



VCS VERIFICATION REPORT

HUNAN DONGPING 72MW HYDROPOWER PROJECT

(VCS PROJECT ID: 30)



Document Prepared By

Shenzhen CTI International Certification Co., Ltd.

Project Title

Hunan Dongping 72MW Hydropower Project

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Summary:

Shenzhen CTI International Certification Co., Ltd (CTI) has performed the verification of the emission reductions reported for the project activity “Hunan Dongping 72MW Hydropower Project” (VCS Project ID: 30) for the monitoring period 01/10/2012 to 31/03/2017, to review and determine the monitored reductions in GHG emissions that have occurred as a result of the project activity. These emission reductions are claimed as Verified Carbon Units (VCU) under the Verified Carbon Standard (VCS) version 4.1.

The verification was performed on the basis of VCS Programme Guide version 4.0 and VCS Standard version 4.1 for the VCS projects, as well as criteria given to provide for consistent project operations, monitoring and reporting. The verification was conducted by means of document review, follow-up interviews and site

inspections, and the resolution of outstanding issues. The verification team identified 1 CL, no CAR or FAR in this monitoring period.

In CTI's opinion, the GHG emission reductions reported for the project in the monitoring report (version 2.1 dated 16/08/2022) are fairly stated. The GHG emission reductions of the period were calculated correctly on the basis of approved methodology ACM0002 "Consolidated methodology for grid-connected electricity generation from renewable sources" (Version 06) and the revised monitoring plan approved by CDM EB on 02/02/2011.

CTI does not assume any responsibility towards the issuance and utilization of the VCU's hereby verified and certified. Request for issuance of VCU's shall be made by the project proponent to an approved VCS Program Registry based on the requirements set out under the most recent version of the VCS Program Guidelines clause on VCS Registration.

The verification of reported emission reductions is based on the information made available to CTI and the engagement conditions detailed in this report. CTI cannot be held liable by any party for decisions made or not made based on this report.

Hence, CTI is able to certify that the emission reductions from the "Hunan Dongping 72MW Hydropower Project" during the period amount to 1,051,933 tCO₂e.

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1 INTRODUCTION

Climate Bridge (Shanghai) Ltd. has commissioned Shenzhen CTI International Certification Co., Ltd (CTI) to carry out the verification and certification of emission reductions reported for the “Hunan Dongping 72MW Hydropower Project” (the project) for the period 01/10/2012 to 31/03/2017. This report contains the findings from the verification and includes a verification statement for the verified carbon units.

1.1 Objective

Verification is the periodic independent review and ex-post determination by an accredited verification body of the monitored reductions in GHG emissions that have occurred as a result of the registered VCS project activity during a defined verification period.

A verification statement is the written assurance by a verification body that, during a specific period in time, a project activity achieved the emission reductions as verified.

The objective of this verification was to verify and provide a verification statement of emission reductions reported for the “Hunan Dongping 72MW Hydropower Project” for the period 01/10/2012 to 31/03/2017.

1.2 Scope and Criteria

The scope of the verification is:

- To verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan;
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emissions reduction data is free from material misstatement;
- To verify that reported GHG emissions data is sufficiently supported by evidence.

The criteria of the verification are:

- VCS Program Guide (version 4.0) /27/
- VCS Standard (version 4.1) /26/ and other relevant requirements defined by Verra;
- The approved methodology ACM0002 (Version 06) /30/ applied by the project.

The verification shall ensure that reported emission reductions are complete and accurate in order to be verified.

1.3 Level of Assurance

The verification report expresses a conclusion with a reasonable level of assurance about whether the reported GHG emissions reduction data is free from material misstatement. CTI applied a materiality threshold of 5% with respect to omission or misstatements concerning reported quantities as per VCS standard.

1.4 Summary Description of the Project

Sectoral Scope and Project Type

According to the VCS Program Guide (version 4.0) /27/, the project is applicable under the following activity categories:

- Sectoral Scope: 1. Energy (Renewable/non-renewable).
- Project type: hydro power generation project.

According to Annex A of the Kyoto Protocol, the project is applicable under the Sectoral Scope 1: Energy Industries (renewable/ non-renewable sources).

Project Background

Project title:	Hunan Dongping 72MW Hydropower Project
Project proponent:	Wuling Power Corporation, Ltd. (China)
Project location:	The middle reaches of Zishui River where is in the vicinity of Minjiawan, Dongping Town, Anhua County, Yiyang City, Hunan Province, P.R.China
VCS Project ID:	30
Applied methodology:	ACM0002 (Version 06)
VCS project crediting period:	01/04/2007 to 31/03/2017 (the first VCS crediting period, detail refer to section 3.3 of this report)
VCU verification period:	01/10/2012 to 31/03/2017

2 VERIFICATION PROCESS

2.1 Method and Criteria

The verification was performed through means of the following three phases in accordance with the requirement of the registered CDM PDD (version 5 dated 10/08/2007), the applied methodology, and the VCS Standard (version 4.1) and other relevant VCS requirements:

- A desk review of the monitoring report and all support documents;
- Follow-up interviews with project stakeholders and site inspection;
- The resolution of outstanding issues and the issuance of the verification report and statement.

The following sections outline each step in more detail.

The verification of the emission reductions has assessed all factors and issues that constitute the basis for emission reductions from the project. These include:

- The emission reduction calculations and the relevant data records;
- The calibration and maintenance records for the monitoring instruments;
- The management systems to support the project operation and monitoring.

2.2 Document Review

Based on the requirements of competency, experience and qualified sectoral scopes, CTI appointed a verification team in accordance with CTI's internal procedures.

Function	Name	Technical competence	Task Performance*
Team Leader	Wang Guolian	1.2, 3.1, 4.1, 5.1, 5.2, 11.1, 11.2, 12.	☒ DR ☒ SV ☒ RP ☐ TR
Technical Reviewer	Lin Shunrong	1.2, 14.1, 15.	☒ DR ☐ SV ☐ RP ☒ TR

*DR=Document review; SV=Site visit; RP=Reporting; TR=Technical review

In addition to the VER/VCU monitoring report /1/ and emission reduction calculation spreadsheet /2/, the following documents also were assessed as a part of the verification audit:

- registered CDM PDD (version 5 dated 10/08/2007) /11/;
- Validation Report of registered CDM PDD (version 01 dated 01/12/2014) /12/;
- Revised monitoring plan approved by CDM EB on 02/02/2011 /18/;
- Validation opinion on revised monitoring plan (Report number BVC/CHINA/MP Change/28/2010, version 01) /19/;
- renewal CDM PDD (version 06 dated 07/08/2014) /20/;
- Validation Report of renewal CDM PDD (version 01 dated 01/12/2014) /21/;
- Baseline and monitoring methodology ACM0002 applied by the project /30/;
- Relevant decisions, clarifications and guidance from the Verra /26/- /29/; and
- Other information and references relevant to the project activity included in Annex B of this report.

During the desk review, CTI has applied standard auditing techniques to assess the quality of information provided. The following activities were performed:

- A review of the data and information presented to verify their completeness;
- A review of the monitoring plan and monitoring methodology, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures; and

An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.

2.3 Interviews

On 08/11/2021, CTI visited Wuling Power Corporation, Ltd. performed on-site assessment. The key personnel of the project were interviewed or assisted the verification team /31/. Main topics of the interview cover implementation of the project construction, applicability of selected methodology, implementation of project monitoring, emission reduction calculation, etc.

The key personnel interviewed /31/ are summarized in the table below:

Interviewed personnel	Role	Organization	Subject
Mr. Zhang Shun	Project Director	Wuling Power Corporation, Ltd.	Operation of the project activity;
Mr. Yu Fengyun	O&M staff	Wuling Power Corporation, Ltd.	Implementation of the monitor plan of the project activity;
Mr. Fang Xuanyong	O&M Director	Wuling Power Corporation, Ltd.	Data collection and data achievement;
Mr. Duan Luhang	O&M staff	Wuling Power Corporation, Ltd.	Calibration of meters and equipment maintenance;
Mr. Lin Yungao	Villager	Local resident	The impact of the project activity; The complaint by local stakeholders; The stakeholder consultation during the operation of the project activity.
Mr. Wang Xiuzhi	Villager	Local resident	
Mr. Yan Bo	Director	Local Environmental Protection Bureau	
Mr. Ye Zongpei	Project Manager	Climate Bridge (Shanghai) Ltd.	

2.4 Site Inspections

The verification team performed the on-site verification (the middle reaches of Zishui River where is in the vicinity of Minjiawan, Dongping Town, Anhua County, Yiyang City, Hunan Province, P.R.China) on 08/11/2021. The interviewed personnel and objective are listed in above table. During the on-site assessment, CTI has applied standard auditing techniques to assess the quality of information provided. The following aspects of the project activity have been verified:

- An assessment of the implementation and operation of the registered project activity is as per the CDM PDD;
- A review of information flows for generating, aggregating and reporting the monitoring parameters; and

- Interviews with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the approved monitoring plan;
- A cross-check between information provided in the monitoring report and data from other sources such as plant logbooks and electricity sale receipts;
- A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the approved monitoring plan approved by CDM EB and the selected methodology;
- A review of calculations and assumptions made in determining the GHG data and emission reductions; and
- An identification that quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

The data presented in the monitoring report were assessed by review of the detailed project documentation and production records, as well as by interviews with personnel from the project developer Wuling Power Corporation, Ltd. and observation of collection of measurements, observation of established monitoring and reporting practices and assessment of the reliability of monitoring equipment. This has enabled the verification team to assess the accuracy and completeness of reported monitoring results, to verify the correct application of the approved monitoring methodology and the determination of the emission reductions.

In addition, all parameters required by the monitoring methodology ACM0002 (Version 06), and the management system were assessed during the site visit.

2.5 Resolution of Findings

A corrective action request (CAR) shall be raised, where:

- i. Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
- ii. Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;
- iii. Issues identified in a FAR during validation to be verified during verification have not been resolved by the project proponents.

A clarification request (CL) shall be raised if information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met.

The verification team identified 1 CL and no CAR in this monitoring period.

2.5.1 Forward Action Requests

A forward action request (FAR) is issued for actions if the monitoring and reporting require attention and/or adjustment for the next monitoring period.

CTI confirmed that there was no FAR identified in previous verification /12/, and no FAR was raised during this verification.

2.6 Eligibility for Validation Activities

The registered CDM PDD was validated by TÜV SÜD Industrie Service GmbH on 05/02/2008 /12/. The revised monitoring plan was validated by Bureau Veritas Certification Holding SAS (Report number BVC/CHINA/MP Change/28/2010, version 01) /19/. The renewed CDM PDD was validation by Bureau Veritas Certification Holding SAS on 01/12/2014 /21/. The proposed VCS monitoring period from 01/10/2012 to 31/03/2017 is 2nd VCS verification, and CTI just undertook verification activities for the project according to the VCS Program Guide. This section is thus not applicable.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

CTI checked public information from I-REC (international renewable energy certificates), REC Mechanism database of China, Chinese Emission Trading System, Gold Standard Registry and interviewed with project developer during site visit, it is confirmed that except CDM and VCS scheme, the project has not been participated or been rejected under any other GHG programs since validation or previous verification.

Through interviewing with project developer, the verification team verified that during the first VCS crediting period from 01/04/2007 to 31/03/2017 (details refer to section 3.3 of this report), the project would claim only for VCU or CERs. But both VCUs and CERs will not be claimed in the same period and therefore the project activity has no double counting for the emission reductions.

The emission reduction resulted from the project during this monitoring period would only apply for VCUs.

3.2 Methodology Deviations

The validation process /12//19//21/ has assessed all factors and issues that constitute the basis for emission reductions from the project according to the applicable CDM methodology ACM0002 (Version 06) /30/. There was not any methodology deviation applied to this project. Details refer to section 4.1.

3.3 Project Description Deviations

The project was registered under CDM (Reference number: 1311) on 12/02/2008 (7 years*3, renewable). As per Validation opinion on revised monitoring report (Report number BVC/CHINA/MP Change/28/2010, version 01) /19/, according to the registered PDD, the parameters required to be monitored are the electricity exported and imported by the Project and the surface area of full reservoir level. As stated in the registered PDD, a backup diesel generator was installed on site to supply emergency power to start the turbines and generators when the Project is accidentally fully stopped and the connected grid failed. An electric meter was installed to exclusively monitor the electricity generated by the diesel generator. Since the diesel generator was periodically operated only for a few minutes as a routine maintenance procedure sometimes. The emissions due to the diesel generator has been calculated and taken into account in the calculation process for the emission reductions. A request was raised by CDM EB to revise the Monitoring Plan to include the monitoring of the parameter related to the diesel consumption. Therefore, the parameter FC_{diesel} (the quantity of the diesel consumed by the backup diesel generator, measured by the fuel gauge of the diesel generator) was included. The same has been approved by CDM EB on 02/02/2011.

The project was registered under CDM scheme on 12/02/2008 (UNFCCC ID. 1311). By checking UNFCCC website (<https://cdm.unfccc.int/Projects/DB/TUEV-SUED1188225533.57/view?cp=1>), the verification team confirmed that for the project activity, the first CDM crediting period is from 12/02/2008 to 11/02/2015. As per relevant CDM standard, the crediting period of the project could be renewed twice.

Through interviewing with project owner during site visit and checking Operation Log /6/, it is confirmed that the 1st turbine/generator unit started operation on 01/04/2007, which is the project start date according to the requirement of VCS. A deviation was identified for the crediting period of the Project. The project is registered under VCS standard 2007 and completed validation before 19/03/2020. As per VCS requirement, it remains eligible to apply the crediting period requirements under VCS standard 2007 which shall be a maximum of ten years and may be renewed at most twice (theoretically the maximum VCS crediting period is 30 years). As per the issuance record of the project activity from Verra website, it was confirmed the start date of first crediting period is 01/04/2007. Therefore, the first renewable crediting period of the Project is updated from 01/04/2007~11/02/2008 to 01/04/2007~31/03/2017, which lasts for 10 years.

However, as the project is also registered as a CDM project with a seven year twice renewable project crediting period, it is not eligible for VCU issuance beyond 21 years (the ending date is 31/03/2028). Therefore, the first VCS crediting period of the project activity is determined as 01/04/2007 to 31/03/2017. This deviation has no impact on the applicability of the methodology, additionality or the appropriateness of the baseline scenario and meet all appropriate rules and requirements of VCS standard.

The verification team confirmed that the deviations will not lower the accuracy and conservativeness of the monitoring system and the project remains in compliance with VCS Program rules and this deviation has no impact on the applicability of the methodology, additionality or the appropriateness of the baseline scenario and meet all appropriate rules and requirements of VCS standard.

The verification team assessed through visual inspection and document review that all physical features of the project activity including data monitoring, reporting and collecting systems have been implemented in accordance with the revised monitoring plan approved by CDM EB on 02/02/2011 /18/. Details refer to section 4.1.

3.4 Grouped Project

The project was not a grouped project; hence this clause is not applicable.

4 VERIFICATION FINDINGS

This section summarises the findings from the verification of the emission reductions reported for the “Hunan Dongping 72MW Hydropower Project” for the period 01/10/2012 to 31/03/2017.

4.1 Project Implementation Status

Project Implementation in accordance with the registered CDM PDD and revised monitoring plan

The project is a grid-connected hydro power plant, which is located in the middle reaches of Zishui River where is in the vicinity of Minjiawan, Dongping Town, Anhua County, Yiyang City, Hunan Province, P.R.China. The installed capacity of the project is 72 MW, consisting of 4 generator units with unit capacity of 18 MW. The average annual power delivered to the grid by the project is expected to be 271.1GWh. The actual implementation of the project during this verification period was verified in terms of name plate capacities of turbine/generator units and monitoring equipment. The details of turbine/generator units with respect to installation and capacity have been verified to be consistent with description indicated in the registered CDM PDD. The 1st turbine/generator unit started operation on 01/04/2007, while all the turbine/generator units were put into full operation on 31/12/2007, which has been verified by site visit interview, checking Operation Log /6/. The electricity generated by the project activity was supplied to Central China Power Grid (CCPG), which can be confirmed by the Power Purchase Agreement (PPA) signed between the project developer and State Grid Hunan Power Grid Company /3/.

The project start date was identified as 01/04/2007 when the project started operation and began generating GHG emission reductions. The project was registered under VCS standard 2007.

All the monitoring system in the monitoring period is consistent with the revised monitoring plan. The control system at the power plant is automated and assures continuous operation, including monitoring on malfunction of equipment. By checking the daily operation and maintenance records /6/, CTI is able to confirm that no serious malfunction happened and the plant was under a normal operation as expected in this monitoring period.

On-site training for the related procedures including monitoring, recording and reporting was verified to be in place /5/ and their implementation was confirmed by interview with the key operators /31/ and observing the operation.

As part of the site visit, CTI confirms that the project implementation is in accordance with the registered CDM PDD (version 5 dated 10/08/2007) /11/ and revised monitoring plan approved by CDM EB on 02/02/2011 /18/. The verification team confirmed through visual inspection and document review that all physical features of the project activity including data collection systems and

storage systems have been implemented in accordance with registered CDM PDD (version 5 dated 10/08/2007) /11/ and revised monitoring plan approved by CDM EB on 02/02/2011 /18/.

Compliance of monitoring plan with monitoring methodology

CTI is able to confirm that the revised monitoring plan approved by CDM EB on 02/02/2011 /18/ is in accordance with the approved methodology applied by the project activity, i.e. ACM0002 (Version 06).

Compliance of monitoring with the monitoring plan

The monitoring has been carried out in accordance with the revised monitoring plan approved by CDM EB on 02/02/2011 /18/. CTI confirms that all parameters stated in the revised monitoring plan are monitored and reported appropriately. All parameters required to be monitored by the revised monitoring plan as per the monitoring methodology ACM0002 (Version 06) and the management system were assessed during the site visit. The monitoring report lists each parameter required by the revised monitoring plan and the information flow (i.e. from data generation, aggregation, recording, calculation and reporting) for these parameters is provided. The information flow for the each parameter is further verified in the following sections.

Parameters monitored

Electricity supplied to the grid by the project is sent to Hunan Power Grid, which is part of the Central China Power Grid (CCPG). Finally the electricity is supplied to Central China Power Grid (CCPG) of China. According to the revised monitoring plan approved by CDM EB on 02/02/2011 /18/, 4 parameters were monitored for the project, which were:

Electricity supplied to the grid by the project (Electricity Supply)

The project involves two transmission lines (Line 502 and Line 504) that connected the project to the CCPG. 4 bi-directional electricity meters (M1, M2, M3 and M4) were measured continuously, recorded monthly and archived electronically. M3 is the backup meter of main meter M1 while M4 is the backup meter of main meter M2. When main meters are not working, the readings of backup meters will be used. Meter M1 and M3 were installed at the high voltage side of the step-up substation of the project on Line 502 and measures electricity supplied to the grid through the Line 502. Meter M2 and M4 were installed at the high voltage side of the step-up substation of the project on Line 504 and measures electricity supplied to the grid through the Line 504.

By checking the operation log /6/ and interview with project developer during site visit /31/, it is confirmed that during this monitoring period, main meter M1 and M2 are working well and has no malfunction. By checking the Electricity Sales Receipts /8/ and interviewing with project developer during site visit /31/, it is confirmed that the cut-off time was 24:00 on the last day of each month in this monitoring period. At the cut-off time, the staff from project developer read the meter reading of M1 and M2, while staff from the grid company read meter in the grid side (the meter belongs to the grid and the information are not available). The project developer will afterwards form Monthly Reading Records (MRRs) /7/ while the grid company transcribes the data into Electricity Sales Receipts /8/.

Electricity Supply was determined as the conservative data between MRRs /7/ and Electricity Sales Receipts /8/, which will be used to calculate the emission reductions.

Electricity imported from the grid by the project (Achieved Electricity)

The project involves two transmission lines (Line 502 and Line 504) that connected the project to the CCPG. 4 bi-directional electricity meters (M1, M2, M3 and M4) were measured continuously, recorded monthly and archived electronically. M3 is the backup meter of main meter M1 while M4 is the backup meter of main meter M2. When main meters are not working, the readings of backup meters will be used. Meter M1 and M3 were installed at the high voltage side of the step-up substation of the project on Line 502 and measures electricity supplied to the grid through the Line 502. Meter M2 and M4 were installed at the high voltage side of the step-up substation of the project on Line 504 and measures electricity supplied to the grid through the Line 504.

By checking the operation log /6/ and interview with project developer during site visit /31/, it is confirmed that during this monitoring period, main meter M1 and M2 are working well and has no malfunction. By checking the Electricity Sales Receipts /8/ and interviewing with project developer during site visit /31/, it is confirmed that the cut-off time was 24:00 on the last day of each month in this monitoring period. At the cut-off time, the staff from project developer read the meter reading of M1 and M2, while staff from the grid company read meter in the grid side (the meter belongs to the grid and the information are not available). The project developer will afterwards form Monthly Reading Records (MRRs) /7/ while the grid company transcribes the data into Electricity Receipts. Achieved Electricity was determined as the conservative data between MRRs /7/ and Electricity Sales Receipts, which will be used to calculate the emission reductions. By checking the operation log /6/, the verification team confirmed that the hydro turbines are under normal operation during this monitoring period. The generated power can be used for operation of the power plant and no power is needed to import from power grid. By checking Monthly Reading Records (MRRs) /7/, it is confirmed the amount of electricity imported from the grid by the project during this monitoring period is 0. The same has been confirmed by checking statement from local power grid company /25/.

The surface area of full reservoir level of the project (Surface area of full reservoir level)

As per the revised monitoring plan approved by CDM EB on 02/02/2011 /18/, this parameter is monitored at the start of the project. By checking measurement result provided by a qualified third party - Hunan Water Resource & Hydropower Investigation & Design Institute /17//22/ on 01/04/2007, it is confirmed the surface area of full reservoir level of the project is 2,230,000 m² at the start of the project.

The quantity of diesel consumed by the backup diesel generator (FC_{diesel})

The diesel will be consumed for supply emergency power to start the turbines and generators when the power plant is accidentally fully stopped and the electricity supply from the connected grid is failed. The quantity and time of the added diesel were recorded by the project owner and the oil purchasing invoice is used to crosscheck. The electricity generated by diesel generator will be monitored by meter

M5. The electricity measured by M5 was only used as an indirect double-check of the quantity of diesel consumed by the backup diesel generator. By checking the operation log /6/ and Monthly Reading Records (MRRs) /7/ and interviewing with project owner /31/ during site visit, it is confirmed that diesel generator were not used and the quantity of diesel consumed by the backup diesel generator is 0.

Monitoring equipment and calibration

All the meters have been calibrated periodically as per the relevant industrial standard by the qualified third party to ensure the monitoring equipments' accuracy and in good conditions. Due to regular replacement, all the electricity meters were replaced during this monitoring period. By checking Meter Change Records /21/, M1 and M3 were replaced on 05/10/2012, and M2 and M4 were replaced 25/11/2012. The relevant information of meter's calibration is listed as below.

	Year	Serial Number	Accuracy	Type	Calibration Date
M1	01/10/2012~05/10/2012	210328079	0.2s	MK6E	08/06/2012
	05/10/2012~31/03/2017	217503487	0.2s	MK6E	05/10/2012 02/10/2013 28/09/2014 25/09/2015 21/09/2016
M2	01/10/2012~25/11/2012	03219617	0.2s	AINRTAL-X	21/03/2012
	25/11/2012~31/03/2017	214084395	0.2s	MK6E	25/11/2012 20/11/2013 17/11/2014 13/11/2015 11/11/2016
M3	01/10/2012~05/10/2012	210328080	0.2s	MK6E	08/06/2012
	05/10/2012~31/03/2017	217503488	0.2s	MK6E	05/10/2012 03/10/2013 28/09/2014 25/09/2015 21/09/2016
M4	01/10/2012~25/11/2012	03219618	0.2s	AINRTAL-X	21/03/2012
	25/11/2012~31/03/2017	214084394	0.2s	MK6E	25/11/2012 20/11/2013 17/11/2014 13/11/2015 11/11/2016
M5	01/10/2012~31/03/2017	00325174	0.5s	DTSD51	16/02/2012 06/02/2013 02/02/2014 28/01/2015 26/01/2016 20/01/2017

All electricity meters were calibrated by State Grid Hunan Electric Power Company Metrology Center. Calibration records and accreditation certificates /14//15/ have been verified by the verification team. The accuracy of meter is comply with that in the revised monitoring plan approved by CDM EB on 02/02/2011 /18/. By checking the industrial metering configuration standard “Technical Administrative Code of Electric Energy Metering” /16/, CTI can confirm that the accuracy level of meter meet the requirement stipulated in this standard. CTI can thus confirm that the accuracy of the meter is in line with the revised monitoring plan approved by CDM EB on 02/02/2011 /18/ and relevant industry standard.

In the monitoring plan of the revised monitoring plan approved by CDM EB on 02/02/2011 /18/, it is stated that the meter will be calibrated and checked annually for accuracy. By checking the calibration reports, CTI found the calibration frequency of electricity meter is annual, which is in line with the calibrating standard “Technical Administrative Code of Electric Energy Metering” /16/. Hence, CTI can confirm that the meter’s calibration frequency is in line with the monitoring plan of the revised monitoring plan approved by CDM EB on 02/02/2011 /18/ and relevant industry standard, and the calibrations are verified to be valid for the whole reporting period.

Data management and control

The project developer is responsible for operation and routine maintenance of power plant under the project activity. The quality assurance and quality control procedures have been addressed in the VER project management and monitoring manual /4/, including the organization structure with the responsibilities, personnel competencies, monitoring procedures and monitoring management. By interview with the staff /31/ and check records /4/-/6/ during on-site visit, it can be confirmed that the monitoring management system is implemented following the project management and monitoring manual.

All monitoring devices have been calibrated and maintained periodically to ensure the accuracy of measurement. Calibration records of instruments used in measurements were made available during the verification visit and found to be valid for the entire period of the verification. Competence and training records of in-plant personnel engaged in measurement of plant parameters were presented during verification and found to be in order.

By checking the revised monitoring plan approved by CDM EB on 02/02/2011, China’s National Plan on Implementation of the 2030 Agenda for Sustainable Development and 17 SDGs defined by UNDP, and interviewing with stakeholders during site visit, the verification team confirmed that the project would contribute to sustainable development in as below:

- SDG 13: Reducing greenhouse gas emissions compared to a business-as-usual scenario;
- SDG 7: Providing clean and renewable energy source and displacing the power generation of fossil fuel power plants, reducing pollution emissions caused by coal burning significantly, thus mitigating the air pollution and its adverse impacts on human health, promoting sustainable economic development in local area;

- SDG 8: Providing direct and indirect employment opportunities during construction and operation period, which promotes sustained, inclusive and sustainable economic growth, full and productive employment and decent work for local residents.

The technical parameters have been verified with the nameplates /9/ and Technical Agreement of the hydro turbines and generators /10/ as below:

	Model	Capacity	Rated flow rate
Turbine	GZ(B113)-WP/620	18.56MW	320.2 m3/s
Generator	SFWG18-76/6860	18MW	10.5kV

The verification team confirmed that during this monitoring period there is no proposed or actual change to the registered CDM PDD (version 5 dated 10/08/2007) and the revised monitoring plan approved by CDM EB on 02/02/2011. All required equipments and procedures are available and implemented in an appropriate manner. All necessary monitoring instruments are installed. All required instruments including standby and operating procedures for the same have been implemented in an appropriate manner. The project is completely operational and the same has been confirmed on-site. Neither mistakes nor malfunction on meters have been observed during this monitoring period.

4.2 Safeguards

4.2.1 No Net Harm

By checking the EIA summary and conclusion provided in the registered CDM PDD (version 5 dated 10/08/2007), it is confirmed that hydro power is green power and the impact caused by hydro power on the surrounding ecosystem and residents, wastewater, solid waste and atmosphere etc. is very little, there would be no net harm caused due to the project activity. Also, the EIA of the project are approved by the government.

Also, no potential environment or social economic matter was found during the site visit. The project is renewable energy project and thus no net harm observed in air or water quality on-site.

4.2.2 Local Stakeholder Consultation

As per the registered CDM PDD (version 5 dated 10/08/2007), the local stakeholder's consultation was conducted in June 2004 and Dec. 2006. During the stakeholder's consultation, a one page questionnaire which was designed to be easily filled in Were distributed. In total 221 participants (50 in June 2004 and 171 in Dec. 2006) filled in the questionnaires included local residents and members of the local government and authorities. The opinions expressed by the stakeholders were recorded and are available on request.

The survey showed that the project receives strong support from the local community. They all believe the project will provide job opportunities and promote local economic development and agree with the project development and construction.

In this monitoring period, communications with local stakeholders were carried out at periodic intervals. Through interviewing with staff from local environmental protection bureau and local residents during the site visit, it is confirmed by the verification team that during this monitoring period, on one hand, the project owner carried out questionnaire survey for the local stakeholders to collect the relevant comments and suggestions in October 2012, August 2013, June 2014, May 2015, April 2016 and March 2017 /24/; on the other hand, local authority has conducted spot checks on the implementation of the project periodically as per the request from the local governments' regulations. Also, through interviewing with staff from local environmental protection bureau and local residents during the site visit, It is confirmed by the verification team that there were no negative comments and issues from the local stakeholders during this monitoring period and the project passed all the periodic spot checks by local government.

All such conclusion has been verified through site visit, check registered CDM PDD (version 5 dated 10/08/2007) and questionnaires, as well as interviewing with local stakeholders and staff from local Environmental Protection Bureau.

4.3 AFOLU-Specific Safeguards

For non-AFOLU projects, this section is not required.

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

CTI confirms that appropriate methods and formulae for calculating baseline emissions, project emissions and leakage have been followed, and the assumptions, emission factors and default values that are applied in the calculation have been justified.

According to the applied methodology, the emission reductions are determined as the difference between the baseline emissions, project emissions and leakage:

$$ER_y = BE_y - PE_y$$

Baseline emissions

Baseline reductions are determined as multiplying the electricity supplied by the project activity to the grid (EG_y) by the validated ex-ante fixed baseline emissions factor (EF_y).

$$BE_y = EG_y \times EF_y$$

Baseline emissions factor (EF_y)

The parameters including $F_{i,j,y}$, NCV_i , $EF_{CO_2,i}$, $OXID_i$, Installed Capacity, $GEN_{j,y}$, Surface area of full reservoir level, Electricity Generation, Captive Power Ratio, $COEF_i$, λ_i , EF_{OM} , EF_{BM} , EF_{CM} is monitored ex-ante in the registered CDM PDD (version 5 dated 10/08/2007). In this monitoring report, all ex-ante parameters have been included and confirmed to be consistent with that in the registered CDM PDD. EF_y (i.e. EF_{CM}) is determined ex-ante by China DNA, which is comply with the registered CDM PDD (version 5 dated 10/08/2007). EF_y is the baseline emissions factor that has been verified ex-ante in the validation stage in the registered CDM PDD (version 5 dated 10/08/2007) as 0.940069 tCO₂e/MWh.

The electricity supplied by the project activity to the grid (EG_y)

EG_y = Electricity Supply - Achieved Electricity

Electricity Supply and Achieved Electricity are determined as the conservative value between Electricity sales receipts and Monthly Reading Records (MRRs). The most conservative values have been applied to calculate the electricity supplied by the project activity to the grid.

Period		Electricity Supply			Achieved Electricity	EG _y
		Monthly Reading Records (10000 kWh)	Electricity Data in Sales Receipt (10000 kWh)	Conservative Value (10000 kWh)	Monthly Reading Records (10000 kWh)	
		A	B	C = min (A,B)	D	
2012	01/10~31/10	930.8904	918.8420	918.8420	0	918.8420
	01/11~30/11	1,784.2836	1,729.8840	1,729.8840	0	1,729.8840
	01/11~31/12	1,187.5776	1,163.1520	1,163.1520	0	1,163.1520
	Subtotal	3,902.7516	3,811.8780	3,811.8780	0	3,811.8780
2013	01/01~31/01	2,402.2290	2,332.8260	2,332.8260	0	2,332.8260
	01/02~28/02	2,216.5580	2,152.7560	2,152.7560	0	2,152.7560
	01/03~31/03	1,975.0368	1,914.0790	1,914.0790	0	1,914.0790
	01/04~30/04	3,384.4800	3,247.0720	3,247.0720	0	3,247.0720
	01/05~31/05	3,956.9112	3,775.9850	3,775.9850	0	3,775.9850
	01/06~30/06	1,739.0604	1,685.6380	1,685.6380	0	1,685.6380
	01/07~31/07	1,477.0800	1,443.0080	1,443.0080	0	1,443.0080
	01/08~31/08	1,383.7032	1,349.8120	1,349.8120	0	1,349.8120
	01/09~30/09	1,467.2988	1,432.3690	1,432.3690	0	1,432.3690
	01/10~31/10	1,312.0932	1,289.7330	1,289.7330	0	1,289.7330
	01/11~30/11	574.7016	566.8390	566.8390	0	566.8390
	01/12~31/12	853.1952	836.9160	836.9160	0	836.9160
	Subtotal	22,742.3474	22,027.0330	22,027.0330	0	22,027.0330
2014	01/01~31/01	2,078.1680	2,030.8280	2,030.8280	0	2,030.8280
	01/02~28/02	1,753.8450	1,702.9160	1,702.9160	0	1,702.9160
	01/03~31/03	1,006.0908	986.2470	986.2470	0	986.2470
	01/04~30/04	3,478.3320	3,340.1600	3,340.1600	0	3,340.1600
	01/05~31/05	3,923.2776	3,747.5270	3,747.5270	0	3,747.5270
	01/06~30/06	4,594.2600	4,392.2970	4,392.2970	0	4,392.2970
	01/07~31/07	3,238.4616	3,105.4330	3,105.4330	0	3,105.4330
	01/08~31/08	2,651.8404	2,551.2930	2,551.2930	0	2,551.2930
	01/09~30/09	1,785.8016	1,741.0350	1,741.0350	0	1,741.0350
	01/10~31/10	1,548.2544	1,520.1030	1,520.1030	0	1,520.1030
	01/11~30/11	2,767.3681	2,674.9340	2,674.9340	0	2,674.9340
	01/12~31/12	1,346.2007	1,321.2210	1,321.2210	0	1,321.2210
	Subtotal	30,171.9002	29,113.9940	29,113.9940	0	29,113.9940
2015	01/01~31/01	579.3090	571.5650	571.5650	0	571.5650
	01/02~28/02	554.2280	546.3650	546.3650	0	546.3650
	01/03~31/03	1,326.6132	1,300.1200	1,300.1200	0	1,300.1200
	01/04~30/04	1,956.6888	1,903.7510	1,903.7510	0	1,903.7510
	01/05~31/05	2,499.8292	2,411.9580	2,411.9580	0	2,411.9580
	01/06~30/06	3,648.7572	3,486.0950	3,486.0950	0	3,486.0950
	01/07~31/07	1,961.6652	1,892.4830	1,892.4830	0	1,892.4830

	01/08~31/08	2,635.5516	2,528.9280	2,528.9280	0	2,528.9280
	01/09~30/09	2,493.7176	2,415.7370	2,415.7370	0	2,415.7370
	01/10~31/10	2,465.4828	2,389.5460	2,389.5460	0	2,389.5460
	01/11~30/11	2,620.3320	2,522.8360	2,522.8360	0	2,522.8360
	01/12~31/12	2,419.0584	2,334.4740	2,334.4740	0	2,334.4740
	Subtotal	25,161.2330	24,303.8580	24,303.8580	0	24,303.8580
2016	01/01~31/01	2,748.9924	2,680.8390	2,680.8390	0	2,680.8390
	01/02~29/02	2,958.6350	2,911.8390	2,911.8390	0	2,911.8390
	01/03~31/03	2,877.8508	2,770.6250	2,770.6250	0	2,770.6250
	01/04~30/04	3,514.5264	3,358.8110	3,358.8110	0	3,358.8110
	01/05~31/05	3,738.9924	3,582.2040	3,582.2040	0	3,582.2040
	01/06~30/06	2,811.6264	2,773.2160	2,773.2160	0	2,773.2160
	01/07~31/07	2,690.2128	2,646.4900	2,646.4900	0	2,646.4900
	01/08~31/08	1,227.0984	1,211.0620	1,211.0620	0	1,211.0620
	01/09~30/09	980.0057	975.9080	975.9080	0	975.9080
	01/10~31/10	754.3668	748.6390	748.6390	0	748.6390
	01/11~30/11	741.2196	735.1550	735.1550	0	735.1550
	01/12~31/12	647.5260	643.1110	643.1110	0	643.1110
	Subtotal	25,691.0527	25,037.8990	25,037.8990	0	25,037.8990
2017	01/01~31/01	2,662.6908	2,634.6190	2,634.6190	0	2,634.6190
	01/02~28/02	2,099.4734	2,084.3690	2,084.3690	0	2,084.3690
	01/03~31/03	2,932.4328	2,886.1290	2,886.1290	0	2,886.1290
	Subtotal	7,694.5970	7,605.1170	7,605.1170	0	7,605.1170
Total		115,363.8819	111,899.7790	111,899.7790	0	111,899.7790

Note: by checking the operation log /6/, the verification team confirmed that the hydro turbines are under normal operation during this monitoring period. The generated power can be used for operation of the power plant and no power is needed to import from power grid. By checking Monthly Reading Records (MRRs) /7/, it is confirmed the amount of electricity imported from the grid by the project during this monitoring period is 0. The same has been confirmed by checking statement from local power grid company /25/.

Hence, the corresponding baseline emission reductions are calculated as:

Period	EGy		EFy	BE _y
	10000kWh	MWh	tCO ₂ /MWh	tCO ₂
01/10/2012~31/12/2012	3,811.8780	3,8118.780	0.940069	35,834
01/01/2013~31/12/2013	22,027.0330	22,0270.330		207,069
01/01/2014~31/12/2014	29,113.9940	29,1139.940		273,691
01/01/2015~31/12/2015	24,303.8580	24,3038.580		228,473
01/01/2016~31/12/2016	25,037.8990	25,0378.990		235,373
01/01/2017~31/03/2017	7,605.1170	7,6051.170		71,493
Total	111,899.7790	111,8997.790	/	1,051,933

Project emissions

According to FSR and by checking nameplate of hydropower turbine and generator during site visit, it is confirmed that the installed capacity of the project (Cap_{PJ}) is 72,000,000W. By checking measurement result provided by a qualified third party - Hunan Water Resource & Hydropower Investigation & Design Institute /17//22/ on 01/04/2007, it is confirmed the surface area of full reservoir level of the project is 2,230,000 m² at the start of the project.

Thus the power density of the project is calculated as $(72,000,000 - 0) / (2,230,000 - 0) = 32 \text{ W/m}^2$, greater than 10W/m². Therefore, based on ACM0002, Version 06, the project emission (PE_y) caused by submerging is 0 tCO_{2e}.

Furthermore, as there is a backup diesel generator onsite, the emissions caused by the generator needs to be calculated, in accordance with the revised monitoring plan approved by CDM EB on 02/02/2011 and “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion” (version 02) based on the diesel consumption, the project emissions are the emission caused by the diesel consumed by the Project and calculated as:

$$PE_y = FC_{\text{diesel}} \times COEF \times p = FC_{\text{diesel}} \times NCV_{\text{diesel}} \times EF_{\text{diesel}} \times p$$

Where,

FC_{diesel} is the quantity of diesel combusted during this monitoring period;

NCV_{diesel} is the net calorific value of diesel, sourced from the latest version of China Energy Statistical Yearbook 2011, which is 42,652 KJ/kg;

$EF_{CO_2, diesel}$ is sourced from local or national data (unavailable) or the IPCC default value (74,800 kg/TJ) at the upper limit of the uncertainty at a 95% confidence interval as provided in table 1.4 of Chapter 1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories;

ρ is the weighted average density of the diesel (Unit: g/ml), 0.85g/ml is determined in the revised monitoring plan approved by CDM EB on 02/02/2011.

Therefore, $PE_{diesel} = FC_{diesel} \times NCV_{diesel} \times EF_{diesel} \times \rho$

By checking the operation log /6/ and Monthly Reading Records (MRRs) /7/ and interviewing with project owner /31/ during site visit, it is confirmed that diesel generator were not used and the quantity of diesel consumed by the backup diesel generator is 0.

Therefore, $PE_{diesel} = 0 \text{ tCO}_2\text{e}$.

In conclusion, PE_y of this project activity during this monitoring period is 0 tCO₂e.

Leakages

Leakage does not need to be accounted for this project as per the registered CDM PDD (version 5 dated 10/08/2007).

Emission reductions

The emission reductions for this monitoring period was calculated as:

Monitoring period	GHG emission reductions or removals (tCO ₂ e)
01/10/2012~31/12/2012	35,834
01/01/2013~31/12/2013	207,069
01/01/2014~31/12/2014	273,691
01/01/2015~31/12/2015	228,473
01/01/2016~31/12/2016	235,373
01/01/2017~31/03/2017	71,493
Total ERs claimed (in 1643 days)	1,051,933

Comparison of actual emission reductions or net anthropogenic GHG removals by sinks with estimates in validated VCS PD

The emission reductions claimed are 1,051,933 tCO₂e in this monitoring period (i.e. 1,643 days). As per the registered PD (version 5 dated 10/08/2007), the estimated annual emission reduction is

253,336 tCO₂e. Therefore, the estimated emission reduction in the monitoring period (covering 1,643 days) is 1,140,359 tCO₂e (calculated as 253,336 tCO₂e * 1643 days / 365 days).

Compared with expected emission reductions 1,140,359 tCO₂e, the reported emission reductions in this monitoring period are 7.75% lower than the expected, which due to the reasonable fluctuation of rainfall and water flow.

CTI is able to confirm that the actual power supply and also emission reductions reported in this monitoring period are reasonable and appropriate. CTI verified the input data for calculating emission reductions and the calculating process, and confirmed the result were complete and transparent.

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

All necessary documentations are collected, referenced and aggregated, which is easily accessible in hard-copy or electronic format. Measurements are performed by calibrated equipment, and the key data can also be cross-checked via other sources, such as records, receipts and inventory data. No assumptions are used that have any material influence on reported emission reductions.

CTI concludes that during this monitoring period, the evidences for determination of emission reductions are sufficient and reasonable, and the calculation of emission reductions is reliable.

4.6 Non-Permanence Risk Analysis

The project is not AFOLU project, and thus non-permanence risk analysis is not applicable for the project.

5 VERIFICATION CONCLUSION

Shenzhen CTI International Certification Co., Ltd (CTI) has performed the verification of the emission reductions that have been reported for the project activity “Hunan Dongping 72MW Hydropower Project” in China (VCS Project ID: 30) for the period 01/10/2012 to 31/03/2017.

The verification is based on the baseline and monitoring methodology ACM0002 (Version 06), registered CDM PDD (version 5 dated 10/08/2007) and the monitoring report (version 2.1 dated 16/08/2022). The verification consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification and certification report.

The project proponents are responsible for the collection, calculation and determination of the GHG data in accordance with the monitoring plan and the reporting of GHG emission reductions on the basis set out within the project monitoring report.

Our verification approach was based on the requirements as defined under the applicable VCS Version 4.1 and relevant UNFCCC requirements. Our approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. The verification can confirm that:

- the project is implemented and operated as per the registered CDM PDD;
- the revised monitoring plan approved by CDM EB on 02/02/2011 is as per the applied methodology;
- the monitoring complies with the revised monitoring plan approved by CDM EB on 02/02/2011;
- the monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable VCS Version 4.1 and CDM requirements;
- the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately;
- the monitoring system is in place and generates GHG emission reductions data;
- the GHG emission reductions are calculated without material misstatements.

It is CTI's responsibility to provide an independent verification statement on the reported GHG emission reductions for the project. Based on an understanding of the risks associated with reporting of GHG emission 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 GHG emission reductions are fairly stated.

CTI does not assume any responsibility towards the issuance and utilization of the VCUs hereby verified and certified. Request for issuance of VCUs shall be made by the project proponent to an approved VCS Program Registry based on the requirements set out under the most recent version of the VCS Program Guidelines clause on VCS Registration.

The verification of reported emission reductions is based on the information made available to CTI and the engagement conditions detailed in this report. CTI cannot be held liable by any party for decisions made or not made based on this report.

In CTI's opinion the GHG emissions reductions of the "Hunan Dongping 72MW Hydropower Project" for the period 01/10/2012 to 31/03/2017 are fairly stated in the monitoring report (version 2.1 dated 16/08/2022). The GHG emission reductions were calculated correctly on the basis of the approved methodology ACM0002 (Version 06) and the monitoring plan contained in the renewed CDM PDD (version 06 dated 07/08/2014).

CTI can confirm that the GHG emission reductions are calculated without material misstatements. Based on the evidence and information that are considered necessary to guarantee that GHG emission reductions are appropriately calculated, CTI confirms the following statement:

Verification period: From 01/10/2012 to 31/03/2017

Verified GHG emission reductions and removals in the above verification period:

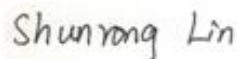
Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
01/10/2012~31/12/2012	35,834	0	0	35,834
01/01/2013~31/12/2013	207,069	0	0	207,069
01/01/2014~31/12/2014	273,691	0	0	273,691
01/01/2015~31/12/2015	228,473	0	0	228,473
01/01/2016~31/12/2016	235,373	0	0	235,373
01/01/2017~31/03/2017	71,493	0	0	71,493
Total	1,051,933	0	0	1,051,933



Ms. Wang Guolian

Team Leader

16/08/2022



Ms. Lin Shunrong

Technical Reviewer

16/08/2022

APPENDIX A: ABBREVIATIONS

CAR	Corrective Action Request
CER	Certified Emission Reduction(s)
CL	Clarification request
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
CTI	Shenzhen CTI International Certification Co., Ltd
DOE	Designated Operational Entity
EF	Emission Factor
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
MP	Monitoring Period
MR	Monitoring Report
CCPG	Central China Power Grid
PD	Project Description
PP	Project Proponent
VCS	Verified Carbon Standard
VCU	Verified Carbon Unit

APPENDIX B: REFERENCES

Documentation used to verify the information provided by the project proponents

- /1/ Climate Bridge (Shanghai) Ltd.: VER/VCU Monitoring Report for Hunan Dongping 72MW Hydropower Project, version 1.0 dated 22/09/2021, version 2.0 dated 08/11/2021, version 2.1 dated 16/08/2022.
- /2/ Climate Bridge (Shanghai) Ltd.: Emission reduction calculation spreadsheet for Hunan Dongping 72MW Hydropower Project
- /3/ Wuling Power Corporation, Ltd. and State Grid Hunan Power Grid Company: Power Purchase Agreement for Hunan Dongping 72MW Hydropower Project.
- /4/ Wuling Power Corporation, Ltd.: VER monitoring manual and management procedure.
- /5/ Wuling Power Corporation, Ltd.: Records of training for on-site staff.
- /6/ Wuling Power Corporation, Ltd.: Operation log, from 01/10/2012 to 31/03/2017.
- /7/ Wuling Power Corporation, Ltd.: Monthly reading records (MMRs) of Hunan Dongping 72MW Hydropower Project from 01/10/2012 to 31/03/2017.
- /8/ State Grid Hunan Power Grid Company: Electricity Sales Receipts from 01/10/2012 to 31/03/2017.
- /9/ Wuling Power Corporation, Ltd.: nameplate of the equipment
- /10/ Wuling Power Corporation, Ltd.: Technical Agreement of the hydro turbines and generators
- /11/ Registered CDM PDD version 06 dated 07/08/2014.
- /12/ TÜV SÜD Industrie Service GmbH: Validation Report of registered CDM PDD, version 3 dated 05/02/2008 .
- /13/ Bureau Veritas Certification Holding SAS: CDM Monitoring Report for Hunan Dongping 72MW Hydropower Project of previous CDM monitoring period (01/07/2012-30/09/2012), version 01 dated 31/10/2012.
- /14/ Hunan Provincial Quality and Technical Supervision Bureau: Accreditation certificate of State Grid Hunan Electric Power Company Metrology Center valid till 18/07/2017.
- /15/ State Grid Hunan Electric Power Company Metrology Center: Calibration certificates for meters covering this monitoring period.
- /16/ State Economic and Trade Commission: Technical administrative code of electric energy

- metering (DL/T 448-2016).
- /17/ Hunan Water Resource & Hydropower Investigation & Design Institute: Measurement result of the surface area of full reservoir level of the project issued on 01/04/2007
 - /18/ Revised monitoring plan approved by CDM EB on 02/02/2011
 - /19/ Bureau Veritas Certification Holding SAS: Validation opinion on revised monitoring report (Report number BVC/CHINA/MP Change/28/2010, version 01)
 - /20/ Renewal CDM PDD (version 06 dated 07/08/2014)
 - /21/ Bureau Veritas Certification Holding SAS: Validation Report of renewal CDM PDD (version 01 dated 01/12/2014)
 - /22/ State Bureau of Surveying and Mapping of the People's Republic of China: Qualification of Hunan Water Resource & Hydropower Investigation & Design Institute
 - /23/ Wuling Power Corporation, Ltd.: Meter Change Records
 - /24/ Wuling Power Corporation, Ltd.: Questionnaires for stakeholder consultation in October 2012, August 2013, June 2014, May 2015, April 2016 and March 2017
 - /25/ Statement about Electricity imported from the grid by the project of this monitoring period issued by local power grid company

Methodologies, tools and other guidance

- /26/ Verified Carbon Standard: VCS Standard, version 4.1.
- /27/ Verified Carbon Standard: VCS Program Guide, version 4.0.
- /28/ Verified Carbon Standard: VCS Sectoral Scopes
- /29/ Verified Carbon Standard: Registration and Issuance Process, version 4.0.
- /30/ UNFCCC EB: Approved methodology, ACM0002, Version 06

Persons interviewed

- /31/ Mr. Zhang Shun, Project Director, Wuling Power Corporation, Ltd.
- Mr. Yu Fengyun, O&M staff, Wuling Power Corporation, Ltd.
- Mr. Fang Xuanyong, O&M staff, Wuling Power Corporation, Ltd.
- Mr. Duan Luhang, O&M staff, Wuling Power Corporation, Ltd.
- Mr. Yan Bo, Director, Local Environmental Protection Bureau

Mr. Lin Yungao, Villager, local resident

Mr. Wang Xiuzhi, Villager, local resident

Mr. Ye Zongpei, Climate Bridge (Shanghai) Ltd.

APPENDIX C: CORRECTIVE ACTION REQUESTS, CLARIFICATION REQUESTS AND FORWARD ACTION REQUESTS

Table 1: Corrective Action Requests

CAR ID	Corrective Action Request	Response by Project Proponent	Verification Team Assessment
NA	NA	NA	NA

Table 2: Clarification Requests

CL ID	Clarification Request	Response by Project Proponent	Verification Team Assessment
01	By checking the MR (version 1.0 dated 22/09/2021), the verification team found that the 1st turbine/generator unit started operation on 30/04/2007, while the project start date and start date of VCS crediting period is 01/04/2007, not the same as the operation start date. PP is request to clarify the reason.	According to VCS's issuance record of this project, the crediting period start date is 01/04/2007.	By checking the issuance record from the Verra Website, it was confirmed that the start date of first crediting period is 01/04/2007. Therefore, CL 01 was closed.

Table 3: Forward Action Requests

FAR ID	Forward Action Request	Response by Project Proponent	Verification Team Assessment
NA	NA	NA	NA

