitored during the instance crediting period.

Data / Parameter	$EG_{PJ,facility,y}$ *(for capacity additions the parameter is called* $EG_{PJ,add,y}$*)*
Data unit	*MWh/y*
Description	*Quantity of net electricity supplied to the grid in year y.*
Measured /Calculated /Default:	*Measured*
Source of data	*Measured by electricity meter(s) at the electricity delivery point or other defined by the grid operator (e.g. project site).*
Value(s) applied	*Provided in the monitoring report.* *For the initial instance Quetena Solar Park the following values have been obtained:* *Total 2021 = 4,883.9* *Total 2022 = 26,607.3* *Total 2023 = 25,795.4* *Total 2024 = 26,584.5*
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	*Calculation of baseline emissions. This parameter will be also used as an indicator of SDG 7 and SDG 13.*
Monitoring frequency	*Continuous monitoring.*
Measuring/ Reading/ Recording frequency	*Continuous following technical norms.*

Measurement/Calculation method (if applicable)	*The net electricity will be measured continuously using energy meters, which measure the net energy generated by the instance and consumed/injected by its storage systems (where applicable), and will be electronically recorded, consolidated and aggregated on a monthly basis.* *Specifically for the initial instance, the electricity meter installed corresponds to the Schneider Electric ION7400 model, featuring an accuracy class of 0.2S in accordance with the IEC 62053-22 international standard.* *Monitoring frequency, and accuracy/precision provisions comply with the applicable regulation and/or relevant industry standards. The measurements will be cross-checked with records of the electricity sold for* $EG_{PJ,add,y}$ if applicable. *Calibration and failure procedure provisions for metering equipment comply with the applicable regulation and/or relevant industry standards.* *Additional technical specifications for the electricity meters can be found in* **section 2.3**. *The above in compliance with section 6.1, table 2. of the methodology AMS-I.D and paragraph 102 of the TOOL07.*
QA/QC procedures applied	*According to the TOOL07, paragraph 102(c): "All measurements should be conducted with calibrated measurement equipment according to relevant industry standards."* *The equipment used at all instances is calibrated and maintained in accordance with the Chilean Technical Norm of Security and Service Quality (NTSyCS) in accordance with the following minimum frequency:* [32]

Meter Age	Verification Period
≤ 7 years	7 years
> 7 years and ≤ 10 years	5 years
> 10 years	3 years

[32] https://www.cne.cl/wp-content/uploads/2015/06/Anexo-NT-Sistemas-de-Medidas-para-Transferencias-Econ%C3%B3micas.pdf

	The information is stored for 10 years from the end of the quantification period as per the MRV Tool

Table 30: Quantity of net electricity supplied

SDGs parameters

Data / Parameter	*SDG 8: Employment records/contracts*
Data unit	*N/A*
Description	*Employment in the construction and/or operation of projects.*
Measured /Calculated /Default:	*N/A*
Source of data	*Employment records or contracts from owner or operator of projects.*
Value(s) applied	*N/A*
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	*This indicator is not used for baseline/project/leakage emission calculations. The project creates jobs in the renewable energy sector; therefore, this parameter will be used as an indicator of SDG 8*
Monitoring frequency	*Periodically.*
Measuring/ Reading/ Recording frequency	*N/A*

Measurement/Calculation method (if applicable)	*N/A.*
QA/QC procedures applied	*Review of employment records or contracts from the project*

Table 31: Employment records

Sustainable Development Safeguards monitoring

AS indicated in 16.1, each instance will be analyzed separately. For the first instance, Quetena Solar Park, the analysis conducted using the BCR Sustainability Development Safeguards (SDSs) tool is provided in the Annexes. Based on that assessment, the following variables have been identified for monitoring.

Data / Parameter	*Hazard Identification, Risk Assessment, and Control Determination Matrix.*
Data unit	*N/A*
Description	*Decree Supreme No. 44*[33] *requires employers to prepare a Hazard Identification, Risk Assessment, and Control Determination Matrix for the identification of hazards and the evaluation of associated risks.*
Measured /Calculated /Default:	*N/A*
Source of data	*Document from owner or operator of projects.*
Value(s) applied	*N/A*
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	*This indicator is not used for baseline, project, or leakage emission calculations. It is applied to monitor compliance with legal requirements and workplace policies designed to prevent unsafe working conditions that could expose project stakeholders to potential hazards or accidents.*
Monitoring frequency	*Periodically.*

[33] https://www.bcn.cl/leychile/navegar?idNorma=1205298

Measuring/ Reading/ Recording frequency	*N/A*
Measurement/Calculation method (if applicable)	*N/A.*
QA/QC procedures applied	*Review of the updated matrix and verification of compliance with the operator's obligations under the Chilean laws and decrees.*

Table 32: Hazard Identification, Risk Assessment, and Control Determination Matrix.

Co-benefits monitoring

The project will not apply to special categories.

- **Appendix 1. Post-registration changes summary.**

No changes have been made to the original document

- **Appendix 2. Sustainable Development Safeguards (SDSs) assessment questionnaire**

Land use: Resource Efficiency and Pollution Prevention and Management

- In accordance with the aspects and requirements highlighted in section 6.1, project/initiative holders shall, in their question assessment, consider risks and potential impacts related to resource efficiency and pollution prevention and management.
  The following table shows the minimum aspects that must be addressed as a result of the assessment.

Could the project/initiative activities potentially entail or result in:	**Response**	**Mitigation and/or preventive actions**
Land degradation or soil erosion, leading to the loss of productive land?	☐Yes ☐Potentially X No	The area where the instance is located is unused and highly altered with a complete absence of vegetation. Justification provided in DIA Box No. 3.8.2
Contaminating soils and aquifers with pollutants, chemicals, or hazardous materials?	☐Yes ☐Potentially X No	The instance disposes of its hazardous materials and chemicals by the means of authorized third parties. Justification provided in DIA Box No. 3.8.1
Air and water pollution resulting from project-related emissions, discharges, or improper waste disposal practices?	☐Yes ☐Potentially X No	No significant air pollution is generated, with its peak during construction phase. Water effluents are generated during the implementation due to usage of chemical bathrooms but are disposed by authorized third parties. Justification provided in DIA Box No. 3.8.1

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
Detrimental excess of nutrients caused by the use of fertilizers and/or pesticides?	☐Yes ☐Potentially X No	The instance does not consider use of fertilizers or pesticides.
Inadequate waste management practices, leading to the improper disposal of project-related waste and potential environmental harm?	☐Yes ☐Potentially X No	The instance disposes of its hazardous materials, chemicals and effluents by the means of authorized third parties. Justification provided in DIA Box No. 3.8.1
Inefficient resource use, including energy, water, and raw materials, leading to increased environmental footprint?	☐Yes ☐Potentially X No	The instance does not exploit or extract natural resources. Justification provided in DIA Section 3.3
Losing productive agricultural land to urban expansion, impacting local food production, rural livelihoods, and overall food security?	☐Yes ☐Potentially X No	The area where the instance is located is unused and highly altered with a complete absence of vegetation. Justification provided in DIA Box No. 3.8.2
Urbanization, leading to the urban heat island effect, impacting local climates and potentially contributing to higher energy consumption for cooling?	☐Yes ☐Potentially X No	The instance does not generate long-term emissions that could affect the climate behavior of the area. Justification provided in DIA Box No. 3.1.1
Disrupting natural drainage systems, leading to increased vulnerability to floods, soil erosion, or other hydrological issues?	☐Yes ☐Potentially X No	The instance disposes of its hazardous materials, chemicals and effluents by the means of authorized third parties. Justification provided in DIA Box No. 3.8.1
Inadequate recycling and reuse of project-related resources,	☐Yes ☐Potentially X No	The instance relates to the environmental policy of the Antofagasta Region, specifically to the objectives of Restoring and improving

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
leading to unnecessary waste and environmental impact?		environmental quality and preventing environmental degradation. Justification provided in DIA Box No. 1.2.4
Deforestation or degradation of forested areas impacting carbon sequestration, biodiversity, and ecosystem services?	☐Yes ☐Potentially X No	The area where the instance is located is unused and highly altered with a complete absence of vegetation. Justification provided in DIA Box No. 3.8.2
Changes in agricultural practices, such as intensive monoculture, leading to soil degradation, loss of biodiversity, and increased vulnerability to pests?	☐Yes ☐Potentially X No	The area where the instance is located is unused and highly altered with a complete absence of vegetation. Justification provided in DIA Box No. 3.8.2
Urbanization or infrastructure development leading to changes in land use patterns and potential habitat fragmentation?	☐Yes ☐Potentially X No	While the instance involved infrastructure development changing the local land use, the risk of habitat fragmentation was actively managed and successfully mitigated prior to construction. Following the identification of 8 terrestrial vertebrate species (including *Microlophus theresioides*) in the baseline studies, the project implemented a Controlled Disturbance Plan to prevent isolation and mortality. This plan included habitat enrichment measures (construction of artificial rock shelters) in an adjacent sector to ensure ecological connectivity. As a result, this measure effectively relocated the resident fauna, ensuring the solar park site remained free of wildlife presence, while simultaneously demonstrating continued reproductive

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
		activity within the habitat enrichment areas. Justification provided in the Controlled Disturbance Report

Water

- The table below outlines the essential criteria that shall be addressed (not exclusively) as an outcome of the assessment in line with the aspects described in section 6.2.

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
Exacerbating water scarcity or depleting water resources?	☐Yes ☐Potentially X No	The instance does not consider extraction of water nor discharge of any kind of substance into natural or artificial water courses. Justification provided in DIA Box No. 3.8.2
Water pollution, including contamination of rivers, lakes, oceans, or aquifers as a result of project-related activities such as emissions, spills, or waste disposal?	☐Yes ☐Potentially X No	The instance does not consider extraction of water nor discharge of any kind of substance into natural or artificial water courses. Justification provided in DIA Box No. 3.8.2

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
Disrupting aquatic ecosystems, including marine life, river ecosystems, or wetlands, due to changes in water quality, temperature, or flow patterns?	☐Yes ☐Potentially X No	The instance does not consider extraction of water nor discharge of any kind of substance into natural or artificial water courses. Justification provided in DIA Box No. 3.8.2
Altering coastal dynamics, including erosion, sedimentation, or changes in sea levels?	☐Yes ☐Potentially X No	The instance is not located near the sea. Justification provided in DIA section 2.3.1
Displacing or negatively impacting wetland habitats, affecting the unique biodiversity and ecosystem services provided by wetlands?	☐Yes ☐Potentially X No	The instance is in a desertic area with class VIII soil, that means the soil does not possess agricultural, livestock or forestry value. Justification provided in DIA section 2.5.6
Altering river flow patterns, potentially leading to downstream impacts on water availability, sediment transport, and ecosystems?	☐Yes ☐Potentially X No	The location of the instance does not contain superficial water courses. Also, it does not intervene with sub superficial water. Justification provided in DIA Box No. 3.8.2
Depleting aquifers and groundwater resources as a result of the project's activities, impacting local water supplies and ecosystem sustainability?	☐Yes ☐Potentially X No	The location of the instance does not contain superficial water courses. Also, it does not intervene with sub superficial water. Justification provided in DIA Box No. 3.8.2

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
Mountainous terrains, including changes in snowmelt patterns, glacier dynamics, or alterations in water runoff?	☐Yes ☐Potentially X No	The location of the instance possesses flat topography. Justification provided in DIA Box No. 3.8.2
Disrupting lake ecosystems, including changes in water quality, nutrient levels, or habitat disturbance?	☐Yes ☐Potentially X No	The location of the instance does not contain superficial water courses. Also, it does not intervene with sub superficial water. Justification provided in DIA Box No. 3.8.2
Contributing to ocean acidification, with potential consequences for marine life and coral reef ecosystems?	☐Yes ☐Potentially X No	The instance is not located near the sea. Justification provided in DIA section 2.3.1

Biodiversity and ecosystems

- The table below outlines the minimum risks and related impacts described in section 6.3. Projects and initiatives shall consider their own local context and

activities when conducting the Sustainable Development Safeguards assessment.

Could the project/initiative activities potentially entail or result in:	**Response**	**Mitigation and/or preventive actions**
Habitat destruction or fragmentation, impacting biodiversity by reducing available habitats for various species?	☐Yes ☐Potentially X No	While the instance involved infrastructure development changing the local land use, the risk of habitat fragmentation was actively managed and successfully mitigated prior to construction. Following the identification of 8 terrestrial vertebrate species (including *Microlophus theresioides*) in the baseline studies, the project implemented a Controlled Disturbance Plan to prevent isolation and mortality. This plan included habitat enrichment measures (construction of artificial rock shelters) in an adjacent sector to ensure ecological connectivity. As a result, this measure effectively relocated the resident fauna, ensuring the solar park site remained free of wildlife presence, while simultaneously demonstrating continued reproductive activity within the habitat enrichment areas. Justification provided in the Controlled Disturbance Report
Introducing invasive species, which could negatively affect native flora and fauna and disrupt local ecosystems? *	☐Yes ☐Potentially X No	The instance does not introduce invasive species. Justification provided in DIA Box No. 3.8.2

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
Altering ecosystem dynamics, including changes in species composition, trophic interactions, or nutrient cycles on the environment?	☐Yes ☐Potentially X No	The instance does not generate a capacity loss related to its ability to support biodiversity due to degradation, erosion, impermeabilization, compaction, or the presence of contaminants. Justification provided in DIA Box No. 3.8.2
Disrupting migration patterns for wildlife species, such as birds, mammals, or aquatic organisms?	☐Yes ☐Potentially X No	Within this instance's area of influence, there is no surface with plants, algae, fungi, wildlife, or, in general, biota that could be affected by the construction and operation of it. Justification provided in DIA Box No. 3.8.2
Chemical contamination or pollution negatively impacting biodiversity in soil, water, or air?	☐Yes ☐Potentially X No	The instance disposes of its hazardous materials, chemicals and effluents by the means of authorized third parties. Justification provided in DIA Box No. 3.8.1
Overexploiting natural resources, such as timber, water, or other materials, leading to declines in biodiversity and ecological balance?	☐Yes ☐Potentially X No	The instance does not exploit or extract natural resources. Justification provided in DIA Section 3.3
Overharvesting species at rates faster than they can actually sustain themselves in the wild?	☐Yes ☐Potentially X No	The instance does not consider hunting or harvesting.

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
Climate change-induced impacts on biodiversity, including shifts in species distributions, changes in phenology, or increased vulnerability to extreme weather events?	☐Yes ☐Potentially X No	The instance does not generate long-term emissions that could affect the climate behavior of the area. Justification provided in DIA Box No. 3.1.1
Negatively impacting endangered or threatened species within the project area, either directly or indirectly through habitat changes or other disturbances?	☐Yes ☐Potentially X No	There is no presence of endangered species in the instance area of influence. Justification provided in DIA Box No. 3.8.2
Reducing genetic diversity within populations, potentially leading to decreased resilience and adaptability of species in the face of environmental changes?	☐Yes ☐Potentially X No	The instance does not generate a capacity loss related to its ability to support biodiversity due to degradation, erosion, impermeabilization, compaction, or the presence of contaminants. Justification provided in DIA Box No. 3.8.2
Inadequate monitoring and assessment of biodiversity within the project area, making it Challenging to identify and address changes over time?	☐Yes ☐Potentially X No	There is the possibility to perform sampling campaigns in the area like the one performed before the construction of the instance. Justification provided in DIA Box No. 3.8.2
Pressure on vulnerable ecosystems?	☐Yes ☐Potentially X No	The area where the instance is located does not belong to any priority site for biodiversity conservation. Justification provided in DIA Box No. 3.8.2

Climate Change

- The table below outlines the minimum risks and climate-related impacts. Projects and initiatives are called to reflect in their SDSs assessment the technical inputs described in section 6.4 and assess at least the following questions.

Could the project/initiative activities potentially entail or result in:	**Response**	**Mitigation and/or preventive actions**
increasing greenhouse gas emissions?	☐Yes ☐Potentially ☐No X N/A	
changes in habitat suitability for species due to climate change impacts, leading to shifts in species distributions or loss of critical habitat?	☐Yes ☐Potentially X No	Within this instance's area of influence, there is no surface with plants, algae, fungi, wildlife, or, in general, biota that could be affected by the construction and operation of it. Justification provided in DIA Box No. 3.8.2
disrupt ecosystem services provided by biodiversity, such as pollination, water purification, and carbon sequestration, affecting overall ecosystem functioning?	☐Yes ☐Potentially X No	Within this instance's area of influence, there is no surface with plants, algae, fungi, wildlife, or, in general, biota that could be affected by the construction and operation of it. Justification provided in DIA Box No. 3.8.2
the spread of invasive species, leading to competition with native species and alteration of ecosystem dynamics?	☐Yes ☐Potentially X No	The instance does not introduce invasive species. Justification provided in DIA Box No. 3.8.2

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
increased frequency or intensity of extreme weather events, such as storms, droughts, or floods, which can damage habitats and threaten species survival?	☐Yes ☐Potentially X No	The instance does not generate long-term emissions that could affect the climate behavior of the area. Justification provided in DIA Box No. 3.1.1
alteration of the phenology and behavior of species, affecting reproductive cycles, migration patterns, and interactions with other species, disrupting ecosystem dynamics?	☐Yes ☐Potentially X No	Within this instance's area of influence, there is no surface with plants, algae, fungi, wildlife, or, in general, biota that could be affected by the construction and operation of it. Justification provided in DIA Box No. 3.8.2
reducing genetic diversity within species populations due to climate change-induced habitat loss or fragmentation, compromising the adaptive capacity of populations to environmental stressors?	☐Yes ☐Potentially X No	Within this instance's area of influence, there is no surface with plants, algae, fungi, wildlife, or, in general, biota that could be affected by the construction and operation of it. Justification provided in DIA Box No. 3.8.2
exacerbation the prevalence of diseases and pathogens among wildlife populations, leading to population declines and ecosystem destabilization?	☐Yes ☐Potentially X No	Within this instance's area of influence, there is no surface with plants, algae, fungi, wildlife, or, in general, biota that could be affected by the construction and operation of it. Justification provided in DIA Box No. 3.8.2

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
weakening the resilience of ecosystems to disturbances, making them more susceptible to collapse or regime shifts, with cascading effects on biodiversity and ecosystem function?	☐Yes ☐Potentially X No	The instance does not generate a capacity loss related to its ability to support biodiversity due to degradation, erosion, impermeabilization, compaction, or the presence of contaminants. Justification provided in DIA Box No. 3.8.2
new challenges in effectively incorporating climate change considerations into biodiversity conservation planning, such as identifying climate-resilient habitats and prioritizing species and ecosystems for conservation action?	☐Yes ☐Potentially X No	The instance does not generate a capacity loss related to its ability to support biodiversity due to degradation, erosion, impermeabilization, compaction, or the presence of contaminants. Justification provided in DIA Box No. 3.8.2
habitat loss, pollution, and overexploitation, amplifying the impacts on biodiversity and complicating conservation efforts?	☐Yes ☐Potentially X No	The instance does not generate a capacity loss related to its ability to support biodiversity due to degradation, erosion, impermeabilization, compaction, or the presence of contaminants. Justification provided in DIA Box No. 3.8.2

Labor and Working Conditions

- The table below outlines the minimum aspects linked to human rights defined in section 7.1.1. Projects and initiatives are called to reflect on their SDSs assessment at least the following questions.

Could the project/initiative activities potentially entail or result in:	**Response**	**Mitigation and/or preventive actions**
forced labor, or human trafficked labor	☐Yes ☐Potentially X No	The instance relates directly to the regional development strategy 2009-2020, specifically to the guideline 5 in the general objectives 2 and 3 where the instance generates quality jobs for men and women and protects and guarantees the health of the population. Justification provided in DIA Box No. 1.2.1
child labor or forced labor practices during the project, either directly or within the project's supply chain?	☐Yes ☐Potentially X No	The instance relates directly to the regional development strategy 2009-2020, specifically to the guideline 5 in the general objectives 2 and 3 where the instance generates quality jobs for men and women and protects and guarantees the health of the population. Also, Chilean Supreme Decree No. 1/2003 known as “Labor Code” stablishes that child labor is prohibited. Justification provided in DIA Box No. 1.2.1 and Labor Code articles 13-15
unsafe working conditions, exposing project stakeholders to potential hazards or accidents before, during and after the implementation of the activities?	☐Yes X Potentially ☐No	The Chilean “Labor Code” stablishes general norms related to working safety and employer responsibility. Justification is in article 184

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
exploitative labor practices, such as inadequate wages, excessive working hours, or poor working conditions for the personnel engaged during the project activities?	☐Yes ☐Potentially X No	The Chilean "Labor Code" stablishes general norms related to working hours, rest and wages. Justification is in articles 22, 34 and 42
discrimination in employment, including unequal opportunities, biased hiring practices, or unfair treatment based on factors such as gender, ethnicity, or other characteristics?	☐Yes ☐Potentially X No	The Chilean "Labor Code" stablishes that labor relations must always be based on a treatment free from violence, compatible with human dignity, and with a gender perspective, which, for the purposes of the Code, implies the adoption of measures aimed at promoting equality and eradicating discrimination based on this factor. Justification is in article 2
violating workers' rights, including issues related to freedom of association, collective bargaining, or other fundamental labor rights during the project's activities?	☐Yes ☐Potentially X No	The Chilean "Labor Code" stablishes that people can constitute syndical organizations and collective bargaining. Justification is in articles 212 and 303
unfair treatment, exploitation, or inadequate protections for contractual workers or migrant laborers?	☐Yes ☐Potentially X No	The Chilean "Labor Code" stablishes that labor relations must always be based on a treatment free from violence, compatible with human dignity, and with a gender perspective, which, for the purposes of the Code, implies the adoption of measures aimed at promoting equality and eradicating discrimination based on this factor. Justification is in article 2

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
inadequate grievance mechanisms, making it challenging for workers to address concerns, report issues, or seek resolution for labor-related problems?	☐Yes ☐Potentially X No	The Chilean "Labor Code" stablishes that people can constitute syndical organizations and collective bargaining. Justification is in articles 212 and 303
insufficient social welfare support, such as healthcare, insurance, or other benefits for workers engaged in project activities?	☐Yes ☐Potentially X No	Workers engaged in the instance activities are protected by the "Labor Code" Justification is in article 209
displacement or negative impacts on local communities due to labor-related issues, including challenges related to employment opportunities and livelihoods?	☐Yes ☐Potentially X No	The instance relates directly to the regional development strategy 2009-2020, specifically to the guideline 5 in the general objectives 2 and 3 where the instance generates quality jobs for men and women and protects and guarantees the health of the population. Justification provided in DIA Box No. 1.2.1
lack of training	☐Yes ☐Potentially X No	The instance complies with Supreme Decree No. 40/1969 relating to prevention of work risks. Justification provided in DIA section 4.3.9

Gender equality and Women empowerment

- Projects and initiatives are called to include in their SDSs assessment the analysis of aspects a, b, c, d, and f mentioned in section 7.1.2, aimed at

avoiding any gender discrimination and ensuring activities do not discriminate against women and girls, reinforcing gender-based inequalities and exclusion.

Could the project/initiative activities potentially entail or result in:	**Response**	**Mitigation and/or preventive actions**
gender-based discrimination in employment opportunities, recruitment processes, or access to leadership positions, hindering women's participation and advancement?	☐Yes ☐Potentially X No	The Chilean "Labor Code" stablishes that labor relations must always be based on a treatment free from violence, compatible with human dignity, and with a gender perspective, which, for the purposes of the Code, implies the adoption of measures aimed at promoting equality and eradicating discrimination based on this factor. Justification is in article 2
unequal access to project benefits, resources, or decision-making processes, resulting in disparities between men and women in the distribution of project-related opportunities and rewards?	☐Yes ☐Potentially X No	The instance promotes an inclusive work environment that provides opportunities and space within the company for everyone, regardless of their personal conditions, based exclusively on personal merit. Justification provided in the diversity and inclusion policy
limited participation and representation of women in project activities, consultations, or community engagements, potentially marginalizing their voices and perspectives?	☐Yes ☐Potentially X No	The instance promotes an inclusive work environment that provides opportunities and space within the company for everyone, regardless of their personal conditions, based exclusively on personal merit. Justification provided in the diversity and inclusion policy

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
increasing unpaid care work burden on women, such as caregiving responsibilities or household chores, due to changes in community dynamics or time constraints resulting from project activities?	☐Yes ☐Potentially X No	The area affected does not represent a traditional, medicinal, spiritual or cultural zone and no community uses it as an economic livelihood, meaning that community dynamics are not affected. Justification provided in DIA Box 3.8.3
limited access to education, training, or capacity-building opportunities for women and girls, inhibiting their ability to develop skills and pursue leadership roles within the project or related industries?	☐Yes ☐Potentially X No	The Chilean "Labor Code" stablishes that labor relations must always be based on a treatment free from violence, compatible with human dignity, and with a gender perspective, which, for the purposes of the Code, implies the adoption of measures aimed at promoting equality and eradicating discrimination based on this factor. Justification is in article 2
gender-based violence or harassment occurring within project settings or project-affected communities, affecting women's safety, well-being, and ability to participate fully?	☐Yes ☐Potentially X No	The Chilean "Labor Code" stablishes that labor relations must always be based on a treatment free from violence, compatible with human dignity, and with a gender perspective, which, for the purposes of the Code, implies the adoption of measures aimed at promoting equality and eradicating discrimination based on this factor. Justification is in article 2

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
inequitable access to land, natural resources, or economic opportunities, particularly disadvantaging women in rural or indigenous communities affected by land use changes?	☐Yes ☐Potentially X No	The area affected does not represent a traditional, medicinal, spiritual or cultural zone and no community uses it as an economic livelihood, meaning that community dynamics are not affected. Justification provided in DIA Box 3.8.3
underrepresentation of women in decision-making processes, including planning, governance structures, or stakeholder consultations, leading to less inclusive and effective outcomes?	☐Yes ☐Potentially X No	The instance promotes an inclusive work environment that provides opportunities and space within the company for everyone, regardless of their personal conditions, based exclusively on personal merit. Justification provided in the diversity and inclusion policy
gender-blind policies, interventions, or project designs that fail to consider the specific needs, priorities, and capacities of women and men, resulting in unintended negative consequences for gender equality and women empowerment?	☐Yes ☐Potentially X No	The instance promotes an inclusive work environment that provides opportunities and space within the company for everyone, regardless of their personal conditions, based exclusively on personal merit. Justification provided in the diversity and inclusion policy
limited economic empowerment and livelihood opportunities for women, such as access to credit, entrepreneurship support, or income-generating activities, within project-affected communities?	☐Yes ☐Potentially X No	No community is affected by the implementation of the instance nor is it in its area of influence. Justification provided in DIA section 3.6

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
health and safety risks that disproportionately affect specific genders within the community, potentially leading to disparate impacts on men and women?	☐Yes ☐Potentially X No	The Chilean "Labor Code" stablishes that labor relations must always be based on a treatment free from violence, compatible with human dignity, and with a gender perspective, which, for the purposes of the Code, implies the adoption of measures aimed at promoting equality and eradicating discrimination based on this factor. Justification is in article 2
cultural and social barriers that may hinder the advancement of gender equality and women empowerment within project settings or affected communities, such as stereotypes, norms, or traditional roles and expectations?	☐Yes ☐Potentially X No	The instance promotes an inclusive work environment that provides opportunities and space within the company for everyone, regardless of their personal conditions, based exclusively on personal merit. Justification provided in the diversity and inclusion policy
inadequate gender analysis and monitoring mechanisms, resulting in a lack of understanding of gender dynamics and missed opportunities for promoting gender equality and women empowerment?	☐Yes ☐Potentially X No	The instance promotes an inclusive work environment that provides opportunities and space within the company for everyone, regardless of their personal conditions, based exclusively on personal merit. Justification provided in the diversity and inclusion policy

Land Acquisition, Restrictions on Land Use, Displacement, and Involuntary Resettlement

- The following table describes the minimum aspects to be considered during the SDSs assessment related to principles and concepts defined in section 7.1.3.

Could the project/initiative activities potentially entail or result in:	**Response**	**Mitigation and/or preventive actions**
conflict over land resources and/or rights, such as competition for space between different land uses, communities, or stakeholders affected by the project?	☐Yes ☐Potentially X No	The area affected does not represent a traditional, medicinal, spiritual or cultural zone and no community uses it as an economic livelihood, meaning that community dynamics are not affected. Justification provided in DIA Box 3.8.3
land acquisition, leading to changes in land ownership patterns and potential conflicts with local communities and landholders?	☐Yes ☐Potentially X No	The land does not belong to any local community and its use was permitted by the meanings of a leasing contract. Justification provided in the leasing contract itself
imposing restrictions on traditional land use practices, affecting the livelihoods and cultural practices of communities in the project area?	☐Yes ☐Potentially X No	The area affected does not represent a traditional, medicinal, spiritual or cultural zone and no community uses it as an economic livelihood. Justification provided in DIA Box 3.8.3
displacing communities or residents from their homes and lands, leading to social, economic, and cultural disruptions?	☐Yes ☐Potentially X No	This instance does not generate relocation of human groups, as is in a zone with no human or indigenous groups present. Justification provided in DIA Box 3.8.3

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
involuntary resettlement or relocation of communities, impacting their access to resources, services, and community networks?	☐Yes ☐Potentially X No	This instance does not generate relocation of human groups, as is in a zone with no human or indigenous groups present. Justification provided in DIA Box 3.8.3
communities losing their livelihoods and agricultural productivity as a result of land acquisition or restriction on land use?	☐Yes ☐Potentially X No	The instance is in a desertic area with class VIII soil, that means the soil does not possess agricultural, livestock or forestry value. Justification provided in DIA section 2.5.6
insufficient compensation and benefits for affected communities and individuals, leading to economic hardships and social discontent?	☐Yes ☐Potentially X No	This instance does not generate relocation of human groups, as is in a zone with no human or indigenous groups present. Justification provided in DIA Box 3.8.3
lack of free, prior, and informed consent from affected communities, potentially resulting in conflict and challenges to project implementation? *	☐Yes ☐Potentially X No	The instance's name and information were published in the Official Gazette the day 01.06.2018, and five radio announcements were broadcast through Radio Topater, where the information stated that affected people or communities could complain about the project activities. Justification provided in radial diffusion certificate
social and cultural disintegration within displaced communities, leading to the erosion of social cohesion and cultural practices?	☐Yes ☐Potentially X No	This instance does not generate relocation of human groups, as is in a zone with no human or indigenous groups present. Justification provided in DIA Box 3.8.3

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
communities losing access to common resources, such as forests, water bodies, or grazing lands, due to land acquisition or use restrictions?	☐Yes ☐Potentially X No	The area affected does not represent a traditional, medicinal, spiritual or cultural zone and no community uses it as an economic livelihood. Justification provided in DIA Box 3.8.3
inadequate resettlement plans, potentially leading to insufficient support, services, and infrastructure for resettled communities?	☐Yes ☐Potentially X No	This instance does not generate relocation of human groups, as is in a zone with no human or indigenous groups present. Justification provided in DIA Box 3.8.3

- *Due diligence for pre-established agreements with local communities is expected, as stated in the BCR Standard Section 12.

Indigenous Peoples and Cultural Heritage

- The following table describes the minimum aspects to be considered during the SDSs assessment related to principles and concepts defined in section 7.1.4.

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
violating the right of indigenous peoples, including their right to land, resources, and self-determination?	☐Yes ☐Potentially X No	The area affected does not represent a traditional, medicinal, spiritual or cultural zone and no community uses it as an economic livelihood. Justification provided in DIA Box 3.8.3

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
impacts on indigenous lands and territories, potentially leading to the displacement of indigenous communities and disruption and loss of livelihoods?	☐Yes ☐Potentially X No	This instance does not generate relocation of human groups, as is in a zone with no human or indigenous groups present. Justification provided in DIA Box 3.8.3
negatively impacting the traditional livelihoods, such as hunting, fishing, or gathering, due to changes in land use or environmental conditions?	☐Yes ☐Potentially X No	The area affected does not represent a traditional, medicinal, spiritual or cultural zone and no community uses it as an economic livelihood. Justification provided in DIA Box 3.8.3
losing sacred sites and cultural heritage, impacting the spiritual and cultural identity of indigenous communities?	☐Yes ☐Potentially X No	The area affected does not represent a traditional, medicinal, spiritual or cultural zone and no community uses it as an economic livelihood. Justification provided in DIA Box 3.8.3
the lack of free, prior and informed consent from indigenous communities (FPIC), potentially resulting in conflicts and challenges to project implementation? *	☐Yes ☐Potentially X No	The instance's name and information were published in the Official Gazette the day 01.06.2018, and five radio announcements were broadcast through Radio Topater, where the information stated that affected people or communities could complain about the project activities. Justification provided in radial diffusion certificate
inadequate cultural impact assessments, potentially leading to insufficient understanding of the project's impact on indigenous cultures and traditions?	☐Yes ☐Potentially X No	The area affected does not represent a traditional, medicinal, spiritual or cultural zone and no community uses it as an economic livelihood. Justification provided in DIA Box 3.8.3

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
losing indigenous knowledge and practices related to land management, resource utilization, and traditional ecological knowledge?	☐Yes ☐Potentially X No	The area affected does not represent a traditional, medicinal, spiritual or cultural zone and no community uses it as an economic livelihood. Justification provided in DIA Box 3.8.3
cultural disintegration and the erosion of social cohesion within indigenous communities?	☐Yes ☐Potentially X No	The area affected does not represent a traditional, medicinal, spiritual or cultural zone and no community uses it as an economic livelihood. Justification provided in DIA Box 3.8.3
inadequate recognition and respect for indigenous governance systems, potentially leading to conflicts over land and resource management?	☐Yes ☐Potentially X No	The area affected does not represent a traditional, medicinal, spiritual or cultural zone and no community uses it as an economic livelihood. Justification provided in DIA Box 3.8.3
insufficient benefit-sharing mechanisms, resulting in the unequal distribution of benefits derived from the project among indigenous communities? **	☐Yes ☐Potentially X No	The land does not belong to any indigenous community and its use was permitted by the meanings of a leasing contract. Justification provided in the leasing contract itself
conflicts arising over land rights, particularly when the project involves changes in land use that may be contested by different stakeholders, including indigenous communities?	☐Yes ☐Potentially X No	The area affected does not represent a traditional, medicinal, spiritual or cultural zone and no community uses it as an economic livelihood. Justification provided in DIA Box 3.8.3

- *Due diligence for pre-established agreements with local communities is expected, as stated in the BCR Standard Section 12. *Carbon ownership and rights*. **Refer to Section 7.3 Economic Impact to know more about benefit sharing.

Community health and safety

- The SDSs assessment shall consider at least, but not exclusively, the following questions related to the principles, concepts, and safeguards to be implemented aligned with section 7.1.3.

Could the project/initiative activities potentially entail or result in:	**Response**	**Mitigation and/or preventive actions**
exposure to hazardous materials, chemicals, or pollutants, potentially leading to adverse health effects or life-threatening risks?	☐Yes ☐Potentially X No	The instance disposes of its hazardous materials and chemicals by the means of authorized third parties. Justification provided in DIA Box No. 3.8.1
degrading air quality in the project area due to emissions, dust, or other airborne pollutants?	☐Yes ☐Potentially X No	No significant air pollution is generated, with its peak during construction phase. Justification provided in DIA Box No. 3.8.1
water contamination, including pollution of water sources or reduced access to clean water, affecting community health and well-being?	☐Yes ☐Potentially X No	Water effluents are generated during the implementation due to usage of chemical bathrooms but are disposed by authorized third parties. Justification provided in DIA Box No. 3.8.1
increased noise levels or vibrations resulting from project operations, potentially causing disturbances and health impacts for nearby communities?	☐Yes ☐Potentially X No	Noise levels related to construction and operation of the instance are below the maximum permitted. Justification provided in DIA Box No. 3.8.1

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
traffic accidents or road safety hazards associated with increased traffic flow or transportation activities related to the project?	☐Yes ☐Potentially X No	The instance restrict circulation to authorized internal roads only. Justification provided in DIA Section 2.4.2.17-18
workers exposure to hazardous conditions, physical attacks or inadequate safety measures?	☐Yes ☐Potentially X No	The Chilean "Labor Code" stablishes general norms related to working safety and employer responsibility. Justification is in article 184
increased prevalence of vector-borne diseases or pest infestations as a result of changes in environmental conditions or habitat disruption?	☐Yes ☐Potentially X No	The instance disposes of its hazardous materials and chemicals by the means of authorized third parties. Justification provided in DIA Box No. 3.8.1
community displacement or involuntary resettlement, leading to social disruption, stress, and negative health outcomes?	☐Yes ☐Potentially X No	This instance does not generate relocation of human groups, as is in a zone with no human or indigenous groups present. Justification provided in DIA Box 3.8.3
community mental health and well-being, including stress, anxiety, and social isolation resulting from changes in living conditions or community dynamics?	☐Yes ☐Potentially X No	The area affected does not represent a traditional, medicinal, spiritual or cultural zone and no community uses it as an economic livelihood, meaning that community dynamics are not affected. Justification provided in DIA Box 3.8.3
inadequate emergency preparedness and response mechanisms, leading to challenges in managing and mitigating potential health and safety emergencies?	☐Yes ☐Potentially X No	The instance counts with an emergency and contingency prevention plan. Justification provided in the plan itself

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
changes in land use patterns, such as increased exposure to disease vectors or decreased access to natural resources essential for health?	☐Yes ☐Potentially X No	The area affected does not represent a traditional, medicinal, spiritual or cultural zone and no community uses it as an economic livelihood. Justification provided in DIA Box 3.8.3
inadequate health infrastructure and services in the project area, leading to challenges in addressing community health needs and emergencies?	☐Yes ☐Potentially X No	The instance is located 1 km west of Calama, meaning that any health issue or emergency can be addressed efficiently. Justification provided in DIA Section 2.3.1

Corruption

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
funds allocated for the project/initiative being misappropriated or embezzled through fraudulent practices or kickbacks?	☐Yes ☐Potentially X No	The instance has implemented policies and controls that explicitly prohibit and establish mechanisms to prevent the misappropriation or embezzlement of funds through fraudulent practices or kickbacks. Justification provided in the Accounting, tax and financial compliance policy

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
bribery or kickbacks being solicited or offered to secure contracts, permits, or other project-related approvals?	☐Yes ☐Potentially X No	The instance maintains a comprehensive legal and ethical compliance framework, including a Crime Prevention Model and specific policies that explicitly prohibit and establish controls against corruption, bribery, and other illicit financial conduct, backed by reporting mechanisms and sanctions. Justification provided in Code of Ethics and Business Conduct and Code of Ethics for Suppliers, Contractors, and Service Providers
nepotism or favoritism in the selection of contractors, suppliers, or project personnel, compromising the integrity and fairness of procurement processes?	☐Yes ☐Potentially X No	The instance has specific policies and controls, including explicit prohibitions on conflicts of interest in selection and procurement processes, mandatory due diligence, objective selection criteria, defined approval flows, and a public complaint channel, to prevent and address nepotism, favoritism, and other conduct compromising fairness and integrity in its activities. Justification provided in Code of Ethics and Business Conduct and Code of Ethics for Suppliers, Contractors, and Service Providers

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
fraudulent reporting or manipulation of project data, such as inflating project costs or overstating achievements, to obtain additional funding or meet performance targets?	☐Yes ☐Potentially X No	The instance addresses the potential for fraudulent reporting or data manipulation by implementing specific policies and controls, including explicit prohibitions against altering accounting information or paying for non-existent services, within its comprehensive compliance framework. Justification provided in the Accounting, tax and financial compliance policy
conflicts of interest among project stakeholders or personnel, such as individuals with financial interests in project outcomes or decision-makers with personal connections to project contractors?	☐Yes ☐Potentially X No	The instance defines conflicts of interest and requires personnel to avoid and report them, including specific rules for relationships with suppliers and contractors. Justification provided in Code of Ethics and Business Conduct

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
lack of transparency in project decision-making processes, budget allocations, or contract awards, leading to suspicions of corruption or malpractice?	☐Yes ☐Potentially X No	The instance has implemented extensive policies and controls, rooted in legal compliance and core ethical principles, specifically to prevent lack of transparency, corruption, and malpractice in processes like contract awards and financial management, which include budget aspects. These measures involve detailed procedures for procurement, financial transactions, conflict of interest management, and information security, overseen by dedicated compliance bodies, with clear reporting channels and significant sanctions for non-compliance. Justification provided in Code of Ethics and Business Conduct
weak regulatory oversight or enforcement mechanisms, allowing for corrupt practices to go undetected or unaddressed within project/initiative activities?	☐Yes ☐Potentially X No	The instance has implemented a comprehensive framework, including a Model of Crime Prevention, dedicated oversight bodies, stringent internal controls for key processes like procurement and finance, confidential reporting channels, and defined sanctions, all designed to ensure robust internal oversight and actively prevent and detect corrupt practices. Justification provided in Code of Ethics and Business Conduct

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
undue influence or pressure exerted by external parties, such as political figures or industry lobbyists, to sway project decisions or gain unfair advantages?	☐Yes ☐Potentially X No	Controls have been established by the instance to prevent undue influence by external parties, including public officials and politically exposed persons, on project decisions or the gaining of unfair advantages, through policies prohibiting corruption, managing conflicts of interest, regulating interactions with authorities, and implementing robust procurement and reporting mechanisms. Justification provided in Code of Ethics and Business Conduct
inadequate accountability mechanisms or whistleblower protection, discouraging individuals from reporting instances of corruption or unethical behavior?	☐Yes ☐Potentially X No	Mechanisms including confidential and anonymous reporting channels, accessible to internal personnel, external partners, and the public, along with a formal structure for investigating reports by a dedicated compliance officer and oversight committee, are established by the instance to encourage the reporting of corruption or unethical behavior and ensure accountability. Justification provided in Code of Ethics and Business Conduct

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
corruption in the environmental permitting process, such as officials accepting bribes to overlook environmental violations or grant permits unlawfully?	☐Yes ☐Potentially X No	Policies and controls explicitly prohibit bribery of public officials, including related crimes in the corporate legal compliance framework, assign responsibility for legal environmental permit obtainment, and provide confidential reporting channels and investigative processes with potential sanctions, aiming to prevent corruption in interactions with authorities. Justification provided in Code of Ethics and Business Conduct
corruption within subcontracting relationships, such as subcontractors paying bribes to secure favorable terms or win subcontracting opportunities?	☐Yes ☐Potentially X No	Policies and controls explicitly prohibit bribery between private parties influencing contracts, require adherence to ethical codes and the corporate legal compliance framework including related crimes, implement procurement process controls and provide confidential reporting/sanction mechanisms, aiming to prevent corruption in subcontracting relationships. Justification provided in Code of Ethics for Suppliers, Contractors, and Service Providers

Economic Impact

- Aspects related to economic impacts described in section 7.3 shall be assessed. The following questions are linked to economic impact safeguards, which should be coherent with the project/initiative context.

Could the project/initiative activities potentially entail or result in:	**Response**	**Mitigation and/or preventive actions**
compromising healthy competition, resulting in unhealthy rivalry and undermining collaboration and cooperation essential for achieving project goals?	☐Yes ☐Potentially X No	Policies and legal compliance framework explicitly prohibit anticompetitive practices and corruption (including bribery between private parties), procurement controls mandate competitive bidding based on objective criteria and screen out non-compliant entities, conflicts of interest are restricted, undue benefits are prohibited, and reporting channels/sanctions are in place, all aimed at preventing practices that compromise healthy competition or undermine collaboration in subcontracting relationships. Justification provided in Code of Ethics for Suppliers, Contractors, and Service Providers
loss of employment opportunities, particularly for vulnerable populations, as a result of changes in economic activities or restructuring?	☐Yes ☐Potentially X No	This instance does not affect communities' economic activities, and, in fact, it creates jobs. Justification provided in DIA Box 1.2.1 and Box 3.8.3
creating economic dependence, such as tourism or conservation initiatives, leading to vulnerability to fluctuations in project funding or market conditions?	☐Yes ☐Potentially X No	The instance does not incur in those topics as it does not affect the landscape and tourist value. Justification provided in DIA Box 3.8.5

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
market distortions or increased competition, such as changes in land use patterns or shifts in supply and demand dynamics within local economies?	☐Yes ☐Potentially X No	The area affected does not represent a traditional, medicinal, spiritual or cultural zone and no community uses it as an economic livelihood. Justification provided in DIA Box 3.8.3
increasing the cost of living for local communities as a consequence of project-related developments, such as infrastructure projects or influxes of external workers?	☐Yes ☐Potentially X No	Workers in the different phases of the instance come from nearby localities and urban centers, proving low to no external workers influx. Justification provided in DIA Section 2.5.5.7
inequitable distribution of benefits, leading to disparities in wealth, income, or access to resources among different segments of the population?	☐Yes ☐Potentially X No	The instance contributes to strengthening local production systems, generating benefits for the population of the region. Justification provided in DIA Box 1.2.1
losing traditional economic practices and knowledge systems, potentially undermining cultural heritage and resilience to economic shocks in communities?	☐Yes ☐Potentially X No	The area affected does not represent a traditional, medicinal, spiritual or cultural zone and no community uses it as an economic livelihood. Justification provided in DIA Box 3.8.3
negatively impacting small-scale enterprises or informal economies that rely on natural resources or ecosystem services?	☐Yes ☐Potentially X No	The area affected does not represent a traditional, medicinal, spiritual or cultural zone and no community uses it as an economic livelihood. Justification provided in DIA Box 3.8.3

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
financial uncertainties, such as project delays, budget overruns, or changes in funding sources, affecting investment confidence and economic stability?	☐Yes ☐Potentially X No	The instance overcame those financial uncertainties (retroactive instance) resulting in its implementation and securing a bank loan. Justification provided in the loan commitment letter
limited access to financial resources, such as credit or microfinance services, for entrepreneurs or smallholders affected by project-related changes in land use or economic activities?	☐Yes ☐Potentially X No	The area affected does not represent a traditional, medicinal, spiritual or cultural zone and no community uses it as an economic livelihood. Justification provided in DIA Box 3.8.3
lack of economic resilience and adaptive capacity within project-affected communities, particularly in response to external shocks or long-term changes in market conditions?	☐Yes ☐Potentially X No	The area affected does not represent a traditional, medicinal, spiritual or cultural zone and no community uses it as an economic livelihood. Justification provided in DIA Box 3.8.3
inadequate compensation or mitigation measures for economic impacts, such as loss of assets or disruptions to income streams, experienced by individuals or communities?	☐Yes ☐Potentially X No	The area affected does not represent a traditional, medicinal, spiritual or cultural zone and no community uses it as an economic livelihood. Justification provided in DIA Box 3.8.3

Governance and Compliance

- Section 8 encompasses the set of safeguards linked to governance and best practices for decision-making. The following table summarizes some of the aspects to be assessed by projects/initiatives.

Could the project/initiative activities potentially entail or result in:	**Response**	**Mitigation and/or preventive actions**
insufficient institutional capacity within project/initiative implementing agencies or partner organizations, leading to challenges in effective governance and project management?	☐Yes ☐Potentially X No	The instance's extensive policies, ethical codes, and legal compliance framework impose specific obligations and controls on external partners regarding ethical conduct, legal compliance, operational standards, and financial/labor/previsional obligations. These requirements, supported by due diligence, monitoring, reporting channels, investigations, and sanctions, are designed to ensure a minimum level of institutional capacity in key areas among partners. Justification provided in Code of Ethics for Suppliers, Contractors, and Service Providers

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
weak governance structures and mechanisms within the project/initiative, such as unclear roles and responsibilities, inadequate decision-making processes, and limited transparency and accountability?	☐Yes ☐Potentially X No	The instance has implemented a robust governance and compliance framework, defined roles, detailed policies, controls, oversight mechanisms (audits, investigations, complaint channel), and sanctions applicable to all personnel and external partners involved in project activities. This structure is designed to ensure clear responsibilities, adherence to procedures, transparency, and accountability within critical operational areas, actively mitigating risks of weak governance. Justification provided in Code of Ethics and Business Conduct
inadequate stakeholder engagement and participation in project/initiative decision-making processes, leading to governance gaps and reduced project legitimacy?	☐Yes ☐Potentially X No	The instance's name and information were published in the Official Gazette the day 01.06.2018, and five radio announcements were broadcast through Radio Topater, where the information stated that affected people or communities could complain about the project activities. Justification provided in radial diffusion certificate
ineffective or inadequate regulatory frameworks governing project activities, resulting in loopholes, inconsistencies, or gaps in environmental protection and governance standards?	☐Yes ☐Potentially X No	The instance is regulated directly by the Chilean Environment Superintendency. Justification provided in the environmental inspection report

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
delays or challenges in obtaining necessary permits, licenses, and approvals for project activities due to regulatory complexities, bureaucratic inefficiencies, or legal requirements?	☐Yes ☐Potentially X No	The instance has all the necessary permits, licenses and approval as it is a retroactive instance. Justification provided in RCA
political interference in project/initiative decision-making processes, such as pressure to prioritize certain projects or interventions based on political agendas rather than scientific or environmental considerations?	☐Yes ☐Potentially X No	The instance has implemented policies and a robust governance structure to prevent undue influence on decisions, explicitly prohibiting offering benefits to public officials and requiring reporting of PEP relationships and undue requests. Decision-making processes follow defined approvals, partner selection includes compliance due diligence, and complaint channels allow reporting irregularities, all aimed at basing decisions on ethical and legal compliance rather than political agendas. Justification provided in Code of Ethics and Business Conduct
non-compliance with relevant laws, regulations, permits, and international agreements governing GHG emissions, biodiversity conservation, environmental protection and land use management, leading to legal challenges and reputational risks?	☐Yes ☐Potentially X No	The instance has all the necessary permits, licenses and approval as it is a retroactive instance. Justification provided in RCA

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
conflicts of interest among project stakeholders or decision-makers, such as individuals with personal or financial interests that may influence project outcomes or decision-making processes?	☐Yes ☐Potentially X No	The instance has implemented extensive policies and controls, rooted in legal compliance and core ethical principles, specifically to prevent lack of transparency, corruption, and malpractice in processes like contract awards and financial management, which include budget aspects. These measures involve detailed procedures for procurement, financial transactions, conflict of interest management, and information security, overseen by dedicated compliance bodies, with clear reporting channels and significant sanctions for non-compliance. Justification provided in Code of Ethics and Business Conduct

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
limited access to justice for communities affected by project activities, such as barriers to legal recourse or remedies for grievances related to land rights, environmental harm, or social impacts?	☐Yes ☐Potentially X No	The area affected does not represent a traditional, medicinal, spiritual or cultural zone and no community uses it as an economic livelihood. Also, there are no relocations. Justification provided in DIA Box 3.8.3
insufficient monitoring and evaluation mechanisms to assess project performance, impacts, and compliance with governance standards, leading to gaps in accountability and learning?	☐Yes ☐Potentially X No	The instance is inspected by competent government institutions that assess performance, impacts and compliance. Justification provided in the environmental inspection report

Could the project/initiative activities potentially entail or result in:	Response	Mitigation and/or preventive actions
inadequate capacity building and training for project stakeholders, such as government officials, local communities, and civil society organizations, to effectively participate in project governance and decision-making processes?	☐Yes ☐Potentially X No	The instance's name and information were published in the Official Gazette and distributed to local state administration bodies to evaluate. The evaluation resulted in comments that were resolved by the instance in an addendum and complementary addendum. Justification provided in distribution to state administration bodies document.

NOTE: This Project Document (PD) shall be completed following the instructions included. However, it is important to highlight that these instructions are complementary to the BCR STANDARD, and the Methodology applied by the project holder, in which more information on each section can be found.