GLOBAL CARBON COUNCIL

Driving Climate Actions

Project Submission Form

V4.0- 2022

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COVER PAGE- Project Submission Form (PSF)	
Complete this form in accordance with the instructions attached at the end of this form.	
BASIC INFORMATION	
Title of the Project Activity as per LON/LOA	**PCH Jesuíta**
PSF version number	01
Date of completion / Updating of this form	04/04/2024
Project Owner(s) as per LON/LOA (Shall be consistent with De-registered CDM Type B Projects)	Jesuíta Energia S.A.
Country where the Project Activity is located	Brazil
GPS coordinates of the project site(s)	13º 22’ 11,88’’ S 59º 00’ 45,51’’ W
Eligible GCC Project Type as per the Project Standard (Tick applicable project type)	☐ **Type A:** ☐ Type A1 ☐ Type A2 ☐ Sub-Type 1 ☐ Sub-Type 2 ☐ Sub-Type 3 ☐ Sub-Type 4 ☒ Type A3

	☐ **Type B – De-registered CDM Projects:**[1] ☐ Type B1 ☐ Type B2
Minimum compliance requirements	☒ Real and Measurable GHG Reductions ☒ National Sustainable Development Criteria (if any) ☒ Apply credible baseline and monitoring methodologies ☒ Additionality ☒ Local Stakeholder Consultation Process ☒ Global Stakeholder Consultation Process ☒ No GHG Double Counting ☒ Contributes to United Nations Sustainable Development Goal 13 (Climate Action)
Choose optional and additional requirements (Tick applicable label categories)	☒ Do-no-net-harm Safeguards to address Environmental Impacts ☒ Do-no-net-harm Safeguards to address Social Impacts ☒ Contributes to United Nations Sustainable Development Goals (in addition to Goal 13)
Applied methodologies including version No. (Shall be approved by the GCC or the CDM)	GCCM001 Methodology for Renewable Energy Generation Projects Supplying Electricity to Grid or Captive Consumers – V.4.0.
GHG Sectoral scope(s) linked to the applied methodology(ies)	GHG-SS #1: Energy (renewable/nonrenewable sources)

[1] Owners of Type B projects shall fill in the form provided in Appendix 7.

Applicable Rules and Requirements for Project Owners

(Tick applicable Rules and Requirements)

Rules and Requirements		Version
☒ ISO 14064-2		
☒ Applicable host country legal requirements /rules		
☒ GCC Rules and Requirements[2]	☒ Project Standard	3.1
	☐ Approved GCC Methodology (XXXXX)	
	☒ Program Definitions	3.1
	☐ Environment and Social Safeguards Standard	3.0
	☐ Project Sustainability Standard	3.0
	☐ Instructions in Project Submission Form (PSF)-template	4.0
	☐ Clarification No. 01	1.3
	☐ Clarification No. 02	1.0
	☐ Clarification No. 03	1.0
	☐ Clarification No. 04	1.0
	☐ Clarification No. 05	1.0
	☐ Standard on avoidance of double counting	
	☐ Add rows if required	
☒ CDM Rules[3]	☐ Approved CDM Methodology (XXXXX)	
	☒ TOOL 1- Tool for the demonstration and assessment of additionality	7.00
	☐ TOOL 02- Combined tool to identify the baseline scenario and demonstrate additionality	

[2] GCC Program rules and requirements: http://www.globalcarboncouncil.com/resource-centre/
[3] CDM Program rules: https://cdm.unfccc.int/Reference/index.html

		☒ TOOL 07- Tool to calculate the emission factor for an electricity system	3.0
		☐ TOOL 19- Demonstration of additionality of microscale project activities	
		☐ TOOL 21- Demonstration of additionality of small-scale project activities	
		☐ TOOL 23- Additionality of first-of-its-kind project activities	
		☐ TOOL 24- Common practice	
		☒ TOOL 27- Investment analysis	12.0
		☐ TOOL 32- Positive lists of technologies	
		☐ Guidelines for objective demonstration and assessment of barriers	
		☐ Add rows if required	
Choose Third Party Project Verification by approved GCC Verifiers[4] (Tick applicable verification categories)	☒ GHG emission reductions (i.e., Approved Carbon Credits **(ACCs)**) ☒ Environmental No-net-harm Label (**E+**) ☒ Social No-net-harm Label (**S+**) ☒ United Nations Sustainable Development Goals (**SDG+**) ☐ Bronze SDG Label ☐ Silver SDG Label ☒ Gold SDG Label ☐ Platinum SDG Label ☐ Diamond SDG Label		

[4] **Note:** GCC Verifiers under the Individual Track are not eligible to conduct verifications for GCC Project Activities whose owners intend to supply carbon credits (ACCs) for use within CORSIA.

	☒ CORSIA requirements (**C$^+$**) ☐ Host Country Attestation on Double counting
Declaration by the 'Authorized Project Owner[5] and focal point' (Tick all applicable statements[6])	The Project Owner(s) declares that: **Generic Requirements applicable to all Project Types:** ☒ We confirm that the Project Activity complies with the eligibility of the applicable project type (A1, A2, A3, B1 or B2) as stipulated by the Project Standard and relevant clarifications. ☒ We confirm that the Project Activity shall start or have started operations, and shall start or have started generating emission reductions, on or after 1 January 2016. ☒ We confirm that the Project Activity is eligible to be registered under the GCC program. We shall ensure the following for the Project Activity (tick at least one of the two options): ☒ No outcomes (e.g., emission reductions, environmental attributes) generated by the Project Activity under GCC will be claimed as carbon credits or environmental attributes under any other GHG/non-GHG[7] program, either for compliance or voluntary purposes, during the entire GCC crediting period; or ☒ If the project activity has been issued with carbon credits or environmental attributes of compensating nature[8] by any other GHG/ non-GHG program, either for compliance or voluntary purposes, the ACCs will be claimed only for the remaining crediting period (subject to a maximum of 10 years of crediting period including the periods under other programs and GCC program) for which carbon credits/ environmental attributes of compensating nature have not been issued by any other GHG/ non-GHG program. **Specific requirements applicable to respective Project Types:** ***For Project Type A1:*** ☐ For Project Type A1, we confirm that the Project Activity is NOT registered as a GHG Project Activity in any other GHG/non-GHG program or any other

[5] The Project Owner means the legal entity or organization that has overall control and responsibility for the Project Activity

[6] **Consequences in case of Non-compliance with declaration statements:**
If at any point in time non-compliance with the declared statements is established as a result of negligence, fraud or wilful misconduct of the GCC Project Owner/s the GCC project activity will be disqualified, and the registration of the proposed Project Activity will be rejected.

[7] Non-GHG programs could be such as I-REC facilitating reliable energy claims with Renewable Energy Certificate (REC) schemes

8 The environmental attributes of compensating nature are those which are used by captive users (e.g., corporates/industries) for offsetting their GHG emissions

	voluntary program and has not issued or will not issue credits under any other program. ***For Project Type A2 (Sub-Type 1):*** ☐ For Project Type A2 Sub-Type 1, we confirm that the Project Activity is NOT registered as a GHG Project Activity in any other GHG/non-GHG program or any other voluntary program and has not issued or will not issue credits under any other program. ***For Project Type A2 (Sub-Type 2 or Sub-Type 3):*** For Project Type A2 Sub-Type 2 or Project Type A2 Sub-Type 3, we confirm that for Project Activity, which has been registered with CDM or any GHG/non-GHG Program and we shall (tick at least one of the two options): ☐ Submit a proof for deregistration from CDM; or ☐ Submit a signed & stamped public undertaking, stating that the Project Owner will never submit any request for Issuance of ACCs or request for renewal of crediting period to CDM-EB or under article 6.4 or any authority after submission to GCC Program and shall formally inform CDM-EB or authority under article 6.4 or any authority after submission to GCC Program. ☐ For Project Type A2 Sub-Type 2 or Project Type A2 Sub-Type 3, we confirm that the Project Activity is NOT included as a component Project Activity (CPA) in any registered GHG Programme of Activities (PoA) or any other functionally equivalent grouped/aggregated activities under any GHG program (such as the CDM or any other voluntary program). ***For Project Type A2 (Sub-Type 4):*** For Project Type A2 Sub-Type 4, we confirm that the Project Activity has been included in a registered CDM-POA and we shall (tick at least one of the two options): ☐ Submit the proof for exclusion of CPA(s) from registered CDM-POA prior to the date of initial submission to the GCC Program; or ☐ Submit the proof of exclusion of CPA(s) from the registered CDM-PoA after the request for registration has been submitted to GCC Program but before the final decision is made by the GCC Steering Committee. ***For Project Type A3:*** ☒ For Project Type A3, we confirm that the Project Activity is NOT registered as a GHG Project Activity in any other GHG/non-GHG program or any other voluntary program and has not issued or will not issue credits under any other program. ***For Project Type B1 or B2:***

	For Project Type B1 or Project Type B2, we confirm that for Project Activity, which has been registered with CDM or any GHG/non-GHG Program and we shall (tick at least one of the two options): ☐ Submit a proof for deregistration from CDM; or ☐ Submit a signed & stamped public undertaking, stating that the Project Owner will never submit any request for Issuance of ACCs or request for renewal of crediting period to CDM-EB or under article 6.4 or any authority after submission to GCC Program and shall formally inform CDM-EB or authority under article 6.4 or any authority after submission to GCC Program. **Requirements to avoid double counting:** We intend to submit or have submitted a written attestation[9] (Host Country Letter of Authorization - HCLOA) from the host country's national focal point or focal point designee for CORSIA eligible units generated beyond 31 December 2020 at the following stages[10] (tick at least one of the three options): ☐ The initial submission for GSC; or ☐ Along with the submission for a request for registration (after Project Verification is completed); or ☒ Along with the submission for a request for the first or subsequent issuance of ACCs. **Project specific requirements:** ***CORSIA specific requirements:*** ☐ We confirm that bundled projects or grouped projects shall have registered crediting period starting on or after 1 Jan 2016 for the grouped/aggregated project as a whole. ☒ We confirm that the Project Activity meets all the requirement of the CORSIA Eligible Emissions Units[11] required for GCC projects and does not fall under the excluded unit types, methodologies, programme elements, and/or procedural classes. ☒ We confirm that the Project Activity aims to achieve at least Silver or higher SDG+ label (i.e., positively impact at least 3 or more United Nations Sustainability Development Goals). ☒ We confirm that the Project Activity will be implemented in a country which is UN member state[12].

9 In case of any change of Host Country Letter of Authorisation (HCLOA) the project owner shall inform the GCC operations team immediately

10 If the host country attestation is not submitted at the initial submission of GSC, the project can be tagged with an indicative CORSIA flag if it's confirmed to be submitted later. If the host country attestation is not submitted at the request for registration, the project can be tagged with an indicative CORSIA flag if at least the PSF and Verification Report confirms to submit this letter, at first issuance. If the host country attestation is not submitted at request for first issuance, the ACCs will not be tagged as CORSIA (C+) compliant if this letter is not submitted.

11 CORSIA Eligible Emissions Units containing approval and conditions for GCC Program: https://www.icao.int/environmental-protection/CORSIA/Pages/CORSIA-Emissions-Units.aspx

12 The list of UN member states countries can be found at https://www.un.org/en/about-us/member-states

	Provide details (if any) below for the boxes ticked above:
	The Project Owner(s) declares that: ☒ All the information provided in this document, including any supporting documents submitted to the GCC or its registry operator IHS Markit at any time, is true and correct. ☒ They understand that a failure by them to provide accurate information or data, or concealing facts and information, can be considered as negligence, fraud or willful misconduct. Therefore, they are aware that they are fully responsible for any liability that arises as a result of such actions. Provide details below for the boxes ticked above
Appendixes 1-9	Details about the Project Activity are provided in Appendixes 1 through 9 to this document.
Name, designation, date and signature of the Focal point (as per LON/LOA)	Name: Thais Christ Antunes Designation: ESG Supervisor **Date:** **Signature:**

1. PROJECT SUBMISSION FORM

Section A. Description of the Project Activity

A.1. Purpose and general description of the Project Activity

The project is the implementation and operation of PCH Jesuíta a small hydroelectric power plant (SHPP) and associated substation, located in the Alto Juruena Basin, on the border between the municipalities of Sapezal and Campos de Júlio, in the state of Mato Grosso.

PCH Jesuíta has a capacity of 22.3 MW and run-of-river operation. The damming of the Juruena River at the site of the SHPP with a 20.90 m high and 620 m wide dam will form a reservoir of around 8.38 km2, with a length of around 6 km. As the river has a winding course in this stretch, the length of the river channel that will remain in the reservoir will be approximately 12 km. The plant is expected to operate at a normal water level of 405 m, an average monthly flow of 162 m3/s and a gross drop of 15 m. It is expected to generate 20.73 MWm of firm energy with run-of-river operation and a powerhouse located at the foot of the dam.

The electricity delivered by the project activity to the grid would be otherwise generated by the operation of grid-connected power plants and by the addition of new generation sources. Thus, the project activity reduces emissions of greenhouse gas (GHG) by displacing electricity generated also from fossil fuel sources, which would have been generated (and emitted) in the absence of the project (the baseline scenario).

The project will serve the purpose of producing clean electrical energy in a sustainable manner. The project activity involves implementation of 22.3 MW small hydro power project which will utilize potential energy available for power generation. Therefore, no fossil fuels are involved for power generation in the project activity. The proposed project activity will also reduce the anthropogenic emissions of greenhouse gases into the atmosphere by avoiding business as usual operation of existing fossil fuels-based power plants to produce equivalent amount of electricity. Over the entire crediting period (10years) of the project, it will generate a total of 1,727,472 MWh electrical power which will result in emission reduction of 770,167 tCO2e. The project will be responsible for an estimated 70,01 tCO2e emission reduction per year.

A.2. Location of the Project Activity

Address and geodetic coordinates of the physical site of the Project Activity		
Physical address	**Latitude***	**Longitude***
Sapezal/ MT	13° 19' 6.263'' S	59° 1' 43.047'' W

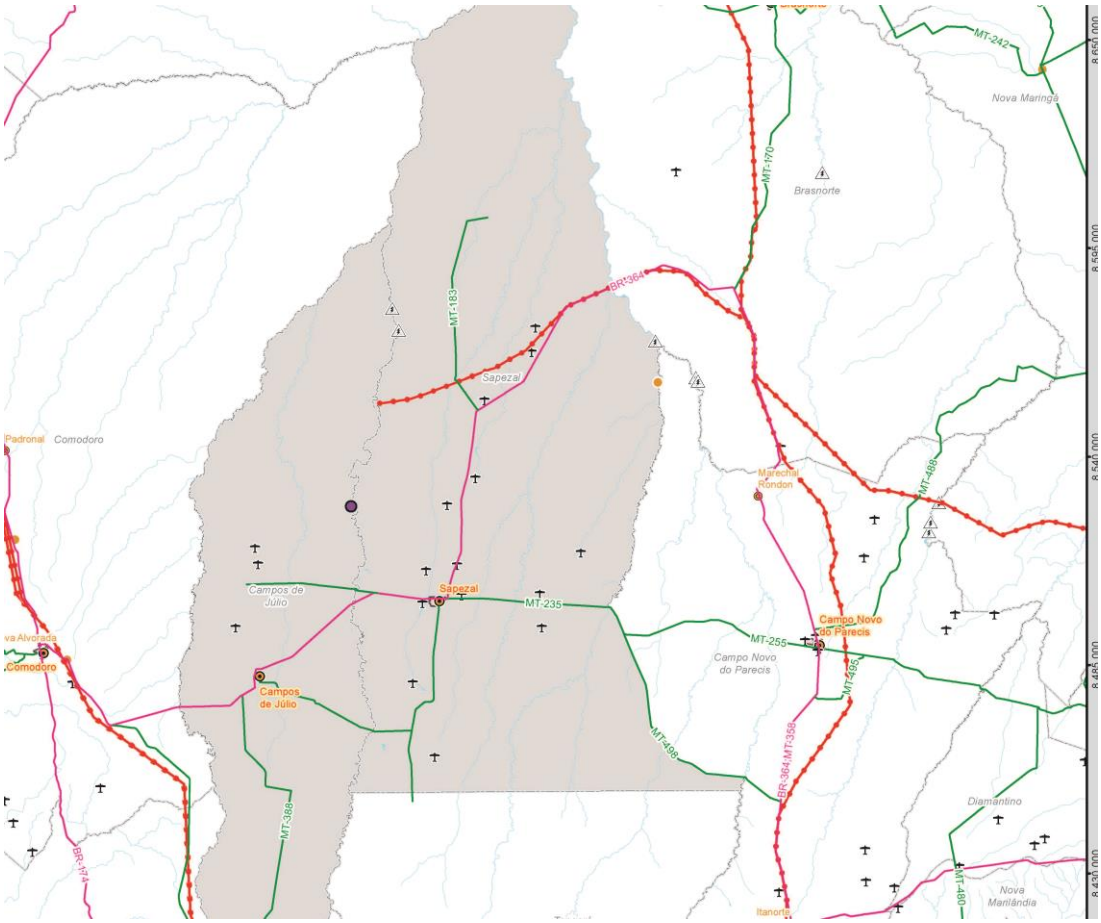

Figure 1 - Location of PCH Jesuíta

A.3. Technologies/measures

Name	PCH Jesuíta
Location	Sapezal (26 km da sede) e Campos de Júlio (59 km da sede)
Hydrographic Basin	Bacia Amazônica – 1 / Sub-Bacia Tapajós - 17
Energy Production	
Installed Capacity (MW)	22,30 MW
Assured Energy (average)	19,72 MW
Annual Assured Energy	172.747 MWh

Plant Load Factor	88,43 %
Water flow	
Long term avarage flow	163,0 m^3/s
Avarage flow	162,6 m^3/s
Montly Average Maximum Flow	199,5 m^3/s
Montly Average Minimum Flow	147,5m^3/s
Area	4.713 km^2

Reservoir Area	
NA de Montante Min. Normal	405,00 m
NA de Montante Máx. Normal	405,00 m
NA de Montante Máx. *Maximorum* (TR = 1.000)	406,70 m
NA de Montante (TR = 10.000)	406,80 m
NA de Jusante Min. Operacional	389,70 m
NA de Jusante Máx. Normal	390,00 m
NA de Jusante Máx. *Maximorum* (TR = 1.000)	391,25 m
Volume do Reservatório	92,65 hm^3
Área Total do Reservatório (no Nível Máximo Normal)	8,376 km^2
Perímetro do Reservatório	23,9 km
Profundidade Média do Reservatório	7,77 m
Profundidade Máxima do Reservatório	14,7 m
Tempo de retenção médio	6,8 dias
Área inundada por município – Sapezal	3,396 km^2 (0,027 % da área municipal)
Área inundada por município – Campos de Júlio	4,980 km^2 (0,077 % da área municipal)
Desvio	

Tipo de desvio	Canal com adufa de desvio
Vazão de desvio (TR = 25 anos)	260,0 m³/s
Cota da Soleira do Canal de Desvio	386,80 m
Comprimento do Canal de Desvio	388,00 m
Nível d'água no Canal de Desvio (TR = 25 anos)	390,84 m
Barragem	
Altura Máxima da Barragem	24,00 m
Tipo/ Material de estrutura	Concreto / Terra
Comprimento de Crista	581,00 m
Cota da Crista	408,50 m
Tomada d'Água e Condutos Forçados	
Tipo de Tomada d´água e número	Abrigada (3 vãos)
Tipo e Número de comportas	3 tipo vagão com rodas
Acionamento de comportas	Pórtico Rolante
Dimensões	4,00 m largura x 8,00 m altura
Número de Condutos Forçados	3 com seção circular
Diâmetro dos Condutos Forçados	4,50 m
Comprimento dos Condutos Forçados	31,60 m
Sistema Extravasor	
Tipo	Vertedouro de soleira controlada com comportas
Capacidade de Descarga (TR = 1.000 anos)	349,0 m³/s
Cota da Crista da Ogiva	401,3 m
Nº de vãos	3
Comprimento da Crista	19,6 m

Estrutura de Dissipação de Energia	Estrutura em laje de concreto armado ancorada na rocha
Casa de Força	
Tipo	Abrigada
Nº de Blocos de geração	3
Largura dos Blocos das Unidades	27,00 m

Turbines	
Type	Kaplan S de eixo horizontal
Quantity	3
Queda bruta	14,92 m
Queda líquida média	14,63 m
Potência Nominal	7,43 MW por unidade
Vazão Turbinada Nominal (engolimento total)	131,40 m³/s
Generator	
Type	Síncrono trifásico de eixo horizontal
Quantity	3
Nominal Effective Power	8,26 MVA
Potência Total	24,78 MVA
Freqüência Nominal	60 Hz
Tensão Nominal	6,9 kV
Transformador Elevador	
Quantidade	1
Potência Nominal	27 MVA
Tensão Primária	6,9 kV
Tensão Nominal do Enrolamento Secundário	138 kV +/- 2 x 2,5%

The proposed hydropower project is a new installation, and its lifetime is 50 years. The capacity of the project will remain constant throughout its lifetime. It is expected that the SHP operate at a PLF of 88.43%.

A.4. Project Owner(s)

Location/ Country	Project Owner(s)	Where applicable[13], indicate if the host country has provided approval (Yes/No)
Brazil	Jesuíta Energia SA (private entity)	No

A.5. Declaration of intended use of Approved Carbon Credits (ACCs) generated by the Project Activity

The Project Activity is expected to generate ACCs for a full 10-year crediting period and supply the credits to offset the following GHG emissions:

Period		Name of the Entities	Purpose and Quantity of ACCs to be supplied
From	To		
26/04/2023	25/04/2033	To be determined	To be determined

A.6. Additional requirements for CORSIA

a) The Project Activity does not cause any net harm to the environment or society and provides an opportunity to demonstrate this achievement by obtaining the additional certification labels E+ and S+.
Please Refer Section E.

b) The Project Activity demonstrates the level of contribution towards achieving the United Nations Sustainability Development Goals (SDGs) and provides an opportunity to demonstrate this achievement by obtaining the additional Silver SDG+ label.
Please Refer Section F.

[13] For example, *Project Coordination Form* is to be filled-in by Project Owners for projects located in Qatar. A written attestation from the host country's national focal point or the focal point's designee, as required by CORSIA (Refer section A.5 of the PSF guidelines).

Section B. Application of selected methodology(ies)

B.1. Reference to methodology(ies) and tools applied in the project

The following by the GCC approved methodology is applicable to this project activity: GCCM001 - Methodology for Renewable Energy Generation Projects Supplying Electricity to Grid or Captive Consumers - Version: v.4.0 – 2022 - Global Carbon Council (GCC)[14].

In line with the methodology mentioned above, the following CDM methodological tools have been applied:

- TOOL01: Tool for the demonstration and assessment of additionality (v7.0.0)[15];
- TOOL05: Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation (v3.0)[16];
- TOOL07: Tool to calculate the emission factor for an electricity system (v7.0)[17];
- TOOL11: Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period (v3.0.1)[18];

Since additionality of the project activity is assessed through sub-step 2b from TOOL01, TOOL27: Investment Analysis (v12.0) is also applicable in this case. In addition, TOOL24: Common Practice (v3.1) is used as referred in TOOL27.

Tools not applicable to the project activity are as follows:

- TOOL11: it is no applicable since this PSF refers to the first crediting period of the project.

B.2. Applicability of methodology(ies) and tools applied in the project

“This methodology is applicable to grid-connected renewable power generation project activities that:

(a) Install a Greenfield power plant;
(b) Involve a capacity addition to (an) existing plant(s);
(c) Involve a retrofit of (an) existing operating plants/units;
(d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or
(e) Involve a replacement of (an) existing plant(s)/unit(s). ”

[14] Available at: https://www.globalcarboncouncil.com/wp-content/uploads/2022/11/Methodology-for-Renewable-Energy-Generation-Projects-Supplying-Electricity-to-Grid-or-Captive-Consumers-v4.pdf
[15] Available at: https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf.
[16] Available at: https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-05-v3.0.pdf.
[17] Available at: https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf.
[18] Available at: https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-11-v3.0.1.pdf.

In this case is applicable the alternative (a) since the installation of 1 new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity are considered Greenfield power plants installation.

The ACM0002 methodology is applicable to hydro power plants grid-connected project activities under following conditions:
(a) The project activity is implemented in existing single or multiple reservoirs, with no change in the volume of any of the reservoirs; or

Not applicable

(b) The project activity is implemented in existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density calculated using equation (3), is greater than 4 W/m2; or

Not applicable

(c) The project activity results in new single or multiple reservoirs and the power density, calculated using equation (3), is greater than 4 W/m2; or

Applicable

(d) The project activity is an integrated hydro power project involving multiple reservoirs, where the power density for any of the reservoirs, calculated using equation (3), is lower than or equal to 4 W/m2, all of the following conditions shall apply:

(i) The power density calculated using the total installed capacity of the integrated project, as per equation (4), is greater than 4 W/m2;
(ii) Water flow between reservoirs is not used by any other hydropower unit which is not a part of the project activity;
(iii) Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m2 shall be:
a. Lower than or equal to 15 MW; and
b. Less than 10 per cent of the total installed capacity of integrated hydro power project.

Not applicable, besides the project has reservoirs this don´t represent another power generation unit

Due to all above the methodology ACM0002 is applicable to the project activity, since results in new multiple reservoirs (2 on total) and the power density, calculated through equation (3), is higher than 4 W/m2.

B.3. Project boundary, sources and greenhouse gases (GHGs)

According to GCCM001 the spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the GCC project power plant

or distributed type power generation devices or the recipient captive users are physically connected to.

The table below provides an overview of the emissions sources included or excluded from the project boundary for determination of baseline and project emissions.

Source		GHG	Included?	Justification/Explanation
Baseline	CO_2 emissions from electricity generation in fossil fuel-fired power plants are displaced due to the project activity	CO_2	Yes	The major source of emissions in the baseline
		CH_4	No	Excluded for simplification. This emission source is assumed to be very small
		N_2O	No	Excluded for simplification. This emission source is assumed to be very small
Project Activity	Emissions from on-site electricity use in the project activity	CO_2	No	Excluded for simplification. This emission source is assumed to be very small
		CH_4	No	Excluded for simplification. This emission source is assumed to be very small
		N_2O	No	Excluded for simplification. This emission source is assumed to be very small

The diagram below shows the project boundary, main equipment's, monitored parameters and gases included:

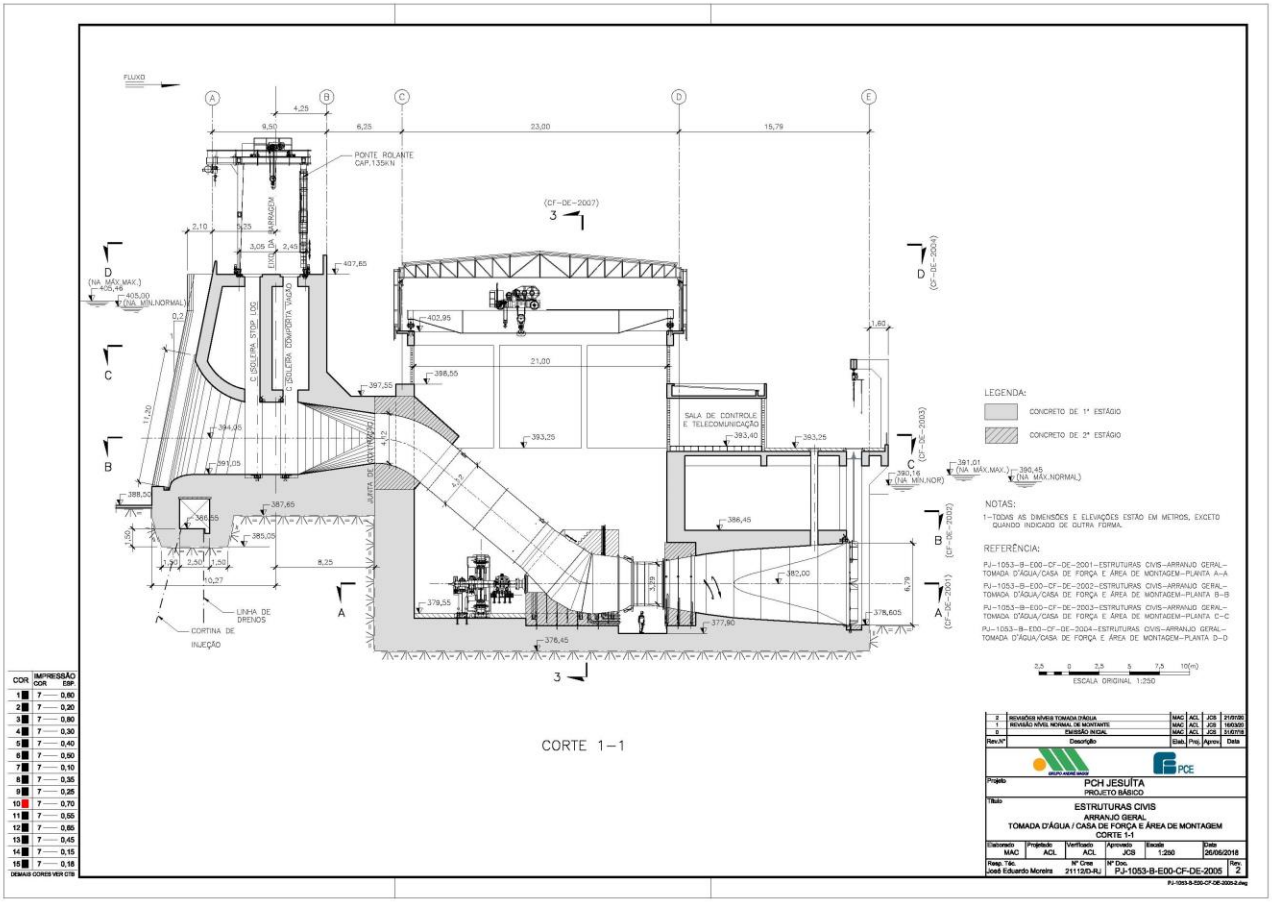

Figure 2 - Project Boundary

B.4. Establishment and description of the baseline scenario

According to GCCM001 Methodology for Renewable Energy Generation Projects Supplying Electricity to Grid or Captive Consumers Projects v.3.0 – 2022, i.e., the determination of baseline scenario is that the electricity delivered to the grid by the project activity would be generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid.

The proposed project activity is the installation of a new grid-connected renewable small hydro power plant, which supplies electricity to the grid, which would otherwise be generated by the operation of the grid connected power plants and by the addition of new generation sources into the grid.

In the absence of the project activity, hypothetically a power plant with emission factor equivalent to grid mix would have supplied electricity to the grid. The grid emission factor is a reasonable benchmark that provides the proxy performance of the baseline power plant. Therefore, the baseline scenario is the supplied electricity by a hypothetically power plant equal to the electricity generation of the project activity multiplied with an emission factor equivalent to the grid mix.

The electricity generation of the project activity will be measured by electricity meters and the emission factor equivalent to the grid mix will be calculated according to the UNFCCC CDM Methodological TOOL 07 “Tool to calculate the emission factor for an electricity system”– Version 07.0.

B.5. Demonstration of additionality

Demonstration as per GCC Clarification No. 01, V1.2 – 2022:

The proposed project is a single project comprising of a small hydro power plant, developed by a single parent company, Amaggi located in Brazil, using the methodology, GCCM001, version 4.0. Therefore, this is considered as a single project GCC clarification No. 01. V1.2-2022.

Demonstration as per GCC Clarification No. 05, V1.0 – 2022:

Submission of registration to the GCC must occur within one year of the start date. The project start date is 26/04/2023 and the initial submission was made in 24/04/2024, which is in accordance with the procedure.

The crediting period must start after the project registration is submitted, so the crediting period for that project will be considered to start on the same day that the GCC registration is completed.

As per paragraph 45, of project standard v3.1 “The GCC applies the following approach for demonstrating additionality, consisting of two components:
(a) A Legal Requirement Test; and
(b) An Additionality Test either based on a Positive List test or a projects-specific additionality test.

A Legal Requirement Test

The project is not enforced by law. Since voluntary commitments/agreements within a sector or by an entity does not constitute the legal requirement; the project is additional as per paragraph 46.

Additionality Tests

According to paragraph 49, of project standard v3.1 project owners shall demonstrate the additionality of the Project Activity in accordance with the applied CDM or GCC methodologies, which requires demonstration that the anthropogenic emissions of GHG emissions by sources are reduced below those that would have occurred in the absence of the proposed GCC Project Activity. If required by the applied methodology, the Project Owners of a proposed GCC Project Activity shall demonstrate additionality following the:

(a) Methodological tool: Investment analysis; or
(b) Guidelines for objective demonstration and assessment of barriers.
51. If required by the applied methodology, the Project Owners of a proposed GCC Project Activity shall demonstrate additionality following the:
(a) Methodological tool: Additionality of first-of-its-kind project activities; or

(b) Methodological tool: Common practice.

To conduct the investment analysis, Methodological tool: Investment analysis (Tool 27), version 11.0 (EB 112 Annex 02) has been referred along with Tool for the demonstration and assessment of additionality (Tool 1).Thus, the project follows section 8.1 of the applied methodology which requires the project proponent to determine the additionality using the CDM TOOL01: "Tool for Demonstration and Assessment of Additionality". Results are presented as follows.

Step 1: Identification of alternatives to the project activity consistent with current laws and regulations:

Step 1a: Define alternatives to the project activity:

The only credible alternative scenarios for the project activity are as follows:

Scenario 1: Continuation of the current (previous) situation of electricity supplied by the Brazilian Interconnected Grid;

Scenario 2: The proposed project activity undertaken without being registered under CDM.

Sub-step 1b: Consistency with mandatory laws and regulations

Both alternative scenarios identified above are in compliance with all regulations, and in accordance with the following entities: ONS, CCEE, ANEEL and relevant environmental agencies (at both federal and state level, when applicable).

Step 2: Investment analysis

Sub-step 2a: Determine appropriate analysis method

Sub-step 2b: Option III. Apply benchmark analysis

The applicable benchmark and financial indicator were calculated following TOOL27. In the case of the project activity, the PROJECT IRR is compared to WACC of the electricity sector. Results are presented below.

Benchmark - Weighted Average Cost of Capital (WACC)

WACC of the sector considered is the one calculated in July 2020 – *i.e.* the starting date of the project activity – and is equal to 8.39%. According to TOOL27, WACC is calculated as follows:

$$WACC = re \times We + rd \times Wd \times (1-Tc) \quad \textbf{Equation 1}$$

Where,

re	=	Cost of equity (-);
We	=	Percentage of financing that is equity (-);
Rd	=	Cost of debt (-);
Wd	=	Percentage of financing that is debt (-);

Tc = Corporate tax rate (-).

We and **Wd** are, respectively, the weights of equity and debt typically observed at the sector. According to TOOL27, if the debt/equity finance structure is not yet available, as it is the case of the project activity, 50 per cent debt and 50 per cent equity financing may be assumed as a default. Then, **Wd** = 50% and **We** = 50%.

Cost of Debt (rd)

rd is the cost of debt, which is observed in the market related to the project activity, and which already accounts for the tax benefits of contracting debts.

The calculation of debt in the case of Brazilian based projects tends to be different from the manner in which it is achieved in other countries. Unlike markets where most commercial players and companies approach private lenders for loans, most Brazilian companies investing in the infrastructure sector expect to receive funds from BNDES. BNDES, a governmentally backed entity, is the major provider of long-term loans in the country, which lacks alternatives to long term loan providers other than governmental entities. Long-term loans are scarcely provided by commercial banks, and in general, these entities do not have competitive rates compared to the BNDES. BNDES infrastructure financing is provided through FINEM (enterprise financing). Our debt calculation is based on FINEM/BNDES interest rates.

Therefore, **rd** is calculated through the following equation:

$$Rd = [1 + (a+b+c) \times (1-Tc)]/ [(1+ \boldsymbol{\pi}) -1] \quad \textbf{Equation 2}$$

Where,

a = Financial cost (%).TJLP is a variable market figure which assesses the rate of debt to apply to the average party borrowing from BNDES. This figure is the underlying majority found in the debt portion of borrowers from the BNDES;

b = BNDES fee (%).The BNDES fee includes administrative and operational costs, and for its remuneration;

c = Spread (%).Each year BNDES provides the lower and upper limits of the variation margin of that rate. It respects its perception of the risks, and the bank policies;

Tc = Marginal tax rate. The marginal tax rate of the sector is considered in un-levering and re-levering Beta. In Brazil the marginal tax rate varies according to the tax regime adopted by the company, and could be either zero (when taxation is incurred against a presumed portion of revenue – Deemed Profit "Lucro Presumido"), or 34% (in the case that taxes incur against the project profits, EBT – "Lucro Real").;

π = Inflation forecast (%).The inflation targeting figure is obtained from the Brazilian Central Bank (www.bcb.gov.br) and it is considered for to achieve the real cash flow rate.

Values considered for the cost of debt calculation are as follows.

Table 2: Cost of debt (rd) calculation

Cost of Debt (rd)	
(a) Financial cost	*2.15%*
(b) BNDES fee	*2.80%*
(c) Spread	*4.26%*
(a+b+c) Pre-Cost of Debt	*9.21%*
(Tc) Marginal tax rate	*0.00*
*(**π**) Inflation forecast*	*4.00%*
After tax Cost of Debt	*5.01%p.y.*

According to the table above, **rd** is 5.01%.

Cost of Equity (re)

re is the cost of equity and was estimated using the best financial practices through the Capital Asset Pricing Model - CAPM. Appendix 1 of TOOL27 presents default values based on long term historical returns in real terms. Therefore, default value from TOOL27 is used, *i.e.* **re** is 10.91%.

Plugging these numbers into WACC formulae:

WACC = if the debt/equity finance structure is not yet available, as it is the case of the project activity, 50 per cent debt and 50 per cent equity financing may be assumed as a default. Then, *x 5.01% + 50% x 11.77% = 8.39%*

Financial Indicator – PROJECT Internal rate of return (P-IRR)

The financial indicator identified is the PROJECT Internal Rate of Return. The cash flow was calculated considering the expected lifetime of the project equipment, *i.e.* 20 years. The table presented below provides a list of the main input values as well as a brief justification for their use.

Table 3: Parameters and the justification of data used in the investment analysis

Parameter	***Values***	***Justification/source of information used***
Installed Capacity (MW)	*22.3*	*ANEEL Resolution No 723 December 18 2022.*
Plant Load Factor (%)	*84.44%*	*Calculated*
Energy Price (R$/MWh)	*R$ 234*	*CCEE Results of the energy auctions conducted by the Brazilian Government in 2019 for hydro power projects.*
Investment (1,000BRL)	*185,560,890*	*ANEEL Open Reports*
Opex (1,000BRL)	*2,500,000*	*Realized in 2023*

Electricity sector taxes (transmission and regulation)	*ONS and CCEE taxes: 0.5% of gross revenues* *TFSEE: 764.73 BRL/kW.year* *TUST/TUSD: 8.12 BRL/kW.month*	— *ONS and CCEE taxes: Taxes from the Brazilian electric sector. ANEEL Resolution nr. 328 dated August 12th, 2004* — *TFSEE (ANEEL Inspection fee): ANEEL Ordinance nr. 9 dated 03/01/2020* — *Transmission taxes (TUSD): The Brazilian Regulatory Agency (ANEEL). 25th ANEEL's Board Meeting 14/07/2020 - average tariff applied to 2020-2021 process (graphic 2).*
Energy sales taxes	*PIS: 0.65% of gross revenues* *COFINS: 3.00% of gross revenues*	— *PIS: Social Integration Program Tax (Programa de Integração Social) established by Law # 10,637 dated 30/12/2002: http://www.receita.fazenda.gov.br/Legislacao/leis/2002/lei10637.htm* — *COFINS: Financing Contribution for Social Security (Contribuição para o Financiamento da Seguridade Social) established by the Law # 10,833 dated 29/12/2003: <http://www.receita.fazenda.gov.br/Legislacao/leis/2003/lei10833.htm>.*
Income taxes	*CSLL: 9% of gross revenues* *Assumed Income for Social Tax: 12%* *IR: 25% of gross revenues* *Assumed Income for Income Tax: 8%*	*Income taxes are calculated based on the following:* — *Social Tax (CSLL) (% of the gross revenue): Law nr. 11,727 dated 23/06/2008.* — *Assumed Income for Social Tax: Law nr. 8,981 dated 20/01/1995.* — *Income Tax (IR) (% of the gross revenue): Law nr. 8,541 dated 23/12/1992.* — *Assumed Income for Income Tax: Decree nr. 3,000 dated 26/03/1999.*
P-IRR%	***4.23%***	***PROJECT Internal Rate of Return of the project activity***

Calculation of the PROJECT IRR and WACC are presented in separated spreadsheet attached to this PSF.

Comparison of financial indicators

The PROJECT IRR is 4.23 %. This number is lower than the benchmark of the sector 8.39%. Hence, it is evident that the project activity is not financially attractive to the investor (Table).

Table 4: Comparison between P-IRR and WACC of the sector

Project	P-IRR (%)	WACC/Ke (%)
Eolicos Ventos de Sao Vicente and Ventos de Santo Antero	4.23 %	8.39%

Sensitivity analysis

The sensitivity analysis was performed by varying in 10% selected parameters and analyzing the impact on the PROJECT IRR. See results in the Table below.

Significant variations have to be observed in order to the P-IRR equals the benchmark. Nevertheless, it shall be noted that the variations regarding the price, electricity and investment are not expected to occur as further substantiated below. Regarding operational costs, since values should be negative to reach the benchmark, they were excluded from the following analysis.

The electricity generation by the plant is not expected to significantly rise because the estimative is based on the guaranteed power as measured at the plants' site by a third party at 90% of probability (P90)[19]. This range is used for financing institutions as a conservative approach. Therefore, an increase in project revenues due to an increase in the electricity generation above the assumption presented in the cash-flow is very unlikely.

The price used in the investment analysis is based on the settled price for hydro power projects in 2019 energy auctions. Energy auctions are promoted by the government and are an official reference for the energy prices analysis by energy players in Brazil. Official information regarding electric energy auctions are publicly available and can be obtained at the Chamber of Electric Energy Commercialization's website: <http://www.ccee.org.br/>. Hence, an increase in the project P-IRR due to an increase in the price of electricity is very unlikely.

The total investment necessary to build the plants as it is presented in the cash flow – which includes equipment, civil engineering, electrical engineering, transmission lines and others – corresponds to the estimated budget made by the project owner based on experience with similar projects and projected costs. Although there may be variations on estimated and actual costs, a reduction of 80.9% on investment is not expected to occur. In reality, real investments in developing countries are usually higher than the original estimative. This may be evidenced from the estimation of construction costs and schedules in developing countries. Using a sample of 125 projects (59 thermal and 66 hydropower) Bacon and Besant-Jones (1998)[20] indicates that although the ratio of actual to estimated cost can be smaller than one (indicating actual investment smaller than estimated), less than 10% of the analysed projects had investments lower than those forecasted. One of the conclusions is that "the estimated values were significantly biased below actual values".

All information used in the investment analysis is based on documented evidence that was provided during the CDM validation and is available with the Project Participant.

Step 3: Barrier analysis
Not applicable as the project activity applies step 2 above.

B.6. Estimation of emission reductions

B.6.1. Explanation of methodological choices

[19] In reality, electricity generation increase after new Hydro Certificate issuance for the Complex. However, results presented in 2.33% increase from data considered at the time of the investment decision. This increase is already incorporated in both sensitivity analysis conducted and, as demonstrated above, it does not impact additionality assessment.

[20] R. W. Bacon and J. E. Besant Jones (1998). Estimating construction costs and schedules – Experience with power generation projects in developing countries. Energy Policy, vol. 26, no 4, pp 317-333.

The emission reductions are calculated according to the underlying methodology GCCM001 as follows:

$$ER_y = BE_y - PE_y - LE_y \qquad \textbf{Equation 1}$$

Where,

BE_y	=	Emissions reductions in project year *y* (tCO_2);
BE_y	=	Baseline emissions in project year *y* (tCO_2);
PE_y	=	Project emissions in project year *y* (tCO_2);
LE_y	=	Leakage emissions in project year *y* (tCO_2).

Baseline Emissions

The project activity baseline emissions are calculated as follows:

$$BE_y = EG_{PJ,y} \times EF_{grid,CM,y} \qquad \textbf{Equation 2}$$

Where,

BE_y	=	Baseline emissions in year *y* (tCO_2);
$EG_{PJ,y}$	=	Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the GCC project activity in year *y* in a greenfield project activity (MWh);
$EF_{grid,CM,y}$	=	Combined margin CO_2 emission factor for grid connected power generation in year *y* calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (tCO_2/MWh) of the CDM.

The CO_2 emission factor of the grid

The CO_2 emission factor for the displacement of electricity generated by power plants in an electricity system is determined according to the latest version of the *UNFCCC CDM Methodological TOOL07 "Tool to calculate the emission factor for an electricity system"– Version 07.0.*, by six steps. These six steps are listed below:

- **STEP 1** – identify the relevant electricity system

According to the tool, "If the DNA of the host country has published a delineation of the project electricity system and connected electricity systems, these delineations should be used. If such delineations are not available, project participants should define the project electricity system and any connected electricity system and justify and document their assumptions in the GCC-PSF".

The Brazilian DNA published Resolution #8, issued on May 26th, 2008[21], defines the Brazilian Interconnected Grid as a single system that covers all the five macro-geographical regions of the country (North, Northeast, South, Southeast and Midwest). Hence, this figure is used to calculate the baseline emission factor of the grid.

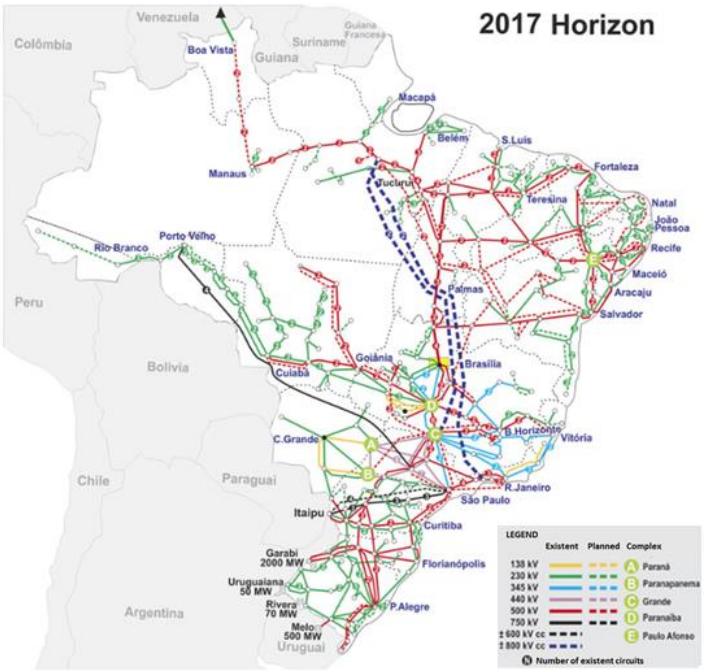

Figure 1: Brazilian Interconnected System.
Source: ONS. Mapas do SIN. Information available at: <http://ons.org.br/paginas/sobre-o-sin/mapas>.

- **STEP 2** – Choose whether to include off-grid power plants in the project electricity system (optional).

Option I of the tool is chosen, which is to include only grid power plants in the calculation.

- **STEP 3 -** Select a method to determine the operating margin (OM).

The calculation of the operating margin emission factor ($EF_{grid,OM,y}$) is based on one of the following methods:

(a) Simple OM, or
(b) Simple adjusted OM, or
(c) Dispatch data analysis OM, or
(d) Average OM.

[21]CIMGC Resolution #8 issued on May 26th, 2008. Available at <https://www.mctic.gov.br/mctic/export/sites/institucional/ciencia/SEPED/clima/arquivos/legislacao_cimgc/Resolucao-n-8-de-26-de-maio-de-2008.pdf>. Accessed on 19 Feb 2019.

The simple operating margin can only be used where low-cost/must-run resources[22] constitute less than 50% of total grid generation in: 1) average of 5 most recent years, or 2) based on long-term normalities for hydroelectricity production. The following table presents the share of hydroelectricity in the total electricity production for the Brazilian interconnected system. The results show the non-applicability of the simple operating margin (hydroelectricity represents 71.3% of the total share).

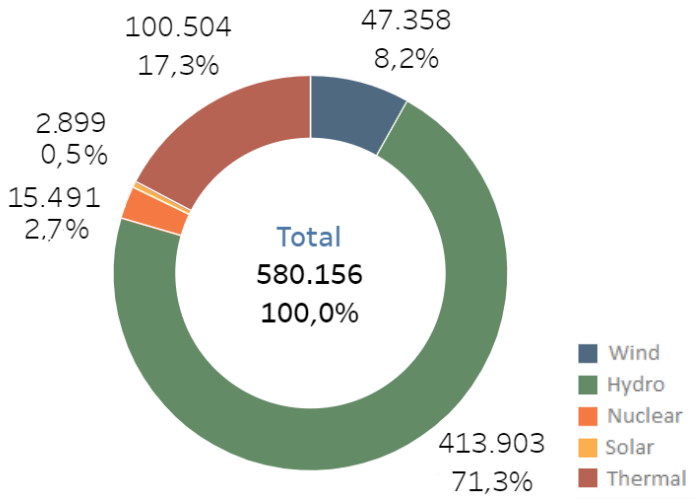

Figure 2: Electricity generation in the Brazilian interconnected system by source, 2016-2020(GWh).
Source: *ONS: Histórico da Operação. Available at* <http://www.ons.org.br/Paginas/resultados-da-operacao/historico-da-operacao/geracao_energia.aspx>.

The fourth alternative, an average operating margin, is an oversimplification and does not reflect in any way the impact of the project activity on the operating margin. Therefore, only options (b) and (c) are available options for OM calculation, which both are publicly available by the Brazilian DNA.

Since the Brazilian DNA made available the grid power that is actually dispatched at the margin during each hour *h*, option (c) *dispatch data analysis* it will be used, while applying the *ex-post* data vintage for determining the OM emission factor.

- **STEP 4** - Calculate the operating margin emission factor according to the selected method

The dispatch data analysis OM emission factor ($EF_{grid,OM\text{-}DD,y}$) is determined based on the grid power units that are actually dispatched at the margin during each hour h where the project is displacing grid electricity. This approach is not applicable to historical data and, thus, requires annual monitoring of $EF_{grid,OM\text{-}DD,y}$.

[22] Low operating cost and must run resources typically include hydro, geothermal, hydro, low-cost biomass, nuclear and solar generation.

$$EF_{grid,OM-DD,y} = \frac{\sum_{h} EG_{PJ,h} \times EF_{EL,DD,h}}{EG_{PJ,y}} \quad \textbf{Equation 3}$$

Where,

$EF_{grid,OM-DD,y}$	=	Dispatch data analysis operating margin CO_2 emission factor in year *y* (tCO_2/MWh);
$EG_{PJ,h}$	=	Electricity displaced by the project activity in hour *h* of year *y* (MWh);
$EF_{EL,DD,h}$	=	CO_2 emission factor for grid power units in the top of the dispatch order in hour *h* in year *y* (tCO_2/MWh);
$EG_{PJ,y}$	=	Total electricity displaced by the project activity in year *y* (MWh);
h	=	Hours in year *y* in which the project activity is displacing grid electricity;
y	=	Year in which the project activity is displacing grid electricity.

- **STEP 5** - Calculate the build margin (BM) emission factor

The build margin emissions factor is the generation-weighted average emission factor (tCO_2/MWh) of all power units m during the most recent year y for which electricity generation data is available, calculated as follows:

$$EF_{grid,BM,y} = \frac{\sum_{m} EG_{m.y} \times EF_{EL,m,y}}{\sum_{m} EG_{m,y}} \quad \textbf{Equation 4}$$

Where,

$EF_{grid,BM,y}$	=	Build margin CO_2 emission factor in year *y* (tCO_2/MWh);
$EG_{m,y}$	=	Net quantity of electricity generated and delivered to the grid by power unit *m* in year *y* (MWh);
$EF_{EL,m,y}$	=	CO_2 emission factor of power unit *m* in year *y* (tCO_2/MWh);
m	=	Power units included in the build margin;
y	=	Most recent historical year for which electricity generation data is available.

In terms of vintage, **option 2** was chosen, *i.e. ex-post* data vintage.

- **STEP 6** – Calculate the combined margin (CM) emissions factor

The combined margin calculation is based on one of the following methods: (a) Weighted average CM; or (b) Simplified CM. Since data to determine OM and BM emission factors is available by the Brazilian DNA, option a) is used following the equation below:

$$EF_{grid,CM,y} = EF_{grid,OM,y} \times w_{OM} + EF_{grid,BM,y} \times w_{BM} \quad \textbf{Equation 5}$$

Where,

$EF_{grid,BM,y}$	=	Build margin CO_2 emission factor in year y (tCO_2/MWh);
$EF_{grid,OM,y}$	=	Operating margin CO_2 emission factor in year y (tCO_2/MWh);
w_{OM}	=	Weighting of operating margin emissions factor (per cent);
w_{BM}	=	Weighting of build margin emissions factor (per cent).

According to TOOL07, for hydro power generation project activities, weights are w_{OM} = 0.5 and w_{BM} = 0.5 for the first and subsequent crediting periods.

Project Emissions (PE_y)

For most renewable energy project activities, project emissions are equal to zero. However, CO_2 emissions from on-site consumption of electricity by project activity shall be calculated using the latest version of the CDM methodological tool "*Tool to calculate baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation*".

For the calculation of the emission reductions Only the quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the GCC project activity in project year y will be considered.
Therefore: **PE_y = 0**

Leakage emissions (LE_y)

The underlying methodology states that: No leakage emissions are anticipated under this methodology No leakage emissions are considered in the proposed project activity.
Therefore: **LEy = 0**

Emission reductions

Final formula to determine the Emission reductions in project year y based on the conclusions above:
$ER_y = BE_y - PE_y - LE_y$

$PE_y = 0$; $LE_y = 0$

$ER_y = BE_y = EG_{PJ,y} \times EF_{grid,}$

B.6.2. Data and parameters fixed *ex ante*

There are no parameters fixed ex-ante. Please refer to section B.7.1

B.6.3. Ex-ante calculation of emission reductions

Baseline emissions

The quantity of net electricity generation supplied by the project plant to the grid in year y (EGPJ,y, in MWh) is based on the calculated plant load factor (PLF) of the power plant. Therefore, the PLF determination follows option b) of CDM Annex 11, EB48.

Table 8: Installed capacity, PLF and electricity generation of power the hydro plant

Hydro Power Plant	*Installed Capacity (MW)*	*Plant Load Factor*	*$EG_{PJ,y}$ (MWh/year)*
PCH Jesuíta	***22,3***	***88.44%***	***172,746***

As described in section B.6.1, the calculation of the combined margin CO2 emission factor for grid connected power generation (EFgrid,CM,y) follows the steps established in TOOL07. Both OM and BM emission factors are calculated and made publicly available by the Brazilian DNA. Values presented below are based on the most recent information available at the time of the PSF preparation.

The OM emission factor considered for ex-ante baseline emissions calculation is EFgrid,OM,2021 = **0.5985** tCO2e/MWh.

The BM emission factor considered for ex-ante baseline emissions calculation is EFgrid,BM,2021 = **0.0540** tCO2e/MWh.

Therefore, applying these values to equation 5, we have that the EFgrid,CM,y (EFgrid,CM,y = EFgrid,y) is **0.4624** tCO2e/MWh

Finally, baseline emissions can be determined applying the results of EGPJ,y and EFgrid,CM.y to Equation 3 as follows:

BEy = EGPJ,y X EFgrid,y = 172,747 MWh x 0.4624 tCO2e/MWh

BEy = 79,861 tCO2e/year

B.6.4. Summary of ex ante estimates of emission reductions

Year	Baseline emissions (t CO_2e)	Project emissions (t CO_2e)	Leakage (t CO_2e)	Emission reductions (t CO_2e)
2023	25,162	0	0	25,162
2024	79,861	0	0	79,861
2025	79,861	0	0	79,861
2026	79,861	0	0	79,861
2027	79,861	0	0	79,861
2028	79,861	0	0	79,861
2029	79,861	0	0	79,861
2030	79,861	0	0	79,861

2031	79,861	0	0	79,861
2032	79,861	0	0	79,861
2033	24,943	0	0	24,943
Total	**768,854**	**0**	**0**	**768,854**
Total number of crediting years	10			
Annual average over the crediting period	**69,896**	**0**	**0**	**69,896**

B.7. Monitoring plan

B.7.1. Data and parameters to be monitored *ex-post*

Data / Parameter Table 1.

Data / Parameter:	**$EG_{PJ,y}$**
Methodology reference	GCCM001 – Methodology for Renewable Energy Generation Projects Supplying Electricity to Grid or Captive Consumers v.4.0 – 2022 https://www.globalcarboncouncil.com/wp-content/uploads/2022/11/Methodology-for-Renewable-Energy-Generation-Projects-Supplying-Electricity-to-Grid-or-Captive-Consumers-v4.pdf
Data unit	MWh/year
Description	Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the GCC project activity in project year *y*
Measured/calculated /default	Measured
Data source	Direct measurement or calculated based on measurements from more than one electricity meters.
Value(s) of monitored parameter applied with basis	172,747

<table>
<tr><td>Measurement/ Monitoring equipment</td><td>
<table>
<tr><td colspan="2"></td></tr>
<tr><td>Type of meter(s)</td><td>Schneider Electric - ION8600V330</td></tr>
<tr><td>Location of meter(s)</td><td>13°19’02" S e 59°02'00" W</td></tr>
<tr><td>Accuracy of meter(s)</td><td>classe de precisão 0.2 (IEC, ANSI)</td></tr>
<tr><td>Serial number of meter(s)</td><td>PT-0909A440-01; PT-1002A538-01</td></tr>
<tr><td>Calibration frequency</td><td>5 years</td></tr>
<tr><td>Date of Calibration/ validity</td><td>10/11/2022</td></tr>
<tr><td>Reference No. of Calibration Certificates</td><td>RLC-587-134-2022</td></tr>
<tr><td>Calibration Status</td><td></td></tr>
</table>

Note: The information related to the installed Measurement/ Monitoring equipment above lists the status at the time of the PSF submission and might change over the crediting period.
</td></tr>
<tr><td>Frequency of Measuring/reading</td><td>Continuous monitoring, hourly measurement and at least monthly recording.</td></tr>
<tr><td>Recording frequency</td><td>Not applicable.</td></tr>
<tr><td>Calculation method (if applicable)</td><td>Calibration of meters, including the frequency of calibration, will be done in accordance with national standards or requirements set by the meter supplier or requirements set by the grid operators. Therefore, all ONS recommendations regarding frequency of calibration will be considered. The most updated version of the ONS procedures recommends a 5-year period for calibration.

The accuracy class of the meters will be in accordance with the meter supplier and/or as per the requirements set by the grid operators or national requirements. Therefore, all ONS recommendations regarding accuracy class of equipment will be considered. The most updated version of the ONS procedures recommends a 0.2% accuracy (class D) .</td></tr>
<tr><td>QA/QC procedures</td><td>The meters must comply with national standards stated by ONS module12.2 (which can be viewed through the link http://extranet.ons.org.br/operacao/prdocme.nsf/principalPRedeweb?openframeset), and industry regulation to ensure the accuracy. These data will be used to calculate the emission reductions. The data will be archived monthly (electronic) and kept archived during the credit period and two years after. The data from the energy meters will be crosschecked with the CCEE databank in order to verify the coherency of the data.</td></tr>
<tr><td>Purpose of data</td><td>Baseline emissions</td></tr>
<tr><td>Additional comments</td><td>-</td></tr>
</table>

Data / Parameter:	**$EF_{grid,y}$**
Methodology reference	GCCM001 – Methodology for Renewable Energy Generation Projects Supplying Electricity to Grid or Captive Consumers v.4.0 – 2022 https://www.globalcarboncouncil.com/wp-content/uploads/2022/11/Methodology-for-Renewable-Energy-Generation-Projects-Supplying-Electricity-to-Grid-or-Captive-Consumers-v4.pdf UNFCCC CDM Methodological tool 07 "Tool to calculate the emission factor for an electricity system"– Version 07.0 https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf
Data unit	tCO_2e/MWh
Description	CO_2 emission factor of the grid electricity in year *y*
Measured/calculated /default	Calculated
Data source	Brazilian DNA - https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/cgcl/clima/paginas/metodo-da-analise-de-despacho
Value(s) of monitored parameter applied with basis	0.4624
Measurement/ Monitoring equipment	Not applicable.
Frequency of Measuring/reading	Yearly
Recording frequency	Yearly
Calculation method (if applicable)	For the simple OM method the emissions factor can be calculated using either the (a) Ex ante data vintage option or (b) the ex post data vintage option (refer to UNFCCC CDM Methodological tool 07 "Tool to calculate the emission factor for an electricity system"– Version 07.0. paragraph 42 page 15) Decision: The project owner select the ex-post data vintage option to calculate the emission factor, i.e. emission factor is determined based on the grid power units that are actually dispatched at the margin during each hour h where the project is displacing grid electricity. This approach is not applicable to historical data and, thus, requires annual monitoring – see chapter B.6.1.
QA/QC procedures	Not applicable
Purpose of data	Baseline emissions

Additional comments	-

For Parameters to be monitored for E+/S+ assessments and SDG labels (positive impacts)

Data / Parameter:	**Number of persons employed**
Purpose:	To demonstrate positive impacts of aspects wrt baseline scenario / BAU / pre-existing scenario and to demonstrate that they do not cause any net harm to environment / society or have an impact on SDG as per selected indicators.
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	Project activity supports creation of short term and long term job opportunities during the construction and operation of the project activity. Supports economic productivity through technology up gradation and innovation through training of labour in high intensive sector. Project protects labour rights and promotes safe and secure working environments. Supports a transition to a low-carbon society through employment training for former fossil fuel industry employees
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate "harmless" condition or demonstrate Impact on SDG	

Parameter to be monitored	Number of people working for the operation of the project
Frequency of monitoring	Yearly
Legal /regulatory / corporate limits (if any)	NA
QA/QC	The records for the number of employees will be provided during each monitoring period

Remarks	Not applicable

Data / Parameter:	**Climate Change**
Purpose:	To demonstrate positive impacts of aspects wrt baseline scenario / BAU / pre-existing scenario and to demonstrate that they have an impact on SDG as per selected indicators.

Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	To justify SDG Goal 13 – Take urgent action to combat climate change and its impacts
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate "harmless" condition or demonstrate Impact on SDG	
Remarks	NA

B.7.2. Data and parameters to be monitored for E+/S+ assessments (negative impacts)

Data / Parameter:	**Solid waste from end of life of equipments**
Purpose:	*To demonstrate compliance of PMRA 01 aspects to legal/regulatory/corporate requirements or to demonstrate that they do not cause any net harm to environment / society or have an impact on SDG as per selected indicators.*
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	The damaged turbine components may cause soil pollution if not stored and disposed-off as per the national/local law.
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate "harmless" condition or demonstrate Impact on SDG	

Parameter to be monitored	**Solid waste from end of life of equipment**
Frequency of monitoring	Annually
Legal /regulatory / corporate limits (if any)	Solid waste management and handling rules, 2016
QA/QC	The details of project wastes will be

		maintained in records for future verification.
Program of Risk Management Actions to mitigate risk related to aspect (if any for aspects assessed to be harmful)		

B.7.3. Sampling plan

Not applicable.

B.7.4. Other elements of the monitoring plan

The monitoring plan follows GCCM001 and all data collected as part of monitoring should be archived electronically and be kept at least for two years after the end of the last crediting period. All measurements are conducted with calibrated measurement equipment according to Brazilian industry standards. The main parameters monitored are:

- Quantity of net electricity generation supplied by the project plant/unit to the grid in year y ($EG_{PJ,y}$);
- Parameters to determine the combined margin emission factor for the grid in year y ($EF_{Grid,CM,y}$).

Monitoring of $EG_{facility,y}$ parameter:
Operation and Maintenance (O&M) team is responsible for the operation and maintenance activities of the plants. The project participant is responsible for collecting and storing all measurement data. Data is collected in real time.

Commercial team is responsible for monitoring and analysing $EG_{facility,y}$. information. It monitors data available by the Chamber of Electricity Commercialization (CCEE from the Portuguese “Câmara de Comercialização de Energia Elétrica”).

Each plant will have two measurement instruments (meters) located in the plant. One is the principal meter and the second is a backup meter. These meters register gross electricity generated by each plant.

It is important to mention that net electricity supplied to the grid impacts directly the revenues of the plants once electricity is the main product of the project. Therefore, a straight control is performed about this information.

Monitoring of $EF_{Grid,CM,y}$:
The Combined margin emission factor for the grid will be calculated following TOOL07 and based on values available by the Brazilian DNA.

Section C. Start date, crediting period type and duration

C.1. Start date of the Project Activity

26/04/2023. This date corresponds to the plant start operation start.

C.2. Expected operational lifetime of the Project Activity

50

C.3. Crediting period of the Project Activity

C.3.1. Start and end date of the crediting period

The start date of the crediting period will be shortly after the completion of the project registration in the GCC .

C.3.2. Duration of crediting period

10 years. 0 months.

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Section D. Environmental impacts

D.1. Analysis of environmental impacts

D.2. Analysis of environmental impacts

The Small Hydro Power Plant implementation was preceded by a comprehensive environmental assessment made with the execution of two main studies: the Environmental Impact Study - EIA (from Portuguese Estudo de Impacto Ambiental) and Environmental Impact Report – RIMA (from Portuguese Relatório de Impacto Ambiental).

The Installation License was obtained on 31/03/2022, provided by SEMA/MT (State Environmental Secretary Agency).

The Operation License shall be issued before the commercial operation start. Environmental studies have not pointed the occurrence of any transboundaries impacts.

Therefore the SHP implementation impacts are limited to water quality, local flora and fauna, social environment in the municipality of Sapezal and Campos de Júlio. On Section D.3 will be better described the impacts and environmental programs to monitor and control the impacts.

Summary of the related documents:

Entity	Document	Date
SEMA-MT	Prior license, nº 2286/2007, "*PCH Jesuita L.P 2286 Venc 09 12 2010.pdf*"	10/12/2007
SEMA-MT	Installation license, nº 74036/2022, "*PCH Jesuita L.I._74036 SEMA Val_13.09.2025.pdf*"	31/03/2022
JGP Consultoria e Participações Ltda	EIA/RIMA: Pequena Central Hidrelétrica (PCH) Jesuíta "*RIMA.pdf*"; "*EIA.pdf*"	April 2008

D.3. Environmental impact assessment and management action plans

The EIA/RIMA was developed based on the impacts caused by the Project installation. Making use of comparative studies and cost/benefit analysis, these documents take in consideration environmental, social and economic factors. These factors considered include: power generation towers, substations and transmission lines construction, installation of construction site, road access construction, impacts on flora and fauna, temporary increase on local population, impacts on health, education and public safety, income generation for local government through taxes, amongst others.

The major environmental negative impact shall be the forest deforestation in the local were the power plant will be constructed as well under transmission lines. These areas, however, presents low population density and consisted mainly on farms and rarely residences of rural workers. Construction on this area did not result in compulsory migration of entire communities.

The main positive impacts are the contribution to the environmental sustainability reducing the use of fossil energy (non-renewable sources), the best use of natural resources and the use of clean and efficient technologies. Besides, the increase on employment opportunities in area where the project

is located, the contribution to better conditions of the local economy by taxes paid, the reduction of the pollution released into atmosphere and associated social costs related.

Section E. Environmental and social safeguard

Impact of Project Activity on		**Information on Impacts, Do-No-Harm Risk Assessment and Establishing Safeguards**									**Project Owner's Conclusion**
		Description of Impact *(both positive or negative)*	**Legal/ requirement / Limit**	**Do-No-Harm Risk Assessment**			**Risk Mitigation Action Plans**		**Do-No-Harm Residual Risk Assessment**		**Self-Declaration**	
				Not Applicable *(No actions required)*	**Harmless** *(No actions required)*	**Harmful** *(Actions required)*	**Operational Controls**	**Program of Risk Management Actions**	**Re-evaluate Risks**	**Monitoring**	**Explanation of Conclusion**	**The Project Activity will not cause any harm**
Environmental impacts on the identified categories [23] ***indicated below.***	*Indicators for environmental impacts*	*Describe anticipated environmental impacts, both positive and negative from all sources (stationary and mobile), that may result from the Project Activity, within and outside the project boundary, over which the Project Owner(s) has control, and beyond what would reasonably be expected to occur in the absence of the Project Activity.*	*Describe the applicable national regulatory requirements /legal limits related to the identified risks of environmental impacts.*	*If no environmental impacts are anticipated, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as* ***Not Applicable*** *(No actions required)*	*If environmental impacts are anticipated, but are expected to be in compliance with applicable national regulatory requirements/ below the legal limits, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as* ***Harmless*** *(No actions required)*	*If environmental impacts are anticipated that will not be in compliance with the applicable national regulatory requirements or are likely to exceed legal limits, then the Project Activity is likely to cause harm (may be un-safe) and shall be indicated as* ***Harmful*** *(Actions required).*	*Describe the operational controls and best practices, focusing on how to implement and operate the Project Activity, to reduce the risk of impacts that have been identified as* ***Harmful****.*	*Describe the Program of Risk Management Actions (refer to Table 3), focusing on additional actions (e.g., installation of pollution control equipment) that will be adopted to reduce the risk of impacts that have been identified as* ***Harmful****.*	*Re-evaluate risks after Risk Mitigation Action Plans have been developed (refer to previous two columns) for impacts that have been identified as Harmful. Indicate whether the risks have been eliminated or reduced and, where appropriate, indicate them as* ***Harmless*** *(No actions required)*	*Describe the monitoring approach and the parameters to be monitored for each impact that has been identified as Harmful and described in the PSF (refer to Table 3).*	*Describe how the Project Owner has concluded that the Project Activity is likely to achieve the identified Risk Mitigation Action Plan targets for managing risks to levels that are unlikely to cause any harm.*	*Confirm that the Project Activity risks of negative environmental impacts are expected to be managed to levels that are unlikely to cause any harm (Mark +1 for* ***Yes*** *or and -1 for* ***No****)*

[23] sourced from the CDM SD Tool and the sample reports are available (https://www4.unfccc.int/sites/sdcmicrosite/Pages/SD-Reports.aspx)

Environmental and Social Safeguards

NEnvironment - *Air*	*SO_x emissions*	Not Applicable	CONAMA Resolution 436/11	Not Applicable	-	-	-	Not Applicable	Not applicable	Not Applicable	Not Applicable	-
	NO_x emissions	Not Applicable	CONAMA Resolution 436/11	Not Applicable	-	-	-	Not Applicable	Not applicable	Not Applicable	Not applicable	-
	CO_2 emissions	Hydro power is a low CO_2 emission generation source. Therefore, the impact is considered to be positive, as this power plant adds clean energy to the national energy grid.	CONAMA Resolution 436/11	-	The generated electricity by the project activity is based on the renewable energy source, which causes no CO2 emissions. Therefore, the impact of CO2 emissions, due to the project activity is assessed as harmless.	-	Not Applicable	Not Applicable	Not applicable	The generated electricity by the project activity will be continuously measured and the related CO2 emission reduction will be calculated according to the underlying methodology GCCM001 v4.0 – 2022.	The operation will continuously monitor the CO_2 emissions related to energy generation. The hydro power generation is not a significant CO2 emission source, reduction targets are set and the operations re-evaluate the related risks whenever necessary.	+ 1
	CO emissions	Not Applicable	CONAMA Resolution 436/11	Not Applicable	-	-	-	Not Applicable	Not applicable	Not Applicable	Not applicale	-
	Suspended particulate matter (SPM) emissions	Not Applicable	CONAMA Resolution 436/11	Not Applicable	-	-	-	Not Applicable	Not applicable	Not Applicable	Not applicable	-
	Fly ash emissions	Not Applicable	Not regulated in the State	Not Applicable	-	-	-	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-

	Non-Methane Volatile Organic Compounds (NMVOCs)	Not Applicable	Not regulated in the state	Not Applicable	-	-	-	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-
	Odor emissions	Not Applicable	Not regulated in the state	Not Applicable	-	-	-	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-
	Noise Pollution	Hydro turbines emit a characteristic noise generated by the blades' rotation through the air while operating, as well as a mechanical noise from the turbine machinery. The air passing through the blades produce a whooshing sound at the same rotation rate and the amount of noise may rise as the speed of the blades increase.	ABNT NBR 10.151/2019 "Acústica – Medição e avaliação de níveis de pressão sonora em áreas habitadas – Aplicação de uso geral" (versão corrigida 2020) In English (ABNT: Brazilian Association of Technical Standards; NBR: Brazilian Standard "Acoustics – Measurement and assessment of sound pressure levels in inhabited areas – General purpose application"	-	The noise pollution related to the hydropower plant complies with Brazilian Standard ABNT 10.151. Therefore, the impact is assessed as harmless.	-	-	Not applicable	Not applicable	Monitoring sound levels in different locations from each hydro tower at several distances every three months, generating a data bank.	The noise pollution will be regularly monitored in accordance to the Brazilian laws to assure that the sound does not surpass the limit over the day and nighttime, as well as maintain the secure distances between hydro turbines and populated houses and other sites.	+1

			(corrected version 2020)									
	Shadow Flicker	Shadow flicker is the light and shade effect caused by rotating hydro turbines when there is a high level and intensity of sunlight. As the blades rotate, at specific times of day, or months of the year, they can block the sun rays causing an intermittent shadow-light effect that can bother residents near hydro utilities.This effect may rise as the speed of the blades increase.	Not regulated in the state	-	The effects of the Shadow flicker assessment have been considered negligible. Therefore, the impact is assessed as harmless.	-	Not applicable.	Not applicable.	Not applicable	Monitoring shadow flicker effects in different locations from each hydro tower at several distances every three months, generating a data bank.	The shadow flicker effect will be regularly monitored to assure that the impacts won´t cause any harm to the residents nearby the hydro power plant.	+1
Environment - *Land*	*Solid waste Pollution from Plastics*	Not Applicable	Not Applicable	-	-	-	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	
	Solid waste Pollution from Hazardous wastes	In the construction phase of the hydro complex, many categories of waste are produced. Plastic waste is one does not have significant impact in this type of activity. During operation phase a few plastics wastes can be generated in small quantity that won´t impact significantly the environment.	National Solid Waste Policy (Federal Law 12,305/2010), solid waste CONAMA's Resolutions and solid wastes Brazilian Standards (NBR)	-	The amount of waste is expected to be very little, and no hazardous waste is anticipated with the project activity. Therefore, the impact is assessed as harmless.	-	Not Applicable	Not Applicable	Not applicable	Potential hazardous materials will be stored in a proper area with spillage protection and working procedures, to ensure that these materials are handled correctly to comply.	This impact is considered harmless and will be monitored to be in compliance with applicable national laws. In order to maintain this status, waste management processes are implemented, focusing on reduction, proper segregation and a responsible final destination, which in this case is recycling.	+1
	Solid waste	Not Applicable	Not Applicable	-	-	-	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	

	Pollution from Bio-medical wastes											
	Solid waste Pollution from E-wastes	Not Applicable	Not Applicable	-	-	-	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	
	Solid waste Pollution from Batteries	An insignificant amount can be generated due to changing batteries in equipment.	National Solid Waste Policy (Federal Law 12305/2010)	Not Applicable	-	-	-	Not Applicable	Not Applicable	Not Applicable	This impact is considered harmless and will be monitored to be in compliance with applicable national laws. In order to maintain this status, waste management processes are implemented, focusing on reduction, proper segregation and responsible final destination, which in this case goes to licensed companies to properly treat batteries.	
	Solid waste Pollution from end of life products/ equipment	Not Applicable	Not Applicable	-	-	-	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-
	Soil Pollution from Chemicals (including Pesticides, heavy	There is a minimal risk of soil contamination by oil and other oily products that can be used in the in the machinery.	National Solid Waste Policy (Federal Law 12,305/2010)	-	-	-	Not Applicable	Not Applicable	Not Applicable	Not Applicable	This impact is considered harmless and will be monitored to be in compliance	-

	metals, lead, mercury)									with applicable national laws. In order to maintain this status, management and control processes are implemented and the wastes go to licensed companies to properly treatment.	
	Soil erosion	In the construction phase of the hydro complex, occurs soil movement, and vegetation removal. Therefore soil can be caried through erosion processes and cause loss of land.	Brazilian Forest Code, law 12.651	-	-	-	Not Applicable	Not Applicable	Not Applicable	Not Applicable	This impact is considered harmless due to the mitigation and prevention actions taken to minimize its effects. The soil disturbance occurs mainly at the beginning of the construction phase when the area preparation is necessary for access and the installation of the hydro turbines. Afterward, drainage channels are installed, and the degraded areas are recovered. The topsoil removed, which is rich in nutrients and native seeds, is put back in strategic places to recover the vegetation. Item dealt with in the Program for	-

											the Prevention of Erosive Processes, which is part of the actions of the Program for the Recovery of Degraded Areas (Operation License - LO) and the Work Environmental Monitoring Program (Installation License - LI).	
Environment - *Water*	*Reliability/ accessibility of water supply*	In the construction phase of the hydro complex, water is a resource required to build and maintain access to the site. The region does not have abundant water availability or potential do explore. During the operation the water will be used mainly for site washing and human consumption	Not regulated	-	-	-	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Even though the area does not present a potential for water supply, water trucks were hired to provide the volume needed for the accesses and to build the base of the hydro turbine.	-
	Water Consumption from ground and other sources	Not Applicable	Not Applicable	-	-	-	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	
	Generation of wastewater	Wastewater is produced only as a domestic residue from employee sanitary installations and site washing which is an insignificant impact for type of activity.	National Solid Waste Policy (Federal Law 12,305/2010), CONAMA Resolution 430/2011 and solid wastes Brazilian	-	-	-	Not Applicable	Not Applicable	Not Applicable	Not Applicable	This impact is considered harmless and will be monitored to follow applicable national laws. In order to maintain this status, waste management processes are	-

			Standards (NBR)								implemented, focusing on reduction, proper segregation and a responsible final destination.	
	Wastewater discharge without/with insufficient treatment	Not Applicable	Not Applicable	Not Applicable	-	-	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-
	Pollution of Surface, Ground and/or Bodies of water	Not Applicable	Not Applicable	-	-	-	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-
Environment – *Natural Resources*	*Conserving mineral resources*	Not Applicable	Not Applicable	-	-	-	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-
	Protecting/ enhancing plant life	There are no nationally protected areas, conservation units or priority areas for biodiversity conservation within the site boundary. At the surroundings of the site, on a region of indirect influence, there is a high priority area for biodiversity conservation.	Not Applicable	-	The project activity is implemented according to the approved environmental impact assemente and regulatory requirements and there is no protected plant life, thus the impact by the project activity is assessed as harmless.	-	Not Applicable	Not Applicable	Not Applicable	The project activity is implemented according to regulatory requirements and located in area that can be monitored.	Offset mechanisms were set for this kind of impact in order to compensate for and protect all local wildlife. Considering there were no significantly critical areas within the site boundaries, this was considered harmless	+1

	Protecting/ enhancing species diversity	There may be harmful effects on birds life and chiropterofauna due to the project activity.	Biodiversity law 13123	-	Monitoring of wildlife will be conducted in the operational phase. The impact by the project activity is assessed as harmless.	-	Not Applicable	Not Applicable	Not Applicable	The potential negative impact on birds has been considered non-significant and thus harmless.	Monitoring of this wildlife will be executed during the operational phase of the hydro complex. For the construction phase, this impact was considered not applicable.	+1
	Protecting/ enhancing forests	Not Applicable	Not Applicable	-	-	-	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-
	Protecting/ enhancing other depletable natural resources	Not Applicable	Not Applicable	-	-	-	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-
	Conserving energy	Not Applicable	Not Applicable	-	-	-	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-
	Replacing fossil fuels with renewable sources of energy	A hydro power plant activity itself is about replacing fossil fuels to renewable sources of energy.	Not Applicable	-	-	-	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-
	Replacing ODS with non-ODS refrigerants	Not Applicable	Not Applicable	-	-	-	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-
	Note: If the score is: (a) zero or greater, the overall impact is neutral or positive and there is no net harm; and (b) less than zero, the overall impact is negative and there is net harm to Environment. Score is obtained after adding the individual scores in each of the rows in the last column of the above table.											
Net Score:			**+3**									

Project Owner's Conclusion in PSF:		The Project Owner confirms that the Project Activity will not cause any net harm to Environment.
GCC Project Verifier's Opinion:		The GCC Verifier certifies that the Project Activity [is not likely to cause any] or [is likely to cause] net harm to the environment...

E.1. Environmental safeguards

Impact of Project Activity on		Information on Impacts, Do-No-Harm Risk Assessment and Establishing Safeguards								Project Owner's Conclusion		
		Description of Impact *(positive or negative)*	**Legal/ voluntary corporate requirement / regulatory/ voluntary corporate threshold Limits**	**Do-No-Harm Risk Assessment (choose which ever is applicable)**			**Risk Mitigation Action Plans for aspects marked as Harmful**		**Performance indicator for monitoring of impact**	***Ex-ante* scoring of environmental impact**	***Explanation of the Conclusion***	
				Not Applicable	**Harmless**	**Harmful**	**Operational Controls**	**Program of Risk Management Actions**	**Monitoring parameter and frequency of monitoring**	**Ex- Ante scoring of the environmental impact (as per scoring matrix Appendix-02)**	**Ex- Ante description and justification/explanation of the scoring of the environmental impact**	**Verification Process**
Environmental Aspects on the identified categories[24] indicated below.	*Indicators for environmental impacts*	*Describe and identify anticipated and actual significant environmental impacts, both positive and negative from all sources (stationary and mobile) during normal and abnormal/emergency conditions, that may result from the construction and operations of the Project Activity, within and outside the project boundary, over which the Project*	*Describe the applicable national regulatory requirements /legal limits / voluntary corporate limits related to the identified risks of environmental impacts.*	*If no environmental impacts are anticipated, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as* ***Not Applicable***	*If environmental impacts exist but are expected to be in compliance with applicable national regulatory /stricter voluntary corporate requirements and will be within legal/ voluntary corporate limits by way of plant design and operating principles, then the Project Activity is unlikely to cause any harm (is*	*If negative environmental impacts exist that will not be in compliance with the applicable national legal/ regulatory requirements or are likely to exceed legal limits, then the Project Activity is likely to*	*Describe the operational controls and best practices , focusing on how to implement and operate the Project Activity, to reduce the risk of*	*Describe the Program of Risk Management Actions (refer to Table 3), focusing on additional actions (e.g., installation of pollution control equipment) that will be adopted to reduce or eliminate the risk of impacts that have been identified as* ***Harmful****.*	*Describe the monitoring approach and the parameters (KPI) to be monitored for each impact irrespective of whether it is harmless of harmful. The frequency of monitoring to be specified as well including the data source.*	*-1* *0* *+1*	*Confirm the score of environmental impact of the project with respect to the aspect and its monitored value in relation to legal /regulatory limits (if any) including basis of conclusion.*	*Describe how the GCC Verifier has assessed that the impact of the Project Activity against the particular aspect* ***and in case of "harmful impacts" how has the*** *project adopted Risk Mitigation Action Plans to mitigate the risks of negative environmental impacts to levels that are unlikely to cause any harm as well as the net positive impacts of the project with respect to the most likely baseline alternative.* .

		Owner(s) has/have control.			*safe) and shall be indicated as **Harmless** /If the project has a positive impact on the environment mark it as "harmless" as well.*	*cause harm (may be un-safe) and shall be indicated as **Harmful***	*impacts that have been identified as '**Harmful** at least to a level that is in compliance with applicable legal/regulatory requirements or industry best practice or stricter voluntary corporate requirements*					
Reference to paragraphs of Environmental and Social Safeguards Standard		*Paragraph 12 (a)*	*Paragraph 13 (c)*	*Paragraph 13 (d) (i)*	*Paragraph 13 (d) (ii)*	*Paragraph 13 (d) (iii)*	*Paragraph 13 (e) (i)*	*Paragraph 13 (e) (ii)*	*Paragraph 12 (c) and Paragraph 13 (f)*	*Paragraph 22*		*Paragraph 24 and Paragraph 26 (a) (i)*
Environment - *Air*	*SO_x emissions (EA01)*	Not Applicable	CONAMA Resolution 436/11	Not Applicable	-	-	-	Not Applicable	Not applicable	Not Applicable	Not Applicable	-
	NO_x emissions (EA02)	Not Applicable	CONAMA Resolution 436/11	Not Applicable	-	-	-	Not Applicable	Not applicable	Not Applicable	Not applicable	-
	CO_2 emissions (EA03)	Hydro power projects are a low CO_2 emission generation source. Therefore, the impact is considered to be positive, as this power plant adds clean energy to the national energy grid.	CONAMA Resolution 436/11	-	The generated electricity by the project activity is based on the renewable energy source, which causes no CO2 emissions. Therefore, the impact of CO2 emissions, due to the project activity	-	Not Applicable	Not Applicable	Not applicable	The generated electricity by the project activity will be continuously measured and the related CO2	The operation will continuously monitor the CO_2 emissions related to energy generation. The project generation is not a significant CO2 emission source, reduction targets are set	+ 1

					is assessed as harmless.					emission reduction will be calculated according to the underlying methodology GCCM001 v4.0 – 2022.	and the operations re-evaluate the related risks whenever necessary.	
	CO emissions (EA04)	Not Applicable	CONAMA Resolution 436/11	Not Applicable	-	-	-	Not Applicable	Not applicable	Not Applicable	Not applicale	-
	Suspended particulate matter (SPM) emissions (EA05)	Not Applicable	CONAMA Resolution 436/11	Not Applicable	-	-	-	Not Applicable	Not applicable	Not Applicable	Not applicable	-
	Fly ash generation (EA06)	Not Applicable	Not regulated in the State	Not Applicable	-	-	-	Not Applicable	Not Applicable	Not Applicable	Not Applicable	-
	Non-Methane Volatile Organic Compounds (NMVOCs) (EA07)	Not Applicable	Not regulated in the state	Not Applicable	-	-	-	Not Applicable	Not Applicable			
	Odor (EA08)	Not Applicable	Not regulated in the state	Not Applicable	-	-	-	Not Applicable	Not Applicable			
	Noise Pollution (EA09)	Hydro turbines emit a characteristic noise generated by the blades' rotation through the air while	ABNT NBR 10.151/2019 "Acústica – Medição e avaliação de níveis de	-	The noise pollution related to the project complies with Brazilian Standard	-	-	Not applicable	Not applicable			

		operating, as well as a mechanical noise from the turbine machinery. The air passing through the blades produce a whooshing sound at the same rotation rate and the amount of noise may rise as the speed of the blades increase.	pressão sonora em áreas habitadas – Aplicação de uso geral" (versão corrigida 2020) In English (ABNT: Brazilian Association of Technical Standards; NBR: Brazilian Standard "Acoustics – Measurement and assessment of sound pressure levels in inhabited areas – General purpose application" (corrected version 2020)		ABNT 10.151. Therefore, the impact is assessed as harmless.							
	Others (EA10)	-	-	-	-	-	-	-	-	-	-	-
Environment - *Land*	*Solid waste Pollution from Plastics (EL-01)*	Plastics waste will be generated duing the construction and operation period.		Law of Plastics Control in Brazil	-	Harmless	-	-	-	Plastics waste will be monitored on monthly basis.	+1	The plastics wastes during construction and operation will be gathered and delivered to the recycle factory and does not contain other pollutants
	Solid waste Pollution from Hazardous wastes (EL02)	-	-	-	-	-	-	-	-	-	-	-
	Solid waste Pollution from Bio-medical wastes (EL03)	-	-	-	-	-	-	-	-	-	-	-

	Solid waste Pollution from E-wastes (EL04)	-	-	-	-	-	-	-	-	-	-	-
	Solid waste Pollution from Batteries (EL05)	-	-	-	-	-	-	-	-	-	-	-
	Solid waste Pollution from end-of-life products/ equipment (EL06)	-	-	-	-	-	-	-	-	-	-	-
	Soil Pollution from Chemicals (including Pesticides, heavy metals, lead, mercury) (EL07)	-	-	-	-	-	-	-	-	-	-	-
	land use change (change from cropland /forest land to project land) (EL08)	The project reservoir covers an area of 8.38 km2.	Regulation for Compensation and Resettlement for Large and Medium Water Conservation and Hydropower Construction Projects.						Refer to the environmental impact report of the construction project of PCH Jesuita	0	Although all of the land and forests occupied will be restored, to be conservative, this parameter is not scored.	
	Others (EL09)		-	-	-	-	-	-	-	-	-	-

		-										
Environment - *Water*	*Reliability/ accessibility of water supply (EW01)*	-	-	-	-	-	-	-	-	-	-	-
	Water Consumption from ground and other sources (EW02)	-	-	-	-	-	-	-	-	-	-	-
	Generation of wastewater (EW03)	Domestic wastewater by onsite employees will be generated during the construction and operation period.	Law of the of Prevention and Control of Water Pollution requires proper treatment of wastewater	-	Harmless The domestic wastewater during the construction and operation periods is treated with dry toilets and sets of domestic wastewater treatment equipment.	-	-	-	Domestic wastewater, the parameter will be monitored on monthly basis.	+1	The cleaning wastewater during construction and daily living does not contain other pollutants.	-
	Wastewater discharge without/with insufficient treatment (EW04)	-	-	-	-	-	-	-	-	-	-	-
	Pollution of Surface, Ground and/or Bodies of water (EW05)	-	-	-	-	-	-	-	-	-	-	-
	Discharge of harmful chemicals like marine	-	-	-	-	-	-	-	-	-	-	-

	pollutants / toxic waste (EW06)											
	Others (EW07)	-	-	-	-	-	-	-	-	-	-	-
Environment – *Natural Resources*	*Conserving mineral resources (ENR01)*	-	-	-	-	-	-	-	-	-	-	-
	Protecting/ enhancing plant life (ENR02)	-	-	-	-	-	-	-	-	-	-	-
	Protecting/ enhancing species diversity (ENR03)	Fish may be affected by the project activity.	Fisheries Law of Brazil	-	Harmless .	-	-	-	Fish releasing records will be monitored	+1	Operational control have been planned for the protection of fish within the area. And the project owner will conduct fish Stocking In addition, the project owner also invested in life monitoring and ecological scientific research to promote species protection.	-
	Protecting/ enhancing forests (ENR04)	-	-	-	-	-	-	-	-	-	-	-

	Protecting/ enhancing other depletable natural resources (ENR05)	-	-	-	-	-	-	-	-	-	-	-
	Conserving energy (ENR06)											
	Replacing fossil fuels with renewable sources of energy (ENR07)	The project utilizes renewable hydro power to generate electricity, which will replace the electricity generated by fossil fuel plants.	-	Harmless .	-	-	-		Electricity generation by the project, the parameter will be monitored consistently and be recorded monthly.	+1	The project is expected to supply an average of 160,915 MWh renewable electricity annually.	
	Replacing ODS with non-ODS refrigerants (ENR08)	-	-	-	-	-	-	-	-	-	-	-
	Others (ENR09)	-	-	-	-	-	-	-	-	-	-	-
Net Score:				**+ 5**								
Project Owner's Conclusion in PSF:				The Project Owner confirms that the Project Activity will not cause any net harm to society.								
GCC Project Verifier's Opinion:				The GCC Verifier certifies that the Project Activity [is not likely to cause any] or [is likely to cause] net harm to the environment...								

E.2. Social Safeguards

Impact of Project Ativity on	Information on Impacts, Do-No-Harm Risk Assessment and Establishing Safeguards							Project Owner's Conclusion		GCC project Verifier's Conclusion (To be included in Project Verification Report only)
	Description of Impact (*positive or negative*)	Legal requirement /Limit, Corporate policies / Industry best practice	Do-No-Harm Risk Assessment (Choose which ever is applicable)			Risk Mitigation Action Plans (for aspects marked as Harmful)	Performance indicator for monitoring of impact.	Ex-ante scoring of environmental impact	Explanation of the Conclusion	3rd Party Audit
			Not Applicable	Harmless	Harmful	Operational / Management Controls	Monitoring parameter and frequency of monitoring (as per scoring matrix Appendix-02)	Ex- Ante scoring of social impact of the project	Ex- Ante description and justification/explanation of the scoring of social impact of the project	Verification Process Will the Project Activity cause any harm?

Social Aspects on the identified Categories indicated below.	*Indicators for social impacts*	*Describe and identify actual and anticipated impacts on society and stakeholders, both positive or negative, from all sources during normal and abnormal/emergency conditions that may result from constructing and operating of the Project Activity within or outside the project boundary, over which the project Owner(s) has/have control*	*Describe the applicable national regulatory requirements / legal limits or organizational policies or industry best practices related to the identified risks of social impacts*	*If no social impacts are anticipated, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as* ***Not Applicable***	*If social impacts exist but are expected to be in compliance with applicable national regulatory requirements/ stricter voluntary corporate limits by way of plant design and operating principles then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as* ***Harmless****), project having positive impact on society. To the BAU / baseline scenario must also mark their aspect as* ***"harmless"***	*If negative social impacts exist that will not be in compliance with the applicable national legal/ regulatory requirements or are likely to exceed legal limits, then the Project Activity is likely to cause harm and shall be indicated as* ***Harmful***	*Describe the operational or management controls that can be implemented as well as best practices, focusing on how to implement and operate the Project Activity, to reduce the risk of impacts that have been identified as* ***Harmful****.*	*Describe the monitoring approach and the parameters (KPI) to be monitored for each impact irrespective of whether it is harmless of harmful. The frequency of monitoring to be specified as well.* *Monitoring parameters can be quantitative or qualitative in nature along with the data source*	*-1* *0* *+1*	*Confirm the score of the social impacts of the project with respect to the aspect and its monitored value in relation to legal/regulato ry limits (if any) including basis of conclusion*	*Describe how the GCC Verifier has assessed that the impact of Project Activity on social aspects (based on monitored parameters, quantitative or qualitative) and in case of "harmful aspects how has the project owner adopted Risk Mitigation Action / management actions plans and policies to mitigate the risks of negative social impacts to levels that are unlikely to cause any harm.* *Also describe the positive impacts of the project on the society as compared to the baseline alternative or BAU scenario.*
Reference to paragraphs of Environmental and Social Safeguards Standard		*Paragraph 12 (a)*	*Paragraph 13 (c)*	*Paragraph 13 (d) (i)*	*Paragraph 13 (d) (ii)*	*Paragraph 13 (d) (iii)*	*Paragraph 13 (e) (i)*	*Paragraph 12 (c) and Paragraph 13 (f)*	*Paragrap h 23*		*Paragraph 24 and Paragraph 26 (a) (ii)*
Social - ***Jobs***	*Long- term jobs (> 10 year) created/ lost (SJ01)*	The project is expected to provide long-term job opportunities.	All employments are in compliance with the Labor Law of Brazil	-	Harmless	-	-	Number of people employed by the project the parameter will be monitored by checking employment records.	+1	Number of people for the long-term operation and on duty is 20.	
	New short-term jobs (< 1 year) created/ lost (SJ02)	The project creates short term job pportunities during construction.	All employments are in compliance with the Labor Law of Brazil	-	Harmless	-	-	Number of people employed by the project the parameter will be monitored by checking employment records.	+1		-

	Sources of income generation increased /reduced (SJ03)	The project increases income by crating job opportunities	All employments are in compliance with the Labor Law of Brazil	-	Harmless	-	-	Income received by employees; the parameter will be monitored by checking payment records.	+1		-
	Avoiding discrimination when	-	-	-	-	-	-	-	-	-	-
	hiring people from different race, gender, ethnics, religion, marginali zed groups, people with disabilitie s (SJ04) *(Human rights)*	-	-	-	-	-	-	-	-	-	-
Social - *Health & Safety*	*Disease prevention (SHS01)*	-	-	-	-	-	-	-	-	-	-
	Occupational health *hazards (SHS02)*	-	-	-	-	-	-	-	-	-	-

	Reducing / increasin g accidents /Incident s/fatality (SHS03)	In the process of project implementation, engineering safety accidents such as industrial injury, Accidental injury, damage to important facilities and other reasons may occur due to management, safety awareness and natural weather.	All trainings and precautions are completed according to the Code for design of occupational safety and health of water resources and hydropower projects	-	Harmless. The project is operated by trained and qualified staffs as per the safety requirement of the Hydro			Accidents occurred at project site, the parameter will be monitered on yearly basis.	+1	Up till now, there is no accident occured.	
	Reducing / increasing crime (SHS04)	-	-	-	-	-	-	-	-	-	-
	Reducing / increasing food wastage (SHS05)	-	-	-	-	-	-	-	-	-	-
	Reducing / increasing indoor air pollution (SHS06)	-	-	-	-	-	-	-	-	-	-
	Efficiency of health services (SHS07)	-	-	-	-	-	-	-	-	-	-

	Sanitation and waste management (SHS08)	Crowds are Concentrated in construction areas, which can easily lead to the occurrence and prevalence of infectious diseases if no attention is paid to water source selection, drinking water hygiene and environmental sanitation.	-	-	Harmless. Measures will be taken, such as establishing hygienic drinking water systems, strengthening hygiene management, actively promoting effective hygiene and epidemic prevention, and establishing hygiene and epidemic prevention clinics.	-	-	Measures for sanitation, the parameter will be monitored by checking relevant documents.	+1	Hire the residents for daily area cleaning and signed sub-contractor for the large- scale sanitation and waste management.	
	Other health and safety issues (SHS09)	-	-	-	-	-	-	-	-	-	-
Social - ***Education***	*Specialized training / education to local personnel (SE01)*	The project owner provides job related training for special positions.			Harmless. The employees will be given job-related training to improve their professional capacity.			The parameter training records will be monitored on yearly basis.	+1	A series of safety and QHSE training is held around twice a year.	
	Educational services improved or not. (SE02)	-	-	-	-	-	-	-	-	-	-

	Project- related knowledg e dissemin ation effective or not (SE03)	-	-	-	-	-	-	-	-	-	-
	Other educatio nal issues (SE03)	-	-	-	-	-	-	-	-	-	-
	Add more rows if required (SE04)	-	-	-	-	-	-	-	-	-	-
Social - *Welfare*	*Improvin g/ deteriorat ing working condition s (SW01)*	-	-	-	-	-	-	-	-	-	-
	Commun ity and rural welfare (indigeno us people and communi ties) (SW02)	-	-	-	-	-	-	-	-	-	-
	Poverty alleviation (more people above poverty level) (SW03)	-	-	-	-	-	-	-	-	-	-

	Improving / deteriorating wealth distribution/ generation of income and assets (SW04)	-	-	-	-	-	-	-	-	-	-
	Increase d or / deteriorating municipal revenues (SW05)	-	-	-	-	-	-	-	-	-	-
	Women's empowerment (SW06) (Human rights)	Women's empowerment can be guaranteed by law	Law of Brazil on the Protection of the Rights and Interests of Women stipulates that the state guarantees women equal labor rights and social security rights with men	-	Harmless	-	-	Number and positions of female employees the parameter can be monitored by checking employees' information at any times.	0	Women's empowerment can be guaranteed by law. However, be conservative, this parameter is not scored.	
	Reduced/ increase d traffic congestion (SW07)	-	-	-	-	-	-	-	-	-	-

	Exploitation of Child labor *(Human rights)* *(SW08)*	The project does not employ child labor.	Labor Law of Brazil clearly stipulates that prohibits employers from employing minors under the age of sixteen.	-	Harmless	-	-	ID information of employees, the parameter will be monitored by checking employee ID information.	+1	There is no child labor hired in the project.	
	Minimum wage protection *(Human rights)* *(SW09)*	-	-	-	-	-	-	-	-	-	-
	Abuse at workplace (With specific reference to women and people with special disabilities / challenges) *(Human rights)* *(SW10*	-	-	-	-	-	-	-	-	-	-
	Other social welfare issues (SW11)	-	-	-	-	-	-	-	-	-	-
	Avoidance of human trafficking and forced labor.	-	-	-	-	-	-	-	-	-	-

	(Human rights) *(SW12)*										
	Avoidance of forced eviction and/or partial physical or economic displacement of IPLCs *(Human rights)* *(CW13)*	Human trafficking and forced labor would not happen.	According to Brazil's labor law, labor relations are asocial relationship based on rights and obligations between the worker and the employer established on the basis of a labor contract, in which both parties are on an equal footing.	-	Harmless	-	-	Labor Contract, the parameter can be monitored at any time.	+1	Up till now, there is no conflict and forced behavior. Each of the employee signed the contract by their own volition.	
	Provision s of resettlement and human settlement displacement *(Human rights)* *(CW14)*	The Environmental Plan (EIA/RIMA) presents all relevant land requisition and resettlement plans, and was implemented in compliances with relevant regulations.	Regulation on Land Requisition Compensation and Resettlement of people for Hydropower Construction Projects.	-	Harmless. All of land acquisition and resettlements are conducted incompliance with the Regulation on Land Requisition Compensation and Resettlement of Migrants for Large and Medium Water Conservation and Hydropower Construction	-	-	Immigrant resettlement, the parameter can be monitored by checking relevant documents at any time.	+1	For this part, there is the governmental document as provided in the supporting documents.	

					Projects.						
Net Score:	**+ 9**										
Project Owner's Conclusion in PSF:	The Project Owner confirms that the Project Activity will not cause any net harm to society.										
GCC Project Verifier's Opinion:	The GCC Verifier certifies that the Project Activity [is not likely to cause any] or [is likely to cause] net harm to society.										

Section F. United Nations Sustainable Development Goals (SDG)

UN-level SDGs	**UN-level Target**	**Declared Country-level SDG**	**Defining Project-level SDGs**				**GCC Project Verifier's Conclusion** **(To be included in Project Verification Report only)**	
			Project-level SDGs	**Project-level Targets/Actions**	**Contribution of Project-level Actions to SDG** **Targets**	**Monitoring**	**Verification Process**	**Are Goal/ Targets Likely to be Achieved?**

Describe UN SDG targets and indicators *See: https://unstats.un.org/*	*Describe the UN-level target(s) and correspo*	*Has the host country declared the SDG to be a*	*Define project-level SDGs by suitably modifying and customizing UN/ Country-level SDGs to the project scope or creating a new indicator(s).*	*Define project-level targets/actions in line with nee project level indicators chosen. Define the target date by which the project Activity is expected to*	*Describe and justify how actions taken under the Project Activity are likely to*	*Describe the monitoring approach and the monitoring parameters*	*Describe how the GCC Verifier has verified the claims that the*	*Describe whether the project-level SDG* *target(s) is likely to be*

sdgs/indicators/indicators-list/	*nding indicator no(s)*	*national priority? Indicate Yes or No*	*Refer to previous column for guidance.*	*achieve the project-level SDG target(s).*		*result in a direct positive effect that contributes to achieving the defined project-level SDG targets*	*to be applied for each project-level SDG* *indicator and its correspondi ng target, frequency of monitoring* *and data source*	*project is likely to achieve the identifie d Project level SDGs* *target(s).*	*achieved by the target date* *(Yes or no)*
Goal 1: End poverty in all its forms everywhere	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Goal 3. Ensure healthy lives and promote well-being for all at all ages	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Goal 5. Achieve gender equality and empower all women and girls	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

Goal 6. Ensure availability and sustainable management of water and sanitation for all	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Goal 7. Ensure access to affordable, reliable, sustainable, and modern energy for all	SDG Target 7.2	Yes	The project generates electricity from the sustainable and renewable hydro source and contributes to increase the share of renewable energy mix in the global energy mix. The project uses hydro technology which is cleaner source of energy which avoids the equivalent amount of fossil fuel consumption for the power generation in the absence of the project activity. Project activity thus promotes investment into the cleaner technology-based power generation projects. By installing hydro technology project owner also promotes upgraded cleaner technology solutions and infrastructure in the power generation sector in the host country.	Project target to generate and feed 936,000 MWh/year hydro based electricity for entire lifetime of the project activity into the Chinese national grid.Project has already started contributing to the SDG 7 from its start date .	Enhance the share of installed Electricity generation capacity from renewable energy sources. Project generate and feed 936,000 MWh/year solar based electricity for entire crediting period of the project activity into the Chinese national grid.	The project increases the renewable energy share in Chinese energy production mix. It provides 936,000 MWh annual clean energy to the grid.	Project O&M team at project site continuously monitors the Quantity of net electricity generation supplied by the project (hydro) plant.		

Goal 8. Promote sustained, inclusive, and sustainable economic growth, full and productive employment and decent work for all	SDG Target 8.5	Yes	Project activity supports creation of short-term and long-term job opportunities during the construction and operation of the project activity. Supports economic productivity through technology up gradation and innovation through training of labour in intensive sector. Project protects labour rights and promotes safe and secure working environments. Supports a transition to a low carbon society through employment training for former fossil fuel industry employees.	The project is expected to create at least 40 long-term job opportunities, economic development has been achieved in the project location by creating opportunities to the other allied services and indirect employment.	20 people to be recruited including all levels. Besides, for short-term jobs, It required a total of 3.1 million labor days, the highest number of 2,760 people, the average peak labor force of 2,300 people.	The project generate employment for both operation and construction period. It created long-term employment for 20 people who are directly working at the site.	Project owner employs people according to the regulations. Check employment records		
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	SDG Target 9.4	Yes	The project provides clean and resilient energy generation facility.	The project is a resilient energy generation facility generate 936,000 MWh Clean energy annually.	The new high-tech hydro power plant is established for providing renewable energy for the area and build a sustainable life.	The project has produced clean energy by implementing a hydroelectric power plant and helps the adaptation of clean energy technologies	Check project implementation continuously		
Goal 10. Reduce inequality within and among countries	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Goal 11. Make cities and human settlements inclusive, safe, resilient, and sustainable	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Goal 12. Ensure sustainable consumption and production patterns	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

Goal 13. Take urgent action to combat climate change and its impacts	SDG Target 13.3	Yes	Project activity generates renewable energy-based electricity and mitigates the CO_2 emissions which would have been generated from the fossil fuel-based power plants.	Project activity involves installation of a 22,3 MW hydro power project in Brazil	Project activity reduces 160,915 tCO2e per year and 1,609,152 tCO2e during the crediting period.	Ensure optimum generation from the plant to the grid.	O&M team monitors the real time generation from the plant and calculated equivalent CO_2 reductio ns.		
Goal 14. Conserve and sustainably use the oceans, seas, and marine resources for sustainable development	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Goal 15. Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	N/A	N/A	N/A	N/A	N/A	N/A	N/A		

Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

SUMMARY	**Targeted**	**Likely to be Achieved**
Total Number of SDGs	**4**	**4**
Certification label (Bronze, Silver, Gold, Platinum, or Diamond) for the ACCs as defined in the PSF	**Gold**	**Gold**

Section G. Local stakeholder consultation

G.1. MODALITIES FOR LOCAL STAKEHOLDER CONSULTATION

The Brazilian Designated National Authority (CIMGC from the Portuguese "Comissão Interministerial de Mudanças Globais do Clima") requires that local stakeholders are consulted to comment towards the CDM project implementation in order to provide the Letter of Approval for a project[25]. The following entities shall be consulted:

- City hall of each involved township;
- City council of each involved township;
- State environmental body;
- Municipal environmental bodies;
- The Brazilian NGO Forum and Social Movements for Environment and Development (FBOMS);
- Community associations whose purposes are direct or indirectly related to the project activity;
- The State Attorney General of the state involved, or, depending on the case, the Attorney General for the Federal District and Territories;
- Federal Attorney General.

The same resolution also requires that at the time these letters are sent, a version of the PSF and a declaration stating how the project contributes to the sustainable development of the country must be made available to these stakeholders at least 15 days previous to the starting of the Global Stakeholder Process (GSP). The PSF was published on 09/04/2024, and a table with the dates of receipt of the letters/emails of invitation to comment for each of the stakeholders will be presented.

G.2. SUMMARY OF COMMENTS RECEIVED

No comments have been received yet.

G.3. CONSIDERATION OF COMMENTS RECEIVED

No comments have been received yet.

[25] Detailed requirements for LoA issuance are presented in the Manual for Submitting CDM Project Activities.

Section H. Approval and authorization

In Brazil, Letters of Approval (LoA) are issued only after the conclusion of the registration of the GCC project. Therefore, there is no LoA issued for the project activity yet.

APPENDIX 1. CONTACT INFORMATION OF PROJECT OWNERS

Project Owner name (as per LON/LOA)	Jesuíta Energia S.A.
Country	Brazil
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Fax	
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Website	
Contact person	Thais Christ Antunes

DOCUMENT HISTORY

Version	Date	Comment
V 4.0	27/09/2022	▪ Revised version released on approval by Steering Committee as per GCC Program Process. ▪ Revised version contains following changes: ○ Introduced A3 type projects A2 project sub-types. ○ Included revised Declaration by the 'Authorized Project Owner and focal point' on GCC requirements. ○ Included modified format for E+/S+/ SDG assessment. ○ Revised instructions for filling in the PSF. ○ Editorial changes to the document.
V 3.2	31/12/2020	▪ The name of GCC Program's emission units has been changed from "Approved Carbon Reductions" or ACRs to "Approved Carbon Credits" or ACCs.
V 3.1	17/08/2020	▪ Editorial revisions made ○ Revised Table in section B.7.2 on Monitoring-program of risk management actions ○ Revised Table in section E.1 on Environmental Safeguards ○ Revised Table in section E.1 on Social Safeguards ○ Revised Table in section F on United Nations Sustainable Development Goals (SDG)
V 3.0	05/07/2020	▪ Revised version released on approval by Steering Committee as per GCC Program Process. ▪ Revised version contains following changes: ○ Change of name from Global Carbon Trust (GCT) to Global Carbon Council (GCC). ○ Considered and addressed comments raised by Steering Committee: ➢ during physical meeting (SCM 01, dated 29 Oct 2019, Doha Qatar); and ➢ electronic consultations EC01-Round 01 (15.09.2019 – 25.09.2019), EC01-Round 02 (27.03.2020 – 27.06.2020). ○ Feedback from Technical Advisory Board (TAB) of ICAO on GCC submission for approval under CORSIA[26];

[26]See ICAO recommendation for conditional approval of GCC at https://www.icao.int/environmental-protection/CORSIA/Documents/TAB/Excerpt_TAB_Report_Jan_2020_final.pdf

V 2.0	25/06/2019	▪ Revised version released for approval by the GCC Steering Committee. ▪ Revised version includes additional details and instructions on the information to be provided, consequent to the latest developments world-wide (e.g., CORSIA EUC).
V 1.0	01/11/2016	Initial version released under the GCC Program Version 1

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