



Driving Climate Actions

Project Verification Report

V3.1 - 2020

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COVER PAGE	
Project Verification Report Form (PVR)	
BASIC INFORMATION	
Name of approved GCC Project Verifier / Reference No. (also provide weblink of approved GCC Certificate)	Shenzhen CTI International Certification Co., Ltd /GCCV007/00 (https://www.globalcarboncouncil.com/wp-content/uploads/2022/03/GCCV007-00-CTI-GCC-Verifier-Certificate-27032022.pdf)
Type of Accreditation	<input type="checkbox"/> Individual Track ¹ <input checked="" type="checkbox"/> CDM Accreditation (Active accreditation from United Nations Framework Convention on Climate Change valid till 30/05/2028; Ref no. E-0061; https://cdm.unfccc.int/DOE/list/DOE.html?entityCode=E-0061) <input type="checkbox"/> ISO 14065 Accreditation
Approved GCC Scopes and GHG Sectoral scopes for Project Verification	Approved GCC Scopes for Project Verification: Green House Gas (GHG# - ACC) Environmental No-harm (E+) Social No-harm (S+) Sustainable Development Goals (SDG+) Approved GHG Sectoral scopes for Project Verification: 1. Energy (renewable/non-renewable sources) (CDM TA 1.1, 1.2) 2. Energy distribution (CDM TA 2.1) 3. Energy demand (CDM TA 3.1) 4. Manufacturing industries (CDM TA 4.1) 5. Chemical industry (CDM TA 5.1, 5.2) 6. Construction (CDM TA 6.1) 7. Transport (CDM TA 7.1) 8. Mining/mineral production (CDM TA 8.1) 9. Metal production (CDM TA 9.1, 9.2) 10. Fugitive emissions from fuels (solid, oil and gas) (CDM TA 10.1) 11. Fugitive Emissions from production and consumption of halocarbons and sulphur hexafluoride (CDM TA 11.1, 11.2) 12. Solvents use (CDM TA 12.1) 13. Waste handling and disposal (CDM TA 13.1, 13.2) 14. Afforestation and Reforestation (CDM TA 14.1) 15. Agriculture (CDM TA 15.1)
Validity of GCC approval of Verifier	26/03/2023
Title, completion date, and Version number of the PSF to which this report applies	Title: Daheishan Hydropower Station Completion:04/03/2024 Version:3.0
Title of the project activity	Daheishan Hydropower Station


¹ **Note:** GCC Verifier under Individual tack is not eligible to conduct verifications for the GCC project that intends to supply carbon credits (ACCs) for CORSIA requirements.

Project submission reference no. (as provided by GCC Program during GSC)	S00553
Eligible GCC Project Type² as per the Project Standard (Tick applicable project type)	<input checked="" type="checkbox"/> Type A: <input type="checkbox"/> Type A1 <input checked="" type="checkbox"/> Type A2 <input type="checkbox"/> Type B – De-registered CDM Projects: <input type="checkbox"/> Type B1 <input type="checkbox"/> Type ³ B2
Date of completion of Local stakeholder consultation	01/05/2022
Date of completion and period of Global stakeholder consultation. Have the GSC comments been verified. Provide web-link.	GSC was conducted from 27/10/2022 to 10/11/2022 and as viewed on the project page (https://projects.globalcarboncouncil.com/project/536). No comments were received for this project (https://www.globalcarboncouncil.com/global-stakeholders-consultation/).
Name of Entity requesting verification service (can be Project Owners themselves or any Entity having authorization of Project Owners)	Sichuan RayGi Green Energy Technology Co., Ltd
Contact details of the representative of the Entity, requesting verification service (Focal Point assigned for all communications)	Mingyue Sun, as the representative of Sichuan RayGi Green Energy Technology Co., Ltd Telephone: +86 17713580778 E-mail: sunmingyue0778@dingtalk.com
Country where project is located	China
GPS coordinates of the Project site(s)	Powerhouse : 22°51' 21" N (22.8558N) 101°57' 01" E (101.9503E) Laihe River Diversion Weir: 22°52'52.0446"N (22.881124N) 101°58'33.6366"E (101.976010E) Jinchang River Diversion Weir: 22°50'41.0250"N (22.844930N) 102°01'14.7822"E (102.020773E) Tailwater Pool of Stage 1 plant:22°53'56.0482"N (22.898902N) 101°56'09.1456"E (101.935874E)

² Project Types defined in Project Standard and Program Definitions on GCC website.

³ GCC Project Verifier shall conduct Project Verification for all project types except B₂.

<p>Applied methodologies (approved methodologies of GCC or CDM can be used)</p>	<p>ACM0002: “Grid-connected electricity generation from renewable sources” (Version 21.0)</p>
<p>GHG Sectoral scopes linked to the applied methodologies</p>	<p>Sectoral Scope 1 -Energy industries (renewable - / non-renewable sources)</p>
<p>Project Verification Criteria: Mandatory requirements to be assessed</p>	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> ISO 14064-2, ISO 14064-3 <input checked="" type="checkbox"/> GCC Rules and Requirements <input checked="" type="checkbox"/> Applicable Approved Methodology <input checked="" type="checkbox"/> Applicable Legal requirements /rules of host country <input checked="" type="checkbox"/> National Sustainable Development Criteria (if any) <input checked="" type="checkbox"/> Eligibility of the Project Type <input checked="" type="checkbox"/> Start date of the Project activity <input checked="" type="checkbox"/> Meet applicability conditions in the applied methodology <input checked="" type="checkbox"/> Credible Baseline <input checked="" type="checkbox"/> Additionality <input checked="" type="checkbox"/> Emission Reduction calculations <input checked="" type="checkbox"/> Monitoring Plan <input checked="" type="checkbox"/> No GHG Double Counting <input checked="" type="checkbox"/> Local Stakeholder Consultation Process <input checked="" type="checkbox"/> Global Stakeholder Consultation Process <input checked="" type="checkbox"/> United Nations Sustainable Development Goals (Goal No 13- Climate Change)
<p>Project Verification Criteria: Optional requirements to be assessed</p>	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Environmental Safeguards Standard and do-no-harm criteria <input checked="" type="checkbox"/> Social Safeguards Standard do-no-harm criteria <input checked="" type="checkbox"/> United Nations Sustainable Development Goals (in additional to SDG 13) <input checked="" type="checkbox"/> CORSIA requirements
<p>Project Verifier’s Confirmation: The <i>GCC Project Verifier</i> has verified the GCC project activity and therefore confirms the following:</p>	<p>The GCC Project Verifier <i>Shenzhen CTI International Certification Co., Ltd</i>, certifies the following with respect to the GCC Project Activity <i>Daheishan Hydropower Station</i>.</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> The Project Owner has correctly described the Project Activity in the Project Submission Form (version 3.0, dated 04/03/2024) including the applicability of the approved methodology ACM0002, version 21.0 and meets the methodology applicability conditions and is expected to achieve the forecasted real, measurable and additional GHG emission reductions, complies with the monitoring methodology, has appropriately conducted local and global stakeholder consultation processes and has calculated emission reductions estimates correctly and conservatively.

	<p><input checked="" type="checkbox"/> The Project Activity is likely to generate GHG emission reductions amounting to the estimated 553,310tCO_{2e} over the fixed crediting period of 10 years, as indicated in the PSF, which are additional to the reductions that are likely to occur in absence of the Project Activity and complies with all applicable GCC rules, including ISO 14064-2 and ISO 14064-3.</p> <p><input checked="" type="checkbox"/> The Project Activity is not likely to cause any net-harm to the environment and/or society and complies with the Environmental and Social Safeguards Standard, and is likely to achieve the following labels:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Environmental No-net-harm Label (E+) <input checked="" type="checkbox"/> Social No-net-harm Label (S+) <p><input checked="" type="checkbox"/> The Project Activity is likely to contribute to the achievement of United Nations Sustainability Development Goals (SDGs), complies with the Project Sustainability Standard, and contributes to achieving a total of 03 SDGs (7,8,13), with the following⁴ SDG certification label (SDG+):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Bronze SDG Label <input checked="" type="checkbox"/> Silver SDG Label <input type="checkbox"/> Gold SDG Label <input type="checkbox"/> Platinum SDG Label <input type="checkbox"/> Diamond SDG Label <p><input checked="" type="checkbox"/> The Project Activity complies with all the applicable requirement of the GCC Program⁵ and ICAO's requirements on CORSIA Emissions Unit Eligibility Criteria and CORSIA Eligible Emissions Units, as per Clarification No 1., v1.3 paragraph 23-25, and the ACCs expected to be issued during the crediting period is likely to be CORSIA eligible and can be used by International Airlines for offsetting their emissions during all phases of CORSIA and therefore requests GCC Steering Committee to append CORSIA Certification label (C+) to this project.</p>
<p>Project Verification Report, reference number and date of approval</p>	<p>Reference number: GCC.21.VAL.007A</p> <p>Date of approval: 04/03/2024</p>
<p>Name of the authorised personnel of GCC Project Verifier and his/her signature with date</p>	<p>Signature: Mr. Zhou Lu </p> <p>Date: 04/03/2024</p>

⁴ SDG Certification labels: Bronze label (1 star): by achieving 2 out of 17 SDGs; Silver label (2 star): by achieving 3 out of 17 SDGs; Gold label (3 star): by achieving 4 out of 17 SDGs; Platinum label (4 star): by achieving 5 out of 17 SDGs; and Diamond label (5 star): by achieving more than 5 out of 17 SDGs.

⁵ "GCC Rules" are defined in Project Definitions and refers to the rules and requirements set out by the GCC program related to GHG emission reductions and its voluntary certification labels and are available on the GCC Program's public website: <https://www.globalcarboncouncil.com/resource-centre.html>

1. PROJECT VERIFICATION REPORT

Section A. Executive summary

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Brief Summary of the Project Activity

Daheishan Hydropower Station (hereafter referred to as “the project”) involves the installation of 24 MW Hydro Power Plant in Daheishan Village, Lvchun County, Honghe Hani and Yi Autonomous Prefecture in Yunnan Province. The aim of the project is to generate electricity from renewable source of energy (hydro) and leads to reduction in GHG emissions. The energy generated is being supplied to Southern China Power Grid (SCPG).

The project is invested and operated by Lvchun Hongrui power development and Operation Co., Ltd. The geographic coordinates of the project are 22°51'21"N (22.8558N), 101°57'01"E (101.9503E).

The project is in operation since 26/08/2019. The emission reductions (annual average) from the project activity are estimated to be 55,331 tCO_{2e} per year over the crediting period.

Scope of Verification

The scope of the services provided by Shenzhen CTI International Certification Co., Ltd (hereafter referred to as “CTI”) for the project is to perform Project Verification of concerned GCC Project Activity and implemented safeguards aimed to achieve environmental and social impacts without causing any net harm. The contribution of the project activity towards the United Nations Sustainable Development Goals would also be verified. The scope of verification is to assess the claims and assumptions made in the Project Submission Form (PSF) against the GCC criteria, including but not limited to, GCC PS, GCC VS, applied CDM methodology, tools, CORSIA requirements and other relevant rules and requirements established under Program process.

Verification Process

The verification process was undertaken by a competent verification team and involved the following,

- the desk review of documents and evidence submitted by the project owner in context of the reference rules and guidelines issued by GCC,
- undertaking/conducting site visit, interview or interactions with the representative of the project owners/representatives,
- reporting audit findings with respect to clarifications and non-conformities and the closure of the findings, as appropriate and
- preparing a draft verification opinion based on the audit findings and conclusions
- technical review of the draft verification opinion along with other documents as appropriate by an independent competent technical review team
- finalization of the verification opinion (this report)

Appointment of the assessment team

Based on the requirements of competency, experience and qualified sectoral scopes, CTI appointed a verification team in accordance with CTI's internal procedures. The detailed information of each team member in the assessment team is listed in the table in Section B.1 below. The qualification of each team member is detail in Appendix 2 to this report

Conclusion

The review of the PSF, supporting documentation and subsequent follow-up actions (onsite visit and interviews) have provided CTI with sufficient evidence to determine the fulfilment of stated criteria. CTI is of the opinion that the project activity "Daheishan Hydropower Station" as described in the final PSF meets all relevant requirements of GCC and host country (legal requirements for producing power) criteria and has correctly applied the methodology ACM0002: "Grid-connected electricity generation from renewable sources" (Version 21.0). Therefore, the project is being recommended to GCC Operations Team for request for registration with relative E+, S+, SDG+ and CORSIA (C+) labels.

Section B. Project Verification team, technical reviewer and approver

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B.1. Project Verification team

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of GCC Project Verifier or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Project Verification findings
1.	Team Leader	IR	LIN	Wu	CTI	Y	Y	Y	Y
2.	Team Member	IR	JIN	Yiming	CTI	Y	Y	Y	Y
3.	Financial Expert	IR	Chen	Yazi	CTI	Y	/	/	Y

B.2. Technical reviewer and approver of the Project Verification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of GCC Project Verifier or outsourced entity)
1.	Technical reviewer	IR	Lin	Shunrong	CTI
2.	TR member	IR	Feng	Tian	CTI
3.	Approver	IR	Zhou	Lu	CTI

Section C. Means of Project Verification

C.1. Desk/document review

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The verification was performed primarily as a document review of the initial PSF/18/ and revised/final PSF/19/. The verification of information provided in the PSF was performed using the source of information provided by the project owners. Additionally, the cross checks were performed for information provided in the PSF using information from sources other than the verification sources, the verification team’s sectoral or local expertise and, if necessary, independent background investigations.

C.2. On-site inspection

Duration of on-site inspection (14/12/2022):				
No.	Activity performed on-site	Site location	Date	Team member
/	<p>The project verification team conducted interviews with the project owner, plant in-charge, other stakeholders to confirm the information and to resolve issues identified in the document review.</p> <p>An assessment was conducted as a part of project verification activity and involved:</p> <ol style="list-style-type: none"> 1.an assessment of the implementation and operation of the project activity as per the PSF and GCC requirements 2.To validate that the project design, as documented is sound and reasonable, and meets the identified criteria GCC Standard Requirements and associated guidance 3.To assess conformance with the certification criteria as laid out in the GCC Standards; 4.To evaluate the conformance with the certification scope, including the GHG project and baseline scenarios, additionality; GHG sources, sinks, and reservoirs; and the physical infrastructure, activities, technologies and processes of the GHG project to the requirements of the GCC; 5.To evaluate the calculation of GHG emissions, including the correctness and transparency of formulae and factors used; assumptions related to estimating GHG emission reductions; and uncertainties; and 6.To determine whether the project could reasonably be expected to achieve the estimated GHG reduction/removals. 7.a review of information flows for generating, aggregating and reporting of the ex-ante monitoring parameters. 8.interviews with relevant personnel to confirm that the operational and data collection procedures can be implemented in accordance with the Monitoring Plan 9.a cross-check between information provided in the submitted documents and data from other sources 	Lvchun County, Honghe Hani and Yi Autonomous Prefecture in Yunnan Province	14/12/2022	LIN Wu, JIN Yiming

	<p>10. a review of calculations and assumptions made in determining the GHG data and estimated eRs, and</p> <p>11. an identification of QA/QC procedures in place to prevent, or identify and correct, any errors or omissions in the reported monitoring parameters</p> <p>12. Verification of Stakeholder Consultation by interviewing the stakeholders.</p> <p>13. additional labels (E+, S+ SDGs and C+)</p> <p>14. confirmation of legal ownership of the project activity and avoidance on double accounting</p>			
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C.3. Interviews

No.	Interview			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Shen	Hongwu	Power Plant Manager, Lvchun Hongrui power development and Operation Co., Ltd	14/12/2022	<ul style="list-style-type: none"> • Chronological description of the project activity with documents of key steps of the implementation. • Current status of plant design • Technical details of the project realization, project feasibility, designing, operational life time, monitoring of the project • Host Government Approval • Approval procedures and status • Monitoring and measurement equipment and system • Financial aspects • Crediting period • Project activity starting date • ACCs allocation/ ownership • Baseline study assumptions • Additionality • Sustainable development issues • Monitoring • Analysis of local stakeholder consultation • Roles & responsibilities of the project owners and project management, monitoring and reporting • National Legislation • Details of emissions reduction • Local stakeholder consultation calculation 	LIN Wu, JIN Yiming
2.	Liu	Jing	Project Manager, Lvchun Hongrui power development and Operation Co., Ltd			
3.	Wang	Shuping	Sichuan RayGi Green Energy Technology Co., Ltd			
4.	Sun	Mingyue	Sichuan RayGi Green Energy Technology Co., Ltd			
5.	Zhang	Zhengfu	Local Villager			
6.	Luo	Fucheng	Local Villager			
7.	Li	Wencai	Local Villager			
8.	Zhang	Yan	Local Villager			

C.4. Sampling approach

Not applicable as no sampling has been used during the project verification.

C.5. Clarification request (CLs), corrective action request (CARs) and forward action request (FARs) raised

Areas of Project Verification findings	Applicable to Project Types	No. of CL	No. of CAR	No. of FAR
Green House Gas (GHG)				
Identification and Eligibility of project type	A ₁ , A ₂ , B ₁ , B ₂			
General description of project activity	A ₁ , A ₂ , B ₁ , B ₂			
Application and selection of methodologies and standardized baselines	A ₁ , A ₂ , B ₁ , B ₂			
- Application of methodologies and standardized baselines	A ₁ , A ₂ , B ₁ , B ₂	CL 01		
- Deviation from methodology and/or methodological tool	A ₁ , A ₂ , B ₁ , B ₂			
- Clarification on applicability of methodology, tool and/or standardized baseline	A ₁ , A ₂ , B ₁ , B ₂			
- Project boundary, sources and GHGs	A ₁ , A ₂ , B ₁ , B ₂		CAR 01	
- Baseline scenario	A ₁ , A ₂ , B ₁ , B ₂			
- Demonstration of additionality including the Legal Requirements test	A ₁ , A ₂ , B ₁ , B ₂	CL02	CAR 02, CAR 03	
- Estimation of emission reductions or net anthropogenic removals	A ₁ , A ₂ , B ₁ , B ₂	CL 03		
- Monitoring plan	A ₁ , A ₂ , B ₁ , B ₂			
Start date, crediting period and duration	A ₁ , A ₂ , B ₁ , B ₂		CAR 04	
Environmental impacts	A ₁ , A ₂ , B ₁ , B ₂	CL 04, CL 05		
Local stakeholder consultation	A ₁ , A ₂ , B ₁			
Approval & Authorization- Host Country Clearance	A ₁ , A ₂ , B ₁ , B ₂			FAR 01
Project Owner- Identification and communication	A ₁ , A ₂ , B ₁ , B ₂			
Global stakeholder consultation	A ₁ , A ₂ , B ₁			
Others (please specify)	A ₁ , A ₂ , B ₁ , B ₂			
VOLUNTARY CERTIFICATION LABELS				
Environmental Safeguards (E ⁺)	A ₁ , A ₂ , B ₁	CL 05		
Social Safeguards (S ⁺)	A ₁ , A ₂ , B ₁			
Sustainable development Goals (SDG ⁺)	A ₁ , A ₂ , B ₁			
Authorization on Double Counting from Host Country (only for CORSIA)	A ₁ , A ₂ , B ₁			FAR 01
CORSIA Eligibility (C ⁺)				FAR 01
Total		5	4	1

Section D. Project Verification findings

D.1. Identification and eligibility of project type

Means of Project Verification	<p>The project activity is correctly identified as A2 category subtype 1 in the PSF/19/ Grid-connected material: Grid-connection schedule protocol/29/ and Grid-connection trial operation position paper/31/ of the hydro power plant provided by the project owners have been checked.</p> <p>According to the operation logbooks/35/ and Grid-connection trial operation position</p>
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	<p>paper/31/, it is confirmed that hydro power plant started operations and begun generating emission reduction from 26/08/2019, which is after 01/01/2016.</p> <p>Information regarding the consistency of the title of the projects, GPS coordinates, Project owners, legal owner etc. has been checked for the any other GHG including CDM, GS, VERRA, CCER/50//51//52//53/ and non GHG program including I-REC or Chinese domestic renewable Energy Certification Scheme for supply of Green Electricity Certificate/54//55/, not same projects appearing in any other registries and under process have been observed. The internet source is as of the following for checking all the sources (in any other registries/websites of programs/standards including local ETS (CC China).</p> <p>Following project meets the Type A2 project category as:</p> <ol style="list-style-type: none"> 1. It is not required by a legal mandate and it does not implement a legally enforced mandate as confirmed from the EIA/23/ and its approval letter/24/, EIA authorized as of not required by a legal mandate. <p>The assessment team assessed the relevant regulations to confirm that the project meets the legal requirement test:</p> <ul style="list-style-type: none"> • China’s Sustainable Development Report/17/ • FSR/22/ • EIA Approval/24/ • Approval of the Daheishan Hydro Power Project/28/ • Grid-connected scheduling protocol/29/ • Notice Regarding the Regulations for Electricity Generation from Renewable Energy/60/ • Law of the People’s Republic of China on Renewable Energies/61/ • Document for Registered Engineering Consultants in China/63/ • Approval and Implementation of Power Industry System Reform in China/65/ • Environmental Protection Law of the People’s Republic of China/66/ <ol style="list-style-type: none"> 2.It complies with all the applicable host country legal requirements/24//28/ and it ensures compliance with legal requirements as it has acquired Grid-connected scheduling protocol/29/ from the SCPG prior to the start of the commercial operation of the project. 3.The project started operation on 26/08/2019/31/,which is after 01/01/2016 and earlier to 05/07/2022 Hence this fall under type A2 project. 4.The project also delivers real, measurable and additional emission reduction of 55,331 tCO₂e annually (average value over the crediting period)/22/. 5.Project applies an approved CDM monitoring and baseline methodology ACM0002: “Grid-connected electricity generation from renewable sources”, Version 21.0/8/. <p>In addition, ownership of the carbon credits generated from the project activity has</p>
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	been clearly addressed in the GCC carbon emission reduction project joint development cooperation agreement/89/.
Findings	No finding was raised.
Conclusion	The project activity was found eligible as per the requirements under section 4 and has been confirmed to be type A2 subtype 1 project in line with paragraph 11 (a) (ii) of the GCC Project Standard version 3.1/2/ and as per Clarification No 1, v1.3 table 1, section 6, which was verified from the documents issued by SCPG.

D.2. General description of project activity

Means of Project Verification	<p>The project activity is installation of a 24 MW hydro power plant which is installing 2 sets of 12MW capacity hydroelectric generators/22//28/ and legal owned by Lvchun Hongrui power development and Operation Co., Ltd. The turbine model type is HLA920-LJ-160 and the generator model type is SF12-12/2860. The installed capacity and relevant technical specification of the project have been verified via checking Equipment technical agreement and equipment purchase contracts/40/ with their technical specification, nameplates/37/, project approval/28/ and onsite inspection. The legal ownership of the project activity is verified via checking business license/27/ with project approval/28/, equipment purchase contracts/40/ and onsite inspection.</p> <p>The project is a green field project connecting to the SCPG and in the absence of the same the electricity requirement would have been met from fossil fuel intensive national grid, via checking Grid-connected scheduling protocol/29/, Grid-connection trial operation position paper/31/, Electricity Purchase Contract/34/, project approval/27/ and onsite visit. Therefore, the grid connected power plants has been selected as the baseline appropriately.</p> <p>During assessment and onsite visit, the verification team observed that the project installation was complete, and the project installation was carried out in accordance with the FSR report/22/ and project approval/28/.</p> <p>The project activity is located in Daheishan Village, Lvchun County, Honghe Hani and Yi Autonomous Prefecture in Yunnan Province, P. R. China. The location was checked with the help of satellite images via independent research. The coordinates of the physical site of the project activity are as follows:</p> <table border="1" data-bbox="502 1496 1497 1574"> <tr> <td>Latitude-Decimal Degree</td> <td>Longitude-Decimal Degree</td> </tr> <tr> <td>22°51'21"N (22.8558N)</td> <td>101°57'01"E (101.9503E)</td> </tr> </table> <p>Latitude and Longitude of the physical site of the project activity has been included appropriately in the PSF which was found consistent from the FSR/22/.</p> <p>The hydro power plant constitutes of 2 sets of 12MW capacity hydroelectric generators/22/ with total installed capacity of 24 MW. The power generated by the hydro turbine generators fed to the SCPG via transmission line of 110kV Xinggu substation/29/ which is located within the project site.</p> <p>The operational lifetime of the turbines is 20 years as per the technical specifications provided by the manufacturer/40/, which is verified as capable to cover the whole lifetime of the project activity as the lifetime of the project is 20 years. The Project Owners have fixed the crediting period of 10 years from 26/08/2019 to 25/08/2029 which is in accordance with the GCC program manual. It is estimated to generate 108,738 MWh on grid electricity annually during life time and 1,087,380 MWh on grid</p>	Latitude-Decimal Degree	Longitude-Decimal Degree	22°51'21"N (22.8558N)	101°57'01"E (101.9503E)
Latitude-Decimal Degree	Longitude-Decimal Degree				
22°51'21"N (22.8558N)	101°57'01"E (101.9503E)				

	<p>electricity during fixed 10-year crediting period with estimated 55,331 tCO₂e emission reductions annually and 553,310 tCO₂e over the fixed 10-year crediting period.</p> <p>The project activity is described as Type A2- sub type 1 under GCC requirement and has applied CDM methodology ACM0002: “Grid-connected electricity generation from renewable sources”, Version 21.0, and falls into the Scope “(a) Construction and operation of a Greenfield power plant”.</p> <p>No sampling approach was applied.</p> <p>In addition to generating emission reductions the hydro power plant also qualifies for other voluntary certification labels.</p> <table border="1"> <thead> <tr> <th>Voluntary Labels (Indicative)</th> <th>Expected to achieve the project</th> <th>Score/Label</th> </tr> </thead> <tbody> <tr> <td>Achieving the United Nations Sustainable Developmental Goals (SDG+)</td> <td>Yes</td> <td>3 out of total 17 SDG; Gold</td> </tr> <tr> <td>Environmental No-net harm (E+)</td> <td>Yes</td> <td>+9</td> </tr> <tr> <td>Social No-Net harms (S+)</td> <td>Yes</td> <td>+8</td> </tr> <tr> <td>CORSIA (C+)</td> <td>Yes</td> <td>For carbon credits</td> </tr> </tbody> </table> <p>In the baseline scenario the main source of emission was found to be CO₂ as electricity was generated mainly through fossil-fuel based power plants whereas in project scenario the electricity is generated by the hydro power plant thereby reducing the CO₂ emissions. Thus, non-application of GWP in this project activity was found to be acceptable as the project boundary does not include any of the GHG emissions in the project scenario as per the applied methodology.</p> <p>The description in the PSF/19/ includes sufficient details and provides clarity about the project activity. The project activity is not a bundled project. The verification team also checked 1) other approaches by attestation from the owner, 2) by checking the webpage in GCC, China CCER web etc.</p>	Voluntary Labels (Indicative)	Expected to achieve the project	Score/Label	Achieving the United Nations Sustainable Developmental Goals (SDG+)	Yes	3 out of total 17 SDG; Gold	Environmental No-net harm (E+)	Yes	+9	Social No-Net harms (S+)	Yes	+8	CORSIA (C+)	Yes	For carbon credits
Voluntary Labels (Indicative)	Expected to achieve the project	Score/Label														
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Environmental No-net harm (E+)	Yes	+9														
Social No-Net harms (S+)	Yes	+8														
CORSIA (C+)	Yes	For carbon credits														
Findings	No finding was raised.															
Conclusion	<p>The project verification was based on review of the key documents such as project approval/28/. The project description as contained in the final PSF was found accurate and complete.</p> <p>Hence, in line with the requirements of paragraph 36 of the GCC Project Standard version 3.1/2/, verification team confirms that project description as contained in the final PSF was found accurate and contains complete details of the GHG emission-reduction activity, including schematics, specifications and a description of how the project reduces emission reductions by generating renewable energy.</p>															

D.3. Application and selection of methodologies and standardized baselines

D.3.1 Application of methodology and standardized baselines

Means of Project Verification	<p>The methodology ACM0002: “Grid-connected electricity generation from renewable sources” (Version 21.0)/8/ and following tools are applied in this project:</p> <ul style="list-style-type: none"> • Tool 01: Tool for the demonstration and assessment of additionality, version 07.0.0/9/
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	<ul style="list-style-type: none"> • Tool 07: Tool to calculate the emission factor for an electricity system, version 07.0/11/ • Tool 24: Common Practice, version 03.1/13/ • Tool 27: Investment Analysis, version 12.0/12/ <p>The applicability criterion and assessment on the project shows in the table below:</p>						
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%; text-align: center;">Applicability Criteria in ACM0002: “Grid-connected electricity generation from renewable sources” (Version 21.0)</th> <th style="width: 40%; text-align: center;">Assessment</th> </tr> </thead> <tbody> <tr> <td> <p>This methodology is applicable to grid-connected renewable energy power generation project activities that:</p> <ul style="list-style-type: none"> (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). </td> <td> <p>According to the FSR and approval of the project/22//28/, the project is a grid-connected greenfield 24MW power plant (hydro power plant) at a site where no renewable power plant was operated prior to the implementation of the project activity. Via checking Grid-connected scheduling protocol/29/, Grid-connection trial operation position paper/31/ and Electricity Purchase Contract/34/, it is verified the project activity is a grid-connected renewable energy power generation project as well.</p> <p>The applicability criterion (a) is met.</p> </td> </tr> <tr> <td> <p>In case the project activity involves the integration of a BESS, the methodology is applicable to grid-connected renewable energy power generation project activities that:</p> <ul style="list-style-type: none"> (a) Integrate BESS with a Greenfield power plant; (b) Integrate a BESS together with implementing a capacity addition to (an) existing solar photovoltaic¹ or wind power plant(s)/unit(s); (c) Integrate a BESS to (an) existing solar photovoltaic or wind power plant(s)/unit(s) without implementing any other changes to the existing plant(s); (d) Integrate a BESS together with implementing a retrofit of (an) existing solar photovoltaic or wind power plant(s)/unit(s). </td> <td> <p>Not applicable, as the project activity does not involve the integration of a BESS.</p> </td> </tr> </tbody> </table>	Applicability Criteria in ACM0002: “Grid-connected electricity generation from renewable sources” (Version 21.0)	Assessment	<p>This methodology is applicable to grid-connected renewable energy power generation project activities that:</p> <ul style="list-style-type: none"> (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). 	<p>According to the FSR and approval of the project/22//28/, the project is a grid-connected greenfield 24MW power plant (hydro power plant) at a site where no renewable power plant was operated prior to the implementation of the project activity. Via checking Grid-connected scheduling protocol/29/, Grid-connection trial operation position paper/31/ and Electricity Purchase Contract/34/, it is verified the project activity is a grid-connected renewable energy power generation project as well.</p> <p>The applicability criterion (a) is met.</p>	<p>In case the project activity involves the integration of a BESS, the methodology is applicable to grid-connected renewable energy power generation project activities that:</p> <ul style="list-style-type: none"> (a) Integrate BESS with a Greenfield power plant; (b) Integrate a BESS together with implementing a capacity addition to (an) existing solar photovoltaic¹ or wind power plant(s)/unit(s); (c) Integrate a BESS to (an) existing solar photovoltaic or wind power plant(s)/unit(s) without implementing any other changes to the existing plant(s); (d) Integrate a BESS together with implementing a retrofit of (an) existing solar photovoltaic or wind power plant(s)/unit(s). 	<p>Not applicable, as the project activity does not involve the integration of a BESS.</p>
	Applicability Criteria in ACM0002: “Grid-connected electricity generation from renewable sources” (Version 21.0)	Assessment					
<p>This methodology is applicable to grid-connected renewable energy power generation project activities that:</p> <ul style="list-style-type: none"> (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). 	<p>According to the FSR and approval of the project/22//28/, the project is a grid-connected greenfield 24MW power plant (hydro power plant) at a site where no renewable power plant was operated prior to the implementation of the project activity. Via checking Grid-connected scheduling protocol/29/, Grid-connection trial operation position paper/31/ and Electricity Purchase Contract/34/, it is verified the project activity is a grid-connected renewable energy power generation project as well.</p> <p>The applicability criterion (a) is met.</p>						
<p>In case the project activity involves the integration of a BESS, the methodology is applicable to grid-connected renewable energy power generation project activities that:</p> <ul style="list-style-type: none"> (a) Integrate BESS with a Greenfield power plant; (b) Integrate a BESS together with implementing a capacity addition to (an) existing solar photovoltaic¹ or wind power plant(s)/unit(s); (c) Integrate a BESS to (an) existing solar photovoltaic or wind power plant(s)/unit(s) without implementing any other changes to the existing plant(s); (d) Integrate a BESS together with implementing a retrofit of (an) existing solar photovoltaic or wind power plant(s)/unit(s). 	<p>Not applicable, as the project activity does not involve the integration of a BESS.</p>						

	<p>The methodology is applicable under the following conditions:</p> <p>(a) Hydro power plant/unit with or without reservoir, wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit;</p> <p>(b) In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power capacity addition projects) the existing plant/unit started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion, retrofit, or rehabilitation of the plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity;</p> <p>(c) In case of Greenfield project activities applicable under paragraph 5 (a) above, the project participants shall demonstrate that the BESS was an integral part of the design of the renewable energy project activity (e.g. by referring to feasibility studies or investment decision documents);</p> <p>(d) The BESS should be charged with electricity generated from the associated renewable energy power plant(s). Only during exigencies⁶ may the BESS be charged with electricity from the grid or a fossil fuel electricity generator. In such cases, the corresponding GHG emissions shall be accounted for as project emissions following the requirements under section 5.4.4 below. The charging using the grid or using fossil fuel electricity generator should not amount to more than 2 per cent of the electricity</p>	<p>According to the FSR/22/, project approval/28/, Grid-connected scheduling protocol/29/, Electricity Purchase Contract/34/ and onsite visit: (a) the project is a hydro power plant with a reservoir, thus (a) is applicable; (b) the project does not involve capacity additions, retrofits, rehabilitations or replacements; (c) the project activity is not applicable under methodology paragraph 5(a) above; (d) the project does not involve BESS.</p> <p>Therefore, this applicability condition is met.</p>
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⁶ For example, upon deep discharge of the batteries.

	<p>generated by the project renewable energy plant during a monitoring period. During the time periods (e.g. week(s), months(s)) when the BESS consumes more than 2 per cent of the electricity for charging, the project participant shall not be entitled to issuance of the certified emission reductions for the concerned periods of the monitoring period.</p>	
	<p>In case of hydro power plants, one of the following conditions shall apply:</p> <ul style="list-style-type: none"> (a) The project activity is implemented in existing single or multiple reservoirs, with no change in the volume of any of the reservoirs; or (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 (7), is greater than 4 W/m²; or (c) The project activity results in new single or multiple reservoirs and the power density, calculated using equation (7), is greater than 4 W/m²; or (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 (7), is lower than or equal to 4 W/m², all of the following conditions shall apply: <ul style="list-style-type: none"> (i) The power density calculated using the total installed capacity of the integrated project, as per equation (8), 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: <ul style="list-style-type: none"> a. Lower than or equal to 15 MW; and b. Less than 10 per cent of the total installed capacity 	<p>The project is a new hydropower project with reservoir and the power density of the power plant, according to equation (7):</p> $PD = \frac{Cap_{PJ} - Cap_{BL}}{A_{PJ} - A_{BL}}$ <p>Where: PD: Power density of the project activity (W/m²) Cap_{PJ}: Installed capacity of the hydro power plant after the implementation of the project activity (W) Cap_{BL}: Installed capacity of the hydro power plant before the implementation of the project activity (W). For new hydro power plants, this value is zero A_{PJ}: Area of the single or multiple reservoirs measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (m²) A_{BL}: Area of the single or multiple reservoirs measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m²). For new reservoirs, this value is zero.</p> <p>As for this project, according to the FSR and project approval/28/, Cap_{PJ} is 24MW, A_{PJ} is $0.6 \times 10^4 \text{m}^2/22/$. Thus: $PD = \frac{Cap_{PJ}}{A_{PJ}} = \frac{24 \times 10^6}{0.6 \times 10^4} = 4000 \text{ W/m}^2 \geq 4 \text{ W/m}^2.$</p> <p>The applicability criterion (c) is met.</p>

	of integrated hydro power project.	
	<p>In the case of integrated hydro power projects, project participants shall:</p> <p>(a) Demonstrate that water flow from upstream power plants/units spill directly to the downstream reservoir and that collectively constitute to the generation capacity of the integrated hydro power project; or</p> <p>(b) Provide an analysis of the water balance covering the water fed to power units, with all possible combinations of reservoirs and without the construction of reservoirs. The purpose of water balance is to demonstrate the requirement of specific combination of reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability in different seasons to optimize the water flow at the inlet of power units. Therefore, this water balance will take into account seasonal flows from river, tributaries (if any), and rainfall for minimum of five years prior to the implementation of the CDM project activity.</p>	<p>According to the FSR/22/ and project approval/28/, the project is not an integrated hydro power project, thus this applicability criteria is not relevant to the proposed project.</p>
	<p>The methodology is not applicable to:</p> <p>(a) Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site;</p> <p>(b) Biomass fired power plants/units.</p>	<p>Via checking the FSR/22/, project approval/28/, EIA approval/24/ and communicating with project owner, the verification team confirmed the project is not an activity that involves switching from fossil fuels to renewable energy at the proposed site, moreover, the project is not a biomass fired power plants/units.</p> <p>The project activity does not involve any of the given criteria hence methodology is applicable for the project activity.</p>
<p>In the case of retrofits, rehabilitations, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is “the continuation of the current situation, that is to use the power generation equipment that was already in use prior to the</p>	<p>This condition is not relevant, as the project activity does not involve capacity additions, retrofits, replacement or rehabilitations.</p>	

	implementation of the project activity and undertaking business as usual maintenance”.	
	Applicability Criteria in Tool 01: Tool for the demonstration and assessment of additionality (Version 07.0.0)	Assessment
	The use of the “Tool for the demonstration and assessment of additionality” is not mandatory for project participants when proposing new methodologies. Project participants may propose alternative methods to demonstrate additionality for consideration by the Executive Board. They may also submit revisions to approved methodologies using the additionality tool.	The project applied the methodology ACM0002: “Grid-connected electricity generation from renewable sources” (Version 21.0) in the PSF/19/, the Tool 01 is included in the methodology, thus it is verified as applicable.
	Once the additionally tool is included in an approved methodology, its application by project participants using this methodology is mandatory.	The methodology applied ACM0002: “Grid-connected electricity generation from renewable sources” (Version 21.0) in the PSF/19/ includes Tool 01, thus it is verified as applicable.
	Applicability Criteria in Tool 05: Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation (Version 03.0)	Assessment
	If emissions are calculated for electricity consumption, the tool is only applicable if one out of the following three scenarios applies to the sources of electricity consumption: (a) Scenario A: Electricity consumption from the grid. The electricity is purchased from the grid only, and either no captive power plant(s) is/are installed at the site of electricity consumption or, if any captive power plant exists on site, it is either not operating or it is not physically able to provide electricity to the electricity consumer; (b) Scenario B: Electricity consumption from (an) off-grid fossil fuel fired captive power plant(s). One or more fossil fuel fired captive power plants are installed at the site of the electricity consumer and supply the consumer with electricity. The captive power plant(s) is/are not connected to the electricity grid; or (c) Scenario C: Electricity consumption from the grid and (a) fossil fuel fired captive power plant(s). One or more fossil fuel fired captive power plants	It is verified via checking FSR/22/ and onsite visit that the electricity consumption will from the grid as Scenario A in case of recondition.

	<p>operate at the site of the electricity consumer. The captive power plant(s) can provide electricity to the electricity consumer. The captive power plant(s) is/are also connected to the electricity grid. Hence, the electricity consumer can be provided with electricity from the captive power plant(s) and the grid.</p>	
	<p>This tool can be referred to in methodologies to provide procedures to monitor amount of electricity generated in the project scenario, only if one out of the following three project scenarios applies to the recipient of the electricity generated: (a) Scenario I: Electricity is supplied to the grid; (b) Scenario II: Electricity is supplied to consumers/electricity consuming facilities; or (c) Scenario III: Electricity is supplied to the grid and consumers/electricity consuming facilities</p>	<p>Via checking FSR/22/, project approval/28/, Grid-connected scheduling/29/, Grid-connection trial operation position paper/31/, Operation logbooks/35/ and onsite inspection, it is verified that the electricity generated from the project activity is supplied to the grid, which is in compliance with Scenario I.</p>
	<p>This tool is not applicable in cases where captive renewable power generation technologies are installed to provide electricity in the project activity, in the baseline scenario or to sources of leakage. The tool only accounts for CO₂ emissions.</p>	<p>Via checking FSR/22/, project approval/28/ and onsite inspection, there is no captive renewable power generation technologies are installed to provide electricity in the project activity in the baseline scenario or to sources of leakage, and the tool is only used for CO₂ emissions.</p>
	<p>Applicability Criteria in Tool 07: Tool to calculate the emission factor for an electricity system (Version 07.0)</p>	<p>Assessment</p>
	<p>This tool may be applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity that is where a project activity supplies electricity to a grid or a project activity that results in savings of electricity that would have been provided by the grid (e.g., demand-side energy efficiency projects)</p>	<p>CM is estimated in the baseline emission calculation for the project activity that substitutes grid electricity that is where the project activity supplies electricity to a grid in the PSF/19/, thus it is verified as applicable.</p>
	<p>Under this tool, the emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off-grid power plants. In the latter case, two sub-options under the step 2 of the tool are available to the project participants, i.e., option IIa and option IIb. If option IIa is chosen, the conditions specified in “Appendix 1: Procedures related to off-grid power</p>	<p>The emission factor for the project electricity system is calculated for grid power plants in the PSF/19/ via checking the project approval/28/, Grid-connected scheduling protocol/29/ and onsite visit, thus it is verified as applicable.</p>

	<p>generation” should be met. Namely, the total capacity of off-grid power plants (in MW) should be at least 10 per cent of the total capacity of grid power plants in the electricity system; or the total electricity generation by off-grid power plants (in MWh) should be at least 10 per cent of the total electricity generation by grid power plants in the electricity system; and that factors which negatively affect the reliability and stability of the grid are primarily due to constraints in generation and not to other aspects such as transmission capacity.</p>	
	<p>In case of CDM projects the tool is not applicable if the project electricity system is located partially or totally in an Annex I country.</p>	<p>The project is located in Daheishan Village, Lvchun County, Honghe Hani and Yi Autonomous Prefecture in Yunnan Province, China, which is checked with FSR/22/, project approval/28/ and onsite visit and it is not located in an Annex I country, thus it is verified as applicable.</p>
	<p>Under this tool, the value applied to the CO₂ emission factor of bio fuel is zero.</p>	<p>The project does not involve bio fuel via checking the FSR/22/, project approval/28/ and onsite visit, thus it is verified as applicable.</p>
	<p>Applicability Criteria in Tool24: Common practice (Version 03.1)</p>	<p>Assessment</p>
	<p>This methodological tool is applicable to project activities that apply the methodological tool “Tool for the demonstration and assessment of additionality”, the methodological tool “Combined tool to identify the baseline scenario and demonstrate additionality”, or baseline and monitoring methodologies that use the common practice test for the demonstration of additionality.</p>	<p>The project applies the Tool 01: Tool for the demonstration and assessment of additionality, which is verified above.</p>
	<p>In case the applied approved baseline and monitoring methodology defines approaches for the conduction of the common practice test that are different from those described in this methodological tool, the requirements contained in the methodology shall prevail.</p>	<p>The project applies the methodology ACM0002: “Grid-connected electricity generation from renewable sources” (Version 21.0) in the PSF/19/ without the requirements for the common practice that are different from those described in this methodological tool. Thus, it is verified as applicable.</p>
<p>Applicability Criteria in Tool27: Investment analysis (Version 12.0)</p>	<p>Assessment</p>	

	<p>This methodological tool is applicable to project activities that apply the methodological tool “Tool for the demonstration and assessment of additionality”, the methodological tool “Combined tool to identify the baseline scenario and demonstrate additionality”, the guidelines “Non-binding best practice examples to demonstrate additionality for SSC project activities”, or baseline and monitoring methodologies that use the investment analysis for the demonstration of additionality and/or the identification of the baseline scenario</p>	<p>The project applies the Tool 01: Tool for the demonstration and assessment of additionality, which is verified above.</p>
	<p>In case the applied approved baseline and monitoring methodology contains requirements for the investment analysis that are different from those described in this methodological tool, the requirements contained in the methodology shall prevail.</p>	<p>The project applies the methodology ACM0002: “Grid-connected electricity generation from renewable sources” (Version 21.0) in the PSF/19/ without the requirements for the investment analysis that are different from those described in this methodological tool. Thus, it is verified as applicable.</p>
Findings	CL01 was raised and resolved.	
Conclusion	<p>The verification team confirms that: It has critically assessed each applicability condition listed in the selected methodology/tool and the relevant information contained in the PSF/19/ against these criteria. The selected CDM methodology (and tools) for the project activity is applicable.</p>	

D.3.2 Clarification on applicability of methodology, tool and/or standardized baseline

Means of Verification	Project	<p>Since the applicability of methodology was found to be fulfilled, further clarification to the methodology were not required.</p>
Findings	No finding was raised.	
Conclusion	<p>The verification team confirms that: It has critically assessed each applicability condition listed in the selected methodology/tool and the relevant information contained in the PSF/19/ against these criteria.</p>	

D.3.3 Project boundary, sources and GHGs

Means of Verification	Project	<p>As per the applied methodology ACM0002: “Grid-connected electricity generation from renewable sources” (Version 21.0)/8/, the spatial extent of the project boundary includes the project power plant/unit and all power plants/units connected physically to the electricity system that the GCC project power plant is connected to.</p> <p>The components of the project boundary mentioned in the PSF/19/ were found to be in compliance with paragraph 22 of the applied methodology /8/.</p> <p>The verification team conducted desk review of the implemented project to confirm the appropriateness of the project boundary identified. The verification team confirmed that all GHG sources required by the methodology have been included within the project boundary.</p>
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	<p>It was assessed that no emission sources related to project activity will cause any deviation from the applicability of the methodology or accuracy of the emission reductions.</p> <p>The project boundary is clearly depicted with the help of a flow diagram in section B.3 of the PSF/19/ and duly verified by the verification team via connection diagram/30/, which is found appropriate.</p>
Findings	CAR 01 was raised and resolved.
Conclusion	<ul style="list-style-type: none"> • The verification team was able to assess that complete information regarding the project boundary has been provided in PSF/19/ and could be assured from the connection diagram/30/. • The verification team confirms that all identified boundary, selected emissions sources and justified for the project activity. • Hence, in line with the paragraph 44 of Project standard version 3.1/2/, verification team confirms that identified boundary and selected emissions sources are justified for the project activity.

D.3.4 Baseline scenario

Means of Project Verification	<p>The paragraph 24 of the applied methodology (ACM0002, Version 21.0)/8/ prescribes baseline scenario as, “the baseline scenario is electricity delivered to the grid by the project activity that would have otherwise been generated by the operation of grid-connected power plants/22//24//28/ and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in TOOL07.”</p> <p>It is verified that the project implementation is compliance with Water Law of the People’s Republic of China/91/, Regulations on the Administration of Bidding and Tendering for Water Conservancy Construction Projects/92/ and Measures for the Administration of the Qualification for Investigation and Evaluation of Hydrological Water Resources and the Qualification for Water Resource Demonstration of Construction Projects/93/, and installation of hydro-power plant is not a compulsive requirement.</p> <p>The baseline scenario in the PSF/19/ is reported as the supply of electricity to grid and thereby displacement of electricity from the electricity distribution system connected to the national grid. The baseline scenario applied in the PSF was compared with the requirements of the baseline described in the applied methodology and found consistent. No project and leakage emissions were considered in the PSF which is in line with the applied methodology/8/.</p>
Findings	No findings were raised.
Conclusion	<ul style="list-style-type: none"> • Hence, in line with paragraph 55 and 57 of the Project standard Version 3.1/2/, verification team concluded that all assumptions and data used by the project owners are listed in the PSF/19/, including their references and sources. • All documentation used by project owners as the basis for assumptions and source of data for establishing the baseline scenario is correctly quoted and interpreted in the PSF; • All assumptions and data used in the PSF/19/ are justified appropriately and considered reasonable in the context of the proposed project activity. • All relevant policies and circumstances have been identified and correctly considered in the PSF, in accordance with the guidance by the GCC Operations Team. • The baseline methodology and the applicable tool(s) have been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions. • The verification team also concluded that the identified baseline scenario reasonably represents what would occur in the absence of the project activity.

D.3.5 Demonstration of additionality

Means of Project Verification	<p>For demonstrating additionality under GCC the project activity is required to undergo the following tests.</p> <p>Legal Requirement Test: based on the available literature on Notice Regarding the Regulations for Electricity Generation from Renewable Energy/60/ and Law of the People’s Republic of China on Renewable Energies/61/ in China it was confirmed that there are no enforced laws, statutes, regulations, court orders, environmental-mitigation agreements, permitting conditions or other legally binding mandates requiring its implementation, or requiring the implementation of a similar technology/measure that would achieve equivalent levels of GHG emission reductions.</p> <p>The assessment team assessed the relevant regulations to confirm that the project meets the legal requirement test: EIA/23/ EIA Approval/24/ Approval of the Daheishan Hydro Power Project/28/ Notice Regarding the Regulations for Electricity Generation from Renewable Energy/60/ Law of the People’s Republic of China on Renewable Energies/61/ Approval and Implementation of Power Industry System Reform in People’s Republic of China/65/ Environmental Protection Law of the People’s Republic of China/66/.</p> <p>In addition to the evidence assessment, a confirmation/29//34/ from the SCPG was received which confirmed that the project is meeting the local legal regulations.</p> <p>b) Additionality Tests: As per the applied methodology ACM0002, Version 21.0)/8/, additionality of the following project activity is demonstrated and assessed by the latest version of Tool 01: Tool for the demonstration and assessment of additionality”, Version 7.0/9/.</p> <p>The entity has adopted the stepwise approach for demonstrating and assessing the additionality of the project activity as follows:</p> <p>Step 0: Demonstration whether the proposed project activity is the first-of-its-kind. This step is optional and not used for this project.</p> <p>Step 1: Identification of alternatives to the project activity consistent with current laws and regulations As per the applied methodology paragraph 24, the project activity is the installation of a Greenfield power plant, and the baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid.” Thus, the baseline scenario is applied as per the methodology</p>
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	<p>and no alternative selection is required as per paragraph 55 of the Project Standard version 3.1/2/.</p> <p><u>Sub-step 1a: Define alternatives to the project activity</u> If the project activity is the installation of a Greenfield power plant with or without a BESS as described under paragraph 4(a) or paragraph 5(a), the baseline scenario is electricity delivered to the grid by the project activity that would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in TOOL07.</p> <p>The proposed project is a Greenfield hydro power plant, and the baseline scenario is electricity delivered to the grid by the project activity that would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources.</p> <p>Alternative (a) Implementing the proposed project, but not as a GCC project; Alternative (b) Continuation of the current situation (no project activity or other alternatives undertaken).</p> <p><u>Sub-step 1b: Consistency with mandatory laws and regulations</u> Both alternatives (a) and (b) are realistic and credible alternatives to the project which are consistent with mandatory laws and regulations. Conclusion: We conclude that alternatives (a) and (b) are in compliance with the relevant Chinese laws and regulations, proceed to Step 2 Investment analysis. .</p> <p>Step 2: Investment analysis Under step 2, it is demonstrated that project activity is not economically or financially feasible, without the revenue from the sale of certified emission reductions.</p> <p>Sub-step 2a: Determine appropriate analysis method: Option III i.e., Benchmark Analysis has been selected by the PO as an investment analysis method. As the project is selling generated electricity to national grid, it will generate financial benefits other than carbon revenue related income. Therefore, Option I is not applicable. In all other cases, Tool 1/9/ has provision to pick either Option II or Option III. Option II is applicable when the alternatives were similar investment projects. However, the alternative is the generation of electricity delivered to the grid by the project activity that would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources. So, Option II is not applicable, and choice of Option III by PO has been accepted by the GCC Verification team.</p> <p>Sub-step 2b: Option III. Apply benchmark analysis: Appropriateness of Benchmark: Post tax project IRR/21/ has been used as the financial indicator for the demonstration of financial unviability for the proposed project activity. A suitable benchmark i.e., expected return on project has been selected as benchmark comparison purposes. The source of benchmark was assessed by the verification team and the selected post tax project IRR and selected benchmark were found to</p>
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	<p>be appropriate and in-line with the applied tools, guidelines and other supporting documents provided by the PO.</p> <p>Paragraph 15 of tool 27/12/ states “Local commercial lending rates or WACC are appropriate benchmarks for a project IRR. Required/expected returns on project are appropriate benchmarks for a project IRR. Benchmarks supplied by relevant national authorities are also appropriate.” In line to the Economic evaluation code for small hydropower projects 3rd edition (SL 16-2010) in China/84/ issued by Ministry of Water Resources of the People’s Republic of China on 22/12/2010, a threshold IRR on project (=required/expected return on project) 10% in nominal terms for the hydropower whose capacity is lower than 50MW has been prescribed. And this benchmark standard is widely used for the China’s GHG emission reduction projects, for example, successfully registered VCS projects (many of them had successfully registered in CDM before as well, then deregistered and registered in VCS for the reason like market price)/90/. The investment decision time is 19/11/2012/38/ (the earliest date among the construction contracts), and it is verified as reasonable to select the benchmark as the Economic evaluation code for small hydropower projects 3rd edition was still the latest version at that investment decision time. Therefore, selected benchmark value was found to be appropriate for this project and representative of the Host Country China and has been applied by similar projects (small hydro power generation), i.e., registered VCS projects ID 1433, ID29, ID1044/90/.</p> <p>The FSR, which is the source of the parameters used for investment analysis, it is verified as conducted by SOCOL Corporation Ltd. in 12/2011/22/, approved by Honghe Prefecture Development and Reform Commission on 11/06/2012.</p> <p>The EIA is verified as conducted by Yunnan Luhong Environment Technology Ltd. in January 2012/23/ and approved by Department of Ecology and Environment of Yunnan Province dated on 07/06/2012/24/.</p> <p>The start date of the project construction is on 19/11/2012, when the first construction contract was signed/38/. Thus, the date of investment decision date has been verified as the date of the earliest date among the construction contracts, which is 19/11/2012/38/.</p>		
	File	Date	Conducted by
	Feasible Study Report	12/2011	Sinohydro First Engineering Bureau Co.
	Project Approval	11/06/2012	Honghe Hani and Yi Autonomous Prefecture Development and Reform Commission
	Environmental impact assessment	01/2012	Yunnan Luhong Environment Technology Ltd.
	EIA approval	07/06/2012	Department of Ecology and Environment of Yunnan Province
	The first construction contract	19/11/2012	Lvchun Hongrui power development and Operation Co., Ltd. and other technical and equipment companies
	Other construction contracts	04/2013-12/2015	Lvchun Hongrui power development and Operation Co., Ltd. and Honghe Shengong construction Co., Ltd.
	Equipment purchases contracts	18/02/2014-	Lvchun Hongrui power development and Operation Co., Ltd. and other technical and equipment companies

	22/11/2016	
Project owner's border decision	20/06/2014	Project Owner
Grid-connected scheduling protoco	13/09/2017	Honghe Power Supply Bureau; Lvchun Hongrui power development and Operation Co., Ltd.
Electricity Purchase Contract	05/03/2018	Honghe Power Supply Bureau; Lvchun Hongrui power development and Operation Co., Ltd.
First grid connection date	26/08/2019	Honghe Power Supply Bureau

The gap between the contracts and the commercial operation time is because the project is affected by another hydro power plant on the stream via onsite interview, and the legal owner encountered financing issues after the first construction contract was signed.

On 26/08/2019, it is verified as the project started operation based on the Grid-connection trial operation position paper/31/.

The gap between the FSR investment estimation in 2011/12/22/ and the the procurement contract at the time of investment decision in 2012/11/19/38/ is less than one year, which makes it reasonable and rational that the input values used in all investment analysis are valid and applicable at the time of the investment decision.

Appropriateness of the Input parameters

Parameter	Value	Unit	Means of Verification
Installed capacity	24	MW	Sourced from FSR P12. FSR page 12/22/, stating that installing 24MW hydro power plant. Details on the installed capacity and number of turbines (2 sets of turbines and generators of 12MW) were also verified from project approval/28/ and equipment purchase contracts/40/. The value was also cross-checked from Grid connection agreement/29/.
Annual generated electricity	122,040	MWh	Sourced from FSR P12. 122,040MWh=24MW*5,085hrs CTI therefore concludes that the assumed annual power generation from the FSR/22/ is appropriate and acceptable, which is based on the nearby Niukong hydrometric station data (since 1979), Xiaohegou hydrometric station data (1960-1969, 1981-now), Lixianjiang hydrometric station data (1956-2005) and

				<p>Huanglianshan hydrometric station data (1991-2002).</p> <p>The source of the amount of energy generated is in accordance with EB48 Annex 11 /14/ option 3 (a). The guidance allows the use of plant load factor provided while applying the project activity for project financing, or to the government while applying the project activity for implementation approval.</p>							
	Annual net supplied electricity	108,738	MWh	<p>Sourced from FSR P372.</p> <p>$108,738 = 122,040 \times 0.9 \times 99\%$ Effective power factor: 0.9 Self-use: 1%</p> <p>CTI therefore concludes that the assumed annual net supplied electricity from the FSR/22/ is appropriate and acceptable. According to the operation logbooks/35/, the 2019 (since project start date 26/08/2019) electricity generated is 4,062.000MWh and on grid electricity is 4,038.232 MWh with efficiency of 0.9941; the 2020 annual electricity generated is 87,163.500MWh and on grid electricity is 86,614.880 MWh with efficiency of 0.9937; the 2021 annual electricity generated is 96,243.600 MWh and on grid electricity is 86,614.880 MWh with efficiency of 0.9930; the 2022 annual electricity generated is 91,554.600 MWh and on grid electricity is 90,941.224 MWh with efficiency of 0.9933. Thus, it is verified that the effective power factor has been reached.</p>							
	Construction period	2	Year	Sourced from FSR							
	Operation period	20	Year	Sourced from FSR							
	Total investment	15,956.54	10 ⁴ CNY	<p>Sourced from FSR P366/22/.</p> <table border="1"> <tr> <td>unit</td> <td>10⁴CNY</td> </tr> <tr> <td>Total static investment</td> <td>15430.25</td> </tr> <tr> <td>Interest during construction</td> <td>526.29</td> </tr> <tr> <td>Total</td> <td>15,956.54</td> </tr> </table>	unit	10 ⁴ CNY	Total static investment	15430.25	Interest during construction	526.29	Total
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	Own capital	6172.10		<p>The FSR/22/ was developed by SOCOL Corporation Ltd. on 11/2011 and approved by Honghe Prefecture Development and Reform Commission on 11/06/2012.</p> <p>The total static investment was estimated to be about 15430.25×10^4 CNY which has been verified to be derived from the approved FSR/22/. The cost estimation sheet was prepared on 12/2011 and was used to identify the feasibility of the project by the project developer.</p> <p>Via comparing to other VCS registered small scale hydro power project in China/90/, ID1433 project's total investment is 14000×10^4 CNY with 18MW capacity and ID project's static investment is 10037.15×10^4 CNY with 18MW capacity.</p> <p>Via checking the construction contract, it takes 13451.68×10^4 CNY /38/ for construction and 2117.29×10^4 CNY/40/ for equipment purchase.</p> <p>Thus, it is verified as rational to use 15430.25×10^4 CNY for estimation.</p> <p>As for the capital source of the total investment, it constitutes of self-raised funding (own capital 6172.10 accounting for 40%) and loan (9258.15 as capital, accounting for 60% including interests). Long-term loan interest used as 6.40%, long term loan repayment period is 10 years, short-term loan interest used as 5.095% during the construction 2 years in guidance from the central bank.</p>
	Loan principal	9258.15		
	Tariff (VAT Inc)	215	CNY/ MWh	<p>The project grid tariff applied in the whole project lifetime is 215 CNY/MWh, which has been verified to be consistent with the value in the approved FSR/22/ without subsidy (no subsidy involved for the project).</p> <p>According to NDRC [2006] No.7 /60/ and current tariff in Yunnan Province in 2011, the tariff is 215 RMB/MWh.</p> <p>Comparing to similar registered project, i.e., VCSID1433/90/ with 18MW in</p>

				<p>Yunnan Province, uses 0.21 CNY/kWh as well.</p> <p>As for the actual tariff/33/, It was 166 CNY/MWh in 2019, 199 CNY/MWh in 2020 and 214 CNY/MWh in 2021.</p> <p>Thus, the tariff 215 CNY /MWh used in the investment analysis is reasonable and appropriate.</p>
	VAT rate	6.0	%	<p>The VAT of 6.0% used in the investment analysis of the proposed project has been substantiated to be in line with the relevant regulations of China/67/. According to the Regulations on the Value Added Tax of Electricity Product, [2004] No.10/67/ issued on 22 December 2004 and effective from 1 February 2005:</p> <p>VAT = on-sale VAT – input VAT On-sale VAT = Sale * Tax rate</p> <p>As the input VAT is limited for hydro power plant, the on-sale VAT was directly used as VAT amount in the FSR, which is 6%. Therefore, CTI confirms that the selected VAT rate is in accordance with the Chinese regulation at the time of the investment decision (11/2011). And the VAT refund is limited and it was also deducted from the project analysis, thus 6% is directly used/22/.</p>
	Income tax rate	1-2 year 0; 3-5 year 12.5; 6-22 year 25.0	%	<p>The income tax rate of (1-2 year)-0%; (3-5year)-12.5%; (6-22year)-25% used in the investment analysis of the proposed project has been substantiated to be in line with the Law of People’s Republic of China on Enterprise Income Tax issued on 16 March 2007/70/ and the policy of Western Region Developing/71/.</p> <p>According to the Guidance on the Assessment of Investment Analysis in the Annex 5 of the CDM-EB 62nd meeting report, the interest payable should be taken into account in the income tax calculation in cases where the benchmark applied in the investment analysis is post tax. As for the proposed project, CTI confirms that the IRR benchmark of 10% is post tax and the interest tax payable has been verified to be included in the calculation of the income tax. The working capital has been returned in the last year</p>

				of operation time in the IRR spreadsheet/21/.
	City maintenance and construction tax rate (of VAT)	5.0	%	The city construction surtax of 5% (of the VAT) has been verified to be in line with the FSR/22/. In accordance with the Provisional Regulations of the People’s Republic of China on Urban Maintenance and Construction Tax/75/, the rate of city construction surtax shall be determined by the taxpayer’s location: 7% for urban areas, 5% for county and town, and 1% for others. The project owner is located in Lvchun County, Honghe Hani and Yi Autonomous Prefecture in Yunnan Province, P. R. China, which has been verified during the follow-up interview. CTI therefore confirms that the city construction surtax of 5% is applicable for the proposed project.
	Education tax (of VAT)	3.0	%	The education tax of 3% required by the national regulation of the paid VAT derived from the FSR/22/ has been substantiated to be in line with the Provisional Regulations of the People’s Republic of China on Education Tax/76/. Therefore, CTI confirms that the education tax of 3% (of the VAT) is appropriate.
	Depreciation rate	4.75	%	It has been verified that a depreciation period of 20 year (the depreciation rate per year is 4.75%) derived from FSR/22/ is in line with the Implementation Rules of Enterprise Income Tax Law of China /69/. Therefore, CTI confirms that the depreciation period of 20 years for the proposed project activity is in line with the Chinese regulation.
Residual value ratio	5.0	%	CTI has verified that the residual value of 5% is derived from the FSR/22/ and is recovered at the end of operation period in the project IRR calculation spreadsheet/21/. According to the Notification on determination of residual rate for enterprise fixed asset/74/, the residual value can be determined by an enterprise and the range of residual value from 0% to 5% is considered to be reasonable. Therefore, CTI confirms that the residual value of 5% for the proposed	

			project is in accordance with the Chinese regulation.
Maintenance fee rate	1	%	<p>CTI has verified that the maintenance fee rate as 1% of the total investment, water source fee is 0.004 CNY/kWh, miscellaneous fee is 12 CNY/kW are derived from the FSR/22/ and is recovered at the end of operation period in the project IRR calculation spreadsheet/21/. There are 18 staff as permanent workers for the hydro plants with 30,000CNY/year salary. The welfare accounting for 46.0% of the salary is also included in the cash flow in the IRR calculation sheet/21/. O&M cost includes the cost above in the IRR calculation/21/. Via checking the finance statement/94/, OM cost from 2019 to 2022 are: 4,001,060.13, 4,981,593.88, 3,871,319.87, 4,824,937.63 CNY. Via comparing to similar small scale hydro power plant VCS registered project in Yunnan Province (i.e., ID1433) with 18MW, the OM cost uses 2,610,000 CNY. Thus, the OM cost with components is verified as rational.</p>
Water resource fee	0.004	CNY/kWh	
Other fee	12	CNY/kw	
Staff	18	Person	
Average annual salary	30,000	CNY/P	
Rate of employee welfare (of annual salary)	46.0	%	
<p>The timing of the investment decision was found to be appropriate as time when the earliest construction contract was signed, which is 19/11/2012/38/. All subsidies/exemptions and rebates offered for nature of project activity is considered for IRR calculations. Tax computation has been done in accordance with local accounting practice according to the Law of corporation income tax/95/.</p> <p>The input values of the parameters involved in the investment analysis was cross-checked against each of the evidence provided by the PO and all the values were found to be applicable at the time of the investment decision.</p> <p>In conclusion, based on CTI's local and sectorial knowledge as well as review of previously registered CDM/VCS/CCER projects, CTI is able to confirm that the input parameters used in the financial analysis are reasonable and adequately represent the economic situation of the project.</p> <p>Sub-step 2c: Calculation and comparison of financial indicators For calculation of financial indicator, all relevant costs and revenues were found to be included in the IRR sheet/21/ provided by the PO. All assumptions and estimates used for input values were checked against the relevant sources.</p> <p>The project IRR of 10% (after tax) is selected as the benchmark for the investment analysis in the FSR/22/. The selected benchmark is based Economic evaluation code</p>			

	<p>for small hydropower projects 3rd edition (SL 16-2010) in China/84/, which was valid and applicable at the time when the FSR/22/ was completed (i.e., December/2011). The project IRR benchmark of electricity engineering is 10% (after tax) in China. CTI confirms that this benchmark as applied in the investment analysis is suitable and reasonable as follows,</p> <ul style="list-style-type: none"> (a) According to the FSR/22/ the proposed project is a newly built on-grid hydro power generation project under 50MW, which is defined as small hydro power plant in Economic evaluation code for small hydropower projects 3rd edition (SL 16-2010)/84/; (b) This benchmark was approved by the Ministry of Water Resources of the People’s Republic of which is the national administrative authority of this industry in China/84/ (c) This benchmark refers to a project IRR (after tax), which is suitable for the investment analysis of the proposed project; (d) This benchmark refers to the risk premiums of hydro power generation project; (e) This benchmark has been widely accepted and applied by the electricity generation industry in China, and it is still in effect till now; <p>Based on the information above, CTI confirms that this benchmark is suitable and reasonable for the proposed project.</p> <p>The IRR value for this project was calculated as 6.77%, which was found to be well below applicable benchmark of 10%. Since the IRR is lower than the benchmark, the Project Activity cannot be considered as financially feasible as per Tool 01: Tool for demonstration and assessment of additionality paragraph 42(b)/9/.</p> <p>Parameters used in the investment analysis are included in the section B.5 of the PSF/19/.</p> <p>Outcome of Step 2b: As the project activity has a lower IRR (6.77%) than the benchmark (10%), thus the project activity cannot be considered financially attractive.</p> <p>Sub-step 2d: Sensitivity analysis A variation of ±10% in the critical assumptions (i.e., Total static investment, Annual average power supply, Annual O&M cost, and Electricity tariff) was considered and presented by the PO in inline to the tool /13/.</p> <p>Sensitivity analysis: The input parameters that constituted more than 20% of the total revenues/costs have been identified and taken into account in the sensitivity analysis, i.e., Total static investment, Annual average power supply, Annual O&M cost, and Electricity tariff.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>IRR Variation</th> <th>Variation of the parameter indicator needed to reach benchmark of 10%</th> </tr> </thead> <tbody> <tr> <td>Total static investment</td> <td>-20.45%</td> </tr> <tr> <td>Annual electricity supply</td> <td>23.90%</td> </tr> <tr> <td>Annual O&M cost</td> <td>-168.70%</td> </tr> <tr> <td>Electricity tariff</td> <td>23.90%</td> </tr> </tbody> </table>	IRR Variation	Variation of the parameter indicator needed to reach benchmark of 10%	Total static investment	-20.45%	Annual electricity supply	23.90%	Annual O&M cost	-168.70%	Electricity tariff	23.90%
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	<p>The likelihood of a project activity surpassing the benchmark IRR, in order to ensure the adequacy of the assumptions used in the investment analysis was performed inline to tool 27/12/.</p> <p>The assessment of the variation is as follows:</p>										
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		in 23.9% year on year for all the 10 years of the crediting period seems unlikely. The actual on-grid electricity for 2019 (the project start commissioning on 26/08/2019/36/) is 4,038.232 MWh, on-grid electricity for 2020 is 86,614.880 MWh, on-grid electricity for 2021 is 86,614.880 MWh, 2022 is 90,941.224 MWh /35/, which are lower than estimation in the FSR and impossible to reach critical point..
Annual O&M cost	-168.70%	The project IRR will reach the benchmark of 10% if the annual O&M costs decrease by 168.70%. Based on the local and sectoral knowledge, such a rate of reduction is not considered plausible. Therefore, it is unlikely that O&M costs will decrease by 168.70% to reach the benchmark of 10%.
Electricity tariff	23.90%	If the electricity tariff increases by 23.90%, the project activity will become financially viable. As there can be fluctuation on the tariff for the regulation, CTI has cross-checked the accounting record of on-grid electricity with unit price/33/ as the tariff is the actual value happened. It was 0.166 CNY/kWh in 2019, 0.199 CNY/kWh in 2020 and 0.214 CNY/kWh in 2021 (VAT included). Therefore, CTI confirms that it is unlikely to increase in the electricity tariff by 23.90%.

The sensitivity analysis results were found to be appropriate and was found to be calculated in-line with the tool/12/ as verified from the IRR sheet/21/.

Step 4: Common Practice Analysis:
 Common practice analysis for the project was conducted using methodological Tool 24: Common practice version 3.1/13/ and its stepwise approach.

Step 1: The applicable capacity calculated as +/-50% of total design capacity of proposed project activity was 12 to 36 MW, which was found to be in line with Tool 24//13/.

Step 2: The public available statistics in China Energy Statistical Year book and China Electric Power Year Book/96/ and relevant project information on CDM/50/, VCS/51/, GS/52/ and GCC/56/ website, 25 hydro power projects with 12MW~36MW in Yunnan Province and started commercial operation before 19/11/2012 are identified, all similar projects which fulfil the criteria given in Tool: 24 para 14/13/ were identified by the PO considering the Yunnan as the applicable geographical area before 19/11/2012 (signing of Construction Contract) /29/.

	<p>Considering the large national territorial area of the China, the economy, policies, regulations and natural source varies from provinces/60//61//62//64/, it is verified rational to use Yunnan Province as applicable geographical area.</p> <p>All the similar projects/57/ were found in the applicable geographical area as checked from the hydro database provided by the General Directorate of Energy Affairs and year book/statistic report/48//49/, registered to CCER and CDM. A total of 25 similar projects/57/ were found in the applicable geographical area as checked from the China Certified Emission Reduction publicly available statistics and relevant project information on CDM, VCS, GS and GCC website /57/. In China, the regulatory framework, investment climate, access to technology, and access to financing are deemed to vary considerably in different Province/Autonomous Region depending on local conditions. As demonstrated above, the environmental assessment (i.e., EIA/23/) and feasibility of the project activity (i.e., FSR/22/) are required to be approved by the provincial governmental authorities, given the different economic development level and regulatory policies in different Province/ Autonomous Region of China. Moreover, the availability of hydro resource is subject to the geographical conditions of different region/22/; as one of the key factors to impact the investment revenue from hydro power generation, the electricity tariff is set in a regulatory way based on the categories of hydro resource region/22/ and is different on Province/Autonomous Region/22/. Therefore, CTI concludes that it is reasonable to select Yunnan Province, where the project is located, as the applicable geographical area.</p> <p><u>Step 3:</u> It is to be noted that China is a non-Annex I country and hence the number of ongoing similar project seeking incentives from carbon revenue was checked from websites of other GHG Programs (VCS, GS, CDM, CCER, GCC), grid-connected hydro power projects started operation before 19/11/2012 with installed capacity between 12 MW to 36 MW in Yunnan Province are selected for common practice analysis. It was confirmed that the number of projects neither registered nor submitted for registration (N_{all}), and value of 0 power plants is appropriately determined. $N_{all} = 0$. There is no bundle project involved.</p> <p><u>Step 4:</u> Projects with technologies different to technology applied in the proposed project activity were identified as $N_{diff}=0$</p> <p><u>Step 5:</u> The factor F was found to be calculated in line with Tool 24/13/.</p> <p>$N_{all}-N_{diff}= 0$</p> <p>$F=1- N_{diff}/N_{all} = 1-(1/1) = 0<0.2$</p> <p>For the concerned project, $F=1 - N_{diff}/N_{all} = 1 - 1 = 0<0.2$, therefore, the proposed project is not a common practice within the applicable geographical area. Hence, the proposed project is additional.</p>
<p>Findings</p>	<p>CL02, CAR02 and CAR03 were raised and resolved.</p>
<p>Conclusion</p>	<p>Hence, in line with paragraph 50 and 51 of the Project standard Version 3.1/2/, verification team concluded that the information mentioned in the PSF/19/ is duly supported by evidence quoted therein. The verification team has described all steps taken, and sources of information used to cross-check the information contained in the PSF. The verification team determined that the evidence assessed is credible, where appropriate in accordance with applicable tools and guidelines for additionality /9/.</p>

D.3.6 Estimation of emission reductions or net anthropogenic removal

Means of Project Verification	<p>In accordance with the applied methodology ACM0002: “Grid-connected electricity generation from renewable sources” (Version 21.0)/8/, the PSF/19/ and ER/20/ sheet have calculated Emission Reductions in the following manner:</p> <p>$ER_y = BE_y - PE_y - LE_y$</p> <p>Where: ER_y = Emission reductions in year y (tCO₂e) BE_y = Baseline emissions in year y (tCO₂e) PE_y = Project emissions in year y (tCO₂e) LE_y = Leakage emissions in year y (tCO₂e)</p> <p>Baseline Emissions</p> <p>Baseline emissions are calculated as the product of the Baseline Emission Factor ($EF_{grid,CM,y}$ in tCO₂/MWh) times Quantity of net electricity generation that is produced and fed into the grid.</p> <p>$BE_y = EG_{GPJ,y} \times EF_{grid,CM}$</p> <p>Where: BE_y = Baseline emission in year y (tCO₂e) $EG_{P,J,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr) $EF_{grid,CM,y}$ = Combined margin emission factor of SCPG, calculated using the latest version of the “Tool to calculate the emission factor for an electricity system/11/” (tCO₂e/MWh): The project is a Greenfield hydro power plant, then: $EG_{P,J,y} = EG_{facility,y}$</p> <p>Where: $EG_{facility,y}$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr). $EG_{P,J,y} = EG_{facility,y} = EG_{out,y} - EG_{in,y}$</p> <p>Determination of Combined margin Grid emission factor ($EF_{grid,CM,y}$)</p> <p>The baseline grid emission factor is calculated in accordance with the “Tool to calculate the emission factor of an electricity system (version 07.0.0) /11/”, which is the latest version of the tool. The grid specific values have been obtained from the data published in 2019 Baseline Emission Factors for Regional Power Grids in China/58/. SCPG is the transmission system operator for electricity in China, covering the region of Yunnan Province. The data obtained for emission factor calculation in the South Region covering Yunnan Province in 2019 Baseline Emission Factors for Regional Power Grids in China/58/ was found to be reliable. The grid specific values in 2019 Baseline Emission Factors for Regional Power Grids in China/58/ have been obtained from the data published by China Electric Power Press which is a government-owned corporation, who published the China Electric Power Yearbooks 2014~2018/48/ and the China Energy Statistics Yearbooks 2014~2018/49/.</p>
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	<p>As per the “Tool to calculate the emission factor for an electricity system”, version 7.0/11/, the calculation of $EF_{EL,j,y}$ should follow the procedures of tool to calculate the emission factor for an electricity system ($EF_{EL,j,y} = EF_{grid,CM,y}$). Thus, in the PSF/19/ dated 04/03/2024, $EF_{grid,CM,y}$ ($EF_{EL,j,y}$) is calculated according to Tool to calculate the emission factor for an electricity system version 7.0 as follows:</p> <p>The grid emission factor was calculated as per the most recent data available at the time of PSF publication on the GCC website for GSC, 27/10/2022. The data used in the EF calculation/20/ is in accordance with the data in the 2019 Baseline Emission Factors for Regional Power Grids in China/58/ basing on the China Electric Power Yearbook/48/ and the China Energy Statistical Yearbook/49/.</p> <p>Operating margin emission factor</p> <p>The share of low-cost/must-run generation in SCPG is much lower than 50% according to the China Electric Power Yearbooks /48/, which was verified by the verification team. Therefore, the operating margin (OM) is calculated using the “simple OM” method which is justified because low cost and must run power plants constitute less than 50 of the total grid generation.</p> <p>Simple operating margin has been calculated as per Option B as stipulated under Paragraph 47 (b) of Methodological Tool 07, version 07/11/. The PSF uses the latest available simple OM within three years for calculation of emission factor according to the requirement in the GCC Clarification No.03 version 1.0, as the simple OM source 2019 Baseline Emission Factors for Regional Power Grids in China/58/ was published on 29/12/2020 and the Global Stakeholder Consultation for the project is from 27/10/2022 to 10/11/2022. The project was initial submitted to GCC on 15/06/2022, so the 2019 Baseline Emission Factors for Regional Power Grids in China/58/ is the latest publication when the project was initial submitted to GCC. The value for weighted average operating margin has been validated and used as 0.8042 tCO₂/MWh.</p> <p>Build margin (BM) emission factor</p> <p>Since the plant specific fuel consumption and electricity generation data are not publicly available in China, the guidance requested by DNV from the CDM Executive Board for a deviation of the baseline methodology of AM0005 has been applied for calculating the build margin (BM) emission factor of this project/47/:</p> <p>The PSF uses the latest available BM within three years for calculation of emission factor according to the requirement in the GCC Clarification No.03 version 1.0, as the BM source 2019 Baseline Emission Factors for Regional Power Grids in China/56/ was published on 29/12/2020 and the Global Stakeholder Consultation for the project is from 27/10/2022 to 10/11/2022.</p> <p>According to the 2019 Baseline Emission Factors for Regional Power Grids in China/58/, country specific data for net calorific value of each type of fossil fuel was obtained from the China Energy Statistical Yearbook/49/, the emission factor of each type of fossil fuel which was taken from the IPCC 2006 default values/16/, and the total electricity delivered to the SCPG which were obtained from the China Electric Power Yearbook /48/, are selected and are deemed reasonable.</p>
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The BM of SCPG is calculated as 0.2135 tCO₂e/MWh in the PSF, which has been verified by the verification team as well.

Calculate the combined margin (CM) emission factor

The combined margin (CM) emission factor is calculated based on the method weighted average CM. The weighted average combined margin has been calculated by the PO, considering the 50% weighted for operating margin and 50% for build margin; this is in accordance with the tool which states that for “All other projects: w_{OM} = 0.5 and w_{BM} = 0.5 for the first crediting period”.

$$EF_{grid,CM,y} = EF_{grid,OM,y} \times w_{OM} + EF_{grid,BM,y} \times w_{BM}$$

EF_{grid,OM,y}: Operating margin CO₂ emission factor for the project electricity system in year y (tCO₂e/MWh)

EF_{grid,BM,y}: Build margin CO₂ emission for the project electricity system factor in year y (tCO₂e/MWh)

w_{OM}: Weighting of operating margin emissions factor (%)

w_{BM}: Weighting of build margin emissions factor (%)

On the basis of these weights for the first crediting period, the combined margin emission factor is calculated and fixed ex-ante:

$$EF_{grid,CM,y} = 0.8042 \text{ tCO}_2/\text{MWh} \times 0.5 + 0.2135 \text{ tCO}_2/\text{MWh} \times 0.5 = 0.50885 \text{ tCO}_2/\text{MWh}$$

Baseline emissions (BE_y)

Baseline emissions (*BE_y*) now can be calculated as the combined margin CO₂ emission factor (*EF_{grid,CM,y}*) multiplied by the annual net generation of the Proposed Project (*EG_{PJ,y}*).

Project Emission (PE_y):

According to the methodology ACM0002: “Grid-connected electricity generation from renewable sources” (Version 21.0)/8/, for most renewable energy power generation project activities, *PE_y* = 0. As for the hydro power plant with water reservoirs installation, the project emission from water reservoir (*PE_{HP,y}*) should be involved. However, if the power density of the project activity is greater than 10W/m², then *PE_{HP,y}* = 0.

As prescribed under section B.2 in the PSF/19/ and the evidence file provided by PO/22/

As for this project, according to the FSR/22/ and project approval/28/, Cap_{PJ} is 24 MW, A_{PJ} is 0.6 × 10⁴ m².

Thus:

$$PD = \frac{Cap_{PJ}}{A_{PJ}} = \frac{24 \times 10^6}{0.6 \times 10^4} = 4000 \text{ W/m}^2$$

$$\geq 4 \text{ W/m}^2.$$

the power density is 4000 W/m², which is greater than 10 W/m².

Thus, *PE_{HP,y}* = 0 and *PE_y* = 0

Leakage Emission (LE_y):

According to methodology ACM0002: “Grid-connected electricity generation from renewable sources” (Version 21.0), no leakage is considered. The main emissions potentially giving rise to leakage are neglected. Thus, *LE_y*=0

Emission Reductions (ER_y):

	$ER_y = BE_y - PE_y = 55,331 \text{ tCO}_2 \text{ e} - 0 \text{ tCO}_2 \text{ e} = 55,331 \text{ tCO}_2 \text{ e}$. The annual emission reductions are estimated to be: 55,331 tCO ₂ . The proposed project activity is expected to achieve 553,310tCO ₂ e of net emission reductions during the 10-year crediting period.
Findings	CL03 was raised and resolved.
Conclusion	The verification team confirms the following; <ul style="list-style-type: none"> • All assumptions and data used by the project owners are listed in the PSF/19/, including their references and sources; • All documentation used by project owners as the basis for assumptions and source of data is correctly quoted and interpreted in the PSF; • All values used in the PSF are considered reasonable in the context of the proposed project activity; • The baseline methodology and the applicable tool(s) have been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions; • All estimates of the emissions can be replicated using the data and parameter values provided in the PSF. • No sampling has been applied in the project activity. Thus, it is in line with paragraph 55, 58 and 59 of the Project standard Version 3.1/2/.

D.3.7 Monitoring plan

Means of Project Verification	The monitoring plan is included in Section B.7 of the PSF/6/based on the approved monitoring methodology ACM0002: “Grid-connected electricity generation from renewable sources” (Version 21.0)/8/ and is correctly applied to the project activity. The monitoring plan has been found to be in compliance with the requirements of the applied methodology for calculation of GHG emission reductions, GCC Environment and Social Safeguards Standard v03/4/, and Project-Sustainability-Standard-v03/5/. The monitoring plan includes following parameters:						
	<table border="1"> <thead> <tr> <th>No.</th> <th>Parameter</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>$EG_{export,y}$</td> <td> Electricity supplied to SCPG by the proposed project in year y. The monitoring parameter will be continuously monitored and at least monthly recorded by means of the bi-directional meter located at the 110kV Xinggu substation, with 0.5s accuracy class. Cross check measurement results with records for sold electricity and nameplate of the meter. The frequency of the meters is every 5 years. The calibration of meters, including the frequency of calibration, should be done in accordance with national standards or requirements set by the meter supplier or requirements set by the grid operators. The accuracy class of the meters should be in accordance with the stipulation of the meter supplier and/or as per the requirements set by the grid operators or national requirements. There was one back up meter has set up. </td> </tr> </tbody> </table>	No.	Parameter	Description	1	$EG_{export,y}$	Electricity supplied to SCPG by the proposed project in year y. The monitoring parameter will be continuously monitored and at least monthly recorded by means of the bi-directional meter located at the 110kV Xinggu substation, with 0.5s accuracy class. Cross check measurement results with records for sold electricity and nameplate of the meter. The frequency of the meters is every 5 years. The calibration of meters, including the frequency of calibration, should be done in accordance with national standards or requirements set by the meter supplier or requirements set by the grid operators. The accuracy class of the meters should be in accordance with the stipulation of the meter supplier and/or as per the requirements set by the grid operators or national requirements. There was one back up meter has set up.
No.	Parameter	Description					
1	$EG_{export,y}$	Electricity supplied to SCPG by the proposed project in year y. The monitoring parameter will be continuously monitored and at least monthly recorded by means of the bi-directional meter located at the 110kV Xinggu substation, with 0.5s accuracy class. Cross check measurement results with records for sold electricity and nameplate of the meter. The frequency of the meters is every 5 years. The calibration of meters, including the frequency of calibration, should be done in accordance with national standards or requirements set by the meter supplier or requirements set by the grid operators. The accuracy class of the meters should be in accordance with the stipulation of the meter supplier and/or as per the requirements set by the grid operators or national requirements. There was one back up meter has set up.					

	2	$EG_{import,y}$	<p>Electricity achieved by the proposed project from SCPG in year y.</p> <p>The monitoring parameter will be continuously monitored and at least monthly recorded by means of the bi-directional meter located at the 110kV Xinggu substation, with 0.5s accuracy class. Cross check measurement results with records for sold electricity and nameplate of the meter. The frequency of the meters is every 5 years. The calibration of meters, including the frequency of calibration, should be done in accordance with national standards or requirements set by the meter supplier or requirements set by the grid operators. The accuracy class of the meters should be in accordance with the stipulation of the meter supplier and/or as per the requirements set by the grid operators or national requirements. There was no available back up meter during the project verification.</p>
	3	$EG_{PJ,y}/EG_{facility,y}$ (ENR 07 SDG 7 SDG 9)	<p>The net electricity delivered by the proposed project to the SCPG in year y.</p> <p>$EG_{facility,y} = EG_{export,y} - EG_{import,y}$</p> <p>Calculated based on the electricity delivered to the grid by the project ($EG_{export,y}$) and the electricity consumed by the project which is imported from the grid ($EG_{import,y}$).</p> <p>The project generates electricity which used to be delivered by power plant using fossil fuels combustion. The project provides clean energy avoiding emission annually and helps adaptation of clean energy technologies by implementing a hydropower plant.</p>
	4	Cap_{PJ}	<p>The capacity of the hydropower plant installed in the project activity will be monitored to calculate the project emission reduction. The data comes from the generator nameplate and is measure once at the beginning of each crediting period.</p>
	5	A_{PJ}	<p>The area of one or more reservoirs measured on the water surface when the reservoirs are full will be monitored to calculate the project emission reduction. The data comes from the the measurement of the water level of the reservoir in the topographical survey and is read once at the beginning of each charging period.</p>
	4	CO ₂ emissions / Climate Action (SDG 13)	<p>The electricity generated will be monitored and CO₂ emission reductions will be calculated accordingly. This parameter will be monitored continuously according to the parameter 1-3</p>

		mentioned before and the methodology requirements.
5	Employment Record (SJ01 SW02 SW08 SDG 8)	Employment opportunities will be provided by project activity. This parameter will be continuously monitored via employment records.
6	Job related training (SE 01)/ Reducing /increasing accidents /Incidents/fatality (SHS03)	Job related training will be provided by project activity, this could be continuously monitored by checking training records, and accidents occurred at project site will be monitored yearly.
7	Noise (EA09)	The noise effect within the project boundary during construction and operation will be yearly monitored according to Emission Standard for Industrial Enterprises Noise at Boundary (GB12348-2008)/86/.
8	Construction Waste (EL09)	Solid waste will be collected and stored at specific locations and collected by special facilities and treated by qualified company according to Pollution control standards for general industrial solid waste storage and disposal sites (GB18599-2001)/87/. This will be monitored by the related treatment record during the project operation.
9	Land use change (change from cropland /forest land to project land) (EL08)/ Threatened livelihood (SJ05)	Via checking the FSR/22/, EIA Approval/24/, Project acceptance report/85/ and onsite visit, the project verification team confirms that the project involves the land use change from croplands and forests to the project construction area without resettlement of residents. And the farmers owned farmland and forest involved are compensated according to the local standard of the year, based on the <i>Yunnan Province large and medium-sized water conservancy and hydropower project construction immigrant resettlement measures</i> . Related compensating records will also be monitored before each verification period according to the <i>Yunnan Province, large and medium-sized water conservancy and hydropower project construction immigrant resettlement measures</i> .
10	Wastewater from project site (EW04)	The wastewater after sedimentation and the domestic sewage will be treated in the septic tank and used for greening forest land or crop fertilizer in the plant area, these treatments will be monitored according to Comprehensive Wastewater Discharge Standards (GB 8978-1996). This will be monitored via regular monitoring of outfall water quality.
11	Sanitation and waste management (SHS08)	
12	Species diversity (ENR03)	Fish may be affected by the project activity. To ensure the ecological flow, an ecological recharge

			<p>pipe is constructed to maintain the ecological environment of the downstream river. Also, the management of construction workers will be strengthened and the raising of exotic species and the destruction of fishery resources in the reservoir area will be prohibited. Discharged ecological flow will be continuously monitored.</p> <p>During onsite visit, the ecological discharge pipe has been set with continuously water flow at the dam.</p>
	13	Community and rural welfare (indigenous people and communities) (SW02)	<p>As the project provides job opportunities with welfare for the community/42/, it improves the community and rural welfare. In the meantime, child labour exploitation is strictly prohibited according to the Labour Law of the People's Republic of China. These will be continuously monitored via employment record.</p>
	14	Exploitation of Child labour (human rights) (SW08)	
	15	Women's empowerment (SW06)	<p>According to the Labour Law of the People's Republic of China and Law of the People's Republic of China on the Protection of the Rights and Interests of Women, discrimination on the woman employment is forbidden as women have equal labour rights and social security rights with men. This will be monitored yearly via employment record.</p>
	16	Solid waste Pollution from Hazardous wastes (EL02)	<p>Project sets a grease trap to treat waste oil and oily wastewater. After treated, all waste oil and oily wastewater will be reused by project or treated by qualified company, monitored annually and record kept 2 years as per Standard for Pollution Control on Hazardous Waste Storage (GB18597-2001)/98/.</p>
	17	The end-of-life solid waste treated records (EL06)	<p>Waste from end-of-life products is generated during operation period as well as the end of the project. All waste will be collected and sent to licensed recycling organizations for better utilization, monitored annually as per Standards for Pollution Control on the Storage and Disposal Site for General Industrial Solid Wastes GB18599-2001/84/.</p>
	<p>The verification team confirmed that the parameters are sufficient to calculate the emission reductions and the environmental and social safeguards/SDG achievement in accordance with the methodology and are correctly reported in the PSF/19/.</p>		
Findings	No finding was raised.		
Conclusion	<p>The verification team confirms that:</p> <ul style="list-style-type: none"> The monitoring plan described in the PSF/19/ is complying with the requirements of the selected methodology. 		

	<ul style="list-style-type: none"> Based on detailed review, the monitoring arrangement described in the monitoring plan is feasible within the project design. The verification team confirms that the project owner will be able to implement the described monitoring plan. The means of implementation of the monitoring plan are sufficient to ensure that the emission reduction and other voluntary labels achieved from the project activity is verifiable and thereby satisfying the requirement of Verification Standard. The monitoring plan will give opportunity for real measurements of achieved emission reductions. There are no host country requirements pertaining to monitoring of any sustainable development indicators. Therefore, there are no such parameters identified in the PSF/19/.
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D.4. Start date, crediting period and duration

Means of Project Verification	<p>The start date of the project activity is 26/08/2019, verified with Grid-connection trial operation position paper/31/.</p> <p>A crediting period of a maximum length of 10 years has been selected by PO. The start date of the crediting period is stated as 26/08/2019, which is also the project start date. And the project is under type A2.</p> <p>The lifetime of project activity is expected to be 20 years which is validated from the technical specification of the equipment/40/.</p>
Findings	CAR04 was raised and resolved.
Conclusion	<p>The start date of the project activity indicated has been checked from actual first operation of the project according to the Grid-connection trial operation position paper/31/, and it has been checked when power is delivery of electricity to grid according to the operation logbooks/35/.</p> <p>The expected operational lifetime of the project activity has been indicated in the PSF /19/ and is deemed reasonable. Thus, it satisfies requirement of paragraph 38, 39 and 40(b) of the Project Standard version3.1/2/.</p>

D.5. Environmental impacts

Means of Project Verification	<p>The project owners have conducted Environmental Impact Assessment (EIA) in 01/2012/23/ in order to assess the impact from the project activity. This is complying to the China environmental regulations and received approval from Department of Ecology and Environment of Yunnan Province on 07/06/2012 /24/. The verification team also confirms that the project owner has taken all the necessary legal approvals from the government and other parties to implement the project activity and there are no adverse impacts on environment due to the implementation of project activity.</p> <p>The project activity is complying to the following laws:</p> <ul style="list-style-type: none"> Notice Regarding the Regulations for Electricity Generation from Renewable Energy/60/ Law of the People’s Republic of China on Renewable Energies/61/ Approval and Implementation of Power Industry System Reform in China/65/
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	<ul style="list-style-type: none"> ● Environmental Protection Law of the People's Republic of China/66/
Findings	CL 04 and CL 05 were raised and resolved.
Conclusion	In opinion of assessment team, the proposed project activity is not exempted from the list of activities that require EIA/23/. There are no transboundary environmental impacts associated with the project. There were no significant adverse environmental impacts revealed in the analysis, this was detailed conducted in the EIA /24/, and the project has obtained the approval of the EIA by the Department of Ecology and Environment of Yunnan Province/24/. All the impacts highlighted in the EIA/23/ have been described in sections E.1 and E.2 of the latest PSF/19/.

D.6. Local stakeholder consultation

Means of Project Verification	<p>A LSC was conducted for the project activity on 01/05/2022 at the meeting room of Lvchun County Government, in Lvchun County, Yunnan Province, P. R. China. Residents of the nearby village, relevant department of the local government and related employees are considered as the stakeholders. It was confirmed that LSC was conducted by interacting with local stakeholders. Local stakeholders were invited via village committee and phone to submit comments on the project activity by completing a questionnaire sent out by the project developer during the LSC meeting. In addition, the project developer visited some residents in their homes. The verification team confirms that the local stakeholder consultation process was performed by the project owner via onsite interview and it was before the submission of the project activity for global stakeholder consultation.</p> <p>The objective of the local stakeholder consultation carried out to comply with GCC requirements and identify the comments/concerns that might be required to be addressed by PO. The stakeholder responses/45/ was received by the assessment team. The verification team confirmed by review of the stakeholder responses/45/ that the summary of stakeholders' comments reported in PSF /20/ was accurate. There was no negative feedback received. No net Harm to Environment/Society and SDG impacts of project were also discussed.</p>
Findings	No finding was raised.
Conclusion	<p>The verification team confirms that the summary of stakeholders' comments reported in PSF/19/ is complete and the local stakeholder consultation process was adequately conducted by the project owner considering the ongoing pandemic to receive unbiased comments from the all the stakeholders.</p> <p>The verification team confirms that the local stakeholder consultation process performed for the project activity fulfils the requirements.</p>

D.7. Approval and Authorization- Host Country Clearance

Means of Project Verification	As per the GCC program guidelines the submission of HCA on double counting is required by CORSIA labeled project after 31/12/2020 as verified under section D.13 of this report. For carbon credits issued during 01/01/2016 to 31/12/2020 the HC attestation is not required. Thus, for this project activity Host country clearance is not required at the time of project verification.
Findings	FAR01 was raised.
Conclusion	The GCC Verifier has raised FAR 1 which confirms that Project shall demonstrate the compliance to CORSIA requirements for the credits claimed beyond 31 December 2020 with respect to double counting and HCLOA requirements and also future CORSIA requirements applicable time to time for the project activity.

D.8. Project Owner- Identification and communication

Means of Verification	Project	<p>The information and contact details of the representation of the project owner and project owners themselves has been appropriately incorporated in Appendix 1 of the PSF/19/ which was checked and verified by the verification team from LOA signed by the project owners. All information was consistent between these documents.</p> <p>Ownership of the project has been verified with checking GCC carbon emission reduction project joint development cooperation agreement/89/, project approval/28/, LOA/25/ and onsite visit.</p> <p>By checking the business licenses of Lvchun Hongrui power development and Operation Co., Ltd./26/ and Sichuan RayGi Green Energy Technology Co., Ltd./27/, it has been confirmed that the legal owners are legal.</p> <p>By checking PPA/34/, cross-checking project approval/28/, Grid-connection trial operation position paper/31/, construction contract/38/ and equipment purchase contract/40/, it has been confirmed that the legal ownership of assets is Luchun Hongrui Electric Power Development and Operation Co., Ltd..</p> <p>Sichuan Raygi Green Energy Technology Co., Ltd and Lvchun Hongrui Power Development and Operation Co., Ltd. signed the GCC carbon emission reduction project joint development cooperation agreement/89/ on 16/05/2022, and made it was clear that the ownership of carbon credits generated by project activities belongs to Sichuan Raygi Green Energy Technology Co., Ltd through cross-checking LOA/25/.</p>
Findings		CL06 was raised.
Conclusion		The verification team confirms that the information of the project owners has been appended as per the template and the information regarding the project owners stated in the PSF/19/ and authorization letter were found to be consistent, and it has been confirmed that the legal owner has authenticity, the legal ownership of assets and the ownership of carbon credits generated by the project activities.

D.9. Global stakeholder consultation

Means of Verification	Project	<p>The PSF was made available through the dedicated interface on the GCC website. The duration of the period for submission of comments for the global stakeholder consultation was from 27/10/2022 to 10/11/2022. There were no comments received during this period.</p> <p>Date and version of PSF which was webhosted on GCC website for GSC is Version 1.1, Dated 06/09/2022 (https://projects.globalcarboncouncil.com/project/536).</p>
Findings		No finding was raised.
Conclusion		The PSF/19/ had been made public for receiving stakeholder feedback and no comments were raised during the GSC process.

D.10. Environmental Safeguards (E+)

Means of Verification	Project	<p>Environment-Air-CO₂ emissions:</p> <p>The project reduces CO₂ emissions since it reduces the amount of fossil fuel using by generating the clean energy, according to the project approval/28/ and FSR/22/. In case of “no project”, stated amount of electricity from SCPG would likely be generated from fossil and cause air pollution. The project will not cause any harm in this regard. The PO will measure the emission reduction according to the parameters. Thus, the effect from the CO₂ emissions is verified as harmless.</p>
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	<p>Environment-Air-Noise Pollution: The impact of the project on the sound environment is mainly concentrated in the construction period. The noise from the construction project is under control according to the national standard Emission Standard for Industrial Enterprises Noise at Boundary (GB12348-2008). The effect of Noise Pollution is verified as harmless via checking the EIA/23/ and EIA Approval/24/ of the project, which includes the specific assessment of the noise pollution on the project according to the GB12348-2008.</p> <p>Environment-Land-Construction Waste: Project construction generates construction waste including soil, rocks and other garbage. Dumping storage yards are set up for temporarily deposition as they are regularly removed and cleaned, according to the Standard for Pollution Control on the Storage and Disposal Site for General Industrial Solid Waste (GB 18599-2001). The effect of Construction Waste is verified as harmless via checking the EIA/23/ and EIA Approval/24/ of the project, which includes the specific assessment of the construction pollution on the project according to the GB 18599-2001.</p> <p>Environment-Land-Land use change (change from cropland/forest land to project land): The project does not involve any resident resettlement. The production land involved in the permanent area covered by the project and the farmers whose farmland and forest are expropriated are compensated according to <i>Yunnan Province large and medium-sized water conservancy and hydropower project construction immigrant resettlement measures</i>. Thus, the effect of Land use change (change from cropland/forest land to project land) is verified as harmless via checking the FSR/22/, EIA/23/ and EIA Approval/24/ and onsite visit of the project.</p> <p>Environment-Water- Wastewater discharge without/with insufficient treatment During the construction period, the wastewater is recycled or discharged after sedimentation treatment. The domestic sewage is treated in septic tank and used for greening forest land or crop fertilizer in the plant area. The SS (suspended solids) , pH value and quantity of wastewater generated and treated are monitored continuously and all wastewater is treated as per Comprehensive Wastewater Discharge Standards (GB 8978-1996). The effect of Wastewater is verified as harmless via checking the EIA/23/ and EIA Approval/24/ of the project, which includes the specific assessment of the wastewater on the project according to the GB 8978-1996.</p> <p>Environment – Natural Resources- Protecting/ enhancing species diversity As a hydro power project, local aquatic ecosystem including fish and material exchange may be affected by the project activity. To mitigate the effects on the ecological flow, an ecological recharge pipe is constructed and discharged ecological flow will be continuously monitored to ensure that the amount of water discharged from the back section of the Laihe River and Jinchang River is not less than 0.392m³/s and 1.232m³/s, respectively, and at the same time, ecological flow on-line monitoring. Besides, the workers will be trained with relative knowledge. The effect on the Protecting/ enhancing species diversity is verified as harmless via checking the EIA/24/ and EIA Approval/25/ of the project, which includes the specific assessment of the ecological effects from the project.</p>
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	<p>Environment – Natural Resources-Replacing fossil fuels with renewable sources of energy: The project replaces fossil fuels with renewable sources of energy since it is a hydro power station. The project is expected to supply an average of 108,738 MWh renewable electricity to SCPG annually, according to the project approval/28/, FSR/22/ and grid-connected scheduling protocol/29/. Thus, the effect on Replacing fossil fuels with renewable sources of energy is verified as harmless.</p> <p>Environment-Land- Solid waste Pollution from Hazardous wastes: Via checking EIA/23/, EIA approval/24/ and onsite inspection, it is verified that the project sets a grease trap to treat waste oil and oily wastewater. After treated, all waste oil and oily wastewater will be reused by project or treated by qualified company as per Standard for Pollution Control on Hazardous Waste Storage (GB18597-2001) /98/.</p> <p>Environment-Land- Solid waste Pollution from end-of-life products/equipment: Via checking EIA/23/, EIA approval/24/ and onsite inspection, it is verified that the all end-of-life solid waste will be collected and sent to licensed recycling organizations for better utilization as per Standards for Pollution Control on the Storage and Disposal Site for General Industrial Solid Wastes GB18599-2001/84/.</p> <p>In all, net score of E+ marked seven is reasonable. The project activity will not cause any net harm to the environment. The detailed matrix has been included in Section F of the PSF/19/.</p>
Findings	CL 05 were raised and resolved.
Conclusion	Based on the documentation review the verification team can confirm that Project Activity is not likely to cause any negative harm to the environment but would have a positive impact, hence, is eligible to achieve additional E+ certifications.

D.11. Social Safeguards (S+)

Means of Project Verification	<p>Social – Jobs: Long-term jobs (>10 years) created/lost There are 18 permanent jobs created for the project and all employments are in accordance with the Labour Law. The effect of Long-term jobs (>10 years) created/lost is verified as harmless via checking the FSR/22/ and employees' welfare records/42/.</p> <p>Social – Health & Safety: Reducing / increasing accidents/Incidents/fatality Engineering safety accidents may occur due to management, safety awareness and natural problem. As the project is operated by trained and qualified staffs as per the safety requirement of the hydropower plant, it is verified as harmless by the project verification team via checking the certificate and training records/42/. And the accidents occurred at project site and regular training will be annually monitored.</p> <p>Social – Health & Safety: Sanitation and waste management During the operation and construction period, the domestic sewage is treated in septic tank and used for greening forest land or crop fertilizer in the plant area. All wastewater is treated as per Comprehensive Wastewater Discharge Standards (GB 8978-1996). The construction waste is regularly treated according to the Standard</p>
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	<p>for Pollution Control on the Storage and Disposal Site for General Industrial Solid Waste (GB 18599-2001). The effect of Sanitation and waste management is verified as harmless via checking the EIA/23/ and EIA Approval/24/ and onsite visit of the project.</p> <p>Social – Education: Specialized training / education to local personnel The specialized training is provided for all the workers including employees from local area of the project, in the meantime, the workers are all from local nearby villages and towns as the hydro power plant is relatively outlying, which is verified by the employment record, training records, staff certificate/42/ and onsite interview. Thus, the effect of Specialized training / education to local personnel is verified as harmless by the project verification team.</p> <p>Social – Welfare: Community and rural welfare (indigenous people and communities) The project creates long-term job opportunities, improves local traffic conditions, improves the level of development and utilization of local resources, and improving community and rural welfare. It is verified with the welfare record of the workers/42/ and onsite interview by the project verification team. Thus, the effects of Community and rural welfare (indigenous people and communities) is verified as harmless.</p> <p>Social – Welfare: Women's empowerment Women's employment is equally guaranteed as per People's Republic of China on the Protection of the Rights and the Labour Law, the wages, related education and training set to be fair no matter genders. Thus, it is verified as harmless according to the workers' personal employment record and welfare record/42/.</p> <p>Social – Welfare: Exploitation of Child labour (human rights) The project does not employ child labour as it is strictly forbidden by the Labour Law in China. It is verified with the workers' personal employment record and welfare record/42/ thus the effect is verified as harmless.</p> <p>Social – Welfare: Minimum wage protection According to the People's Republic of China on the Protection of the Rights, the Labour Law and Yunnan Province adjusts and raises minimum wage/99/, the minimum wage of employees is guaranteed. Thus, it is verified as harmless according to the workers' personal employment record and welfare record/42/.</p> <p>Social – Jobs: Threatened livelihood Via checking Project acceptance report/82/, the permanent land occupation of the power station involves has been compensated. Thus, it is verified as harmless</p> <p>In all, net score of S+ marked seven is reasonable, the project activity will not cause any net harm to society. The detailed matrix has been included in Section E.2. of the PSF/19/.</p>
Findings	No findings were raised.

Conclusion	Based on the documentation review the verification team can confirm that Project Activity is not likely to cause any negative harm to the society but would have a positive impact, hence, is eligible to achieve additional S+ certifications
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D.12. Sustainable development Goals (SDG+)

Means of Project Verification	<p>The assessment of the contribution of the project activity on United Nations Sustainable Development Goals has been carried out in section F of the PSF. Out of the 17 Goals project activity has no adverse effect on any of the goal and contribute to 3 SDGs:</p> <ul style="list-style-type: none"> • Goal 7. Affordable and Clean Energy: SDG Target 7.2 “By 2030, increase substantially the share of renewable energy in the global energy mix”-The project increases substantially the share of renewable energy in the global energy mix. Adopt a clean and environmentally sound technology for energy supply as 108,738 MWh electricity is expected on grid. The contribution towards SGD goal is being monitored by the parameter monitoring of net electricity generated by the project activity in the monitoring plan and is found adequate. • Goal 8. Decent Work and Economic Growth: SDG Target 8.5: Generate job opportunities - The project creates direct and indirect employment opportunities during construction and operation phases. The contribution towards SGD goal is being monitored in the monitoring plan and is found adequate. • Goal 13. Climate Action: SDG Target 13.2“Integrate climate change measures into national policies, strategies and planning”.- The project takes action to address climate change and its impacts via reducing GHG emission. The contribution towards SGD goal is being monitored by the parameter 'CO2 Emissions' in the monitoring plan and is found adequate. <p>An appropriate monitoring plan has been put in place to monitor both the elements. The detailed matrix has been included in Section F of the PSF/19/.</p>
Findings	No finding was raised.
Conclusion	Based on the documentation review the verification team can confirm that Project Activity is not likely to contribute to the United Nations Sustainable Development Goals and would have a positive impact, hence, is eligible to achieve additional SDG+ certifications.

D.13. Authorization on Double Counting from Host Country (for CORSIA)

Means of Project Verification	A declaration under section A.5 of the PSF/19/ has been included for offsetting the approved carbon credits (ACCs) for the entire crediting period from 26/08/2019 to 31/12/2028 and the attestation from PO has been obtained confirming the authorization on double counting/43/.
Findings	FAR 01 was raised.
Conclusion	The project owner has clarified the intent of use of carbon credits for CORSIA hence no double counting will take place.

D.14. CORSIA Eligibility (C+)

Means of Project Verification	The project activity meets the CORSIA Eligibility since the crediting period is after 01/01/2016 and the project is applying for registration under GCC which is one of the approved programs for eligibility.
Findings	FAR01 was raised.
Conclusion	The project activity meets the CORSIA eligibility.

Section E. Internal quality control

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The final validation report has undergone a technical review by a qualified independent reviewer before requesting registration of the project activity. The technical review was performed by a technical reviewer qualified in accordance with CTI Certification's qualification scheme for GCC project verification and emission reductions verification that meets the criteria of GCC guidelines for qualification.

Section F. Project Verification opinion

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Shenzhen CTI International Certification Co., Ltd (CTI) was contracted by Sichuan RayGi Green Energy Technology Co.,Ltd on behalf of GCC legal owner Lvchun Hongrui power development and Operation Co., Ltd. for verification of the project activity "Daheishan Hydropower Station" in China.

The objectives of this project verification is to validate that the GCC project meets the requirements of GCC project framework v2.1, GCC program manual v3.1, GCC program processes v4.0, GCC project standard v3.1, GCC project sustainability standard v3.1, GCC verification standard v3.1, GCC Environment & Social safeguards standard v3.0, ISO 14064-2 & ISO 14064-3, applicable approved CDM methodology ACM0002: "Grid-connected electricity generation from renewable sources" (Version 21.0)/8/, Applicable Legal requirements/rules of host country, National Sustainable Development Criteria and CORSIA requirements and other GCC requirements related to aspects such as project design, applicable conditions, project boundary, baseline scenarios, additionality, emission reduction, monitoring plan, local stakeholder consultation, global stakeholder consultation, GHG emission reductions (ACCs), environmental no-net harm label (E+), social no net harm label (S+), Silver SDG label (SDG+), CORSIA+. This report summarizes the final project verification opinion which is based on Project Submission Form Version 3.0, Dated 04/03/2024.

The Project Activity complies with all the applicable requirement of the GCC Program and ICAO's requirements on CORSIA Emissions Unit Eligibility Criteria and CORSIA Eligible Emissions Units, as per Clarification No 1., v1.3 paragraph 23-25, and the ACCs expected to be issued during the crediting period is likely to be CORSIA eligible and can be used by International Airlines for offsetting their emissions during all phases of CORSIA and therefore requests GCC Steering Committee to append CORSIA Certification label (C+) to this project."

The project activity is a hydro power project, which results in reductions of CO₂e emissions that are real, measurable and give long-term benefits to the mitigation of climate change. It is demonstrated that the project is not a likely baseline scenario and the emission reductions attributable to the project are, hence, additional to any that would occur in the absence of the project activity. The project correctly applies the approved baseline and monitoring ACM0002: "Grid-connected electricity generation from renewable sources" (Version 21.0)/8/ and is assessed against latest valid PS, VS and Environment and Social Safeguards Standard and/or other applicable GCC/CDM Decisions/Tools/Guidance/Forms.

The project activity is likely to achieve the anticipated emission reductions stated in the PSF/19/ provided the underlying assumptions do not change. The expected emission reductions (annual average) from the project activity are estimated to be 553,310tCO₂e/year over the selected Fixed 10 years crediting period starting from 26/08/2019. The project activity is likely to achieve the anticipated emission reductions stated in the PSF/19/ provided the underlying assumptions do not change.

CTI has informed the project owners of the verification outcome through the draft verification report and final verification report. The final verification report contains the information with regard to fulfilment of the requirements for verification, as appropriate.

CTI applied the following verification process and methodology using a competent verification team:

- the desk review of documents and evidences submitted by the project owner in context of the reference GCC rules and guidelines issued,
- undertaking/conducting site visit, interview or interactions with the representative of the project owner,
- reporting audit findings with respect to clarifications and non-conformities and the closure of the findings, as appropriate and
- preparing a draft verification opinion based on the audit findings and conclusions
- technical review of the draft verification opinion along with other documents as appropriate by an independent competent technical review team
- finalization of the verification opinion (this report)

Shenzhen CTI International Certification Co., Ltd (CTI) has verified and hereby certifies that the GCC project activity “Daheishan Hydropower Station”:

a. has correctly described the Project Activity in the Project Submission Form (Version no. 3.0, Dated 04/03/2024)/19/ including the applicability of the approved methodology ACM0002: “Grid-connected electricity generation from renewable sources” (Version 21.0) and meets the methodology applicability conditions, is additional and is expected to achieve the forecasted real, measurable and additional GHG emission reductions, complies with the monitoring methodology, has appropriately conducted local and global stakeholder consultation processes and has calculated emission reduction estimates correctly and conservatively;

b. is likely to generate GHG emission reductions amounting to the estimated 55,331tCO₂e per year and 553,310 tCO₂e during fixed 10-year crediting period as indicated in the PSF/19/, which are additional to the reductions that are likely to occur in absence of the Project Activity and complies with all applicable GCC rules, including ISO 14064-2 and ISO 14064-3, and therefore requests the GCC Program to register the Project Activity;

c. is not likely to cause any net-harm to the environment and/or society and complies with the Environmental and Social Safeguards Standard, and therefore requests the GCC Program to register the Project Activity, which is likely to achieve the requirements of the Environmental No-net-harm Label (E+) and the Social No-net-harm Label (S+); and

d. is likely to contribute to the achievement of United Nations Sustainable Development Goals (SDGs), comply with the Project Sustainability Standard, and contribute to achieving a total of 3 SDGs, which is likely to achieve the Silver SDG certification label (SDG+).

Appendix 1. Abbreviations

Abbreviations	Full texts
ACC	Approved Carbon Credits
ACM	Approved Consolidated Methodology
AM	Approved Methodology
AMS	Approved Methodology for SSC Projects
BE	Baseline Emission
BESS	Battery Energy Storage System
BM	Build Margin
CAR	Corrective Action Request
CCER	Chinese Certified Emission Reduction
GCC	Clean Development Mechanism
CH ₄	Methane
CL	Clarification Request
CM	Combined Margin
CO ₂	Carbon dioxide
CP	Crediting Period
DNA	Designated National Authority
DR	Desk Review
EIA	Environmental Impact Assessment
FAR	Forward Action Request
GHG	Green House Gas
GW	Giga Watt
GWP	Global Warming Potential
GWh	Giga Watt hour
IPCC	Intergovernmental Panel on Climate Change
CTI	Shenzhen CTI International Certification Co., Ltd
KW	kilo Watt
KWh	kilo Watt hour
LSC	Local Stakeholder Consultation Process
MoV	Means of Verification
MP	Monitoring Plan
MW	Mega Watt
MWh	Mega Watt hour
N ₂ O	Nitrous Oxide
OM	Operating Margin
PSF	Project Submission Form
PE	Project Emission
PLF	Plant Load Factor
PO	Project Owner
PS	Project Standard
RFR	Request for Registration
SDG	Sustainable Development Goal
SPV	Special Purpose Vehicle
tCO _{2e}	Tonnes of Carbon dioxide equivalent
TPH	Tonnes Per Hour
UNFCCC	United Nations Framework Convention on Climate Change
V	Version
VS	Verification Standard
Project Specific	
HPP	Hydro Power Plant
SCPG	South China Power Grid

Appendix 2. Competence of team members and technical reviewers

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CERTIFICATE OF APPOINTMENT


Mr. Wu LIN

Satisfies the requirements of competence management system of CTI Certification, and is hereby appointed as:

Qualification						
Status	GHG Auditor	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date	✓	✓	✓	✓	✓	✓

Scope	Technical Area
SS 1: Energy industries (renewable/non-renewable sources)	TA 1.1: Thermal energy generation
	TA 1.2: Energy generation from renewable energy sources
SS 2: Energy distribution	TA 2.1: Electricity distribution
SS 3: Energy demand	TA 3.1: Energy demand
SS 4: Manufacturing industries	TA 4.1: Cement and lime production
SS 5: Chemical industry	TA 5.1: Chemical industry
	TA 5.2: Caprolactam, nitric and adipic acid
SS 10: Fugitive emissions from fuels (solid, oil and gas)	TA 10.1: Fugitive emissions from oil and gas
SS 11: Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride	TA 11.1: Emissions of fluorinated gases
	TA 11.2: Refrigerant gas production
SS 12: Solvents use	TA 12.1: Chemical industry
SS 13: Waste handling and disposal	TA 13.1: Solid waste and wastewater
	TA 13.2: Manure

This appointment is valid for 3 years from its date of approval below and is bound by internal requirements of management system of the Certification Body of CTI.

Approved by: 
 Lu ZHOU
 General Manager
 Shenzhen, 01/01/2021



CERTIFICATE OF APPOINTMENT

Ms. Yazhi CHEN

Satisfies the requirements of competence management system of CTI Certification, and is hereby appointed as:

Qualification						
Status	GHG Auditor	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date	-	-	-	-	-	√

Scope	Technical Area
Financial Expert	Financial Expert

This appointment is valid for 3 years from its date of approval below and is bound by internal requirements of management system of the Certification Body of CTI.

Approved by:

Wu LIN

Wu Lin

Technical Competent Manager

Shenzhen, 10/01/2022



CERTIFICATE OF APPOINTMENT

Ms. Shunrong LIN

Satisfies the requirements of competence management system of CTI Certification, and is hereby appointed as:

Qualification						
Status	GHG Auditor	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date	√	√	√	√	√	√

Scope	Technical Area
SS 1: Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources
SS 3: Energy demand	TA 3.1: Energy demand
SS 13: Waste handling and disposal	TA 13.1: Solid waste and wastewater
	TA 13.2: Manure
SS 14: Afforestation and reforestation	TA 14.1: Afforestation and reforestation
SS 15: Agriculture	TA 15.1: Agriculture

This appointment is valid for 3 years from its date of approval below and is bound by internal requirements of management system of the Certification Body of CTI.

Approved by:

Wu LIN

Technical Competent Manager

Shenzhen, 25/10/2022

Qualified verifier and reviewer for assessment SDGs, E+, S+ under GCC program

Name	SDGs, E+, S+ Verifier	SDGs, E+, S+ independent reviewer
Mr. Wu LIN	Yes	Yes
Ms. Shunrong LIN	Yes	Yes

Appendix 3. Document reviewed or referenced

No	Author	Title	References to the document	Provider
/1/.	GCC	GCC-Program-Manual	Ver. 3.1	Others
/2/.	GCC	Project-Standard http://globalcarboncouncil.com/wp-content/uploads/2021/10/Project-Standard-v3.1.pdf	Ver. 3.1	Others
/3/.	GCC	Verification-Standard http://globalcarboncouncil.com/wp-content/uploads/2021/10/Verification-Standard-v3.1.pdf	Ver. 3.1	Others
/4/.	GCC	Environment-and-Social-Safeguards-Standard https://www.globalcarboncouncil.com/wp-content/uploads/2022/10/Environment-and-Social-Safeguards-Standard.V3.0_-1.pdf	Ver 03	Others
/5/.	GCC	Project-Sustainability-Standard https://www.globalcarboncouncil.com/wp-content/uploads/2022/09/Project-Sustainability-Standard_V3.0-1_.pdf	Ver 03	Others
/6/.	GCC	Project Submission Form	Version no.-4.0	Others
/7/.	UNFCCC	CDM Glossary terms	Version 10.0	Others
/8/.	UNFCCC	ACM0002: "Grid-connected electricity generation from renewable sources" Version 21.0 https://cdm.unfccc.int/methodologies/DB/HF3LP6041YY0JIP1DK6ZRJO9RSCX3S	Version 21.0 02/11/2022	Others
/9/.	UNFCCC	Tool 01: Tool for the demonstration and assessment of additionality	Version 07.0.0	Others
/10/.	UNFCCC	Tool 05: Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation	Version 03.0	Others
/11/.	UNFCCC	Tool 07: Tool to calculate the emission factor for an electricity system	Version 07.0	Others
/12/.	UNFCCC	Tool 27: Investment analysis	Version 12.0	Others
/13/.	UNFCCC	Tool 24: Common Practice	Version 3.1	Others
/14/.	UNFCCC	https://GCC.unfccc.int/Projects/projectsearch.html		Others
/15/.	UNFCCC	EB 48 Annex 11	Version 01	Others

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		Guidelines for The Reporting and Validation of Plant Load Factors	17/07/2009	
/16/.	IPCC	2006 default values		Others
/17/.	Government of China	China's Sustainable Development Report 2019	2019	Others
/18/.	Lvchun Hongrui power development and Operation Co., Ltd.; Sichuan RayGi Green Energy Technology Co., Ltd.	Project Submission Form (initial)	Version 1.1, Dated 06/09/2022	PO
/19/.	Lvchun Hongrui power development and Operation Co., Ltd.; Sichuan RayGi Green Energy Technology Co., Ltd.	Project Submission Form (revised/final)	Version 3.0, Dated 04/03/2024	PO
/20/.	Lvchun Hongrui power development and Operation Co., Ltd.; Sichuan RayGi Green Energy Technology Co., Ltd.	ER Sheet (Daheishan Hydropower Station-ER Sheet)	Dated on 06/09/2022	PO
/21/.	Lvchun Hongrui power development and Operation Co., Ltd.; Sichuan RayGi Green Energy Technology Co., Ltd.	IRR Sheet (Daheishan Hydropower Station-IRR Sheet)	Version 1, Dated on 18/10/2022; Version 2, Dated on 24/03/2023	PO
/22/.	SOCOL Corporation Ltd. (Sinohydro First Engineering Bureau Co. Ltd)	FSR approved by Honghe Prefecture Development and Reform Commission on 11/06/2012	Dated in December 2011	PO
/23/.	Yunnan Luhong Environment Technology Ltd.	EIA	Dated in January 2012	PO
/24/.	Department of Ecology and Environment of Yunnan Province	EIA Approval	Dated on 07/06/2012	PO
/25/.	Lvchun Hongrui power development and Operation Co., Ltd.; Sichuan RayGi Green Energy Technology Co., Ltd.	LOA	Dated on 08/06/2022	PO
/26/.	Lvchun County Market Supervision and Administration	Business License of Lvchun Hongrui power development and Operation Co., Ltd.	Issued on 21/08/2019	PO
/27/.	Sichuan Tianfu New District Administration	Business License of Sichuan RayGi Green Energy Technology Co., Ltd.	Issued on 01/07/2022	PO
/28/.	Honghe Hani and Yi Autonomous Prefecture Development and Reform Commission	Approval of the Daheishan Hydro Power Project	Dated on 11/06/2012	PO
/29/.	Honghe Power Supply Bureau; Lvchun Hongrui power development and Operation Co., Ltd.	Grid-connected scheduling protocol	Dated on 13/09/2017	PO

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/30/.	Lvchun Hongrui power development and Operation Co., Ltd.	Connection diagram		PO
/31/.	Honghe Power Supply Bureau	Grid-connection trial operation position paper (certificate that on-grid since 26/08/2019)	Dated on 25/03/2020	PO
/32/.	Lvchun Hongrui power development and Operation Co., Ltd.	Off-grid Statement	From operation to 2022	PO
/33/.	Lvchun Hongrui power development and Operation Co., Ltd.	On-grid Statement	From operation to 2022	PO
/34/.	Honghe Power Supply Bureau; Lvchun Hongrui power development and Operation Co., Ltd.	Electricity Purchase Contract	Dated on 05/03/2018	PO
/35/.	Lvchun Hongrui power development and Operation Co., Ltd.	Operation logbooks	Since 26/08/2019	PO
/36/.	Lvchun Hongrui power development and Operation Co., Ltd.; Yunnan Rundian Engineer Technology Consultation Ltd.	Order to commence	Dated 25/09/2013	PO
/37/.	Lvchun Hongrui power development and Operation Co., Ltd.	Generator nameplates	/	PO
/38/.	Lvchun Hongrui power development and Operation Co., Ltd.; Huaning Ningxing Industrial Ltd.; Honghe Shengong construction Co., Ltd.; Chian Railway 16 th Bureau Engineering Corporation; Yunnan Water Conservancy and Hydropower Project Ltd.;	Construction contracts, the earliest one is 110kV export line construction contract and project construction contracts	The earliest date among the construct contracts is 19/11/2012	PO
/39/.	Lvchun Hongrui power development and Operation Co., Ltd.	Board resolution for GCC project	Dated on 15/04/2021	PO
/40/.	Lvchun Hongrui power development and Operation Co., Ltd. and other technical and equipment companies	Equipment technical agreement and equipment purchase contracts	The earliest date among the construct contracts is 18/02/2014	PO
/41/.	Yunnan power grid Ltd. Power Science Research Institute	Meter calibration certificate: Certificate Number: 2018N-29011; 2018N-29010;	Certificate issued valid from 27/01/2018 until 26/01/2024; Agency issued since 05/12/2005	PO

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/42/.	Lvchun Hongrui power development and Operation Co., Ltd.	Operation worker certificate, welfare and training	Since 26/08/2019	PO
/43/.	Lvchun Hongrui power development and Operation Co., Ltd.	Statement on avoiding double counting	Dated on 23/09/2022	
/44/.	Lvchun Hongrui power development and Operation Co., Ltd.	Site photos	Taken on 29/11/2022	PO
/45/.	Lvchun Hongrui power development and Operation Co., Ltd.	Stakeholder Responses	01/05/2022	PO
/46/.	Ministry of energy and Natural Resources	Calibration requirements		PO
/47/.	CDM Executive Board	Guidance for request for deviation titled "Application of AM0005 and AMS-I.D in China" http://GCC.unfccc.int/Projects/deviations/87512		Others
/48/.	China Electric Power Press/China DNA	China Electric Power Yearbook, 2014~2018. 2019 Baseline Emission Factors for Regional Power Grids in China http://www.mee.gov.cn/ywgz/ydqhbh/wsqtz/202012/t20201229_815386.shtml	29/12/2020	Others
/49/.	China Statistic Press//China DNA	China Energy Statistical Yearbook, 2014~2018. 2019 Baseline Emission Factors for Regional Power Grids in China http://www.mee.gov.cn/ywgz/ydqhbh/wsqtz/202012/t20201229_815386.shtml	29/12/2020	Others
/50/.	CDM	http://cdm.unfccc.int/Projects/projectsearch.html		Others
/51/.	VCS	http://www.vcsprojectdatabase.org/		Others
/52/.	Gold Standard	http://www.goldstandard.org/about-us/project-registry		Others
/53/.	CCER	Chinese Certified Emission Reduction		Others
/54/.	I-REC	International Renewable Energy Certificate https://www.irecstandard.org/		Others
/55/.	China Green Electricity Certificate	http://www.greenenergy.org.cn/		Others
/56/.	GCC	https://projects.globalcarboncouncil.com/pages/		Others
/57/.	China Certified Emission Reduction publicly available statistics and relevant project information on CDM, VCS, GS and GCC website	Unit investment and unit O&M cost of 25 projects (12MW~36MW) in Yunnan Province		Others

/58/.	Ministry of Ecology and Environment of the People's Republic of China	Notice on 2019 Baseline Emission Factors for Regional Power Grids in China, 29 December 2020 (downloadable from http://www.mee.gov.cn/ywgz/ydqhbh/wsqtz/202012/t20201229_815384.shtml)	29/12/2020	Others
/59/.	National Development and Reform Commission (NDRC) and Ministry of Construction	Methodology and Parameters of Economic Evaluation on Construction Projects (3rd edition)	2006	Others
/60/.	NDRC	Notice Regarding the Price Regulations for Electricity Generation from Renewable Energy, NDRC, [2006] No.7 https://www.ndrc.gov.cn/xxgk/zcfb/tz/200601/t20060120_965897.html	4 January 2006	Others
/61/.	Standing Committee of the tenth National People's Congress	Law of the People's Republic of China on Renewable Energies, http://www.gov.cn/ziliao/flfg/2005-06/21/content_8275.htm	1 January 2006	Others
/62/.	State Power Corporation of China	Interim Rules on Economic Assessment of Electric Engineering Retrofit Projects	China Electric Power Press, 2002.	Others
/63/.	China Planning Press	Document for Registered Engineering Consultants in China	2008	Others
/64/.	NDRC	Interim Measures for Renewable Energy Power Tariff and Cost-sharing, NDRC [2006] No.7	1 January 2006.	Others
/65/.	State Council of China	Approval and Implementation of Power Industry System Reform in China http://www.ndrc.gov.cn/xwfb/t20050708_28096.htm	11 April 2002	Others
/66/.	Standing Committee of the Seventh National People's Congress	Environmental Protection Law of the People's Republic of China http://www.lawlib.com/law/law_view.asp?id=6229	26 December 1989	Others
/67/.	State Taxation Administration	Regulations on the Value Added Tax of Electricity Product, [2004] No.10	22 December 2004	Others
/68/.	Ministry of Finance & State Administration of Taxation	Circular Regarding the Policies of Value Added Tax for the Partial Products with Comprehensive Utilization of Resources and Other Products, Cai Shui [2001] No.198 http://www.whgs.gov.cn/cms/whgs03/laws/02/030202/200112010122.html	1 December 2001	Others
/69/.	Ministry of Justice of the People's Republic of China	Law of People's Republic of China on Enterprise Income Tax, President decree No.63	1 January 2008	Others

		http://www.gov.cn/flfg/2007-03/19/content_554243.htm		
/70/.	State Council of China	Implementation Rules of Enterprise Income Tax Law of People's Republic of China, State Council Document No.512 http://www.gov.cn/zwgk/2007-12/11/content_830645.htm	Enforced on 01/01/2008, amended on 23/04/2019	Others
/71/.	State Taxation Administration	Circular on Tax Policy Issues concerning the In-depth Implementation of the Strategy of Developing the Western Region [2011] No.58 http://www.chinatax.gov.cn/chinatax/n810341/n810765/n812156/201108/c1186395/content.html	27 July 2011	Others
/72/.	Ministry of Finance and the State Administration of Taxation	Notice on the Application of Low Value Added Tax Rates and Policies on Levying Value Added Tax with the Simple Approach to Some Goods, Cai Shui [2009] No 9 http://www.js-n-tax.gov.cn/Page1/StatuteDetail.aspx?StatuteID=9066	19 January 2009	Others
/73/.	Ministry of Justice of the People's Republic of China	Law of the People's Republic of China on Evaluation of Environmental Impact, [2002] No.77	1 September 2003.	Others
/74/.	State Tax Bureau of China	Notice on Determination of Residual Rate for Enterprise Fixed Asset, Guo Shui Han [2005] No.883, http://www.chinatax.gov.cn/n8136506/n8136563/n8193451/n8193526/n8194270/8245508.html	14 September 2005	Others
/75/.	State Council of China	Provisional Regulations of the People's Republic of China on Urban Maintenance and Construction Tax, Guo Fa [2016] No.280, Approval of Urban Maintenance and Construction Tax (qq.com)	2016	Others
/76/.	State Council of China	Education Surtax Policy, No.448 Government Webpage, Regulation for Education tax (www.gov.cn)	Issued on 24/09/2005, enforced on 01/10/2005	Others
/77/.	State Council of China	Provisional Regulations of the People's Republic of China on Education Tax, No. 448 http://www.gov.cn/zwgk/2005-09/27/content_70440.htm	20 August 2005	Others
/78/.	The General Office of the State Council	Notice on Strictly Prohibiting the Installation of Fuel-fired Generation with the Capacity of 135 MW or below, Decree [2002]	2002	Others

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		No.6. http://www.gov.cn/gongbao/content/2002/content_61480.htm		
/79/.	State Economic and Trade Commission of China	Technical Management Regulation of Power Metering Device (DLT448-2000)	01 January 2001	Others
/80/.	General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China	Checking Regulation of Electronic Power Meters (JJG 596-1999)	15 March 2000	Others
/81/.	Ministry of Finance & State Administration of Taxation	Notice about Implementation of VAT Reform in the Whole Country, Cai Shui [2008] No. 170 http://www.js-n-tax.gov.cn/Page1/StatuteDetail.aspx?StatuteID=8965	19 Dec 2008	Others
/82/.	National Statistics	National Statistics-China Statistical Yearbook (m12333.cn)	2019-2020	Others
/83/.	National Bureau of Statistics of China	National Statistics Database on the index of raw material price. Producer Price Index: Producer Good: Raw Material Economic Index CEIC (ceicdata.com)	/	Others
/84/.	Ministry of Water Resources of the People's Republic of China	Economic evaluation code for small hydropower projects 3rd edition (SL 16-2010) in China	Published on 22/10/2010, enforced on 22/01/2011	Others
/85/.	Bureau of Ecology and Environment of Honghe Hani and Yi Autonomous Prefecture	Project acceptance report	Dated on 03/11/2020	PO
/86/.	Ministry of Ecology and Environment of the People's Republic of China	Emission Standard for Industrial Enterprises Noise at Boundary (GB12348-2008)	Published on 19/08/2008, enforced on 01/10/2008	Others
/87/.	Ministry of Ecology and Environment of the People's Republic of China	Pollution control standards for general industrial solid waste storage and disposal sites (GB18599-2001)	Approved on 28/12/2001, enforced on 01/07/2002	Others
/88/.	Ministry of Ecology and Environment of the People's Republic of China	Comprehensive Wastewater Discharge Standards (GB 8978-1996)	Published on 04/10/1996, enforced on 01/01/1998	Others
/89/.	Sichuan RayGi Green Energy Technology Co., Ltd; Lvchun Hongrui power development and Operation Co., Ltd.	GCC carbon emission reduction project joint development cooperation agreement	Dated on 16/05/2022	PO
/90/.	VCS Website	VCS1433 LinCang Yun County, XinTangFang Hydropower Station Project (https://registry.verra.org/app/projectDetail/VCS/1433); VCS29 Gansu Zhouqu Shimenping 15 MW Hydropower	/	Others

		Station Project (https://registry.verra.org/app/projectDetail/VCS/29); VCS1044 Ziqiang 18MW Hydropower Project in Guizhou Province China (https://registry.verra.org/app/projectDetail/VCS/1044)		
/91/.	Standing Committee of the National People's Congress	Water Law of the People's Republic of China (http://www.npc.gov.cn/npc/sjxflfg/201906/e1c5425950d54137805528c23b2d2986.shtml)	Issued since 01/07/1988	Others
/92/.	Ministry of Water Resources of the People's Republic of China	Regulations on the Administration of Bidding and Tendering for Water Conservancy Construction Projects (https://www.gov.cn/gongbao/content/2002/content_61624.htm)	Issued since 01/01/2002	Others
/93/.	Ministry of Water Resources of the People's Republic of China	Measures for the Administration of the Qualification for Investigation and Evaluation of Hydrological Water Resources and the Qualification for Water Resource Demonstration of Construction Projects (https://www.gov.cn/gongbao/content/2003/content_62177.htm)	Issued 01/05/2003	Others
/94/.	Lvchun Hongrui power development and Operation Co., Ltd.	Finance statement	2019-2022	Others
/95/.	State Taxation Administration	Law of corporation income tax (https://www.chinatax.gov.cn/chinatax/n810341/n810825/c101434/c28479830/content.html)	Issued since 16/03/2007	Others
/96/.	China Statistic Press//China DNA	China Energy Statistical Yearbook, 1956~2022.	1956~2022	Others
/97/.	China Electric Power Press/China DNA	China Electric Power Yearbook, 2004~2022.	2004~2022.	Others
/98/.	State Environmental Protection Administration	Standard for Pollution Control on Hazardous Waste Storage (GB18597-2001)	Issue from 2001	Others
/99/.	Department of Labor Resources and Social Security of Yunnan Province	Yunnan Province adjusts and raises minimum wage in 2023 (https://hrss.yn.gov.cn/html/2023/10/12/57455.html)	Issued since 12/10/2023	Others

Appendix 4. Clarification request, corrective action request and forward action request

Table 1. CLs from this Project Verification

CL ID	01	Section no.	B.2.	Date: 19/12/2022
Description of CL				
By checking the initial PSF (version 1.1) and evidence material provided, the evidence of the area of reservoir is deficient. PO is requested to provide relevant evidence or further clarify it.				

Project Owner's response	Date: 24/03/2023
The data source of A _{PJ} in Data/Parameter Table 3 is in Daheishan Plant Main Characteristic Table 1.20-1 of the FSR. Land area flooded by reservoirs equals to 9 mu, which is 6000 m ²	
Documentation provided by Project Owner	
FSR	
GCC Project Verifier assessment	Date: 25/03/2023
Via checking the FSR page 70, the flooded area of reservoir is 9 mu. The CL 01 is resolved.	

CL ID	02	Section no.	B.5.	Date: 19/12/2022
Description of CL				
By checking PSF (version 1.1), the parameter in the table of Sub-step2c is not clearly mentioned in the evidence file. PO is requested to clarify the data source.				
Project Owner's response				Date: 24/03/2023
Parameters in the table have been revised, related parts have been corrected as well. Data source of the parameters is FSR P67-73.				
Documentation provided by Project Owner				
Updated PSF version 2.0, FSR				
GCC Project Verifier assessment				Date: 25/03/2023
Via checking the updated PSF version 2.0, the parameters in the table in Sub-step2c are revised according to the data source FSR. The CL 02 is resolved.				

CL ID	03	Section no.	B.6.2.	Date: 19/12/2022
Description of CL				
By checking PSF (version 1.1), the data source of A _{PJ} in Data/Parameter Table 3 is not stated clearly. PO is requested to clarify the data source.				
Project Owner's response				Date: 24/03/2023
The data source of A _{PJ} in Data/Parameter Table 3 is in Daheishan Plant Main Characteristic Table 1.20-1 of the FSR. 'Land area flooded by reservoirs equals to 9 mu, which is 6000 m ² '				
Documentation provided by Project Owner				
Updated PSF version 2.0, FSR				
GCC Project Verifier assessment				Date: 25/03/2023
Via checking the FSR page 70, the flooded area of reservoir is 9 mu, i.e. 6000m ² . The CL 03 is resolved.				

CL ID	04	Section no.	D.2.	Date: 19/12/2022
Description of CL				
By checking PSF (version 1.1) and relevant evidence materials, the date of the EIA is inconsistent. PO is requested to revise it.				
Project Owner's response				Date: 24/03/2023
The date of the EIA has been revised.				
Documentation provided by Project Owner				
Updated PSF version 2.0				
GCC Project Verifier assessment				Date: 25/03/2023
Via checking the PSF version 2.0, the date of EIA is revised according to the evidence material. CL04 is resolved.				

CL ID	05	Section no.	E.1., D.1.	Date: 19/12/2022
Description of CL				
By checking PSF (version 1.1), the information of Noise Pollution (EA09) and Environment-Land is inconsistent with the description in Section D.1. PO is requested to clarify it.				
Project Owner's response				Date: 24/03/2023

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Assessments about Noise Pollution and Environment-Land have been added in PSF.	
Documentation provided by Project Owner	
Updated PSF version 2.0	
GCC Project Verifier assessment	Date: 25/03/2023
Via checking the PSF version 2.0, the Assessments about Noise Pollution and Environment-Land is added according to EIA. CL05 is resolved.	

CL ID	06	Section no.	Cover page, A.4. Appendix 1.	Date: 01/02/2024
Description of CL				
By checking PSF and relevant evidence materials, the ownership of ACCs is not clear. Therefore, CL1 is raised, PO is requested to make clarification of this part.				
Project Owner's response				Date: 01/03/2024
Sichuan RayGi Green Energy Technology Co.,Ltd will hold the ownership of ACCs.				
Documentation provided by Project Owner				
Updated PSF version 3.0, GCC carbon emission reduction project joint development cooperation agreement/89/				
GCC Project Verifier assessment				Date: 01/03/2024
By checking the business licenses of Lvchun Hongrui power development and Operation Co., Ltd./26/ and Sichuan RayGi Green Energy Technology Co., Ltd./27/, it has been confirmed that the legal owners are legal. By checking the power purchase agreement, it is confirmed that the two parties to the agreement are Yunnan Power Grid Co., Ltd. and Lvchun Hongrui Power Development and Operation Co., Ltd., and cross-checking project approval/28/, Grid-connection trial operation position paper/31/, construction contract/38/ and equipment purchase contract/40/, it has been confirmed that the legal ownership of assets is Lvchun Hongrui Electric Power Development and Operation Co., Ltd.. Sichuan Raygi Green Energy Technology Co., Ltd and Lvchun Hongrui Power Development and Operation Co., Ltd. signed the GCC carbon emission reduction project joint development cooperation agreement/89/ on 16/05/2022, and made it was clear that the ownership of carbon credits generated by project activities belongs to Sichuan Raygi Green Energy Technology Co., Ltd through cross-checking LOA/25/. CL06 is resolved.				

Table 2. CARs from this Project Verification

CAR ID	01	Section no.	B.3.	Date: 19/12/2022
Description of CAR				
By checking PSF (version 1.1), the Justification/Explanation in the table about emission sources in project scenario is incorrect. PO is requested to revise it.				
Project Owner's response				Date: 24/03/2023
Justification/Explanation has been revised according to an approved project.				
Documentation provided by Project Owner				
Updated PSF version 2.0				
GCC Project Verifier assessment				Date: 25/03/2023
Via checking the PSF version 2.0, the Justification/Explanation is revised. CAR 01 is resolved.				

CAR ID	02	Section no.	B.5.	Date: 19/12/2022
Description of CAR				
By checking PSF (version 1.1), Sub-step 2d: Sensitivity analysis is incomplete. PO is requested to add description about the items.				
Project Owner's response				Date: 24/03/2023
Sensitivity analysis has been completed now.				
Documentation provided by Project Owner				

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Updated PSF version 2.0	
GCC Project Verifier assessment	Date: 25/03/2023
Via checking the PSF version 2.0, the sensitivity analysis is completed. CAR 02 is resolved.	

CAR ID	03	Section no.	B.5.	Date: 19/12/2022
Description of CAR				
By checking PSF (version 1.1), Sub-step 4a-2, 4a-3: Common practice analysis is incomplete and the common practice start date is incorrect. PO is requested to list and add description about the projects, and revise the start date of common practice.				
Project Owner's response				Date: 24/03/2023
The start date of common practice analysis has been revised and completed now.				
Documentation provided by Project Owner				
Updated PSF version 2.0				
GCC Project Verifier assessment				Date: 25/03/2023
Via checking the PSF version 2.0, the sensitivity analysis is completed. CAR 03 is resolved.				

CAR ID	04	Section no.	C.3.1.	Date: 19/12/2022
Description of CAR				
By checking PSF (version 1.1), the end date of the crediting period is missing. PO is requested to revise it.				
Project Owner's response				Date: 24/03/2023
The end date of the crediting period has been added now.				
Documentation provided by Project Owner				
Updated PSF version 2.0				
GCC Project Verifier assessment				Date: 25/03/2023
Via checking the PSF version 2.0, the end date of the crediting period is added. CAR 04 is resolved.				

CAR ID	05	Section no.	-	Date: 01/08/2023
Description of CAR				
By checking the Request for Registration Form, the date and version information of the documents (ER sheet, IRR sheet and PVR) are incorrect. PO is requested to revise it.				
Project Owner's response				Date: 02/08/2023
The date and version number of the documents involved have been revised.				
Documentation provided by Project Owner				
GCC project Request for Registration Form (RFRF) Version 2.0				
GCC Project Verifier assessment				Date: 02/08/2023
Via checking the RFRF version 2, the end date of the date and version information of the documents (ER sheet, IRR sheet and PVR) have been incorrectly. CAR 05 is resolved.				

CAR ID	06	Section no.	E	Date: 01/08/2023
Description of CAR				
By checking the PSF, the Solid waste Pollution from Hazardous wastes, Solid waste Pollution from end of life products/ equipment and Threatened livelihood in E+ and S+ is missing. PO is requested to revise it.				
Project Owner's response				Date: 02/08/2023
The information have been revised.				
Documentation provided by Project Owner				
PSF				
GCC Project Verifier assessment				Date: 02/08/2023
Via checking the PSF, the E+ and S+ Sections have been revised. CAR 06 is resolved.				

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CAR ID	07	Section no.	F	Date: 01/08/2023
Description of CAR				
By checking the PSF, the evidence on SDG 9 is insufficient. PO is requested to revise it.				
Project Owner's response				Date: 02/08/2023
The SDG 9 has been deleted.				
Documentation provided by Project Owner				
PSF Version 2.0				
GCC Project Verifier assessment				Date: 02/08/2023
SDG 09 has been deleted. CAR 07 is resolved.				

Table 3. FARs from this Project Verification

FAR ID	01	Section no.	H.	Date: 01/08/2023
Description of FAR				
The GCC Verifier has raised FAR 1 which confirms that Project shall demonstrate the compliance to CORSIA requirements for the credits claimed beyond 31 December 2020 with respect to double counting and HCLOA requirements and also future CORSIA requirements applicable time to time for the project activity.				
Project Owner's response				Date: N/A
N/A				
Documentation provided by Project Owner				
N/A				
GCC Project Verifier assessment				Date: N/A
N/A				

Appendix 5. Environmental safeguards assessment

Impact of Project Activity 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/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	3 rd Party Audit
				Not Applicable	Harmless	Harmful	Operational Controls	Program of Risk Management Actions				
Environmental Aspects on the identified categories⁷ 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 Owner(s) has/have control.	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	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	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 cause harm (may be un-safe) and shall be indicated as Harmful	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' at least to a level that is in compliance with applicable legal/regulator requirements or industry best practice or stricter voluntary	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

⁷ sourced from the CDM SD Tool and the sample reports are available (<https://www4.unfccc.int/sites/sdcmicrosite/Pages/SD-Reports.aspx>)

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				Not Applicable	<i>principles, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as Harmless /if the project has an positive impact on the environment mark it as "harmless" as well.</i>		<i>corporate requirements</i>					<i>likely baseline alternative.</i>
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)	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.		
	NO _x emissions (EA02)	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.		
	CO ₂ emissions (EA03)	The project reduces CO ₂ emissions. So this impact is positive.	N.A.	N.A.	Harmless	-	N.A.	N.A.	Continues monitoring the net electricity supplied to grid and calculate the emissions using equation $CO_2 \text{ emission} = E_{grid,CM,y}^r \times EG_{facility,y}$	+1	The electricity generation will be monitored by using electricity meters. Therefore, emission reduction will be calculated accordingly.	The project reduces CO ₂ emissions since it reduces the amount of fossil fuel used. The project activity causes positive impact on the environment by replacing the fossil fuels with the renewable energy sources of energy. Hence, CO ₂ emissions is not likely to cause any net harm to the environment.

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CO emissions (EA04)	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.		
Suspended particulate matter (SPM) emissions (EA05)	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.		
Fly ash generation (EA06)	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.		
Non-Methane Volatile Organic Compounds (NMVOCs) (EA07)	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.		
Odor (EA08)	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.		
Noise Pollution (EA09)	<p>The impact of the project on the sound environment is mainly concentrated in the construction period. However, because the project is small, as well as the construction crew install no-noise and speed limit signs at environmentally sensitive points such as villages and schools, and reasonably schedule construction operations the noise generated by the construction has little impact on the surrounding sound environment. Also, construction crew will utilize low-noise equipment and arrange the operation time reasonable to lower the impact.</p> <p>For the noise generated during operation mainly comes from the noise</p>	GB12348-2008	-	<p>Considering the scale of project is small and noise reduction treatments are taken, the noise level will be taken under control as per GB12348-2008, so this impact is deemed Harmless.</p>	-	N.A.	N.A.	<p>Monitoring noise level on yearly basis.</p>	+1	<p>Because the project is small, as well as the construction crew install no-noise and speed limit signs at environmentally sensitive points such as villages and schools, and reasonably schedule construction operations the noise generated by the construction has little impact on the surrounding sound environment. And the noise generated during operation mainly comes from the noise generated by the</p>	<p>The noise values onsite meet the requirements of the standard in the Emission Standard for Industrial Enterprises at Boundary (GB12348-2008). The noise pollution is not likely to cause any net harm to the environment.</p>

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		generated by the hydroelectric generator set. After the plant barrier, the noise of the plant boundary can meet the requirements of the corresponding standard limit value So the noise impact is deemed to be Harmless.									hydroelectric generator set. After the plant barrier, the noise of the plant boundary can meet the requirements of the corresponding standard limit value	
	Others (EA10)	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.		
Environment - Land	Solid waste Pollution from Plastics (EL-01)	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.		
	Solid waste Pollution from Hazardous wastes(EL 02)	During operation, maintenance and transformer will generate certain waste oil and oily wastewater	Integrated Sewage Discharge Standard (GB8978-1996) Hazardous waste storage is in accordance with Hazardous Waste Storage Pollution Control Standard (GB 18597- 2001).	N.A.	Project sets a grease trap to treat waste oil and oily wastewater. After treated, all waste oil and oily wastewater will be reused by project or treated by qualified company.-	-	N.A.	N.A.	Monitoring the quantity of waste oil produced and quantity of waste oil treatment yearly.	+1	The impact is within legal limit, and this parameter will be monitored, hence the project is deemed Harmless	Via checking EIA/23/, EIA approval/24/, Project acceptance report/82/, and onsite visit, the hazardous waste has been treated appropriate as per Standard for Pollution Control on Hazardous Waste Storage (GB18597-2001) . Thus, it is not likely to cause any net harm to the environment.
	Solid waste Pollution from Bio-medical wastes (EL03)	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.		
	Solid waste Pollution from E-	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.		

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wastes (EL04)												
Solid waste Pollution from Batteries (EL05)	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.			
Solid waste Pollution from end of life products/equipment (EL06)	Waste from end-of-life products is generated during operation period as well as the end of the project. All waste will be collected and sent to licensed recycling organizations for better utilization	Standards for Pollution Control on the Storage and Disposal Site for General Industrial Solid Wastes GB18599- 2001	N-	Harmless	-	N.A.	N.A.	Monitor the end-of-life waste treatment on yearly basis.	+1	Waste from endof-life products is generated during operation period as well as the end of the project. All waste will be collected and sent to licensed recycling organizations for better utilization.	Via checking EIA/23/, EIA approval/24/ , Project acceptance report/82/, and onsite visit, the end-of-life waste has been treated appropriate as per GB18599-2001. Thus, it is not likely to cause any net harm to the environment.	
Soil Pollution from Chemicals (including Pesticides, heavy metals, lead, mercury) (EL07)	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.			
land use change (change from cropland /forest land to project land) (EL08)	The permanent land occupation of the power station involves 52 production compensation personnel with 0.99 mu of arable land per capita, and the power station occupies a total of 51.3 mu of arable land. As the power station expropriates the arable land, the production materials of the production personnel are lost.	Yunnan Province, large and medium-sized water conservancy and hydropower project construction immigrant resettlement measures	-	According to the survey, this project is a small hydropower project and does not involve resettlement of residents; the production land involved in the permanent area covered by the project are	-	N.A.	N.A.	By checking related compensating treatment records during each verification period.	+1	According to the survey, this project is a small hydropower project and does not involve resettlement of residents; the production land involved in the permanent area covered by the project are compensated according to the local standard of the year. The farmers whose	The lands occupied by the project have been all compensated according to the local standard Yunnan Province, large and medium-sized water conservancy and hydropower project construction immigrant	

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					compensated according to the local standard of the year. The farmers whose farmland and forest are expropriated will be compensated through land adjustment and capital compensation, and the production and living of the farmers will be properly arranged. So the impact is deemed to be Harmless					farmland and forest are expropriated will be compensated through land adjustment and capital compensation, and the production and living of the farmers will be properly arranged..	resettlement measures. The land use change is unlikely to cause net harm to the environment.
<i>Construction Waste (EL09)</i>	The amount of soil and rock dumping generated by the project due to construction is 286,800 m ³ (natural square), and in the treatment and disposal of the dumping, 11 dumping storage yards are set up. The impact of slag disposal on the environment is mainly in the form of land occupation (the 11 slag storage sites set up by the project cover an area of 5.49hm ²) and will destroy the native vegetation in the area. However, the land occupied by the dumps is forest land, sloping land and terraced flat land, so the amount of arable land used by local villagers will be affected in terms of land occupied by the dumps. So the impact is negative.	GB 18599-2001	-	Harmless. Construction crew will set up temporary garbage dumps in each construction area, frequently spray pest control and other medicinal water, arrange special personnel to sweep the garbage regularly and make simple screening according to the type of garbage. When dismantling the shed after the construction, the surrounding	-	N.A.	N.A.	By checking related treatment record during each verification period.	+1	By taking various actions, the impact will be harmless.	The construction waste generated during the project construction has been treated according to the national standard GB 18599-2001. The construction waste is unlikely to cause net harm to the environment.

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					<p>domestic garbage dumps and garbage cans should be cleared in time, and the simple dry toilets and cesspits must be dismantled, filled and leveled, and disinfected with carbolic acid and quicklime at the same time. After the end of the project, demolish the construction area of the temporary buildings, the concrete mixing system, construction machinery parking site and other construction land, timely site cleaning, remove construction waste and all kinds of debris. Each construction contractor or owner should arrange a person in charge of the collection of production waste, scrap iron, scrap steel, etc. should be stacked in the designated location, and disorderly piling is strictly prohibited.</p>								
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					So the impact is deemed to be harmless								
Environment - Water	<i>Reliability/ accessibility of water supply (EW01)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.			
	<i>Water Consumption from ground and other sources (EW02)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.			
	<i>Generation of wastewater (EW03)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.			
	<i>Wastewater discharge without/with insufficient treatment (EW04)</i>	During the construction period, the wastewater is recycled or discharged after sedimentation treatment. The domestic sewage is treated in septic tank and used for greening forest land or crop fertilizer in the plant area. So this impact is negative.	Comprehensive Wastewater Discharge Standards (GB 8978-1996)	N.A.	Harmless	-	-	N.A.	N.A.	Continuously monitor density of SS, pH value	+1	Wastewater is recycled or discharged after treatment and will not cause pollution to the environment	The wastewater generated by the project has been discharged according to the GB-8978-1996. The wastewater is unlikely to cause net harm to the environment.
	<i>Pollution of Surface, Ground and/or Bodies of water (EW05)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.			
	<i>Discharge of harmful chemicals like marine pollutants / toxic waste (EW06)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.			
	<i>Others (EW07)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.			

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Environment – Natural Resources	<i>Conserving mineral resources (ENR01)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.		
	<i>Protecting/enhancing plant life (ENR02)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.		
	<i>Protecting/enhancing species diversity (ENR03)</i>	Fish may be affected by the project activity. The completion of the barrage will block the migratory passage of fish in the original river, so that the material exchange and species exchange between the upstream and downstream aquatic ecosystems will be blocked and restricted. So this impact is negative.	No national regulatory and requirements identified.	-	-	Harmful	To ensure the ecological flow, an ecological recharge pipe is constructed.	Construct an ecological recharge pipe to ensure ecological flow downstream and maintain the ecological environment of the downstream river. Also, the management of construction workers will be strengthened and the raising of exotic species and the destruction of fishery resources in the reservoir area will be prohibited.	Continuously monitor discharged ecological flow.	+1	There will not be any harm to the fish species with the help of the mitigation measure taken.	The ecological recharge pipe is constructed for avoiding the impacts on the fish and ecological flow, thus it is unlikely to cause net harm to the environment.
	<i>Protecting/enhancing forests (ENR04)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.		
	<i>Protecting/enhancing other depletable natural resources (ENR05)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.		
	<i>Conserving energy (ENR06)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.		
	<i>Replacing fossil fuels</i>	The project generates electricity which used to	N.A.	N.A.	Harmless	-	N.A.	N.A.	Continuous measuring for	+1	The electricity generation will	The project reduces the

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	<i>with renewable sources of energy (ENR07)</i>	be delivered by power plant using fossil fuels combustion. So this impact is positive							electricity generation will be done by using electricity meters		be monitored by using electricity meters. Therefore, fossil fuels reduction will be calculated accordingly.	amount of fossil fuel used via replacing the electricity from fossil fuel intensive grid with renewable power, thus it is not likely to cause any net harm to the environment.
	<i>Replacing ODS with non-ODS refrigerants (ENR08)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.		
	<i>Others (ENR09)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.		
Net Score:												
		+9										
Project Owner's Conclusion in PSF:		+9		The Project Owner confirms that the Project Activity will not cause any net harm to Environment.								
GCC Project Verifier's Opinion:		+9		The GCC Verifier certifies that the Project Activity is not likely to cause any net harm to the environment.								

Appendix 6. Social safeguards assessment

Impact of Project Activity 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)

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	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	3 rd Party Audit	
			Not Applicable	Harmless	Harmful						Operational / Management Controls
Social Aspects on the identified categories⁸ indicated below.	Indicators for social impacts	Describe and identify actual and anticipated impacts on society and stakeholders, both positive or negative, from all source 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 wrt. 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 or 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/regulatory 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)	Paragraph 23		Paragraph 24 and Paragraph 26 (a) (ii)
Social - Jobs	Long-term jobs (> 10)	The project creates long term job	All employments are done	N.A.	Harmless	-	N.A.	Number of people employed by the	+1	The social impact is	Verification team confirms that the

⁸ sourced from the CDM SD Tool and the sample reports are available (<https://www4.unfccc.int/sites/sdcmicrosite/Pages/SD-Reports.aspx>)

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	<i>year) created/lost (SJ01)</i>	opportunities during operation. 18 people have been employed as long terms employee.	according to the national employment regulation					project will be monitored through checking employment records		expected to increase employment, which can be confirmed by employment records	project will creates long term job opportunities during operation. The verification team checked the identified monitoring parameter, its monitoring plan, procedures and found adequately defined and further its monitoring, reporting, and recording system is in place.
	<i>New short-term jobs (< 1 year) created/lost (SJ02)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.	
	<i>Sources of income generation increased / reduced (SJ03)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.	
	<i>Avoiding discrimination when hiring people from different race, gender, ethnics, religion, marginalized groups, people with disabilities (SJ04)</i> <i>(human rights)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.	
	<i>Threatened livelihood (SJ05)</i>	The permanent land occupation of the power station involves 52 production compensation personnel with 0.99 mu of arable land per capita, and the power	<i>Yunnan Province, large and medium-sized water conservancy and hydropower project construction immigrant resettlement measures</i>	-	According to the survey, the production land involved in the permanent area covered by the project are compensated according to the	-	N.A.	N.A.	+1	By checking related compensating treatment records during each verification period.	Via checking Project acceptance report/82/, the permanent land occupation of the power station involves has been compensated.

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		station occupies a total of 51.3 mu of arable land. As the power station expropriates the arable land, the production materials of the production personnel are lost.			local standard of the year. The farmers whose farmland and forest are expropriated will be compensated through land adjustment and capital compensation, and the production and living of the farmers will be properly arranged. So the impact is deemed to be Harmless						Thus, it is verified as harmless
Social - Health & Safety	<i>Disease prevention (SHS01)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.	
	<i>Occupational health hazards (SHS02)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.	
	<i>Reducing / increasing accidents/Incidents/fatality (SHS03)</i>	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.	N.A.	N.A.	Harmless. The project is operated by trained and qualified staffs as per the safety requirement of the Hydropower Plant	-	N.A.	Accidents occurred at project site, the parameter will be monitored on yearly basis.	+1	N.A.	Verification team confirms that the project avoids accidents during operation with trained and qualified workers. The verification team checked the identified monitoring parameter, its monitoring plan, procedures and found adequately defined and further its monitoring, reporting, and recording system is in place.
	<i>Reducing / increasing crime (SHS04)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.	

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	<i>Reducing / increasing food wastage (SHS05)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.	
	<i>Reducing / increasing indoor air pollution (SHS06)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.	
	<i>Efficiency of health services (SHS07)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.	
	<i>Sanitation and waste management (SHS08)</i>	During the construction period, the wastewater is recycled or discharged after sedimentation treatment. The domestic sewage is treated in septic tank and used for greening forest land or crop fertilizer in the plant area. So this impact is negative.	Comprehensive Wastewater Discharge Standards (GB 8978-1996)	N.A.	Harmless	-	N.A.	Continuously monitor density of SS, pH value	+1	During the construction period, the wastewater is recycled or discharged after sedimentation treatment. The domestic sewage is treated in septic tank and used for greening forest land or crop fertilizer in the plant area.	Verification team confirms that the project guarantees sanitation and waste management quality according to the Comprehensive Wastewater Discharge Standards (GB 8978-1996). The verification team checked the identified monitoring parameter, its monitoring plan, procedures and found adequately defined and further its monitoring, reporting, and recording system is in place.
	<i>Other health and safety issues (SHS09)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.	
Social - Education	<i>specialized training / education to local</i>	The project owner provides job related training for the special positions	N.A.	N.A.	-	-	N.A.	Check training records	+1	Job related training can be confirmed	Verification team confirms that the project will provides job related training for

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	<i>personnel (SE01)</i>									by training records	the special positions. The verification team checked the identified monitoring parameter, its monitoring plan, procedures and found adequately defined and further its monitoring, reporting, and recording system is in place.
	<i>Educational services improved or not (SE02)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.	
	<i>Project-related knowledge dissemination effective or not (SE03)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.	
	<i>Other educational issues (SE03)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.	
Social - Welfare	<i>Improving/deteriorating working conditions (SW01)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.	
	<i>Community and rural welfare (indigenous people and communities) (SW02)</i>	The project creates long term job opportunities during operation. 18 people have been employed as long terms employee. This action will improve communal harmony and rural welfare.	Labor Law of the People's Republic of China, Law of the People's Republic of China on the Protection of Minors	N.A.	Harmless	-	N.A.	Continuously monitor the employment record.	+1	The social impact is expected to increase employment, which can be confirmed by employment records	Verification team confirms that the project provides job opportunities for the community and welfare according to the Labor Law of the People's Republic of China, Law of the People's Republic of China on the Protection of Minors. The verification team checked the identified

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											monitoring parameter, its monitoring plan, procedures and found adequately defined and further its monitoring, reporting, and recording system is in place.
<i>Poverty alleviation (more people above poverty level) (SW03)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.	N.A.	
<i>Improving / deteriorating wealth distribution/ generation of income and assets (SW04)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.	N.A.	
<i>Increased or / deteriorating municipal revenues (SW05)</i>	N.A.	N.A.	N.A.		-	N.A.	N.A.	N.A.	N.A.	N.A.	
<i>Women's empowerment (human rights) (SW06)</i>	Women's empowerment can be guaranteed by law	Law of the People's Republic of China 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	N.A.	Harmless	-	N.A.	By checking company regulations on the yearly basis and ensure that all positions of the project are available for women according to the Law of the People's Republic of China on the Protection of the Rights and Interests of Women.	+1	Women empowerment can be guaranteed by law	Verification team confirms that the project provides equal employment opportunities for women. The verification team checked the identified monitoring parameter, its monitoring plan, procedures and found adequately defined and further its monitoring, reporting, and recording system is in place.	

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	<i>Reduced / increased traffic congestion (SW07)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.	
	<i>Exploitation of Child labour (human rights) (SW08)</i>	The project does not employ child labor.	Labor Law of the People's Republic of China, Law of the People's Republic of China on the Protection of Minors	-	Harmless	-	-	Continuously monitor the employment record.	+1	The project does not employ child labor as per Labor Law of the People's Republic of China, Law of the People's Republic of China on the Protection of Minors	Verification team confirms that the project does not include child labor. The verification team checked the identified monitoring parameter, its monitoring plan, procedures and found adequately defined and further its monitoring, reporting, and recording system is in place.
	<i>Minimum wage protection (human rights) (SW09)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.	
	<i>Abuse at work place. (with specific reference to women and people with special disabilities / challenges) (human rights) (SW10)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.	
	<i>Other social welfare issues (SW11)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.	

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	<i>Avoidance of human trafficking and forced labour</i> <i>(human rights)</i> <i>(SW12)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.	
	<i>Avoidance of forced eviction and/or partial physical or economic displacement of IPLCs</i> <i>(human rights)</i> <i>(CW13)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.	
	<i>Provisions of resettlement and human settlement displacement</i> <i>(human rights)</i> <i>(CW14)</i>	N.A.	N.A.	N.A.	-	-	N.A.	N.A.	N.A.	N.A.	
Net Score:		+8									
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 net harm to society.									

Appendix 7. United Nations Sustainable Development Goals assessment

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 ?
<p>Describe UN SDG targets and indicators</p> <p>See: https://unstats.un.org/sdgs/indicators/indicators-list/</p>	Describe the UN-level target(s) and corresponding indicator no(s)	Has the host country declared the SDG to be a national priority? Indicate Yes or No	Define project-level SDGs by suitably modifying and customizing UN/ Country-level SDGs to the project scope or creating a new indicator(s). Refer to previous column of guidance.	Define project-level targets/actions in line with the project level indicators chosen. Define the target date by which the project Activity is expected to achieve the project-level SDG target(s).	Describe and justify how actions taken under the Project Activity are likely to result in a direct positive effect that contributes to achieving the defined project-level SDG targets	Describe the monitoring approach and the monitoring parameters to be applied for each project-level SDG indicator and its corresponding target, frequency of monitoring and data source	Describe how the GCC Verifier has verified the claims that the project is likely to achieve the identified Project level SDGs target(s).	Describe whether the project-level SDG target(s) is likely to be 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.		
Goal 2: End hunger, achieve food security and improved nutrition and	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		

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promote sustainable agriculture								
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.		
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.		
Goal 5. Achieve gender equality and empower all women and girls	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.		
Goal 7. Ensure access to affordable, reliable,	SDG Target 7.2. Promote sustainable	Yes	Enhance the share of installed electricity generation capacity from renewable energy sources.	Project target to generate and feed 108,738 MWh/year hydro-based electricity for entire lifetime of the project activity into the Chinese national grid. Project has already	The project increases the renewable energy share in energy	By monitoring energy provided	During the site visit, verification team confirms that	Yes

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<p>sustainable and modern energy for all</p>	<p>d, inclusive and sustainable economic growth, full and productive employment and decent work for all</p>			<p>started contributing to the SDG 7 from its start date 26/08/2019</p>	<p>production mix. It provides 108,738 MWh clean energy annually.</p>	<p>continuously</p>	<p>project increases the renewable energy share in Chinese energy production mix. It provides 108,738 MWh annual clean energy to the grid.</p>	
<p>Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</p>	<p>SDG Target 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</p>	<p>Yes</p>	<p>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.</p>	<p>The project is expected to create 18 long-term jobs including all levels. Project has already started contributing to the SDG 8 from its start date 26/08/2019</p>	<p>The project created job opportunity for both construction and operation period. It created long term employment for 18 people who are directly working at the site.</p>	<p>By checking employment records.</p>	<p>During the site visit, verification team confirms that project creates job opportunity. It created long term employment for 18 people.</p>	<p>Yes</p>
<p>Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and</p>	<p>N.A.</p>	<p>N.A.</p>	<p>N.A.</p>	<p>N.A.</p>	<p>N.A.</p>	<p>N.A.</p>		

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foster innovation								
Goal 10. Reduce inequality within and among countries	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.		
Goal 12. Ensure sustainable consumption and production patterns	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 Take urgent action to combat climate change and its impacts	Yes	Amount of emission reduction achieved by project under GCC market mechanism	Project provides clean energy avoiding 55,331 tCO ₂ emission annually	The project has started operation since 26/08/2019 and is implemented as per design spec and is likely to provide clean renewable energy of around 108,738 MWh per year thus resulting in around 55,331 tCO ₂ e emission	Calculate avoided GHG emissions every year according to the measurement of the monthly electricity generated by the project	During the site visit, verification team confirms that project activity reduces 55,331 tCO ₂ e per annum and 553,310tCO ₂ e during the crediting period.	Yes

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					reduction per year.			
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.		
Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage 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.		
Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		

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and inclusive institutions at all levels								
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.		
SUMMARY					Targeted		Likely to be Achieved	
Total Number of SDGs					3		3	
Certification label (Bronze, Silver, Gold, Platinum, or Diamond) for the ACCs as defined in the PSF					Silver		Silver	

DOCUMENT HISTORY

Version	Date	Comment
V 3.1	31/12/2020	<ul style="list-style-type: none"> ▪ The name of GCC Program’s emission units has been changed from “Approved Carbon Reductions” or ACRs to “Approved Carbon Credits” or ACCs.
V 3.0	23/08/2020	<ul style="list-style-type: none"> ▪ Revised version released on approval by the Steering Committee as per the GCC Program Process; ▪ Revised version contains the following changes: <ul style="list-style-type: none"> ○ Change of name from Global Carbon Trust (GCT) to Global Carbon Council (GCC); ○ Considered and addressed comments raised by the Steering Committee: <ul style="list-style-type: none"> ➤ during physical meeting (SCM 01, dated 29 Oct 2019, Doha Qatar); and ➤ electronic consultations EC01-Round 04 (17.08.2020 – 22.08.2020). ▪ Feedback from the Technical Advisory Board (TAB) of ICAO on GCC submissions for approval under CORSIA⁹;
V 2.0	25/06/2019	<ul style="list-style-type: none"> ▪ Revised version released for approval by the GCC Steering Committee. ▪ This version contains details and information to be provided, consequent to the latest worldwide developments (e.g., CORSIA EUC).
v1.0	01/11/2016	<ul style="list-style-type: none"> ▪ Initial version released for approval by the GCC Steering Committee under GCC Program Version 1

⁹See ICAO recommendation for conditional approval of GCC at https://www.icao.int/environmental-protection/CORSIA/Documents/TAB/Excerpt_TAB_Report_Jan_2020_final.pdf



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