Verification report for
GS4GG project activities

(Gold Standard for the Global Goals)

VERICATION AND CERTIFICATION REPORT	
Title of the project activity	Hunan Guanbaodu-Liangjiangkou Small-scale Hydropower Bundle Project
Reference number of the project activity	GS835
Version number of the verification and certification report	02
Completion date of the verification and certification report	02/09/2021
Monitoring period number and duration of this monitoring period	MP number: 9th MP dates: 01/01/2020 to 31/12/2020 (both days included)
Version number of monitoring report to which this report applies	03
Crediting period of the project activity corresponding to this monitoring period	2nd crediting period: 01/01/2016 to 31/12/2022 (both days included)
Project participant(s)	Climate Bridge (Shanghai) Ltd.
Host Party	P. R. China
Activity Requirements applied	☐ Community Services Activities ☒ Renewable Energy Activities ☐ Land Use and Forestry Activities/Risks & Capacities ☐ N/A
Methodology (ies) applied and version number	ACM0002 "Grid-connected electricity generation from renewable sources" (Version 16.0)
Product Requirements applied	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A
SDG Contributions targeted (as per approved PDD)	Goal 5: Gender Equality Goal 7: Affordable and Clean Energy Goal 8: Decent work and economic growth Goal 13: Climate Action
Estimated amount of annual average certified SDG impact (as per approved PDD)	Gender Equality (SDG 5)- 5.1.1 Legal frameworks are in place to promote, enforce and monitor equality and non-discrimination on the basis of sex: 4 women employees Affordable and Clean Energy (SDG 7)- 7.2.1 Renewable energy share in the total final energy consumption: 21,612 MWh/year renewable power

		generation
	Decent Work and Economic Growth (SDG 8)- 8.3.1 Proportion of informal employment in non-agriculture employment, by sex	23 of job positions and training opportunities
	Decent Work and Economic Growth (SDG 8)- 8.5.1 Average hourly earnings of female and male	Salary level of 1,100~ 3,773 RMB/month
	Climate Action (SDG 13)- 13.3.2 - Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions.	GHG emission Reductions 12,930 t GSVERs/year
Total amount of certified SDG impact (as per approved methodology) achieved in this monitoring period	Gender Equality (SDG 5)- 5.1.1 Legal frameworks are in place to promote, enforce and monitor equality and non-discrimination on the basis of sex	2 women employees
	Affordable and Clean Energy (SDG 7)- 7.2.1 Renewable energy share in the total final energy consumption	27,807.33 MWh/year renewable power generation
	Decent Work and Economic Growth (SDG 8)- 8.3.1 Proportion of informal employment in non-agriculture employment, by sex	17 of job positions and training opportunities
	Decent Work and Economic Growth (SDG 8)- 8.5.1 Average hourly earnings of female and male	Salary level of 3,819 RMB/month
	Climate Action (SDG 13)- 13.3.2 - Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions.	GHG emission Reductions 16,636 t GSVERs/year
Name of VVB	VVB Name: Shenzhen CTI International Certification Co., Ltd (CTI)	
Name, position and signature of the approver of the verification and certification report	Wang Guolian Technical Reviewer/Approver	

SECTION A. Executive summary

The project activity is a renewable hydro electricity generation project activity that will displace electricity generation in the Central China Power Grid (CCPG), displacing fossil fuel dominated electricity generation and thus resulting in greenhouse gases emission reductions.

The project is a grid connected hydro power project with a total installed capacity of 5.89MW (4MW+1.89MW). The bundled project includes 2 small-scale hydro power generation projects as follows:

The Guanbaodu project is located on Qushui River. The installed capacity is 4 MW (1MW×4), and the annual net electricity generation is estimated to be 15,513 MWh. The operation of Guanbaodu project displaces equivalent power generated from CCPG which is mainly dominated by fossil fuel fired power plants. It helps to reduce greenhouse gas (GHG) emissions by an estimated annual average of 9,281 tCO_2e per year during the second crediting period. The main construction of Guanbaodu project consists of a dam, a power house and a switch station. The generated electricity is delivered to the Gantang Substation via a 35kv power transmission line, then delivered to Jingzhou Power Grid, and finally connected to CCPG.

The Liangjiangkou project is located on Tongdao River. The installed capacity is 1.89 MW (0.63MW×3), and the annual net electricity generation is estimated to be 6,099 MWh. The operation of Liangjiangkou project displaces equivalent power generated from CCPG which is mainly dominated by fossil fuel fired power plants. It helps to reduce greenhouse gas (GHG) emissions by an estimated annual average of 3,649 tCO_2e per year during the second crediting period. The main construction of Liangjiangkou project consists of a dam, a power house, a booster substation and a tail water channel. The generated electricity is delivered to the Xianxi Substation via a 35kv power transmission line, and finally connected to CCPG.

The project activity uses renewable hydro energy to generate electricity displacing fossil fuel dominated electricity generation in CCPG and thus resulting in greenhouse gases emission reductions.

The estimated emission reductions are claimed from both power plants is 12,930 tCO_2e per year during the 2nd renewable 7-years crediting period and the Certified emissions reduction for the current 9th monitoring period from 01/01/2020 to 31/12/2020 is 16,636 tCO_2e.

Scope of Verification

This verification is an independent and objective review and ex-post determination of the monitored reductions in GHG emissions by the VVB. The verification addresses the implementation and operation of the GS PA and tests the data and assertions set out in the monitoring report based on the following:

(i) The registered GS PDD for 2nd crediting period/3/
(ii) The approved methodology mentioned in the PDD, ACM0002 “Grid-connected electricity generation from renewable sources” (Version 16.0)/27/
(iii) The GS4GG Transition Annex of the project/4/
(iv) the Gold Standard for the Global Goals Principles and Requirements/29/,
(v) the Gold Standard for the Global Goals Safeguarding Principles & Requirements/30/,
(vi) the Gold Standard for the Global Goals Stakeholder Consultation and Engagement Requirements /31/,
(vii) Validation and Verification Body requirements, Product requirements and references relevant to the project activity’s reported emission reductions

The verification has considered both quantitative and qualitative aspects on stated/reported emission reductions. The monitoring report (all versions) and corresponding supporting documentation was assessed in accordance with the rules defined by GS4GG, as appropriate to the PA. The verification is not meant to provide any consulting or recommendations to the PP/others. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the monitoring activities.

Verification process

The verification has been performed as described in the Gold Standard for the Global Goals Principles and Requirements/29/ as below process,

a. Desk review of the GS MR (version 01 dated 18/06/2021)/1/ and the relevant documents
b. On-site assessment (24/06/2021~25/06/2021)
c. Issuance of draft verification report & verification protocol
d. Desk review of the revised MR and related documents
e. Resolution of the raised CAR

f. Issuance of the final verification report
g. Independent technical review of the draft verification report and final/revised documentation (e.g., Monitoring Report, corresponding ER sheet and evidences)
h. Reporting and closure of TR comments/findings and final approval for the decision made
i. Issuance of final verification report to contracted PP (or authorized representatives) and submission of request for issuance, as appropriate.

Conclusion

CTI has performed the verification of the GS PA "Hunan Guanbaodu-Liangjiangkou Small-scale Hydropower Bundle Project" having GS Ref. Number GS835 for the 9th monitoring period from 01/01/2020 to 31/12/2020. The verified emission reductions amount to 16,636 tCO_2e in the aforesaid monitoring period.

The technical parameters of the hydro turbine and generators are consistent with the PDD/3/, and not changed since last periodical verification/6/.

In CTI's opinion, the GHG emission reductions reported for the project in the GS4GG 9th monitoring report are fairly stated. CTI confirmed that each SDG Impacts were calculated correctly on the basis of the approved monitoring methodologies ACM0002. ver. 16.0/27/ and the monitoring plan contained in the PDD/3/.
CTI confirms that each SDG Impacts are calculated without material misstatements. Based on the evidence and information that are considered necessary to guarantee that each SDG Impacts are appropriately calculated, CTI is able to certify that each SDG Impacts from the project "Hunan Guanbaodu-Liangjiangkou Small-scale Hydropower Bundle Project" during the indicated monitoring period. Therefore, this is being submitted for request for issuance, as per GS procedures as applicable.

SECTION B. Verification team, technical reviewer and approver

B.1. Verification team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Validation findings
1.	Team Leader & Verifier	IR	Li	Ziqi	CTI	√	√	√	√

B.2. Technical reviewer and approver of the verification and certification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)
1.	Technical reviewer/ Approver	IR	Wang	Guolian	CTI

SECTION C. Application of materiality

C.1. Consideration of materiality in planning the verification

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Human error in the quantification of emissions	Low	Human error is likely to occur if personnel are unfamiliar with, or not well trained regarding, emissions processes or data recording	Depending on the monitoring period being verified, conduct increased verifying during the months when there is a greater likelihood of errors and issues with data quality control due to project participants' leave schedules
2.	Undue reliance on a poorly designed information system, which may have few effective quality controls	Low	Use of spreadsheets without adequate controls related to data changes/updates, version tracking, traceability, security	Depending on how data is generated, processed, and reported, place greater emphasis on verifying data captured and processed manually and/or in spreadsheets versus those that are generated from an automated system
3.	Omissions and misstatements in data transfer from hand written notes into digital Excel ER spreadsheet	Medium	Ineffective quality control of data transfer due to unclear QA/QC procedure	Check QM procedure/manual. PP may demonstrate how to transfer data and how this is crosschecked. Conduct interview with related personnel whether procedure is actually conducted but not adequately described.

On the basis of the risk analysis the verification has been planned. A detailed audit/verification plan has been prepared and submitted to the project participant(s) in due time before the site visit.

C.2. Consideration of materiality in conducting the verification

The errors identified in the project are below the threshold limit of materiality and hence not material. The GHG emission reductions are calculated without material misstatements.

SECTION D. Means of verification

D.1. Desk review

Desk review of all documents provided by PP and publicly available documents relevant for the verification including monitoring plan, monitoring report, monitoring methodology, project design document, applicable tools in particular attention to the frequency of measurements, QA/QC procedures and other relevant documents was conducted by CTI.

The main documents are listed below:

(i) the GS4GG Monitoring Report Version 01 dated 18/06/2021/1/,
(ii) the emission reduction calculation spreadsheet related to this monitoring period/2/,
(iii) the last revision of the PDD including the monitoring plan/3/,
(iv) the last revision of the GS validation report/4/,
(v) documentation of previous verification/6/,
(vi) the GS4GG Transition Annex of the project/4/,

Other supporting documents, such as publicly available information and background information were also reviewed.

The list of documents reviewed during the verification is provided under Appendix 3 of this report.

D.2. On-site inspection

Duration of on-site inspection: 24/06/2021~25/06/2021				
No.	**Activity performed on-site**	**Site location**	**Date**	**Team member**
1.	Opening meeting	Guanbaodu Plant in Guanbaodu Village, Taiyangping Town, Jingzhou Miao & Dong Autonomous County, Huaihua City, Hunan Province, P.R. China	24/06/2021	Li Ziqi
2.	On-site inspection Interview with PP Representative, Operation Staff and local stakeholders of Guanbaodu Plant	Guanbaodu Plant in Guanbaodu Village, Taiyangping Town, Jingzhou Miao & Dong Autonomous County, Huaihua City, Hunan Province, P.R. China	24/06/2021	Li Ziqi
3.	Documents check of Guanbaodu Plant	Guanbaodu Plant in Guanbaodu Village, Taiyangping Town, Jingzhou Miao & Dong Autonomous County, Huaihua City, Hunan Province, P.R. China	24/06/2021	Li Ziqi
4.	On-site inspection Interview with PP Representative, Operation Staff and local stakeholders of Liangjiangkou Plant	Liangjiangkou plant in Liangjiangkou Village, Shuangjiang Town, Tongdao Dong Autonomous County, Huaihua City, Hunan Province, P.R. China	25/06/2021	Li Ziqi
5.	Documents check of Liangjiangkou Plant	Liangjiangkou plant in Liangjiangkou Village, Shuangjiang Town, Tongdao Dong Autonomous County, Huaihua City, Hunan Province, P.R. China	25/06/2021	Li Ziqi
6.	Finding Summary	Liangjiangkou plant in Liangjiangkou Village, Shuangjiang Town, Tongdao Dong Autonomous County, Huaihua City, Hunan Province, P.R. China	25/06/2021	Li Ziqi
7.	Close Meeting	Liangjiangkou plant in Liangjiangkou Village, Shuangjiang Town, Tongdao Dong Autonomous County, Huaihua City, Hunan Province, P.R. China	25/06/2021	Li Ziqi

D.3. Interviews

D.3.1. Interviews with Project owner, operation staffs and local stakeholders

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Li	Yonghua	Jingzhou Miao & Dong Autonomous County Guanbaodu Hydropower Co., Ltd. /CEO	24/06/2021	- General aspects of the project - Changes since validation / previous verifications - Calibration procedures - Power generation situation - Quality management system - Involved personnel and responsibilities - Training and practice of the operational personnel - Implementation of the monitoring plan - Monitoring data management - Data uncertainty and residual risks - Procedural aspects of the verification - Maintenance - Environmental aspects - Job opportunities - Salary level - Water quality and quantity - Solid waste - Biodiversity - Livelihood of the poor - Access to energy service	Li Ziqi
2	Li	Jing	Jingzhou Miao & Dong Autonomous County Guanbaodu Hydropower Co., Ltd. / Guanbaodu Plant Chief	24/06/2021		Li Ziqi
3	Chu	Yanming	Jingzhou Miao & Dong Autonomous County Environment Protection Bureau/ Inspection team leader	24/06/2021	- Water quality and quantity - Solid waste - Biodiversity - Livelihood of the poor - Management Regulation of Environment and Health	Li Ziqi
4	Zheng	Lianxi	Guanbaodu Village, Taiyangping Town, Jingzhou Miao & Dong Autonomous County/local resident	24/06/2021	- Water quality and quantity - Solid waste - Biodiversity - Livelihood of the poor	Li Ziqi
5	Yang	Zhiqin	Tongdao Dong Autonomous County Liangjiangkou Hydropower Station/ Liangjiangkou Plant Chief	25/06/2021	- General aspects of the project - Changes since validation / previous verifications - Calibration procedures - Power generation situation - Quality management system	Li Ziqi

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
6	Wu	Yourong	Tongdao Dong Autonomous County Liangjiangkou Hydropower Station/ General Manager	25/06/2021	- Involved personnel and responsibilities - Training and practice of the operational personnel - Implementation of the monitoring plan - Monitoring data management - Data uncertainty and residual risks - Procedural aspects of the verification - Maintenance - Environmental aspects - Job opportunities - Salary level - Water quality and quantity - Solid waste - Biodiversity - Livelihood of the poor - Access to energy service	Li Ziqi
7	Wu	Yanchao	Jingzhou Miao & Dong Autonomous County Environment Protection Bureau/Vice Bureau Chief	25/06/2021	- Water quality and quantity - Solid waste - Biodiversity - Livelihood of the poor - Management Regulation of Environment and Health	Li Ziqi
8	Shu	Xiaofeng	Tumen Village, Shuangjiang Town, Tongdao Dong Autonomous County/Local resident	25/06/2021	- Water quality and quantity - Solid waste - Biodiversity - Livelihood of the poor	Li Ziqi
9	Peng	Yumei	Climate Bridge Ltd./Project Manager	24/06/2021-25/06/2021	- Monitoring plan - Monitoring training - Emission reduction calculation	Li Ziqi

C.3.2. Type of Questions asked by the team members:

During the site visit, the verifier has randomly selected operation staffs from project implementer and local stakeholders as above table to confirm that the correctness of the project SDG monitoring data and information reported by the PP.

The questions asked were basically based on requirements of the GS4GG and MR description.

For Guanbaodu:

- Water quality and quantity - Wastewater treatment, discharge amount of sanitary wastewater
- Solid wastes - Domestic rubbish treatment
- Biodiversity (species and habitat conservation) - Impact by the project on the local ecological environment
- Employment - Job opportunities, salary
- Livelihood of the poor - Financial balance, employment opportunities especially for women

- Access to energy service - Electricity generation
- Human and institutional capacity - Monthly payroll, Training regarding operation and maintenance

A summary of interview questions and feedback received are presented in the below table:

SD indicator	Questions for operation staffs and local stakeholders during the site interviews	Summary of feedback
Water quality and quantity	1. Is there any wastewater discharged to the river?	Never
Soil wastes	2. How is the soil quality after the installation and operation of the project?	It is not affected
	3. Is there any solid waste discharged by the project and impact the local environment?	Solid wastes were well treated and no impact to local environment
Biodiversity	4. Do you think the project affect the fauna of the site?	Positive impacts. There are more fishes in the river than before
	5. Do you think the project affects the ecological environment of the site?	No negative impact on local ecological environment
Employment	6. Do you think that this project offers opportunities for employment?	Yes, the projects provide very good opportunities for employments of local residents
	7. Do you think that this project offers job opportunities for women?	Yes, the projects provide very good opportunities for local women residents
	8. Do you think that this project could provide income to employees higher than the average level?	Yes, higher salary is offered by the project proponents
Livelihood of the poor	9. Is there any permanent jobs and tentative jobs provided by the project?	Permanent and tentative jobs are offered by the project proponents
Access to energy services	10. Do you have electricity access before and now?	Before there were more blackouts but this was solved with the project
	11. How much on average do you have to pay for electricity in the past? How is it compared with the actual situation with the project?	The prices did not change but we have participation thought the cooperative
	12. Do you think the project will contribute to a long lasting solution for your energy needs?	Yes, because the energy is generated locally
Human and institutional capacity	13. What is the main way of making money in your household? Can this project bring new jobs even to women?	The main way before the project is agriculture. The project offers a new work area for some residents and local women.
	14. Do you think that the trainings will be offered to workers in this project?	Yes
-	15. How do you communicate your questions or comments to the PP?	The personnel of the plant organized public meetings and always is possible to communicate directly with the designated personnel of the plant.

For Liangjiangkou:

- Water quality and quantity - Wastewater treatment, discharge amount of sanitary wastewater
- Solid wastes - Domestic rubbish treatment
- Biodiversity (species and habitat conservation) - Impact by the project on the local ecological environment
- Employment - Job opportunities, salary
- Livelihood of the poor - Financial balance, employment opportunities especially for women
- Access to energy service - Electricity generation
- Human and institutional capacity - Monthly payroll, Training regarding operation and maintenance

A summary of interview questions and feedback received are presented in the below table:

SD indicator	Questions for operation staffs and local stakeholders during the site interviews	Summary of feedback
Water quality and quantity	16. Is there any wastewater discharged to the river?	Never
Soil wastes	17. How is the soil quality after the installation and operation of the project?	It is not affected
	18. Is there any solid waste discharged by the project and impact the local environment?	Solid wastes were well treated and no impact to local environment
Biodiversity	19. Do you think the project affect the fauna of the site?	No negative impact
	20. Do you think the project affects the ecological environment of the site?	No negative impact
Employment	21. Do you think that this project offers opportunities for employment?	Yes, the projects provide very good opportunities for employments of local residents
	22. Do you think that this project offers job opportunities for women?	Yes, the projects provided very good opportunities for local women residents
	23. Do you think that this project could provide income to employees higher than the average level?	Yes, higher salary is offered by the project proponents
Livelihood of the poor	24. Is there any permanent jobs and tentative jobs provided by the project?	Permanent and tentative jobs are offered by the project proponents
Access to energy services	25. Do you have electricity access before and now?	Before there were more blackouts but this was solved with the project
	26. How much on average do you have to pay for electricity in the past? How is it compared with the actual situation with the project?	The prices did not change but we have participation thought the cooperative
	27. Do you think the project will contribute to a long lasting solution for your energy needs?	Yes, because the energy is generated locally
Human and institutional capacity	28. What is the main way of making money in your household? Can this project bring new jobs even to women?	The main way before the project is agriculture. The project offers a new work area for some residents and local women.
	29. Do you think that the trainings will	Yes

SD indicator	Questions for operation staffs and local stakeholders during the site interviews	Summary of feedback
	be offered to workers in this project?	
-	30. How do you communicate your questions or comments to the PP?	The personnel of the plant organized public meetings and always is possible to communicate directly with the designated personnel of the plant.

Verification Team along with onsite observation, objective evidence collections, data generation and recording analysis also considered the views obtained in these interviews while arriving at Verification Opinion.

D.4. Sampling approach

No sampling approach has been used by the PP as per the PDD.

D.5. Clarification requests, corrective action requests and forward action requests raised

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
General Description of Project	-	CAR 01	-
Remaining forward action requests from validation and/or previous verification	-	-	-
Compliance of the project implementation with the registered project design document	-	-	-
Post-registration changes	-	-	-
Compliance of the monitoring system applied by the project with the registered monitoring plan	CL 01	-	-
Compliance of monitoring activities with the registered monitoring plan	-		
SDG Data and parameters fixed ex ante or at renewal of crediting period	-	-	-
SDG Data and parameters monitored	-	CAR 02 CAR 03 CAR 04	-
Comparison of monitored parameters with last monitoring period	-	-	-
Compliance of the sampling implementation with the registered sampling plan	-	-	-
Assessment of data and calculation of SDG Impacts	-		
Calculation of baseline value or estimation of baseline situation of each SDG Impact	-	-	-
Calculation of project value or estimation of project situation of each SDG Impact	-	CAR 05	-
Calculation of leakage	-	-	-
Calculation of net benefits or direct calculation for each SDG Impact	-	-	-
Comparison of actual SDG Impacts with estimates in approved PDD	-	CAR 06	-
Remarks on increase in achieved SDG Impacts from estimated value in approved PDD	-	-	-
Safeguards reporting	-	CAR 07	-
Stakeholder inputs and legal disputes	-	-	-
Others (please specify)	-	-	-
Total	**1**	**7**	**-**

SECTION E. Verification findings

E.1. General Description of Project

Means of verification

A draft monitoring report was submitted to the verification team by the project participants prior to the start of the verification activities.

It is checked that the appropriate form has been used for compiling the MR as per the Gold Standard for Global Goals Monitoring Report Template version 1.1 in October 2020/28/.

Further every section has been checked against the GS4GG Principles& Requirements/29/.

Via on-site investigation, CTI confirmed that the project the project is a grid connected hydro power project with a total installed capacity of 5.89MW (4MW+1.89MW)/26/. The bundled project includes 2 small-scale hydro power generation projects/26/.

The Guanbaodu project is located on Qushui River. The installed capacity is 4 MW (1MW×4), and the annual net electricity generation is estimated to be 15,513 MWh. The operation of Guanbaodu project displaces equivalent power generated from CCPG which is mainly dominated by fossil fuel fired power plants. It helps to reduce greenhouse gas (GHG) emissions by an estimated 9,281 tCO_2e per year during the second crediting period. The main construction of Guanbaodu project consists of a dam, a power house and a switch station. The generated electricity is delivered to the Gantang Substation via a 35kv power transmission line, then delivered to Jingzhou Power Grid, and finally connected to CCPG.

The Liangjiangkou project is located on Tongdao River. The installed capacity is 1.89 MW (0.63MW×3), and the annual net electricity generation is estimated to be 6,099 MWh. The operation of Liangjiangkou project displaces equivalent power generated from CCPG which is mainly dominated by fossil fuel fired power plants. It helps to reduce greenhouse gas (GHG) emissions by an estimated 3,649 tCO_2e per year during the second crediting period. The main construction of Liangjiangkou project consists of a dam, a power house, a booster substation and a tail water channel. The generated electricity is delivered to the Xianxi Substation via a 35kv power transmission line, and finally connected to CCPG.

By implementing the project, PP has contributed to sustainable development through the reduction of GHG emissions and other pollutants, ensuring the local power supply and providing an opportunity for local community to generate steady and continual job opportunities & income for their livelihood.

The project is applicable to the applied CDM approved methodology of ACM0002 (Version 16.0): “Grid-connected electricity generation from renewable sources”.

The detailed geographic coordinates of the project included in this monitoring period is listed as below:

No.	Project Location		
Host Country	China		
Region:	Hunan Province		
Project location address:	Guanbaodu: Guanbaodu Village, Taiyangping Town, Jingzhou Miao & Dong Autonomous County, Huaihua City Liangjiangkou: Liangjiangkou Village, Shuangjiang Town, Tongdao Dong Autonomous County, Huaihua City		
Geographical Coordinates	**Project**	**Latitude**	**Longitude**
	Guanbaodu	26°40'38" N	109°44'09" E
	Liangjiangkou	26°13'11" N	109°47'45" E

The project was registered as a GS-VER project on 31/12/2010 with the registration number of GS835. According to the validation report/5/ and previous verification report/6/, the project participant has adopted for the renewable crediting period of 21 years with the start date of 01/01/2009, and the second crediting period is from

	01/01/2016 to 31/12/2022, this monitoring period from 01/01/2020 to 31/12/2020 belongs to the second crediting period. As part of the site visit the Verification Team was able to confirm that the project description in MR is in accordance with the project description contained in the PDD/3/.
Findings	CAR 01 was raised and resolved. Refer to Appendix 4 for detail assessment.
Conclusion	It can be confirmed that the final version Monitoring report/1/ is complete and transparent and in accordance with the PDD/3/ and Global Goals Monitoring Report Template version 1.1 in October 2020/28/. Refer to the below sections for details.

E.2. Remaining forward action requests from validation and/or previous verification

This is the 9th verification of the project activity. Via checking the 8th verification report/6/ and GS performance review form/7/, CTI verified that there is no FAR was raised at the 8th periodical performance certification.

E.3. Compliance of the project implementation with the registered project design document

Means of verification	By means of an in-depth review of the PDD and the checks carried out during the on-site visit, an assessment has been carried out whether the project has been implemented and operated in line with the PDD and whether all physical features of the project are in place. The following has been checked: implemented technology, project equipment as well as monitoring equipment. Further CTI has checked if relevant technical equipment of the project activity has been exchanged or modified during the monitoring period and consistent notations of key equipment (meters etc.) in PDD/3/, MR/1/ and ER calculation spreadsheet/2/ are applied. The verifier has performed a site visit and conducted site interview with operation staffs and local stakeholders, in addition checked all the provided evidence as listed in Appendix 3, CTI found that the project has been put into operation normally and CTI found that the implementation of the project activity is in accordance with the approved PDD for 2nd Crediting Period/3/. The construction of *Guanbaodu Hydropower Station* (hereafter referred to as "Guanbaodu") commenced in August 2005, and its operation started in January 2008; and the construction of *Liangjiangkou Hydropower Station* (hereafter referred to as "Liangjiangkou") commenced in August 2006, and its operation started in January 2008, which has been confirmed in the registered Validation Report/5/ and the daily operational log/18/ against the and previous verification report/6/. The SDG monitoring parameters used during this monitoring period to arrive at the SDG impacts are transparently described in the Monitoring Report. The net electricity generated of Guanbaodu and Liangjiangkou is 18,919.88 MWh and 8,887.45 MWh, respectively during this monitoring period from 01/01/2020 to 31/12/2020, which is verified by checking meter recordings/17/, the Electricity Transaction Note /15/ and cross checking with Electricity Sales and Purchase Invoices/16/. The emission reductions achieved during this monitoring period are 16,636 tCO_2e/2/. The details of verification against if any changes incorporated by PP during this monitoring period are provided in the respective sections and there is no significant change observed in the listed monitoring parameters since last verification. PP has provided detailed specifications in the MR section B.1. Verification team herewith confirms that the specifications of main equipment are the same as provided in the PDD and site inspection of the nameplates of equipment/26/. Basic technical details of the project are summarized in below table. **Guanbaodu Project**

Parameter	Unit	Value
Hydro Turbine		

	Quantity	-	4
	Model	-	GD008-WZ-275
	Installed capacity	MW	1.097
	Water head	m	3.4
	Flow rate	m^3/s	37.8
	Rotation Speed	r/min	133.3
Generator			
	Quantity	-	4
	Model	-	SFW1000-10/1430
	Rated capacity	MW	1
	Rated voltage	kV	6.3
	Rated current	A	114
	Rated rotation Speed	r/min	600
	Power factor	-	0.8

Liangjiangkou Project

Parameter	Unit	Value
Hydro Turbine		
Quantity	-	3
Model	-	Z003-LH-160
Installed capacity	MW	0.7
Water head	m	6.8
Flow rate	m^3/s	12.3
Rotation Speed	r/min	250
Generator		
Quantity	-	3
Model	-	SF630-24/1730
Rated capacity	MW	0.63
Rated voltage	kV	0.4
Rated current	A	113
Rated rotation Speed	r/min	250
Power factor	-	0.8

Interviews with operational personnel have been carried out, QMS records, maintenance records, instrument specifications were checked in this context.

This is the 9th monitoring period belongs to 2nd crediting period and the verification team herewith confirms that the project implementation is consistent since the last periodical verification/6/ as mentioned in the PDD/3/. There are no major obstructions or gaps noted during this monitoring period.

The actual distribution and operation were found in accordance with the descriptions provided in the PDD. There is no deviation / change evidenced during this monitoring period and there were no delays compared to information in approved project.

Findings	N/A
Conclusion	Assessment concludes the following: - The implementation status of project activity was found to be in compliance with PDD/3/. - CTI has conducted the on-site visit to confirm the implementation status of the project w.r.t. the realized technology/26/. - The actual operation of project activity was found to be in compliance with PDD/3/. - There were no delays compared to information in approved project.

E.4. Post-registration changes

E.4.1. Temporary deviations from Certified Key Project Information, Project Design Document, Monitoring & Reporting Plan, applied methodology or applied standardized baseline

Not Applicable

E.4.2. Corrections

Not Applicable

E.4.3. Changes to start date of crediting period

Not Applicable

E.4.4. Permanent changes from registered monitoring plan, applied methodology or applied standardized baseline

Not Applicable

E.4.5. Changes to project design of approved project

The following change to project design has been approved by GS prior to this verification.

The project used to consist of three hydropower projects, the Guanbaodu hydropower project (referred as 'Guanbaodu'), the Liangjiangkou hydropower project (referred as 'Liangjiangkou') and the Xinglong hydropower project (referred as 'Xinglong'). The total installed capacity of the bundle project was 7.65 MW with annual expected net electricity generation (electricity supplied to power grid) of 27,745MWh. Upon a design change request on 08/08/2014, the project participants changed the design of the project by removing one of the hydropower projects (Xinglong) from the bundled project. The other two projects were still bundled and nothing else changed. As a result, the changed project only consists of two hydropower projects (Guanbaodu and Liangjiangkou), and the installed capacity is 5.89 MW with annual expected net electricity generation of 21,612 MWh. Also, the project title has also been changed from 'Guanbaodu-Liangjiangkou-Xinglong Small-scale Hydropower Bundle Project' to 'Guanbaodu-Liangjiangkou Small-scale Hydropower Bundle Project'.

This change to project design has been approved by GS on 03/09/2014. And during this verification of the current monitoring period, no change to project design has been identified.

E.5. Compliance of the monitoring system applied by the project with the registered monitoring plan

Means of verification	By means of comparison of the MR/1/ with the applied CDM methodology/27/ and all applicable GS4GG guidelines, the verification team has checked whether the monitoring system is in compliance with the monitoring plan/3/ and related requirements of the applied methodology/27/, whether the source and the applied value of the SDG monitored parameter is acceptable; whether the parameters monitored explain the operational and management structure, responsibilities and institutional arrangement for data collection/archiving, QA/QC procedures. The monitoring system applied by the project compliance with the registered monitoring plan is demonstrated as below: **Monitoring framework** The MR contains a diagram illustrating the Operations and Management Structure to be implemented by the project owner in order to implement the project activity which is confirmed consistent with the PDD. The General Manager conducts the

	overall responsibility for the monitoring process, GS monitoring team are responsible for the monitoring of all the parameters monitored for this monitoring period. And all the data was reviewed by the project representative. The organizational structure is considered sufficient to fulfil the monitoring requirements of the methodology and ensure that emission reductions verified for this monitoring period. **Monitoring equipment, data and procedures:** The monitoring procedures applied by the project compliance with the registered monitoring plan/3/ is demonstrated as below: ***Guanbaodu*** For monitoring parameters related to SDG 13, net electricity supplied to the grid by the project ($EG_{PJ,y}$) is monitored, the generated electricity is boosted from 6.3 kV to 35kV and delivered to the Gantang Transformer Station then delivered to Jingzhou Power Grid, and finally connected to CCPG. PPA/12/ describes the grid connection manner, which is consistent with the description in both the MR and the registered PDD; Two electric meters (Gateway meter M2 installed at the Gantang Transformer Station and backup meter M1 installed at the power station of the project respectively, the two meters are bi-directional with accuracy 0.5s for M2 and 0.5 for M1) for monitoring the Electricity exported to the grid by the project (EG_{export}) and Electricity imported from the grid (EG_{import}) have been installed well. Net electricity supplied to the grid by the project ($EG_{PJ,y}$) is calculated based on the Electricity exported to the grid by the project (EG_{export}) minus Electricity imported from the grid (EG_{import}). A Power Purchase Agreement/12/ between the project owner and the grid company which has been checked to verify the above descriptions. For monitoring parameters related to SDG 5,7,8, the monitoring officer carries out technical training meetings and the stakeholders' questionnaires annually, and the accountant provides Electricity Sales and Purchase Invoices/16/ and monthly payroll/24/ which contain the information about employees' name, gender and salary every year. During this monitoring period, the technical trainings were provided and recorded on 06/03/2020 and 05/04/2020 separately verified by checking the training records/20/, the stakeholder questionnaires contained water quality, solid wastes and biodiversity were distributed and collected on 15/04/2020 verified by checking the filled questionnaires by local stakeholders/21/. ***Liangjiangkou*** For monitoring parameters related to SDG 13, net electricity supplied to the grid by the project ($EG_{PJ,y}$) is monitored, the generated electricity is boosted from 6.3 kV to 35kV and delivered to the Shuangjiang Transformer Station then delivered to Hunan Power Grid, and finally connected to CCPG. PPA/12/ describes the grid connection manner, which is consistent with the description in both the MR and the registered PDD; One electric meter (Gateway meter M1 installed at the Shuangjiang Transformer Station, the meter is bi-directional with accuracy 0.5s) for monitoring the Electricity exported to the grid by the project (EG_{export}) and Electricity imported from the grid (EG_{import}) have been installed well. Net electricity supplied to the grid by the project ($EG_{PJ,y}$) is calculated based on the Electricity exported to the grid by the project (EG_{export}) minus Electricity imported from the grid (EG_{import}). A Power Purchase Agreement/12/ between the project owner and the grid company which has been checked to verify the above descriptions. For monitoring parameters related to SDG 5,7,8, the monitoring officer carries out technical training meetings and the stakeholders' questionnaires annually, and the accountant provides Electricity Sales and Purchase Invoices/16/ and monthly payroll/24/ which contain the information about employees' name, gender and salary every year. During this monitoring period, the technical trainings were

	provided and recorded on 17/03/2020 separately verified by checking the training records/20/, the stakeholder questionnaires contained water quality, solid wastes and biodiversity were distributed and collected on 15/04/2020 verified by checking the filled questionnaires by local stakeholders/21/. **Quality Assurance and Quality Control** The related QA/QC procedure has been conducted by PP for the monitoring process including data verification and cross check by monitoring team and project owner which has been verified by checking the related manual/22/ and monitoring electricity records/15/ and calibration certificate/13/. CTI confirmed that the QA/QC procedure has been implemented by PP properly during this monitoring period and the data management is confirmed as effective. **Emergency Procedure** **For Guanbaodu:** The readings of the backup meter M1 will be used for ER calculation with deduction of the transmission loss if the gateway meter M2 works abnormally, and if both were malfunction, and net electricity supplied to grid will be confirmed based on the conventional process accepted by project owner and Grid Company during the meter troubleshooting period. **For Liangjiangkou:** The net electricity supplied to grid will be confirmed based on the conventional process accepted by project owner and Grid Company during the meter troubleshooting period if the gateway meter M1 works abnormally. During this monitoring period, via site visit and checking the calibration certificate of meters/13/, CTI confirmed that meters were normal operation and there was no emergency happened. **Non-Double counting assessment** The VVB has checked for double counting by reviewing all relevant registries including CDM/33/, VCS/34/ and other GHGs programs such as China CCER/35/, EU ETS, IREC or subnational, various regional schemes such as the Canadian and American provincial/state-based schemes. CTI confirmed that there is no potential exists for Double Counting of emissions reductions due to issuance of Gold Standard VERs/CO_2-certificates from the considered project activity. Furthermore, the project implemented having the unique geographical coordinates, project equipment's information is also verified during site visit and confirmed as consistent with the project PDD/3/. It is concluded that the PP the double counting to the ER calculation ensured to be avoided. Thus the risk of double counting is unlikely to happen. In conclusion, the MP is completely in accordance with the approved methodology applied by the GS4GG project/27/ and PDD/3/.
Findings	CL 01 was raised and resolved. Refer to Appendix 4 for detail assessment.
Conclusion	The monitoring plan complies with the applied methodology and the monitoring system and all applied procedures are completely in compliance to the latest approved monitoring plan and the methodology.

E.6. Compliance of monitoring activities with the registered monitoring plan

E.6.1. SDG Data and parameters fixed ex ante or at renewal of crediting period

Means of verification	The values of ex-ante parameter assessed in the table given below: **Ex Ante Data and Parameters**

Parameters	Source of data	Values applied	Assessment by Verification team
SDG13 - $EF_{grid,OM,y}$	Data from Transition-Annex for this	0.9724 tCO_2e/MWh	This is an ex-ante fixed value calculated as per "Tool to calculate the emission factor

		project/4/		for an electricity system" (version 05.0) and will be fixed during the 2nd crediting period.
	$EF_{grid,BM,y}$	Data from Transition-Annex for this project/4/	0.4737 tCO_2e/MWh	This is an ex-ante fixed value calculated as per "Tool to calculate the emission factor for an electricity system" (version 05.0) and will be fixed during the 2nd crediting period.
	ω_{OM}	Data from Transition-Annex for this project/4/	0.25	This is an ex-ante fixed value determined as per "Tool to calculate the emission factor for an electricity system" (version 05.0) and will be fixed during the 2nd crediting period.
	ω_{BM}	Data from Transition-Annex for this project/4/	0.75	This is an ex-ante fixed value determined as per "Tool to calculate the emission factor for an electricity system" (version 05.0) and will be fixed during the 2nd crediting period.
	$EF_{grid,CM,y}$	Data from Transition-Annex for this project/4/	0.5983 tCO_2e/MWh	This is an ex-ante fixed value calculated as per "Tool to calculate the emission factor for an electricity system" (version 05.0) and will be fixed during the 2nd crediting period.

The assessment team has checked that all the ex-ante parameters were fixed at the level of PA and were verified from the registered GS PDD/3/. Also, the ex-ante parameter values have been consistently applied for the ER calculation which is evident from the ER calculation sheet/2/.

Findings	N/A
Conclusion	The value mentioned in the Monitoring Report/1/ and Emission Reduction Spreadsheet/2/ are consistent with the PDD/3/. The applied value is correct and justified.

E.6.2. SDG Data and parameters monitored

Means of verification

1. Electricity export (EG_{export})

Relevant SDG:	SDG13
Data/Parameter	Electricity export (EG_{export})
Unit	MWh
Description	Electricity delivered to the power grid generated by the project
Value applied for this monitoring period	18,933.74 (Guanbaodu) 8,892.94 (Liangjiangkou)
Measuring /Reading /Recording frequency	Continuous measurement and monthly recording
Is measuring and reporting frequency in accordance with the monitoring	Yes, the measuring and reporting frequency are in line with the registered PDD/3/ and applied methodology/27/.

plan and monitoring methodology? (Yes / No)

Monitoring equipment with accuracy

Electricity export is monitored by electricity meters listed below,

Guanbaodu

Meter No.	Type	Serial No.	Accuracy	Calibration Date	Validity Date
M1	DSSD25	0704575	0.5s	05/04/2019 10/03/2020	04/04/2020 09/03/2021
M2	DSZ331	12010000 0049	0.5s	05/04/2019 10/03/2020	04/04/2020 09/03/2021

Liangjiangkou

Meter No.	Type	Serial No.	Accuracy	Calibration Date	Validity Date
M1	DSZ331	43480010 00369738 1	0.5s	11/05/2019 11/05/2020	10/05/2020 10/05/2021

Is the installed monitoring equipment has been duly calibrated for this entire monitoring period?

Yes, CTI has checked all related calibration certificates/13/ and confirms that the calibration of each meter was conducted by qualified 3rd party/14/ and is valid for the entire 9th monitoring period.

How were the values in the monitoring report verified?

Guanbaodu Project

EG_{export} is measured continuously by gateway meter M2, gateway meter M2 is installed at the Gantang Transformer Station and owned by local power company with accuracy of 0.5s and recorded monthly at 24:00h on 20th of each month. The electricity during 21/12/2019 to 31/12/2019 has been deducted from January 2020 and the electricity during 21/12/2020 to 31/12/2020 has been added for December 2020, the relevant data is confirmed by checking PO's reading records/17/ which have been confirmed by the grid company/15/.

The gateway meter monitors the amount of electricity exported to the grid by the project. The meter readings are recorded by the grid company daily and aggregated monthly. Meanwhile, the automatic monitoring system collects the data from the meters every day and delivers them to the grid company. The meter readings are recorded by the grid company, based on that, related monthly electricity transaction notes/15/ and sales invoices/16/ have been issued.

M1 installed at the power station is the backup meter. When the Gateway Meter is in malfunction, the readings of M1 will be used for reference. The accuracy of M1 is 0.5.

Neither failure of Gateway Meter M2 and backup meter M1 were detected during the monitoring period.

Liangjiangkou Project

EG_{export} is measured continuously by gateway meter M1, gateway meter M1 is installed at the Shuangjiang Transformer Station and owned by local power company with accuracy of 0.5s and recorded monthly at 24:00h 20th of each month. The electricity during 21/12/2019 to 31/12/2019 has been deducted from January 2020 and the electricity during 21/12/2020 to 31/12/2020 has been added for December 2020, the relevant data is confirmed by checking PO's reading records/17/ which

	have been confirmed by the grid company/15/. The gateway meter monitors the electricity delivered to the grid through the project. The meter readings are recorded by the grid company daily and aggregated monthly. Meanwhile, the automatic monitoring system collects the data from the meters every day and delivers them to the grid company. The meter readings are recorded by the grid company jointly with PP, based on that, related monthly electricity transaction notes/15/ and sales invoices/16/ have been issued. Neither failure nor exchange of Gateway Meter M1 was detected during the monitoring period. The reported value in the MR has been recalculated by the verification team based on the values from the monthly reports. Based on monthly reports/15/, the verification team calculated the data aggregation completely independent from the calculation provided by the PP. 100% of the daily and monthly reports have been verified. The values have been cross-checked with electricity sales invoices/16/ and verified as consistent.
If applicable, has the reported data been cross-checked with other available data?	Yes. The meter reading records/17/ have been cross-checked with values in monthly electricity transaction notes/15/ and electricity sales invoices/16/ and verified as consistent.
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures were found to be appropriate and reliable via checking the calibration reports/13/ and site investigation.

2. Electricity import (EG_{import})

Relevant SDG:	SDG13
Data/Parameter	Electricity import (EG_{import})
Unit	MWh
Description	Electricity imported from the power grid by the project
Value applied for this monitoring period	13.86 (Guanbaodu) 5.49 (Liangjiangkou)
Measuring /Reading /Recording frequency	Continuous measurement and monthly recording
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring	Yes, the measuring and reporting frequency are in line with the registered PDD/3/ and applied methodology/27/.

<table>
<tr><td>methodology? (Yes / No)</td><td></td></tr>
<tr><td>Monitoring equipment with accuracy</td><td>Electricity import is monitored by electricity meters listed below,
Guanbaodu
<table>
<tr><th>Meter No.</th><th>Type</th><th>Serial No.</th><th>Accuracy</th><th>Calibration Date</th><th>Validity Date</th></tr>
<tr><td>M1</td><td>DSSD25</td><td>0704575</td><td>0.5s</td><td>05/04/2019
10/03/2020</td><td>04/04/2020
09/03/2021</td></tr>
<tr><td>M2</td><td>DSZ331</td><td>12010000 0049</td><td>0.5s</td><td>05/04/2019
10/03/2020</td><td>04/04/2020
09/03/2021</td></tr>
</table>
Liangjiangkou
<table>
<tr><th>Meter No.</th><th>Type</th><th>Serial No.</th><th>Accuracy</th><th>Calibration Date</th><th>Validity Date</th></tr>
<tr><td>M1</td><td>DSZ331</td><td>43480010 00369738 1</td><td>0.5s</td><td>11/05/2019
11/05/2020</td><td>10/05/2020
10/05/2021</td></tr>
</table></td></tr>
<tr><td>Is the installed monitoring equipment has been duly calibrated for this entire monitoring period?</td><td>Yes, CTI has checked all related calibration certificates/13/ and confirms that the calibration of each meter was conducted by qualified 3rd party/14/ and is valid for the entire 9th monitoring period.</td></tr>
<tr><td>How were the values in the monitoring report verified?</td><td>Guanbaodu Project
EG_{import} is measured continuously by gateway meter M2, gateway meter M2 is installed at the Gantang Transformer Station and owned by local power company with accuracy of 0.5s and recorded monthly at 24:00h on 20th of each month. The electricity during 21/12/2019 to 31/12/2019 has been deducted from January 2020 and the electricity during 21/12/2020 to 31/12/2020 has been added for December 2020, the relevant data is confirmed by checking PO's reading records/17/ which have been confirmed by the grid company/15/.
The gateway meter monitors the amount of electricity imported to the grid by the project. The meter readings are recorded by the grid company daily and aggregated monthly. Meanwhile, the automatic monitoring system collects the data from the meters every day and delivers them to the grid company. The meter readings are recorded by the grid company, based on that, related monthly electricity transaction notes/15/ and purchases invoices/16/ have been issued.
M1 installed at the power station is the backup meter. When the Gateway Meter is in malfunction, the readings of M1 will be used for reference. The accuracy of M1 is 0.5.
Neither failure of Gateway Meter M2 and backup meter M1 were detected during the monitoring period.
Liangjiangkou Project
EG_{export} is measured continuously by gateway meter M1, gateway meter M1 is installed at the Shuangjiang Transformer Station and owned by local power company with accuracy of 0.5s and recorded monthly at 24:00h 20th of each month. The electricity during 21/12/2019 to 31/12/2019 has been deducted from January 2020 and the electricity during 21/12/2020 to 31/12/2020 has been added for December 2020, the relevant data is confirmed by checking PO's reading records/17/ which have been confirmed by the grid company/15/.
The gateway meter monitors the electricity imported from the</td></tr>
</table>

	grid through the project. The meter readings are recorded by the grid company daily and aggregated monthly. Meanwhile, the automatic monitoring system collects the data from the meters every day and delivers them to the grid company. The meter readings are recorded by the grid company jointly with PP, based on that, related monthly electricity transaction notes/15/ and purchases invoices/16/ have been issued. Neither failure nor exchange of Gateway Meter M1 was detected during the monitoring period. The reported value in the MR has been recalculated by the verification team based on the values from the monthly reports. Based on monthly reports/15/, the verification team calculated the data aggregation completely independent from the calculation provided by the PP. 100% of the daily and monthly reports have been verified. The values have been cross-checked with electricity purchases invoices/16/ and verified as consistent.
If applicable, has the reported data been cross-checked with other available data?	Yes. The meter reading records/17/ have been cross-checked with values in monthly electricity transaction notes/15/ and electricity purchases invoices/16/ and verified as consistent.
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures were found to be appropriate and reliable via checking the calibration reports/13/ and site investigation.

3. $EG_{PJ,y}$

Relevant SDG:	SDG13
Data/Parameter	$EG_{PJ,y}$
Unit	MWh
Description	Net Electricity supplied to the grid by the project
Value applied for this monitoring period	18,919.88 (Guanbaodu) 8,887.45 (Liangjiangkou)
Measuring /Reading /Recording frequency	N/A
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	N/A
Monitoring equipment with accuracy	N/A
Is the installed monitoring equipment has been duly calibrated for this entire	N/A

monitoring period?	
How were the values in the monitoring report verified?	$EG_{PJ,y}$ is calculated by $EG_{export} – EG_{import}$. The calculated value in the MR has been recalculated by the verification team based on the values from the monthly electricity transaction notes/15/ for both EG_{export} and EG_{import} as assessed in above tables.
If applicable, has the reported data been cross-checked with other available data?	Yes. The meter reading records/17/ have been cross-checked with values in monthly electricity transaction notes/15/ and electricity purchases invoices/16/ and verified as consistent.
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedure for calculation; procedure for monitoring staff training and competence/20/ were established and implemented. The data flow and protection process were observed during the on-site inspection.

4. Installed Capacity

Relevant SDG:	SDG 13
Data/Parameter	Installed capacity
Unit	MW
Description	Installed capacity of project
Value applied for this monitoring period	4 (Guanbaodu) 1.89 (Liangjiangkou)
Measuring /Reading /Recording frequency	Yearly
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The measuring frequency are in line with the registered PDD/3/.
Monitoring equipment with accuracy	N/A
Is the installed monitoring equipment has been duly calibrated for this entire monitoring period?	N/A
How were the values in the monitoring report verified?	***Guanbaodu Project*** 4 sets of turbine generators with rated unit capacity of 1 MW are installed which is in line with registered PDD. The nameplates and the central control system of turbine generators are read in year 2019. ***Liangjiangkou Project*** 3 sets of turbine generators with rated unit capacity of 0.63 MW are installed which is in line with registered PDD. The nameplates and the central control system of turbine generators are read in year 2019. The value has been checked with the capacity

	indicated on the nameplates (4 x 1 MW+ 3 x 0.63 MW) of generators/26/ and the technical information/parameters of the key equipment as listed in the PDD/3/.
If applicable, has the reported data been cross-checked with other available data?	Yes. The nameplates of all the generators installed in the project/26/ was cross-checked with the technical information from equipment purchasing contracts as listed in PDD.
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures were found to be appropriate and reliable via checking the nameplates/26/ by site investigation.

5. Area of the reservoir

Relevant SDG:	SDG 13
Data/Parameter	Area of the reservoir
Unit	m^2
Description	Area of the reservoir
Value applied for this monitoring period	328,000 (Guanbaodu) 176,800 (Liangjiangkou)
Measuring /Reading /Recording frequency	Yearly
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The measuring frequency are in line with the registered PDD/3/.
Monitoring equipment with accuracy	N/A
Is the installed monitoring equipment has been duly calibrated for this entire monitoring period?	N/A
How were the values in the monitoring report verified?	***Guanbaodu Project*** Area of the reservoir is measured yearly by a qualified 3rd party entity "Jingzhou Miao and Dong Autonomous County Hydro Management Station"/19/. The area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full was determined as 328,000 m^2 in 2020. ***Liangjiangkou Project*** Area of the reservoir is measured yearly by a qualified 3rd party entity "Tongdao Dong Autonomous County Water Conservancy Bureau" /19/. The area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full was determined as 176,800 m^2 in 2020.

If applicable, has the reported data been cross-checked with other available data?	Yes. It was verified by on-site interview and cross checking with Report of the reservoir area of Guanbaodu and Liangjiangkou Hydropower project/19/ and MR, registered PDD and applied methodology.
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures were found to be appropriate and reliable via checking the Report of the reservoir area/19/ by site investigation.

6. Power Density

Relevant SDG:	SDG 13
Data/Parameter	Power density
Unit	W/m^2
Description	Power density of project
Value applied for this monitoring period	12.20 (Guanbaodu) 10.69 (Liangjiangkou)
Measuring /Reading /Recording frequency	Yearly
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The measuring frequency are in line with the registered PDD/3/.
Monitoring equipment with accuracy	N/A
Is the installed monitoring equipment has been duly calibrated for this entire monitoring period?	N/A
How were the values in the monitoring report verified?	As per the PDD and methodology, Power density= Installed capacity/Area of the reservoir ***Guanbaodu Project*** The area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full was determined as 328,000 m^2 in 2020/19/, the power density is therefore calculated as 12.20 W/m^2 which is higher than 10 W/m^2. ***Liangjiangkou Project*** The area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full was determined as 176,800 m^2 in 2020/19/, the power density is therefore calculated as 10.69 W/m^2 which is higher than 10 W/m^2.

If applicable, has the reported data been cross-checked with other available data?	Yes. The calculation results are confirmed as correct which are verified by on-site interview and cross checking with Report of the reservoir area of Guanbaodu and Liangjiangkou Hydropower project/19/ and MR, registered PDD and applied methodology.
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures for calculation were found to be appropriate and reliable via checking the Report of the reservoir area/19/ by site investigation. The results during the whole verification period are higher than 10W/m^2, therefore, no project emission needs to be taken into account.

7. Women employees

Relevant SDG:	SDG5
Data/Parameter	Women employees
Unit	Number
Description	The job positions for local women provided by the project.
Value applied for this monitoring period	2 (Guanbaodu provides 13 job positions for local in total, including 2 job positions for woman and 11 job positions for men) 0 (Liangjiangkou provides 4 job positions for local in total, including 0 job position for woman and 4 job positions for men)
Measuring /Reading /Recording frequency	Monthly
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the Transition Annex/4/.
Monitoring equipment with accuracy	N/A
Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	N/A
How were the values in the monitoring report verified?	The Human and institutional capacity during the operation period was monitored by checking the job positions for local women provided by the project basing on the monthly payrolls/24/, the numbers of employees (including gender) and their income were checked monthly. Through reviewing the Employment Contract/23/ and monthly payroll/24/ of the monitoring period and onsite interview, it is confirmed that 2 women for Guanbaodu and 0 women for Liangjiangkou were employed in the project for this monitoring period. For Liangjiangkou, the reason of 0 woman

	employed for this monitoring period has been clarified by PP in the MR. Via site interview with the project owner and local stakeholders, CTI confirmed that the situation in 2020 is special due to COVID-19 pandemic and project owner promised to recruit local female resident as priority as possible in next monitoring period.
If applicable, has the reported data been cross-checked with other available data? (Yes / No)	Yes. The above mentioned was verified by checking the Employment Contract/23/ and monthly payroll/24/ during this monitoring period. And Staff representatives were interviewed by verification team during site visit, it is verified that the number of women labor is correct.
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures were found to be appropriate and reliable.

8. Renewable power generation (Access to energy service)

Relevant SDG:	SDG7
Data/Parameter	**Renewable power generation (Access to energy service)**
Unit	MWh
Description	The amount of electricity the power plant supplies to the local which could release the local power shortage to a certain extent
Value applied for this monitoring period	18,919.88 (Guanbaodu) 8,887.45 (Liangjiangkou)
Measuring /Reading /Recording frequency	N/A
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	N/A
Monitoring equipment with accuracy	N/A
Is the installed monitoring equipment has been duly calibrated for this entire monitoring period?	N/A
How were the values in the monitoring report verified?	Renewable power generation is calculated by $EG_{export} - EG_{import}$. The calculated value in the MR has been recalculated by the verification team based on the values from the monthly electricity transaction notes/15/ for both EG_{export} and EG_{import} as assessed in above tables.

If applicable, has the reported data been cross-checked with other available data?	Yes. The meter reading records/17/ have been cross-checked with values in monthly electricity transaction notes/15/ and electricity purchases invoices/16/ and verified as consistent.
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedure for calculation; procedure for monitoring staff training and competence/20/ were established and implemented. The data flow and protection process were observed during the on-site inspection.

9. Training opportunities

Relevant SDG:	SDG8
Data/Parameter	**Training opportunities (human and institutional capacity)**
Unit	-
Description	Technical training provided by the project and the number of employees being trained technically
Value applied for this monitoring period	13 (the number of employees being trained technically by Guanbaodu) 4 (the number of employees being trained technically by Liangjiangkou)
Measuring /Reading /Recording frequency	Monthly
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the Transition Annex/4/.
Monitoring equipment with accuracy	N/A
Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	N/A
How were the values in the monitoring report verified?	The training opportunities (human and institutional capacity) during this monitoring period was monitored by checking the technical training provided by the project basing on the training records/20/. Through reviewing the training records/20/, it is confirmed that trainings were provided to the employees twice for Guanbaodu and once for Liangjiangkou for this monitoring period and the number of employees trained technically by Guanbaodu is 13 and the number of employees trained technically by Liangjiangkou is 4.
If applicable, has the reported data been cross-checked with other available data? (Yes / No)	Yes. The training records/20/ is checked and on-site interview with staffs.

Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures were found to be appropriate and reliable.

10. Employment

Relevant SDG:	SDG8
Data/Parameter	**Employment (including job quality, fulfillment of labor standards)**
Unit	Number
Description	The numbers of employees of permanent jobs provided by the project
Value applied for this monitoring period	13 (Guanbaodu) 4 (Liangjiangkou)
Measuring /Reading /Recording frequency	Monthly
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the Transition Annex/4/.
Monitoring equipment with accuracy	N/A
Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	N/A
How were the values in the monitoring report verified?	The Human and institutional capacity during the operation period was monitored by checking the numbers of employees of permanent jobs provided by the project basing on the monthly payrolls/24/, the numbers of employees (including gender) were checked monthly. Through reviewing the Employment Contract/23/ and monthly payroll/24/ of the monitoring period and onsite interview, it is confirmed that 13 for Guanbaodu and 4 for Liangjiangkou are employed in the project during this monitoring period.
If applicable, has the reported data been cross-checked with other available data? (Yes / No)	Yes. The Employment Contract/23/ is cross checked with monthly payroll/24/ and on-site interview with staffs.
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures were found to be appropriate and reliable.

11. Salary level

	Relevant SDG:	SDG8
	Data/Parameter	**Salary level (Livelihood of the poor)**
	Unit	RMB/month
	Description	Salary of employees of the project
	Value applied for this monitoring period	The salary of permanent employees is in the range from 760.94 to 7,138.94 RMB/month with an average of 3,994 RMB/month (Guanbaodu) The salary of permanent employees is in the range from 3,200 to 3,400 RMB/month with an average of 3,250 RMB/month (Liangjiangkou) The average salary level of the bundled project is 3,819 ((3,994 RMB/month×13+3,250 RMB/month×4)/17=3,819) RMB/month, higher than rural per capita disposable income 999 RMB/month of Huaihua city in 2020.
	Measuring /Reading /Recording frequency	Monthly
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the Transition Annex/4/.
	Monitoring equipment with accuracy	N/A
	Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	N/A
	How were the values in the monitoring report verified?	The Livelihood of the poor during the operation period was monitored by checking income numbers of employees provided by the project basing on the monthly payrolls/24/, the numbers of employees (including gender) and their income were checked monthly. Through reviewing the Employment Contract/23/ and monthly payroll/24/ of the monitoring period and onsite interview with staffs, it is confirmed that the income for permanent employees is in the range from 760.94 to 7,138.94 RMB/month with an average of 3,994 RMB/month (Guanbaodu), the income for permanent employees is in the range from 3,200 to 3,400 RMB/month with an average of 3,250 RMB/month (Liangjiangkou), The average salary level of this bundled project was calculated as 3,819 ((3,994 RMB/month×13+3,250RMB/month×4)/17) RMB/month, which is verified by checking the checking the Employment Contract/23/ against the monthly payroll/24/. All the values are provided by the project compared with the baseline during this monitoring period. And via checking the rural per capita

		disposable income for Huaihua City in 2020/36/, CTI confirmed that the average salary level of the bundled project is higher than rural per capita disposable income 999 RMB/month in Huaihua City.
	If applicable, has the reported data been cross-checked with other available data? (Yes / No)	Yes. The Employment Contract/23/ is cross checked with monthly payroll/24/ and on-site interview with staffs.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures were found to be appropriate and reliable.
Findings	CAR 02 CAR 03 and CAR 04 were raised and resolved. Refer to Appendix 4 for detail assessment.	
Conclusion	The parameters have been monitored appropriately, in accordance with the registered monitoring plan/3/ (as per measurement methods and procedures to be applied) and applied methodology/27/ and Transition Annex/4/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/3/ and Transition Annex/4/.	

E.6.3. Comparison of monitored parameters with last monitoring period

Means of verification	Not applicable due to the bundled project is non-Community Service Activities.
Findings	N/A
Conclusion	N/A

E.6.4. Compliance of the sampling implementation with the registered sampling plan

Means of verification	N/A
Findings	N/A
Conclusion	N/A

E.7. Assessment of data and calculation of SDG impacts

E.7.1. Calculation of baseline value or estimation of baseline situation of each SDG Impact

Means of verification	***SDG 5 Baseline Impact:*** Via checking the MR and through interview with representative of staffs, CTI confirmed that the project created job opportunity to local women. In the baseline situation, as per interview with representative of staffs, CTI verified that no new job created to local women. Therefore, Baseline Impact benefit is zero. ***SDG 7 Baseline Impact:*** Via checking the MR and through interview with users, CTI confirmed that the project promotes access to affordable and clean energy services. In the baseline situation, as per the interview with users, CTI verified that CCPG used other fossil fuel sources to generate electricity. Therefore, Baseline Impact benefit is zero. ***SDG 8 Baseline Impact:*** Via checking the MR and through interview with representative of staffs, CTI confirmed that the project created jobs, provides income and training to staffs. In the baseline situation, as per interview with representative of staffs, CTI verified that no new job created, no income and no training without this project. Therefore, Baseline Impact benefit is zero. ***SDG 13 Baseline Impact:***

	Via checking the MR/1/ and ER sheet/2/, CTI confirmed that the project created GHG emission reduction. In the baseline situation, as per interview with representative of staffs, CTI verified that there was no operation of renewable power generation, all the electricity demand would be supplied by CCPG as usual without this project, hence no GHG emission reduction would be achieved in baseline scenario. Therefore, Baseline Impact benefit is zero.
Findings	N/A
Conclusion	The verification team confirms that a) The complete data was available and is duly reported; b) As indicated above, the description with regard to cross-check of reported data is included under respective parameter (refer Section E.6.2. of this report); c) Appropriate methods and formulae for calculating baseline SDG impact; d) Appropriate emission factors and other reference values were correctly applied. e) The calculation of baseline situation of each SDG impact is correct.

E.7.2. Calculation of project value or estimation of project situation of each SDG Impact

Means of verification	***SDG 5 Project Impact:*** For SDG Indicator 5.1.1, This monitoring period from 01/01/2020 to 31/12/2020, Guanbaodu and Liangjiangou provided 2 and 0 job position for local women respectively which has been verified in section E.6.2 of this report. Therefore, the SDG 5 project impact is 2. ***SDG 7 Project Impact:*** For SDG Indicator 7.2.1, This monitoring period from 01/01/2020 to 31/12/2020, net generation electricity of Guanbaodu delivered to the Jingzhou County Grid was 18,919.88 MWh and net generation electricity of Liangjiakou delivered to the Tongdao County Grid was 8,887.45 MWh which has been verified in section E.6.2 of this report. Therefore, the SDG 7 project impact is 27,807.33 MWh. ***SDG 8 Project Impact:*** For SDG Indicator 8.3.1, This monitoring period from 01/01/2020 to 31/12/2020, Guanbaodu provided 13 employment positions and carried out twice technical training meetings; Liangjiangkou provided 4 employment positions and carried out once technical training meetings which has been verified in section E.6.2 of this report. Therefore, the SDG 8- Indicator 8.3.1 project impact is 17 employment positions and training opportunities. For SDG Indicator 8.5.1, This monitoring period from 01/01/2020 to 31/12/2020, the average salary level of Guanbaodu is 3,994 RMB/month and Liangjiangkou is 3,250 RMB/month, and average salary level of the bundled project is 3,819 RMB/month higher than rural per capita disposable income 999 RMB/month of Huaihua city in 2020 which has been verified in section E.6.2 of this report. Therefore, the SDG 8- Indicator 8.5.1 project impact is salary level of 3,819 RMB/month. ***SDG 13 Project Impact:*** The GHG Emission Reductions value of this project is calculated as below steps, ***Baseline Emissions Calculation Assessment:***

The formula used for the determination of baseline emissions which is consistent with the registered PDD and the applied methodology:

$BE_y = EG_{PJ,y} * EF_{grid,CM,y}$ (1

According to the PDD, $EG_{PJ,y}$ is equal to EG_{export} minus EG_{import} in monitoring plan.
Where:

BE_y	Baseline Emissions (tCO_2e)
$EG_{PJ,y}$	Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the project activity in year y (MWh), $EG_{PJ,y} = EG_{export,y} - EG_{import,y}$
EG_{export}	Electricity exported (MWh/yr)
EG_{import}	Electricity imported (MWh/yr)
$EF_{grid,CM,y}$	Combined margin CO_2 emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system (tCO_2/MWh), the $EF_{grid,CM,y} = 0.5983\ tCO_2e/MW$

Calculation of BE_y - Guanbaodu

Period	EG_{export} (MWh)	EG_{import} (MWh)	$EF_{grid,CM,y}$ (tCO_2/MWh)	BE_y (tCO_2e)
01/01/2020-20/01/2020	652.26	5.18	0.5983	387.15
21/01/2020-20/02/2020	1,640.03	1.26	0.5983	980.48
21/02/2020-20/03/2020	1,258.95	0.42	0.5983	752.98
21/03/2020-20/04/2020	1,999.90	0.07	0.5983	1,196.50
21/04/2020-20/05/2020	1,506.75	0.35	0.5983	901.28
21/05/2020-20/06/2020	2,577.19	0.07	0.5983	1,541.89
21/06/2020-20/07/2020	2,115.40	0.07	0.5983	1,265.60
21/07/2020-20/08/2020	1,806.14	0.56	0.5983	1,080.28
21/08/2020-20/09/2020	1,179.01	0.70	0.5983	704.98
21/09/2020-20/10/2020	2,374.26	0.14	0.5983	1,420.44
21/10/2020-20/11/2020	1,181.95	1.12	0.5983	706.49
21/11/2020-31/12/2020	641.90	3.92	0.5983	381.70
Sum of this MP 01/01/2020 - 31/12/2020	**18,933.74**	**13.86**	**0.5983**	**11,319.00**

Calculation of BE_y - Liangjiangkou

Period	EG_{export} (MWh)	EG_{import} (MWh)	$EF_{grid,CM,y}$ (tCO_2/MWh)	BE_y (tCO_2e)
01/01/2020-20/01/2020	288.484	2.128	0.5983	171.33
21/01/2020-20/02/2020	828.856	0.168	0.5983	495.80
21/02/2020-20/03/2020	570.808	0.196	0.5983	341.40
21/03/2020-20/04/2020	1,053.752	0.056	0.5983	630.43
21/04/2020-20/05/2020	758.016	0.140	0.5983	453.44
21/05/2020-20/06/2020	1,293.012	0.028	0.5983	773.59
21/06/2020-20/07/2020	863.184	0.028	0.5983	516.43
21/07/2020-20/08/2020	812.700	0.084	0.5983	486.19
21/08/2020-20/09/2020	587.832	0.476	0.5983	351.42
21/09/2020-20/10/2020	1,076.040	0.140	0.5983	643.71
21/10/2020-20/11/2020	466.984	0.476	0.5983	279.11
21/11/2020-31/12/2020	293.272	1.568	0.5983	174.53
Sum of this MP 01/01/2020 - 31/12/2020	**8,892.94**	**5.49**	**0.5983**	**5,317.00**

Calculation of BE_y

Period	BE_y - Guanbaodu (tCO_2e)	BE_y - Liangjiangkou (tCO_2e)	BE_y (tCO_2e)
01/01/2020-20/01/2020	387.15	171.33	558.47

21/01/2020-20/02/2020	980.48	495.80	1,476.28
21/02/2020-20/03/2020	752.98	341.40	1,094.38
21/03/2020-20/04/2020	1,196.50	630.43	1,826.92
21/04/2020-20/05/2020	901.28	453.44	1,354.72
21/05/2020-20/06/2020	1,541.89	773.59	2,315.48
21/06/2020-20/07/2020	1,265.60	516.43	1,782.03
21/07/2020-20/08/2020	1,080.28	486.19	1,566.47
21/08/2020-20/09/2020	704.98	351.42	1,056.40
21/09/2020-20/10/2020	1,420.44	643.71	2,064.15
21/10/2020-20/11/2020	706.49	279.11	985.60
21/11/2020-31/12/2020	381.70	174.53	556.23
Sum of this MP 01/01/2020 - 31/12/2020	**11,319**	**5,317**	**16,636**

The baseline emissions (BE) during this monitoring period are calculated as **16,636** tCO_2e.

Project Emission Calculation Assessment:

The formula used for the determination of project emissions which is confirmed as consistent with the latest approved PDD and applied methodology:

$$PE_y = PE_{FF,y} + PE_{GP,y} + PE_{HP,y} \quad (2$$

Where:

- PE_y = Project emissions (tCO_2/yr)
- $PE_{FF,y}$ = Project emissions from fossil fuel consumption in year *y* (tCO_2/yr)
- $PE_{GP,y}$ = Project emissions from the operation of geothermal power plants due to the release of non-condensable gases in year *y* (tCO_2e/yr)
- $PE_{HP,y}$ = Project emissions from water reservoirs of hydro power plants in year *y* (tCO_2e/yr)

According to ACM0002, for all renewable energy power generation project activities, emissions due to the use of fossil fuels for the backup generator can be neglected, so $PE_{FF,y} = 0$.

The project is not a geothermal power plant, thus $PE_{GP,y} = 0$.

Therefore, $PE_y = PE_{HP,y}$

The proposed hydropower project is a new project and results in a new reservoir, and its power density of is calculated as follows:

$$PD = \frac{Cap_{PJ} - Cap_{BL}}{A_{PJ} - A_{BL}}$$

Where:

- PD = Power density of the project activity (W/m^2)
- 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 reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (m^2)
- A_{BL} = Area of the reservoir measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m^2). For new reservoirs, this value is zero

For the bundled two projects,

for Guanbaoodu:

Cap_{BL} = 0, A_{BL} = 0, Cap_{PJ} = 4MW, and A_{PJ} = 328,000 m^2, therefore PD=12.20 W/m^2, which is greater than 10W/m^2;

and **for Liangjiangkou,**

Cap_{BL} = 0, A_{BL} = 0, Cap_{PJ} = 1.89MW, and A_{PJ} = 176,800 m^2, therefore PD=10.69 W/m^2, which is greater than 10W/m^2.

	Therefore, according to ACM0002, $PE_{HP,y}$ = 0, so $PE_y = PE_{HP,y}$ = 0. ***Leakage Calculation Assessment:*** According to ACM0002, there is no leakage considered, i.e. LE_y = 0 tCO_2e. The emission reductions (ER_y) of SDG 13 by the project during a given year y are the difference among baseline emissions (BE_y), project emissions (PE_y). Hence, $ER_y = BE_y - PE_y = BE_y$ =16,636 tCO_2e The SDG 13 Project Impact, i.e. emission reductions (ER_y) during this monitoring period is **16,636** tCO_2e.
Findings	CAR 05 was raised and resolved. Refer to Appendix 4 for detail assessment.
Conclusion	The verification team confirms that a) The complete data was available and is duly reported; b) As indicated above, the description with regard to cross-check of reported data is included under respective parameter (refer Section E.6.2. of this report); c) Appropriate methods and formulae for calculating project SDG impact were followed; The calculation of project situation of each SDG impact is correct.

E.7.3. Calculation of leakage

Means of verification	Via checking the PDD of this project and applied methodology, it is confirmed that no leakage for this project was identified.
Findings	N/A
Conclusion	The verification team confirms that no leakage is considered.

E.7.4. Calculation of net benefits or direct calculation for each SDG Impact

Means of verification

Calculation of net benefits as difference of baseline and project values or direct calculation for each SDG impact is as following,

SDG	SDG Impact	Baseline estimate	Project estimate	Net benefit
13	Emissions Reductions (The bundled project)	0	16,636 tCO_2e	16,636 tCO_2e
13	Emissions Reductions (Guanbaodu)	0	11,319 tCO_2e	11,319 tCO_2e
13	Emissions Reductions (Liangjiangkou)	0	5,317 tCO_2e	5,317 tCO_2e
5	Number of women employees (The bundled project)	0	2	2
5	Number of women employees (Guanbaodu)	0	2	2
5	Number of women employees (Liangjiangkou)	0	0	0
7	MWh of renewable energy generated (The bundled project)	0	27,807.33 MWh	27,807.33 MWh
7	MWh of renewable energy generated (Guanbaodu)	0	18,919.88 MWh	18,919.88 MWh
7	MWh of renewable energy generated (Liangjiangkou)	0	8,887.45 MWh	8,887.45 MWh
8	Number of job positions and training opportunities (The bundled project)	0	17	17
8	Number of job positions and training opportunities (Guanbaodu)	0	13	13
8	Number of job positions and training opportunities (Liangjiangkou)	0	4	4
8	Salary level (The bundled project)	0	3,819 RMB /month	3,819 RMB /month

	8	Salary level (Guanbaodu)	0	3,994 RMB /month	3,994 RMB /month
	8	Salary level (Liangjiangkou)	0	3,250 RMB /month	3,250 RMB /month
	All the figures as per the monitoring report were cross-checked by the verification team against basic monitored data. Refer to E.6.2 of this report for details assessment.				
Findings	N/A				
Conclusion	The verification team confirms that a) The complete data was available and is duly reported; b) As indicated above, the description with regard to cross-check of reported data is included under respective parameter (refer Section E.6.2. of this report); c) Appropriate methods and formulae for calculating net benefits for each SDG impact were followed; The calculation of net benefits for each SDG impact is correct.				

E.7.5. Comparison of actual value of impacts with estimates in approved PDD

Means of verification	The verification team has checked if the MR includes a comparison of actual values of the monitoring period with the estimations in the registered PDD for each SDG impact. Conclusion is as below table				
	Item	**Period**	**Indicator**	**Values estimated in ex ante calculation of approved PDD**	**Actual values achieved during this monitoring period**
	SDG5	01/01/2020-31/12/2020	Number of women employees	4	2
	SDG7	01/01/2020-31/12/2020	Access to clean energy	21,612MWh	27,807.33MWh
	SDG 8	01/01/2020-31/12/2020	The number of new job created by the project and training opportunities	23	17
			Salary level	1,100-3,773RMB/month	3,819 RMB/month
	SDG 13	01/01/2020-31/12/2020	Amount of emission (tCO_2e)	12,930	16,636
Findings	CAR 06 was raised and resolved. Refer to Appendix 4 for detail assessment.				
Conclusion	The MR includes a summary table of comparison of actual values of the monitoring period with the estimations in the approved PDD for each SDG impact and the comparison results are confirmed as correct.				

E.7.6. Remarks on increase in achieved SDG Impacts from estimated value in approved PDD

Means of verification	For SDG 5, there is slight difference by comparison of actual value of impacts with estimates in approved PDD for the women employees from 01/01/2020 to 31/12/2020. Via checking the monthly payroll/24/, CTI verified that the women employees are 0 for Liangjiangkou which is not same to PDD. The reason of 0 woman employed for this monitoring period has been clarified by PP in the MR. Via site interview with the project owner and local stakeholders, CTI confirmed that the situation in 2020 is special due to COVID-19 pandemic and project owner promised to recruit local female resident as priority as possible in next monitoring period.

	For SDG 8, there is slight difference by comparison of actual value of impacts with estimates in approved PDD for the job positions for local people and average salary level of employees from 01/01/2020 to 31/12/2020. Via checking the monthly payroll/24/, CTI verified that the job positions for local people is lower than PDD, the reason is same to SDG 5 as above assessment. In addition, CTI verified that the average monthly salary level of the employees is 3,819 RMB/Month, higher than rural disposable income 999 RMB/month of Huaihua City/36/, which is beyond the range of 1,100-3,773 RMB/month in the registered PDD and Transition Annex. For SDG 7 and SDG 13, CTI confirmed that the actual value during this monitoring period was found to be 28.66% higher than ex-ante estimated value in the PDD for this project during this monitoring period. For Guanbaodu Project, the ex-post value is 21.96% higher than the ex-ante estimated value, and for Liangjiangkou Project, the ex-post value is 45.71% higher than the ex-ante estimated value. CTI confirmed that the project installations and capacity are in line with the PDD via checking the nameplate of the hydro turbines and generators/26/. Hence, the higher emission reduction is not caused by the change of project installations and capacity. Via checking the registered PDD, the estimated emission reductions in the PDD are calculated and based on the electricity generation sourced from the Guanbaodu and Liangjiangkou PDR/11/. While through checking the PDR, the amount of electricity generation mainly depends on precipitation in historical average year. By means of checking the precipitation data published by Hunan Hydrology/32/, it is confirmed that the precipitation in 2020 of Huaihua City was 55.42% more than average level in historical year. Furthermore, the verification team checked the accumulated net electricity supplied to the grid by both the projects from 2009 to 2020, it is verified that the accumulated net electricity supplied to the grid by the bundled project from 2009 to 2020 is also 7.12% less than the total estimated net electricity value in the registered PDD/1/ and Transition Annex/4/ from 2009 to 2020. Hence, it is verified that the average value is similar to the project design data with long time period. Hence, it is confirmed that actual emission reduction during this monitoring period which is higher than the amount of designed supplied electricity in PDD is reasonable. And there is no risk of higher ER value than PDD for this project for a long term.
Findings	N/A
Conclusion	The actual SDG impacts for 7 and 13 are higher than the estimated values and actual SDG impacts for 5 and 8 are lower than the estimated values given in the registered PDD/3/, which is assessed as appropriate and accepted.

E.8. Safeguards reporting

Means of verification	Via checking the Section B and C of Transition Annex/4/, CTI confirmed that there are three Safeguarding principles need to be monitored which have been assessed as below, **1. Water quality**

Relevant Safeguarding Principles:	4.2
Data/Parameter	**Water quality**
Unit	Level of management
Description	The impact of waste water on local water body in the operation period
Value applied for this monitoring period	No negative impact

Measuring /Reading /Recording frequency	Yearly during the operation period
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the Transition Annex/4/.
Monitoring equipment with accuracy	N/A
Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	N/A
How were the values in the monitoring report verified?	The waste water during the operation period was monitored by stakeholders' questionnaires. Stakeholders' questionnaires contained question as follows: Do you think that the waste water produced from the project has unfriendly influence on water quality? The project owner made questionnaires for 24 local residents (12 for each sub project) on 15/04/2020 to ask their comments and received 12(Guanbaodu) and 11(Liangjiangkou) pieces of Stakeholders' questionnaires replies respectively. The verifier checked the stakeholder questionnaires/21/ and confirmed by interviews of plant personnel and local stakeholders. Also, it is verified that all of the 23 stakeholders stated there was no significant impact on local environment during this monitoring period.
If applicable, has the reported data been cross-checked with other available data? (Yes / No)	N/A
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	N/A

2. Solid wastes

Relevant Safeguarding Principles:	4.3
Data/Parameter	**Solid wastes**
Unit	Level of management
Description	Management of the domestic rubbish during the operation period
Value applied for this monitoring period	No negative impact
Measuring /Reading /Recording frequency	Yearly during the operation period

Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the Transition Annex/4/.
Monitoring equipment with accuracy	N/A
Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	N/A
How were the values in the monitoring report verified?	The waste water during the operation period was monitored by stakeholders' questionnaires. Stakeholders' questionnaires contained question as follows: Do you think that the solid waste produced from the project has unfriendly influence on local environment? The project owner made questionnaires for 24 local residents (12 for each sub project) on 15/04/2020 to ask their comments and received 12(Guanbaodu) and 11(Liangjiangkou) pieces of Stakeholders' questionnaires replies respectively. Via checking the Management Regulation of Environment and Health/25/ for both Hydropower Stations and site inspection, CTI confirmed that the solid waste generated during operation period have been transported to the designated wastes deposit plant and then to landfill plant for central disposal as defined in EIA/10/. The verifier checked the stakeholder questionnaires/21/ and confirmed by interviews of plant personnel and local stakeholders. Also, it is verified that all of the 23 stakeholders stated there was no significant impact on local environment during this monitoring period.
If applicable, has the reported data been cross-checked with other available data? (Yes / No)	N/A
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	N/A

3. Biodiversity

Relevant Safeguarding Principles:	4.3
Data/Parameter	**Biodiversity (species and habitat conservation)**
Unit	Degree of Biodiversity
Description	The impacts of project activity on fish and

		organism species and habitats
	Value applied for this monitoring period	No negative impact
	Measuring /Reading /Recording frequency	Yearly during the operation period
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the Transition Annex/4/.
	Monitoring equipment with accuracy	N/A
	Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	N/A
	How were the values in the monitoring report verified?	The waste water during the operation period was monitored by stakeholders' questionnaires. Stakeholders' questionnaires contained question as follows: Do you think that the project operation has unfriendly influence on local biodiversity? The project owner made questionnaires for 24 local residents (12 for each sub project) on 15/04/2020 to ask their comments and received 12(Guanbaodu) and 11(Liangjiangkou) pieces of Stakeholders' questionnaires replies respectively. Via checking the EIA/10/, CTI confirmed that there will be no considerable effects on fish and organism species and habitats due to the project activity and no extinction of any animals will happen. In addition, via checking the Report for the Examination and Acceptance of Completed Project/9/, CTI confirmed the measures of ecological conservation have been well implemented Furthermore, the verifier checked the stakeholder questionnaires/21/ and confirmed by interviews of plant personnel and local stakeholders. Also, it is verified that all of the 23 stakeholders stated there was no significant impact on local biodiversity during this monitoring period.
	If applicable, has the reported data been cross-checked with other available data? (Yes / No)	N/A
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	N/A

Findings	N/A
Conclusion	All the potential negative information on assessment questionnaires answered as "No", thus confirmed that there was no negative impact on safeguarding principles during this monitoring period. So there is no need to re-assessment the Safeguarding principles during this monitoring period.

E.9. Stakeholder inputs and legal disputes

Means of verification	As confirmed through the onsite visit and interview with the users, it is verified that the inputs/grievances mechanism has been in place. As per the onsite interview with PP and local stakeholders, it is confirmed that the questionnaires/21/ survey has been carried out for collecting the comments from local stakeholders regularly so that they can raise any questions to the project implementers. Besides, local people can raise any suggestion about negative impacts of the project operation to monitoring office at any time which has been confirmed by site interview with local stakeholders. Therefore, it is verified that they have access to provide issues or comments through questionnaires. And via checking the questionnaires/21/ conducted in this monitoring period and checking the three channels of inputs/grievances mechanism, it is verified that there were no inputs/grievances received during this monitoring period.
Findings	N/A
Conclusion	All the methods of continuous input /grievance mechanism are confirmed during on-site investigation and interviews. CTI verified that there are no comments/complaints received from the stakeholders during this monitoring period of the project activity.

SECTION F. Internal quality control

The final verification report was undergone a technical review by a qualified independent reviewer before requesting issuance of the project activity. The technical review was performed by a technical reviewer qualified in accordance with CTI's qualification scheme for GS validation and verification that meets the criteria of GS4GG guidelines for qualification.

SECTION G. Verification opinion

The verification team assigned by the VVB (CTI) concludes that the 9th periodic verification of GS programme of activities “Hunan Guanbaodu-Liangjiangkou Small-scale Hydropower Bundle Project” in Henan Province, China, as described in the approved PDD, GS approved transition annex and final version of monitoring report, meets all relevant requirements set by the Gold Standard for the Global Goals Principles and Requirements.

The project activity was correctly implemented according to selected monitoring methodology and monitoring plan. The collected monitoring data allowed to verify the amount of achieved SDG impacts. And the project is contributed to sustainability development. Thus, the VVB is pleased to issue a positive verification opinion.

SECTION H. Certification statement

Shenzhen CTI International Certification Co., Ltd (CTI) has performed the 9th periodic verification of the SDG outcomes that have been reported for the GS project activity "Hunan Guanbaodu-Liangjiangkou Small-scale Hydropower Bundle Project" in Henan Province, P. R. China for the monitoring period from 01/01/2020 to 31/12/2020.

The verification is based on the baseline and monitoring methodology ACM0002 "Grid-connected electricity generation from renewable sources" (Version 16.0), the PDD, the approved Transition Annex and the final version of monitoring report. The verification consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up on-site visit and interviews with project participants; iii) resolution of outstanding issues and the issuance of the final verification and certification report.

The PPs are responsible for the collection, calculation and determination of the SDG impacts data in accordance with the monitoring plan and the reporting of SDG impacts on the basis set out within the project monitoring report.

It is CTI's responsibility to provide an independent verification statement on the reported SDG impacts for the project. Based on an understanding of the risks associated with reporting of SDG impacts data and the controls in place to mitigate these, CTI planned and performed our work to obtain the information and explanations that we considered necessary to provide reasonable assurance that reported SDG impacts are fairly stated.

CTI confirms that the SDG impacts are calculated without material misstatements. Based on the evidence and information that are considered necessary to guarantee that SDG impacts are appropriately calculated, CTI confirms that the SDG impacts from the "Hunan Guanbaodu-Liangjiangkou Small-scale Hydropower Bundle Project" in Henan Province, P. R. China during the monitoring period from 01/01/2020 to 31/12/2020 as follows:

Monitoring Period Number: 9th

Monitoring period: 01/01/2020 to 31/12/2020

The verified amount of impact for each SDG in the PA as per commitment period is stated below;

SDG No.	**Total for this MP**
	Vintage: 01/01/2020 to 31/12/2020
SDG 5	2 women employees
SDG 7	27,807.33 MWh/year renewable power generation
SDG 8	17 of job positions and training opportunities
	Salary level of 3,819 RMB/month
SDG 13	GHG emission Reductions 16,636 t GSVERs

Appendix 1. Abbreviations

Abbreviations	Full texts
BE	Baseline Emission
CAR	Corrective Action Request
CCPG	Central China Power Grid
CDM	Clean Development Mechanism
CL	Clarification Request
CO_2	Carbon dioxide
CP	Crediting Period
DNA	Designated National Authority
EB	Executive Board
EIA	Environmental Impact Assessment
FAR	Forward Action Request
GHG	Green House Gas
GSC/GSP	Global Stakeholder Consultation Process
GS4GG	Gold Standard for the Global Goals
ILO	International Labour Organization
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
LSC	Local Stakeholder Consultation
MoV	Means of Validation
MP	Monitoring Plan
ODA	Official Development Assistance
PD	Project Developer
PDD	Project Design Document
PE	Project Emission
PP	Project Participant
PS	Project Standard
QC/QA	Quality control/Quality assurance
RFR	Request for Registration
SCR	Stakeholder Consultation Report
SD	Sustainable Development
SDG	Sustainable Development Goals
SFR	Stakeholder Feedback Round
tCO_2e	Tonnes of Carbon di oxide equivalent
UNFCCC	United Nations Framework Convention on Climate Change
V	Version
VER	Voluntary Emission Reduction
VVB	Validation and Verification Body
VVS	Validation and Verification Standard

Appendix 2. Competence of team members and technical reviewers

Mr. Li Ziqi

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 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 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:

Wu LIN Wu Lin

Technical Competent Manager

Shenzhen, 01/01/2021

Ms. Guolian WANG

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 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 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

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, 01/01/2021

Appendix 3. Documents reviewed or referenced

No	Author	Title	References to the document	Provider
1.	PP	9th periodic Monitoring Report of "Hunan Guanbaodu-Liangjiangkou Small-scale Hydropower Bundle Project"	- Version No. 01, dated 18/06/2021 - Version No. 02, dated 13/07/2021 - Version No. 03, dated 31/08/2021	PP
2.	PP	9th periodic Emission Reduction Calculation spreadsheet of "Hunan uanbaodu-Liangjiangkou Small-scale Hydropower Bundle Project"	- Version No. 01, dated 18/06/2021 - Version No. 02, dated 31/08/2021	PP
3.	PP	GS4GG approved Project Design document of "Hunan Guanbaodu-Liangjiangkou Small-scale Hydropower Bundle Project" for 2nd crediting period	- Version No. 09, dated 29/03/2016	PP
4.	PP	GS4GG approved Transition Annex of "Hunan Guanbaodu-Liangjiangkou Small-scale Hydropower Bundle Project"	- GS4GG Transition Annex of this project	PP
5.	TUV NORD	Validation report of "Hunan Guanbaodu-Liangjiangkou Small-scale Hydropower Bundle Project" for 2nd crediting period	- Rev No. 1, 29/03/2016	GS website
6.	VVB	Previous verification Reports and MRs of "Hunan Guanbaodu-Liangjiangkou Small-scale Hydropower Bundle Project"	- Previous verification: MR and Verification Report	GS website
7.	GS	GS performance review form for 8th periodical monitoring period	Performance Review under Gold Standard for the Global Goals for 8th periodical monitoring period of this project	PP
8.	Jingzhou County Administrative Bureau for Industry and Commerce (Guanbaodu) & Tongdao County Administrative Bureau for Industry and Commerce (Liangjiangkou)	Business License	Business License of Jingzhou Miao & Dong Autonomous County Guanbaodu Hydropower Co., Ltd. (project owner of Guanbaodu hydropower project) and Tongdao Dong Autonomous County Liangjiangkou Hydropower Station (project owner of Liangjiangkou hydropower project)	Project Owner
9.	Huaihua City Environmental Protection Bureau (Guanbaodu) And	Report of Acceptance of Environmental Protection	Acceptance of Environmental Protection of Guanbaodu project issued by Hunan Province Huaihua City Environmental Protection Bureau dated 06/02/2013.	Project Owner

	Hunan Province Huaihua City Tongdao Hydropower Check and Accept Commission (Liangjiangkou)		Acceptance of Environmental Protection of Liangjiangkou project issued by Hunan Province Huaihua City Tongdao Hydropower Check and Accept Commission dated in Dec. 2009.	
10.	Huaihua Environmental Protection Research Institute	Environment Impact Assessment	EIA of Guanbaodu project finished by Huaihua Environmental Protection Research Institute on 19/10/2005 EIA of Liangjiangkou project finished by Huaihua Environmental Protection Research Institute on 05/07/2006	Project Owner
11.	Xiangtan water conversation & hydropower engineering exploration & design institute, Hunan Province (Guanbaodu) And Jingzhou Miao & Dong Autonomous water conversation & hydropower engineering exploration & design institute (Liangjiangkou)	Preliminary Design Report	PDR of Guanbaodu project finished in May 2005 PDR of Liangjiangkou project finished in May 2006	Project Owner
12.	Hunan Province Huaihua City Jingzhou Power Company (Guanbaodu) And Hunan Province Huaihua City Tongdao Power Company (Liangjiangkou)	Power Purchase Agreement	Power Purchase Agreement signed by the Guanbaodu project owner with Hunan Province Huaihua City Jingzhou Power Company for year 2020 covering this monitoring period; Power Purchase Agreement signed by the Liangjiangkou project owner with Hunan Province Huaihua City Tongdao Power Company for year 2020 covering this monitoring period	Project Owner
13.	Huaihua Electric Energy Measurement Center of Hunan Electric Power Company	Calibration certificates	**Guanbaodu:** Calibration Certificates for gateway meter M2, dated on 05/04/2019 and 10/03/2020 valid to 09/03/2021 Calibration Certificates for back-up meter M1, dated on 05/04/2019 and 10/03/2020 valid to 09/03/2021	Project Owner
	Hunan Province Huaihua Electric Power Bureau Tongdao Electric Power Company		**Liangjiangkou:** Calibration Certificates for gateway meter M1, dated on 11/05/2019 and 11/05/2020 valid to 10/05/2021	Project Owner
14.	Hunan Province Bureau of Quality & Technical Supervision	Certificate of Metrological Authorization	Certificate of metrological authorization to Huaihua Electric Energy Measurement Center of Hunan Electric Power Company, 1. issued on 30/04/2015, the valid	Project Owner

			period is to 29/04/2020 2. issued on 30/04/2020, the valid period is to 29/04/2025	
	Huaihua City Bureau of Quality & Technical Supervision		Certificate of Metrological Authorization of Measuring Centre of Hunan Province Huaihua Electric Power Bureau Tongdao Electric Power Company 1. issued on 26/05/2016, the valid period is to 25/05/2019 2. issued on 26/05/2019, the valid period is to 25/05/2022	Project Owner
15.	Huaihua City Jingzhou Power Company (Guanbaodu) And Huaihua City Tongdao Power Company (Liangjiangkou)	Electricity Transaction Notes	Electricity Transaction Notes covering this monitoring period ***Guanbaodu Project*** ● Monthly electricity transaction notes of Meters M2 ● Monthly electricity transaction notes of Meters M1 ● Electricity data during 21/12/2019 to 31/12/2019 and during 21/12/2020 to 31/12/2020. ***Liangjiangkou Project*** ● Monthly electricity transaction notes of Meters M1 ● Electricity data during 21/12/2019 to 31/12/2019 and during 21/12/2020 to 31/12/2020.	Project Owner
16.	Huaihua City Jingzhou Power Company (Guanbaodu) And Huaihua City Tongdao Power Company (Liangjiangkou)	Electricity Sales and Purchase Invoices	Electricity Sales and Purchase Invoices for both projects during this monitoring period	Project Owner
17.	Jingzhou Miao & Dong Autonomous County Guanbaodu Hydropower Co., Ltd. (Guanbaodu) And Tongdao Dong Autonomous County Liangjiangkou Hydropower Station (Liangjiangkou)	Meter Reading Records	Meter Reading Records of this monitoring period which was confirmed by the grid company Gateway Meter M2 of Guanbaodu, Backup Meter M1 of Guanbaodu, Gateway Meter M1 of Liangjiangkou	Project Owner
18.	Jingzhou Miao & Dong Autonomous County Guanbaodu Hydropower Co., Ltd. (Guanbaodu) And Tongdao Dong	Operation LOG	Log of each sub-project • Power plant daily operation log. • Power plant daily dispatch log. • Maintenance plan and records. • Electric equipments operation records. • Duty shift records. • Hourly power generation statistics from DCS.	Project Owner

	Autonomous County Liangjiangkou Hydropower Station (Liangjiangkou)		• Daily power generation statistics from DCS. • Monthly power generation statistics from DCS.	
19.	Jingzhou Miao and Dong Autonomous County Hydro Management Station (Guanbaodu) And Tongdao Dong Autonomous County Water Conservancy Bureau (Liangjiangkou)	Proof of Area of Reservoir	Measurement Report of reservoir area for Guanbaodu project by Jingzhou Miao and Dong Autonomous County Flood Control and Drought Prevention Office, dated 25/06/2020 for this monitoring period Measurement Report of reservoir area for Liangjiangkou project by Tongdao Dong Autonomous County Reservoir and Immigration Authority dated 12/06/2020 for this monitoring period	Project Owner
20.	Jingzhou Miao & Dong Autonomous County Guanbaodu Hydropower Co., Ltd. (Guanbaodu) And Tongdao Dong Autonomous County Liangjiangkou Hydropower Station (Liangjiangkou)	Technical Training Records	Project Responsibilities, Training and Competence Records • Project Organization Chart and responsibilities • Operator working certificates • Technical Training Records Guanbaodu dated 06/03/2020 and 05/04/2020 • Technical Training Records Liangjiangkou dated 17/03/2020	Project Owner
21.	Local stakeholders	Filled questionnaires by local stakeholders	Filled questionnaires by local stakeholders for SDG monitoring 1. 12 for Guanbaodu 2. 11 for Liangjiangkou	Project Owner
22.	Jingzhou Miao & Dong Autonomous County Guanbaodu Hydropower Co., Ltd. (Guanbaodu) And Tongdao Dong Autonomous County Liangjiangkou Hydropower Station (Liangjiangkou)	Monitoring Manual	Monitoring Manual for the project activity and project site management rules and regulations for each power plant	Project Owner
23.	Jingzhou Miao & Dong Autonomous County Guanbaodu Hydropower Co., Ltd. (Guanbaodu)	Employment Contract	Employment Contracts of both plants	Project Owner

	And Tongdao Dong Autonomous County Liangjiangkou Hydropower Station (Liangjiangkou)			
24.	Jingzhou Miao & Dong Autonomous County Guanbaodu Hydropower Co., Ltd. (Guanbaodu) And Tongdao Dong Autonomous County Liangjiangkou Hydropower Station (Liangjiangkou)	Payroll of Every Staff	Monthly Payroll of Every Staff for Guanbaodu Project for this monitoring period Monthly Payroll of Every Staff for Liangjiangkou Project for this monitoring period	Project Owner
25.	Jingzhou Miao & Dong Autonomous County Guanbaodu Hydropower Co., Ltd. (Guanbaodu) And Tongdao Dong Autonomous County Liangjiangkou Hydropower Station (Liangjiangkou)	Management Regulation of Environment and Health	Management Regulation of Environment and Health for Guanbaodu project dated in Mar. 2020 Management Regulation of Environment and Health for Liangjiangkou project dated in Oct. 2020	Project Owner
26.	On-site Verification Team	Photographs of Project Site	Photographs of Project Site, Hydro turbines, Generators, Central Control Room, DCS System, all the meters and nameplate of the equipments took by the verification team during on-site for both Guanbaodu and Liangjiangkou Projects	On-site Verificati on Team
27.	UNFCCC	ACM0002	Approved CDM methodology ACM0002: “Grid-connected electricity generation from renewable resources” (Version 16.0)	UNFCCC Website
28.	GS	GS4GG MR template	Gold Standard for Global Goals Monitoring Report Template version 1.1 in October 2020	GS Website
29.	GS	Gold Standard for the Global Goals Principles and Requirements	Version 1.2	GS Website
30.	GS	Gold Standard for the Global Goals Safeguarding Principles & Requirements	Version 1.2	GS Website
31.	GS	Gold Standard for the Global Goals Stakeholder Consultation and	Version 1.2	GS Website

		Engagement Requirements		
32.	Hunan Hydrology	Precipitation in 2020 of Huaihua City	http://www.hnswkcj.com/wxhn/h5/hy/rain/sum.view	Public Website
33.	UNFCCC	UNFCCC website	https://cdm.unfccc.int	UNFCCC website
34.	VERRA	VCS	https://verra.org/project/vcs-program/	VCS website
35.	CCER exchange info-platform	China CCER GHG Scheme	http://cdm.ccchina.org.cn/ccer.aspx	Public Website
36.	Hunan Statistic	Rural per capita disposable income for Huaihua City in 2020	http://hnzd.stats.gov.cn/dcsj/sjfb/hhs/zxfb/202003/t20200312_178200.html	Public Website

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

Table 1. Remaining FAR from validation and/or previous verification

FAR ID	N/A	**Section no.**		**Date:** DD//22/YYYY
Description of FAR				
No FAR from the 8th verification report and Performance Review Form.				
Project participant response				**Date:** DD/22/YYYY
Documentation provided by project participant				
VVB assessment				**Date:** DD/22/YYYY

Table 2. CL from this verification

CL ID	01	**Section no.**	C	**Date:** 05/07/2021
Description of CL				
In the section C, the demonstration of no double counting of GS VERs for this monitoring period is not clarified.				
Project participant response				**Date:** 12/07/2021
It is promised that the emission reduction in this monitoring period from 01/01/2020 to 31/12/2020 (the first and last days included) will request for GS VERs and will not be submitted for any emissions reduction certificate or carbon offset. Thus, there is no double counting.				
Documentation provided by project participant				
/1/ version 02				
VVB assessment				**Date: 13/07/2021**
The revised MR is checked, CTI confirmed that demonstration of no double counting of GS VERs for this monitoring period is clarified. The VVB has checked for double counting by reviewing all relevant registries including CDM/33/, VCS/34/ and other GHGs programs such as China CCER/35/, EU ETS, IREC or subnational, various regional schemes such as the Canadian and American provincial/state-based schemes. CTI confirmed that there is no potential exists for Double Counting of emissions reductions due to issuance of Gold Standard VERs/CO2-certificates from the considered project activity. Furthermore, the project implemented having the unique geographical coordinates, project equipment's information is also verified during site visit and confirmed as consistent with the project PDD/3/. It is concluded that the PP the double counting to the ER calculation ensured to be avoided. Thus the risk of double counting is unlikely to happen. In conclusion, the MP is completely in accordance with the approved methodology applied by the GS4GG project/27/ and PDD/3/. CL 01 is closed.				

Table 3. CAR from this verification

CAR ID	01	**Section no.**	Cover	**Date:** 05/07/2021
Description of CAR				
1. In the cover page of MR, the PDD version is not the one applicable to this monitoring report. 2. The first date and last date included is not provided for this monitoring period. 3. The name of applied methodology is missing.				
Project participant response				**Date:** 12/07/2021
1. The PDD version has been revised in the updated MR. 2. The first date and last date included has been provided for this monitoring period in the updated MR. 3. The name of applied methodology has been added in the updated MR.				
Documentation provided by project participant				
/1/ version 02				
VVB assessment				**Date: 13/07/2021**

1. The revised MR is checked, CTI confirmed that the PDD version is revised to 09 which is applicable. 2. The revised MR is checked, CTI confirmed that the first date and last date included has been added. 3. The revised MR is checked, CTI confirmed that the name of ACM0002 is added and confirmed as correct. CAR 01 is closed.

CAR ID	02	**Section no.**	D.2	**Date:** 05/07/2021
Description of CAR				
In the section D.2, for parameters EG_{export} and EG_{import}, the QA/QC procedure is not complete, the electricity receipts or invoices mentioned in section C is not used as the evidence.				
Project participant response				**Date:** 12/07/2021
The QA/QC procedure of parameters EG_{export} and EG_{import} and the electricity invoices as evidence have been added in the updated MR.				
Documentation provided by project participant				
/1/ version 02 /17/ /15/ /16/				
VVB assessment				**Date: 13/07/2021**
The revised MR is checked, CTI confirmed that the QA/QC procedure has been revised, the meter reading records/17/ have been cross-checked with values in monthly electricity transaction notes/15/ or electricity sales invoices/16/ and verified as consistent. CAR 02 is closed.				

CAR ID	03	**Section no.**	D.2	**Date:** 05/07/2021
Description of CAR				
In the section D.2, for parameter $EG_{PJ,y}$, 1. How to calculate the parameter is not provided. 2. QA/QC for calculation result is not provided. 3. MR stated that this parameter is also to monitor outcome of SDG 7, however, for SDG 7, as per the Transition Annex, the description is not same to SDG 13. Revision is requested.				
Project participant response				**Date:** 12/07/2021
1. The calculation of parameter $EG_{PJ,y}$ has been provided in the updated MR. 2. QA/QC for calculation result has been provided in the updated MR. 3. The new table of monitored parameter SDG 7 has been added in the updated MR.				
Documentation provided by project participant				
/1/ version 02 /20/				
VVB assessment				**Date: 13/07/2021**
1. The revised MR is checked, CTI confirmed that the calculation process is provided, $EG_{PJ,y}$ is calculated by $EG_{export} – EG_{import}$ 2. The revised MR is checked, CTI confirmed that the QA/QC procedure for calculation; procedure for monitoring staff training and competence/20/ were established and implemented. The data flow and protection process were observed during the on-site inspection. 3. The revised MR is checked, CTI confirmed that the new table of monitored parameter SDG 7 has been added which has been assessed in section E.6.2 of this report. CAR 03 is closed.				

CAR ID	04	**Section no.**	D.2	**Date:** 05/07/2021
Description of CAR				
In the section D.2, for parameter Training opportunities, the values applied is not clear due to only two trainings provided in Guanbaodu and one in Liangjiangkou. Revision is requested.				
Project participant response				**Date:** 12/07/2021
For parameter Training opportunities, the detailed description of values applied has been added in the updated MR.				
Documentation provided by project participant				
/1/ version 02 /20/				
VVB assessment				**Date: 13/07/2021**

The revised MR is checked, CTI confirmed that the clear description has been added, through reviewing the training records/20/, it is confirmed that trainings were provided to the employees twice for Guanbaodu and once for Liangjiangkou for this monitoring period and the number of employees trained technically by Guanbaodu is 13 and the number of employees trained technically by Liangjiangkou is 4. CAR 04 is closed.

CAR ID	05	**Section no.**	E.2	**Date:** 05/07/2021
Description of CAR				
In the section E.2, for SDG 8 project impacts, the training opportunities provided by the bundled project are is 17 in the MR which is not clear due to only two trainings provided in Guanbaodu and one in Liangjiangkou. Revision is requested.				
Project participant response				**Date:** 12/07/2021
For parameter Training opportunities, the values applied (17) means that the number of employees being trained technically by bundled project, 'the training opportunities' has been revised to 'the number of employees being trained technically' in the updated MR.				
Documentation provided by project participant				
/1/ version 02 /20/				
VVB assessment				**Date: 13/07/2021**
The revised MR is checked, CTI confirmed that the clear description has been added, through reviewing the training records/20/, it is confirmed that trainings were provided to the employees twice for Guanbaodu and once for Liangjiangkou for this monitoring period and the number of employees trained technically by Guanbaodu is 13 and the number of employees trained technically by Liangjiangkou is 4. CAR 05 is closed.				

CAR ID	06	**Section no.**	E.5	**Date:** 05/07/2021
Description of CAR				
In the section E.5, the corresponding indicators for each SDG are not provided and units for all figures are missing.				
Project participant response				**Date:** 12/07/2021
The corresponding indicators for each SDG and units for all figures have been provided in the updated MR.				
Documentation provided by project participant				
/1/ version 02				
VVB assessment				**Date: 13/07/2021**
The revised MR is checked, CTI confirmed that the corresponding indicators for each SDG are provided and units for all figures are added which is confirmed as correct and consistent with other parts. CAR 06 is closed.				

CAR ID	07	**Section no.**	F	**Date:** 05/07/2021
Description of CAR				
In the section F, for Safeguarding Principles 4.3 monitored parameter solid wastes, the source of data is not complete as per the request in the Transition Annex. Revision is requested.				
Project participant response				**Date:** 12/07/2021
The source of data for Solid wastes has been added in the updated MR.				
Documentation provided by project participant				
/1/ version 02 /25/ /10/ /21/				
VVB assessment				**Date: 13/07/2021**
The revised MR is checked, CTI confirmed that the related information has been added as per the Transition Annex. Via checking the Management Regulation of Environment and Health/25/ for both Hydropower Stations and site inspection, CTI confirmed that the solid waste generated during operation period have been transported to the designated wastes deposit plant and then to landfill plant for central disposal as defined in EIA/10/. The verifier checked the stakeholder questionnaires/21/ and confirmed by interviews of plant personnel and local stakeholders. Also, it is verified that all of the 23 stakeholders stated there was no negative impact on local environment during this monitoring period. CAR 07 is closed.				

Table 4. FAR from this verification

FAR ID	xx	**Section No.**		**Date:** DD/22/YYYY
Description of FAR				
No FAR from this verification				
Project participant response				**Date:** DD/22/YYYY
XX				
Documentation provided by project participant				
XX				
VVB assessment				**Date:** DD/22/YYYY
XX				