

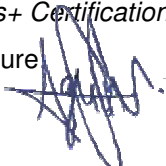


**Verification and certification report form for  
CDM project activities  
(Version 04.0)**

*Complete this form in accordance with the instructions attached at the end of this form.*

**BASIC INFORMATION**

<b>Title and UNFCCC reference number of the project activity</b>	Hunan Zhugaotan Hydropower Project (UNFCCC reference number: 4713)		
<b>Scale of the project activity</b>	<input checked="" type="checkbox"/> Large-scale <input type="checkbox"/> Small-scale		
<b>Version number of the verification and certification report</b>	01.0		
<b>Completion date of the verification and certification report</b>	11/06/2021		
<b>Monitoring period number and duration of this monitoring period</b>	The 2 <sup>nd</sup> monitoring period: 01/01/2013-24/05/2014		
<b>Version number of the monitoring report to which this report applies</b>	02		
<b>Crediting period of the project activity corresponding to this monitoring period</b>	The fixed crediting period: 01/06/2011-31/05/2021		
<b>Project participants</b>	The project owner: Huayuan ChunJiang Power Generation Co., Ltd. (China)		
<b>Host Party</b>	China		
<b>Applied methodologies and standardized baselines</b>	Energy industries (renewable - / non-renewable sources) ACM0002 Consolidated baseline methodology for grid-connected electricity generation from renewable sources (Version 11.0)		
<b>Mandatory sectoral scopes</b>	1: Energy industries (renewable - / non-renewable sources)		
<b>Conditional sectoral scopes, if applicable</b>	Not applicable		
<b>Estimated amount of GHG emission reductions or GHG removals for this monitoring duration in the registered PDD</b>	133,597 tCO <sub>2</sub> e		
<b>Certified amount of GHG emission reductions or GHG removals for this monitoring period</b>	Amount before 1 January 2013	Amount from 1 January 2013 until 31 December 2020	Amount from 1 January 2021
	0 tCO <sub>2</sub> e	95,790 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e
<b>Name and UNFCCC reference number of the DOE</b>	LGAI Technological Center, S.A. (Applus+ Certification) UNFCCC Ref. No.: E-0032		

<b>Name, position and signature of the approver of the verification and certification report</b>	<p>Mr. Agustín Calle de Miguel</p> <p><i>Applus+ Certification CDM Technical Manager</i></p> <p>Signature </p>
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**SECTION A. Executive summary**

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LGAI Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by Huayuan ChunJiang Power Generation Co., Ltd. to perform the 2<sup>nd</sup> periodical verification of Hunan Zhugaotan Hydropower Project (UNFCCC Ref. No. 4713) applying the methodology ACM0002 version 11.0 under the requirement of CDM validation and verification standard for project activities version 02.0. The management of Huayuan ChunJiang Power Generation Co., Ltd. is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions.

A desk review and follow up have been conducted to verify the data submitted in the monitoring report. Applus+ Certification confirms the following has been reviewed:

- (a) The registered PDD, including the monitoring plan and the corresponding validation report;
- (b) Monitoring reports of previous monitoring periods and corresponding verification reports (if applicable);
- (c) Monitoring report of this monitoring period;
- (d) The applied monitoring methodology;
- (e) Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board;
- (f) All information and references relevant to the project activity's resulting in emission reductions.

Hunan Zhugaotan Hydropower Project is a newly-built hydropower project. The purpose of the project is to generate electricity by using hydro resources to alleviate electricity shortage in Central area of China. The project activity will achieve greenhouse gas (GHG) emission reductions by avoiding GHG emissions from the electricity generation of fossil fuel-fired power plants in Central China Power Grid (CCPG) which is dominant of fuel-fired power plants. The total installed capacity of the project is 33 MW involves the installation and operation of 3 sets of hydropower turbine generator with 11 MW each. The project started construction on 09/10/2007 and started fully operation on 15/03/2012, the commissioning date for the first generator was 08/10/2011.

Applus+ Certification confirms that the project is implemented in accordance with the validated and registered PDD. The monitoring plan complies with the applied methodology ACM0002 version 11.0 and the monitoring has been carried out in accordance with the monitoring plan. The monitoring system is in place and the emission reductions are calculated without material misstatements. Our opinion relates to the projects GHG emissions and the resulting GHG emission reductions reported and related to the valid and registered project baseline and monitoring and its associated documents. Based on the information reviewed and evaluated Applus+ Certification confirms that the implementation of the project has resulted in 95,790 tCO<sub>2</sub>e emission reductions during period 01/01/2013-24/05/2014.

**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 DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Verification findings
1.	Lead Auditor / Technical Expert	EI	Xue	Denny	Applus+ Certification	x	x	x	x

**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 DOE or outsourced entity)
1.	Technical reviewer	EI	Shen	Simon	Applus+ Certification
2.	Approver	IR	Calle de Miguel	Agustín	Applus+ Certification

**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.	N.A.			

**C.2. Consideration of materiality in conducting the verification**

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Not applicable.

**SECTION D. Means of verification****D.1. Desk/document review**

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The Monitoring Report version 01 dated 08/05/2021 submitted by the PP was made publicly available on the UNFCCC website before the verification activities started. The published MR was assessed based on all the relevant documents. The aim of the assessment in the desk review was to:

- verify the completeness of the data and the information presented in the MR;
- check the compliance of the MR with respect to the monitoring plan depicted in the registered PDD and verify that the applied methodology was carried out. Particular attention to the frequency of measurements, the quality of the metering equipment including calibration requirements, and the quality assurance and quality control procedures was paid;
- evaluate the data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.

A complete list of documents reviewed is available in Appendix 3 of this report.

**D.2. On-site inspection**

Duration of on-site inspection: 08/06/2021				
No.	Activity performed on-site	Site location	Date	Team member
1.	<ul style="list-style-type: none"> <li>- confirm the implementation and operation of the project;</li> <li>- review the data flow for generating, aggregating and reporting the monitoring parameters;</li> <li>- confirm the correct implementation of procedures for operations and data collection;</li> <li>- cross-check the information provided in the MR documentation with other sources;</li> <li>- review the calculations and assumptions used to obtain the GHG data and ER;</li> <li>- check the monitoring equipment against the requirements of the PDD and the approved methodology, including calibrations, maintenance, etc.;</li> <li>- identify if the quality control and quality assurance procedures are in place to prevent or correct errors or omissions in the reported parameters.</li> </ul>	Huayuan Town, Huayuan County, Western Hunan Autonomous Prefecture, Hunan Province, People's Republic of China	08/06/2021	Denny Xue

**D.3. Interviews**

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Gang	Cun	Huayuan ChunJiang Power Generation Co., Ltd.	08/06/2021	Operation of the project activity; Implementation of the monitor plan of the project activity; Data collection and data achievement; Calibration of meters and equipment maintenance; Data collection and ER calculation	Denny Xue
2	Xie	Zhang	Huayuan ChunJiang Power Generation Co., Ltd.	08/06/2021		
3	Wu	Jiangwei	Huayuan ChunJiang Power Generation Co., Ltd.	08/06/2021		
4	Jiang	Yunshen	Huayuan ChunJiang Power Generation Co., Ltd.	08/06/2021		
5	Xie	You	Huayuan ChunJiang Power Generation Co., Ltd.	08/06/2021		

**D.4. Sampling approach**

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Not applicable.

**D.5. Clarification requests (CLs), corrective action requests (CARs) and forward action requests (FARs) raised**

<b>Areas of verification findings</b>	<b>No. of CL</b>	<b>No. of CAR</b>	<b>No. of FAR</b>
Compliance of the monitoring report with the monitoring report form	0	0	0
Compliance of the project implementation and operation with the registered PDD	0	0	0
Post-registration changes	0	0	0
Compliance of the registered monitoring plan with the methodologies including applicable tools and standardized baselines	1	0	0
Compliance of monitoring activities with the registered monitoring plan	0	0	0
Compliance with the calibration frequency requirements for measuring instruments	0	0	0
Assessment of data and calculation of emission reductions or net removals	0	1	0
Assessment of reported sustainable development co-benefits	0	0	0
Global stakeholder consultation	0	0	0
Others (please specify)	0	0	0
<b>Total</b>	<b>1</b>	<b>1</b>	<b>0</b>

## SECTION E. Verification findings

### E.1. Compliance of the monitoring report with the monitoring report form

<b>Means of verification</b>	The verification team verified the applied monitoring form against the latest version of "CDM-MR-FORM".
<b>Findings</b>	The "CDM-MR-FORM" version 08.0 was applied. The verification team has verified the format against the template and confirmed that the correct format of MR form is used.
<b>Conclusion</b>	The monitoring report is in line with the "CDM-MR-FORM" version 08.0 and instructions therein.

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

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This is the 2<sup>nd</sup> periodical verification. There are no remaining issues and FARs from the validation report<sup>1</sup>.

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

<b>Means of verification</b>	The verification team has, by means of an on-site inspection, assessed that all physical features (technology, project equipment, and monitoring and metering equipment) of the registered CDM project activity are in place and that the project participants have operated the project activity as per the registered PDD.
<b>Findings</b>	<p>The project was registered on 04/05/2011 with the reference number 4713 which is available on the UNFCCC website (<a href="https://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1303176054.3/view">https://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1303176054.3/view</a>).</p> <p>This monitoring period falls into the fixed crediting period. The fixed crediting period is from 01/06/2011 to 31/05/2021.</p> <p>The project activity is implemented in accordance with the approved consolidated baseline and monitoring methodology ACM0002 version 11.0.</p> <ul style="list-style-type: none"> <li>- The Project is grid connected renewable power generation project activity;</li> <li>- The Project is green-field electricity generation project;</li> <li>- The project activity does not involve in any non-renewable components, a capacity addition, co-generation and retrofit or modification to an existing facility;</li> <li>- The project activity does not involve in switching from fossil fuels to renewable energy sources at the site where no renewable power plant was operated prior to the implementation of the project activity;</li> <li>- The geographic and system boundary includes the Central China Power Grid (CCPG) to which the project is supplying the electricity, the grid is clearly identifiable and the information on the characteristics of the grid is available.</li> </ul> <p>The project covers the period 01/01/2013 - 24/05/2014 during the fixed crediting period. The project started construction on 09/10/2007 and started fully operation on 15/03/2012. The commissioning date for the first generator was 08/10/2011. All these have been confirmed by site visit and checking operation log and validation report.</p> <p>The verification team has performed a site visit to verify the actual implementation of the project against the description in the registered PDD. In this monitoring period, the project involved implementation and operation of 3 sets of hydropower turbine generator with 11 MW each. The start date and end date of this monitoring period is within the fixed crediting period. The capacity of the installed capacity is the same as per the registered PDD. The total installed capacity of the project is 33 MW with 3 sets of hydropower turbine generator with 11 MW each. Through site visit, the verification team has verified the technical parameters of the main</p>

<sup>1</sup> The verification of 1<sup>st</sup> monitoring period is still under process.

	<p>equipment. The hydro turbine's model is ZZ550-LH-265 and the generator's model is SF11-24/4250 which is in line with the actual situation and the technical parameters specified in the registered PDD. Through the document review and site visit, the verification team confirmed that the actual implementation of the project is in accordance with the registered PDD.</p> <p>The generated electricity is properly delivered to the Central China Power Grid (CCPG) as confirmed by site visit and checking Power Purchase Agreement (PPA). The quantity of net electricity generation supplied by the project plant to CCPG in year <math>y</math> (<math>EG_{\text{facility},y}</math>) is continuously monitored and monthly recorded by one set of bidirectional meters installed at on-site substation. The total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year <math>y</math> (<math>TEG_y</math>) is continuously monitored and monthly recorded by 3 meters installed at outlet of 3 generators respectively. The installed capacity of the hydro power plant after the implementation of the project activity (<math>Cap_{PJ}</math>) is determined by checking nameplate yearly. The area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (<math>A_{PJ}</math>) is determined by topographical surveys and maps yearly. The location of the monitoring meters has been visited by the verification team during site visit. The installation of the monitoring meters is in compliance with the description in the registered PDD.</p> <p>The CDM management manual was verified by the verification team, and the monitoring and management system was found in place. The staffs of the project activity have received training on monitoring, management &amp; CDM knowledge, the training records were also verified by the verification team.</p> <p>The monitoring report contains a comparison of the actual emission reductions claimed in the monitoring period with the estimation in the registered PDD. The actual emission reductions during this monitoring period are lower than the values estimated in the registered PDD for the monitoring period 01/01/2013 - 24/05/2014 which surely will not lead to the over-estimation of ERs.</p> <p>During the site visit, no changes have been observed or identified which may impact the additionality as there was no change in the effective output capacity, no addition of component nor extension of technology, no addition nor removal of project sites of the project activity, no change of values of the actual operational parameter relevant to determination of emission reductions which are within the control of the PP; no change has been observed or identified that may impact the scale of the project activity or applicability of baseline and monitoring methodology. It's confirmed that there are no special events in the monitoring period. As a result, the verification team confirms that none of the data affects the additionality, scale or applicability of the project.</p>
<b>Conclusion</b>	<p>The verification team confirms that the implementation and operation of the registered CDM project activity has been conducted in accordance with the description contained in the registered PDD. There is no deviation or the proposed or actual changes in the implementation or operation of the registered CDM project activity during this monitoring period.</p>

#### E.4. Post-registration changes

##### E.4.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents<sup>2</sup>

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Not applicable.

<sup>2</sup> Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

**E.4.2. Corrections**

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Not applicable.

**E.4.3. Changes to the start date of the crediting period**

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Not applicable.

**E.4.4. Inclusion of a monitoring plan**

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Not applicable.

**E.4.5. Permanent changes from registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents**

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Not applicable.

**E.4.6. Changes to the project design**

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Not applicable.

**E.4.7. Changes specific to afforestation and reforestation project activities**

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Not applicable.

**E.5. Compliance of the registered monitoring plan with applied methodologies, applied standardized baselines, and other applied methodological regulatory documents**

<b>Means of verification</b>	The verification team has verified the monitoring plan in the registered PDD with the approved methodology ACM0002, version 11.0 to confirm the compliance.
<b>Findings</b>	The monitoring plan in the registered PDD is in accordance with the approved methodology ACM0002, version 11.0, applied by the proposed CDM project activity. No correction or permanent change to the monitoring plan has been requested to the CDM Executive Board due to the compliance with methodology.
<b>Conclusion</b>	The monitoring plan in the registered PDD is in accordance with the approved methodology ACM0002, version 11.0.

**E.6. Compliance of monitoring activities with the registered monitoring plan****E.6.1. Data and parameters fixed ex ante or at renewal of crediting period**

<b>Means of verification</b>	The verification team has verified the defaulted figures which are not monitored in crediting period via comparing with the registered PDD.
<b>Findings</b>	<p>All the parameters listed in the registered PDD except Installed capacity of the hydro power plant before the implementation of the project activity (<math>Cap_{BL}</math>) and Area of the reservoir measured in the surface of the water, before the implementation of the project activity (<math>A_{BL}</math>) are used to calculate "Emission factor of CCPG" (<math>EF_y</math>) which is determined ex-ant according to the applied methodology fixed at the 1<sup>st</sup> crediting period. The value of the parameter for <math>EF_y</math> is 0.9735 tCO<sub>2</sub>e which was calculated according to the procedure outlined in B.6 of the registered PDD for the whole crediting period.</p> <p>As the project activity is a new project, therefore, Installed capacity of the hydro power plant before the implementation of the project activity (<math>Cap_{BL}</math>) and Area of the reservoir measured in the surface of the water, before the implementation of the project activity (<math>A_{BL}</math>) are all considered as zero which is the same as the registered PDD and methodology.</p> <p>Therefore, all the parameters listed is fully consistent with the information in the</p>

	registered PDD.
<b>Conclusion</b>	The verification team confirmed that the figures are consistent with its sources.

### E.6.2. Data and parameters monitored

Means of verification	<p>The verification team has verified the following via the site inspection and documents review:</p> <ul style="list-style-type: none"><li>- Whether the registered monitoring plan has been properly implemented and followed by the project participants;</li><li>- Whether all parameters stated in the registered monitoring plan and relevant Board decisions have been monitored and updated as applicable, including:<ul style="list-style-type: none"><li>i) Project emission parameters;</li><li>ii) Baseline emission parameters;</li><li>iii) Leakage parameters;</li><li>iv) Management and operational system: the responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the registered monitoring plan;</li></ul></li><li>- Whether the equipment used for monitoring is controlled and calibrated in accordance with the registered monitoring plan, the applied methodology, Board guidance, local/national standards, or as per the manufacturer's specification;</li><li>- Whether the monitoring results are consistently recorded as per approved frequency;</li><li>- Whether the quality assurance and quality control procedures have been applied in accordance with the registered monitoring plan.</li></ul>																																		
Findings	<p>The monitoring has been carried out in accordance with the monitoring plan in registered PDD. All parameters were monitored and determined as per the monitoring plan listed in the table below:</p> <table><tr><th>Meth/tool</th><th>PDD</th><th>MR</th><th>Compliance?</th></tr><tr><td>EG<sub>facility,y</sub></td><td>EG<sub>facility,y</sub></td><td>EG<sub>facility,y</sub></td><td>Yes.</td></tr><tr><td>TEG<sub>y</sub></td><td>TEG<sub>y</sub></td><td>TEG<sub>y</sub></td><td>Yes.</td></tr><tr><td>Cap<sub>PJ</sub></td><td>Cap<sub>PJ</sub></td><td>Cap<sub>PJ</sub></td><td>Yes.</td></tr><tr><td>A<sub>PJ</sub></td><td>A<sub>PJ</sub></td><td>A<sub>PJ</sub></td><td>Yes.</td></tr></table> <table><tr><td>Data / Parameter:</td><td>EG<sub>facility,y</sub></td></tr><tr><td>Data unit:</td><td>MWh</td></tr><tr><td>Description:</td><td>Quantity of net electricity generation supplied by the project plant to CCPG in year y</td></tr><tr><td>Purpose of the data:</td><td>Calculation of baseline emissions</td></tr><tr><td>Parameter value:</td><td>98,398.08</td></tr><tr><td>Source of data used:</td><td>Quantity of net electricity generation supplied by the project plant to CCPG in year y (EG<sub>facility,y</sub>) is sourced from Monthly Reading Records (MRRs) issued by the project owner, Electricity Transaction Notes (ETNs) issued by power grid company covering monitoring period. For data of 31/12/2012 and 24/05/2014 are determined by MRRs and statement issued by power grid company.</td></tr><tr><td>Information flow:</td><td>For Quantity of net electricity generation supplied by the project plant to CCPG in year y (EG<sub>facility,y</sub>) are continuously monitored and monthly recorded by 1 sets of bidirectional meters at project site (one as Main and another as Backup). At 24:00 of the certain day of every month, the</td></tr></table>	Meth/tool	PDD	MR	Compliance?	EG <sub>facility,y</sub>	EG <sub>facility,y</sub>	EG <sub>facility,y</sub>	Yes.	TEG <sub>y</sub>	TEG <sub>y</sub>	TEG <sub>y</sub>	Yes.	Cap <sub>PJ</sub>	Cap <sub>PJ</sub>	Cap <sub>PJ</sub>	Yes.	A <sub>PJ</sub>	A <sub>PJ</sub>	A <sub>PJ</sub>	Yes.	Data / Parameter:	EG <sub>facility,y</sub>	Data unit:	MWh	Description:	Quantity of net electricity generation supplied by the project plant to CCPG in year y	Purpose of the data:	Calculation of baseline emissions	Parameter value:	98,398.08	Source of data used:	Quantity of net electricity generation supplied by the project plant to CCPG in year y (EG <sub>facility,y</sub> ) is sourced from Monthly Reading Records (MRRs) issued by the project owner, Electricity Transaction Notes (ETNs) issued by power grid company covering monitoring period. For data of 31/12/2012 and 24/05/2014 are determined by MRRs and statement issued by power grid company.	Information flow:	For Quantity of net electricity generation supplied by the project plant to CCPG in year y (EG <sub>facility,y</sub> ) are continuously monitored and monthly recorded by 1 sets of bidirectional meters at project site (one as Main and another as Backup). At 24:00 of the certain day of every month, the
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		<p>raw data of meter reading of Main meter are recorded by the power grid company and project owner, the project owner would form Monthly Reading Records (MRRs) based on the meter readings. The power grid company will issue ETNs accordingly. For data of 31/12/2012 and 24/05/2014 are determined by MRRs and statement issued by power grid company.</p> <p>The data for MRRs, ETNs and Statement issued by power grid company have been sent to the CDM consulting company for reporting of GHG emission reduction. The conservative one would be used for ER calculation.</p>												
	<p>Monitoring method, frequency and equipments:</p>	<p>The parameter was measured continuously and recorded monthly by 1 sets of bidirectional meters at project site during the monitoring period verified by site visit. See below for the information of Main and backup meters installed at project site verified by site visit and checking calibration certificates:</p> <table border="1" data-bbox="735 703 1447 949"> <thead> <tr> <th>Meter</th> <th>Type</th> <th>Serial Number</th> <th>Accuracy</th> </tr> </thead> <tbody> <tr> <td>Main Meter</td> <td>DTSD341</td> <td>43414010000187979</td> <td>0.2s</td> </tr> <tr> <td>Backup Meter</td> <td>DTSD341</td> <td>43414010000187980</td> <td>0.2s</td> </tr> </tbody> </table> <p>The type, serial number and accuracy have been confirmed by site visit.</p>	Meter	Type	Serial Number	Accuracy	Main Meter	DTSD341	43414010000187979	0.2s	Backup Meter	DTSD341	43414010000187980	0.2s
	Meter	Type	Serial Number	Accuracy										
	Main Meter	DTSD341	43414010000187979	0.2s										
	Backup Meter	DTSD341	43414010000187980	0.2s										
	<p>Calibration:</p>	<p>The calibration information are below:</p> <table border="1" data-bbox="735 1075 1447 1249"> <thead> <tr> <th>Meter</th> <th>Calibration date</th> <th>Valid until</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Main Meter</td> <td>13/10/2012</td> <td>12/10/2013</td> </tr> <tr> <td>13/10/2013</td> <td>12/10/2014</td> </tr> <tr> <td rowspan="2">Backup Meter</td> <td>13/10/2012</td> <td>12/10/2013</td> </tr> <tr> <td>13/10/2013</td> <td>12/10/2014</td> </tr> </tbody> </table> <p>The calibration for meters was conducted by an accredited third party which is Xiangxi metering center of Hunan Electric Power Co., Ltd. was accredited by Quality and Technology Supervision Bureau of Hunan Province.</p>	Meter	Calibration date	Valid until	Main Meter	13/10/2012	12/10/2013	13/10/2013	12/10/2014	Backup Meter	13/10/2012	12/10/2013	13/10/2013
Meter	Calibration date	Valid until												
Main Meter	13/10/2012	12/10/2013												
	13/10/2013	12/10/2014												
Backup Meter	13/10/2012	12/10/2013												
	13/10/2013	12/10/2014												
<p>QA/QC procedure:</p>	<p>Data record will be archived for a period of 2 years after the crediting period to which the records pertain.</p>													
<p>Means of verification:</p>	<p>Data of the parameter was verified by checking MRRs. All data is in line with MRRs;</p> <p>Information flow was verified by checking MRRs, ETNs and statement issued by power grid company, and all information are consistent;</p> <p>Monitoring method was verified by site visit, checking calibration certificates, all monitoring method meets the description in the PDD;</p> <p>Calibration was verified by checking calibration certificate and Accreditation certificate, all calibration of monitoring equipment meets the requirement indicated in the PDD.</p>													
<p>Data / Parameter:</p>	<p>TEG<sub>y</sub></p>													
<p>Data unit:</p>	<p>MWh</p>													
<p>Description:</p>	<p>Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity</p>													

	supplied to internal loads, in year y																		
Purpose of the data:	Calculation of project emissions																		
Parameter value:	101,135.66																		
Source of data used:	Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y (TEG <sub>y</sub> ) is sourced from Monthly Reading Records (MRRs) issued by the project owner.																		
Information flow:	<p>For total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y (TEG<sub>y</sub>) are continuously monitored and monthly recorded by 3 meters at outlet of 3 generators respectively. At 24:00 of the certain day of every month, the raw data of meter reading of 3 meters are recorded by project owner, the project owner would form Monthly Reading Records (MRRs) based on the meter readings.</p> <p>The data for MRRs have been sent to the CDM consulting company for reporting of GHG emission reduction.</p>																		
Monitoring method, frequency and equipments:	<p>The parameter was measured continuously and recorded monthly by 3 meters at outlet of 3 generators respectively during the monitoring period verified by site visit. See below for the information of 3 meters installed at project site verified by site visit and checking calibration certificates:</p> <table border="1"> <thead> <tr> <th>Meter</th><th>Type</th><th>Serial Number</th><th>Accuracy</th></tr> </thead> <tbody> <tr> <td>1# generator meter</td><td>DTSD341</td><td>11030611780208</td><td>0.5s</td></tr> <tr> <td>2# generator meter</td><td>DTSD341</td><td>11030611780205</td><td>0.5s</td></tr> <tr> <td>3# generator meter</td><td>DTSD341</td><td>11030611780210</td><td>0.5s</td></tr> </tbody> </table> <p>The type, serial number and accuracy have been confirmed by site visit.</p>	Meter	Type	Serial Number	Accuracy	1# generator meter	DTSD341	11030611780208	0.5s	2# generator meter	DTSD341	11030611780205	0.5s	3# generator meter	DTSD341	11030611780210	0.5s		
Meter	Type	Serial Number	Accuracy																
1# generator meter	DTSD341	11030611780208	0.5s																
2# generator meter	DTSD341	11030611780205	0.5s																
3# generator meter	DTSD341	11030611780210	0.5s																
Calibration:	<p>The calibration information are below:</p> <table border="1"> <thead> <tr> <th>Meter</th><th>Calibration date</th><th>Valid until</th></tr> </thead> <tbody> <tr> <td rowspan="2">1# generator meter</td><td>13/10/2012</td><td>12/10/2013</td></tr> <tr> <td>13/10/2013</td><td>12/10/2014</td></tr> <tr> <td rowspan="2">2# generator meter</td><td>13/10/2012</td><td>12/10/2013</td></tr> <tr> <td>13/10/2013</td><td>12/10/2014</td></tr> <tr> <td rowspan="2">3# generator meter</td><td>13/10/2012</td><td>12/10/2013</td></tr> <tr> <td>13/10/2013</td><td>12/10/2014</td></tr> </tbody> </table> <p>The calibration for meters was conducted by an accredited third party which is Xiangxi metering center of Hunan Electric Power Co., Ltd. was accredited by Quality and Technology Supervision Bureau of Hunan Province.</p>	Meter	Calibration date	Valid until	1# generator meter	13/10/2012	12/10/2013	13/10/2013	12/10/2014	2# generator meter	13/10/2012	12/10/2013	13/10/2013	12/10/2014	3# generator meter	13/10/2012	12/10/2013	13/10/2013	12/10/2014
Meter	Calibration date	Valid until																	
1# generator meter	13/10/2012	12/10/2013																	
	13/10/2013	12/10/2014																	
2# generator meter	13/10/2012	12/10/2013																	
	13/10/2013	12/10/2014																	
3# generator meter	13/10/2012	12/10/2013																	
	13/10/2013	12/10/2014																	
QA/QC procedure:	Data record will be archived for a period of 2 years after the crediting period to which the records pertain.																		

	Means of verification:	<p>Data of the parameter was verified by checking MRRs. All data is in line with MRRs;</p> <p>Information flow was verified by checking MRRs, and all information are consistent;</p> <p>Monitoring method was verified by site visit, checking calibration certificates, all monitoring method meets the description in the PDD;</p> <p>Calibration was verified by checking calibration certificate and Accreditation certificate, all calibration of monitoring equipment meets the requirement indicated in the PDD.</p>
	<b>Data / Parameter:</b>	Cap <sub>PJ</sub>
	Data unit:	W
	Description:	Installed capacity of the hydro power plant after the implementation of the project activity
	Purpose of the data:	Calculation of project emissions
	Parameter value:	2013: 33,000,000 2014: 33,000,000
	Source of data used:	Installed capacity of the hydro power plant after the implementation of the project activity (Cap <sub>PJ</sub> ) is sourced from nameplate of the power generators units.
	Information flow:	For Installed capacity of the hydro power plant after the implementation of the project activity (Cap <sub>PJ</sub> ) are determined by nameplate of the power generators units yearly.
	Monitoring method, frequency and equipments:	For Installed capacity of the hydro power plant after the implementation of the project activity (Cap <sub>PJ</sub> ) are determined by nameplate of the power generators units yearly.
	Calibration:	Not applicable
	QA/QC procedure:	Data record will be archived for a period of 2 years after the crediting period to which the records pertain.
	Means of verification:	<p>Data of the parameter was verified by checking nameplate of the power generators units. All data is in line with nameplate of the power generators units;</p> <p>Information flow was verified by checking nameplate of the power generators units, and all information are consistent;</p> <p>Monitoring method was verified by site visit, checking nameplate of the power generators units, all monitoring method meets the description in the PDD.</p>
	<b>Data / Parameter:</b>	A <sub>PJ</sub>
	Data unit:	m <sup>2</sup>
	Description:	Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full
	Purpose of the data:	Calculation of project emissions
	Parameter value:	2013: 3,000,000

		2014: 3,000,000
	Source of data used:	For area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full ( $A_{PJ}$ ) is sourced from Survey report of Xiangxi Autonomous Prefecture Water Conservancy and Hydropower Survey and Design Research Institute in which indicate $A_{PJ}$ is 3,000,000 m <sup>2</sup> in both 2013 and 2014. Xiangxi Autonomous Prefecture Water Conservancy and Hydropower Survey and Design Research Institute is a third party design institution with accreditation.
	Information flow:	For area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full ( $A_{PJ}$ ) is sourced from Survey report of Xiangxi Autonomous Prefecture Water Conservancy and Hydropower Survey and Design Research Institute.
	Monitoring method, frequency and equipments:	For area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full ( $A_{PJ}$ ) is sourced from Survey report of Xiangxi Autonomous Prefecture Water Conservancy and Hydropower Survey and Design Research Institute.
	Calibration:	Not applicable
	QA/QC procedure:	Data record will be archived for a period of 2 years after the crediting period to which the records pertain.
	Means of verification:	Data of the parameter was verified by checking Survey report of Xiangxi Autonomous Prefecture Water Conservancy and Hydropower Survey and Design Research Institute. All data is in line with Survey report of Xiangxi Autonomous Prefecture Water Conservancy and Hydropower Survey and Design Research Institute; Information flow was verified by checking Survey report of Xiangxi Autonomous Prefecture Water Conservancy and Hydropower Survey and Design Research Institute, and all information are consistent; Monitoring method was verified by site visit, checking Survey report of Xiangxi Autonomous Prefecture Water Conservancy and Hydropower Survey and Design Research Institute, all monitoring method meets the description in the PDD.
<b>Conclusion</b>	The verification team confirmed that: <ul style="list-style-type: none"> <li>- The registered monitoring plan has been properly implemented and followed by the project participants;</li> <li>- All parameters stated in the registered monitoring plan and relevant Board decisions have been monitored;</li> <li>- The equipment used for monitoring is controlled and calibrated in accordance with the registered monitoring plan and the applicable national standard;</li> <li>- The monitoring results are consistently recorded as per approved frequency;</li> <li>- The quality assurance and quality control procedures have been applied in accordance with the registered monitoring plan.</li> </ul>	

### E.6.3. Implementation of sampling plan

<b>Means of verification</b>	Not applicable.
<b>Findings</b>	Not applicable.
<b>Conclusion</b>	Not applicable.

### E.7. Compliance with the calibration frequency requirements for measuring instruments

<b>Means of verification</b>	The verification team verified the calibration records of the monitoring equipment and the qualification of the calibrator to confirm the compliance of the calibration.
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<b>Findings</b>	<p>5 monitoring meters are used in the monitoring period,</p> <p>The calibration information of the 5 meters has been presented in the E.6.2.</p> <p>As required by the registered PDD, the meters are examined, tested, debugged and calibrated at least once a year by Xiangxi metering center of Hunan Electric Power Co., Ltd.. During this monitoring period, the meters are calibrated at least once a year and the validity period of each calibration is 1 year, which is in line with monitoring plan. The verification team confirmed that the 1<sup>st</sup> calibration is before this monitoring period and the latest calibration validity period covers the last day of this monitoring period. Thereby, it is confirmed that the calibration interval is consistent with the monitoring plan. The validity period for the calibrations covered the whole monitoring period.</p> <p>Xiangxi metering center of Hunan Electric Power Co., Ltd. was accredited by Quality and Technology Supervision Bureau of Hunan Province. Accreditations of institutions are valid when performed the calibration.</p>
<b>Conclusion</b>	The verification team confirmed that the calibration is conducted at the frequency as specified by the registered monitoring plan. The calibration is confirmed to be effective via verifying the calibration record and qualification of the calibrator.

## E.8. Assessment of data and calculation of emission reductions or net removals

### E.8.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

<b>Means of verification</b>	<p>The data recorded in the Monthly Reading Reports (MRRs) have been verified by the verification team. The recorded data have also been crosschecked with Electricity Transaction Notes (ETNs). Defaulted value used for baseline GHG emissions calculation has been verified against the data source. The calculation process as well as all assumptions used in the calculation of the baseline GHG emissions has been verified against the methodology and the registered PDD. The verification team also re-produced the calculation to confirm the correctness of the baseline GHG emissions calculation.</p>
<b>Findings</b>	<p>The calculation tool, i.e. the ER Calculation spreadsheet clearly and transparently describes the calculation of baseline GHG emissions.</p> <p>As a result of verification of the baseline GHG emissions calculation process, the verification team confirmed that all the parameters required for the determination of the emission reductions have been included in the Monitoring Report and ER calculation spreadsheet and are consistent with the applied methodology ACM0002 version 11.0 and the monitoring plan contained in the registered PDD. The parameters are complete in this monitoring period.</p> <p>After verifying the reported figures with the raw data sources, it's confirmed that the values of the parameters from the raw data sources are consistent with those quoted in the ER calculation spreadsheet and the Monitoring Report. The verification process for the same has been clearly described in section E.6.2 of the report. The reported data of the monitored parameters have been crosschecked against other evidences than from the raw data records to confirm the appropriateness of the values.</p> <p>The verification team re-produced the calculation process in the ER calculation spreadsheet and confirmed that the methods and formulae used to obtain the baseline emissions are appropriate. The calculation has been done in accordance with the methods and formulae described in the registered monitoring plan and applicable methodology. Total emission reductions during the monitoring period have been rounded down to an integer.</p> <p>The verification team confirms that the assumptions, emission factors and default values (ex-ante values) from PDD used in the emission reductions calculation during the monitoring period have been correctly justified. All the emission factors and default values are explicitly mentioned in the final MR.</p>
<b>Conclusion</b>	The verification team concluded that:

	<ul style="list-style-type: none"> <li>- A complete set of data for calculating the baseline GHG emissions are available during this monitoring period;</li> <li>- Reported electricity data for calculating baseline GHG emissions have been cross-checked against electricity sales invoices;</li> <li>- Appropriate methods and formulae for calculating baseline GHG emissions have been followed;</li> <li>- Assumptions, emission factors and default values that were applied in the calculations have been justified;</li> </ul>
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#### E.8.2. Calculation of project GHG emissions or actual net anthropogenic GHG removals by sinks

<b>Means of verification</b>	The calculation process of the project GHG emissions has been verified against the methodology and the registered PDD.
<b>Findings</b>	The project emission ( $PE_y$ ) is zero as the power density of the project is larger than $10 \text{ W/m}^2$ as calculated as below during the monitoring period: $\text{Power Density (PD)} = (\text{Cap}_{PJ} - \text{Cap}_{BL}) / (\text{A}_{PJ} - \text{A}_{BL}) = (33,000,000 - 0) / (3,000,000 - 0) = 11 \text{ W/m}^2$ which is large than $10 \text{ W/m}^2$ . Then $PE_y$ is determined as zero. Thus, no project emissions are envisaged from the project activity.
<b>Conclusion</b>	The project GHG emissions during this monitoring period are confirmed as 0 tCO <sub>2e</sub> .

#### E.8.3. Calculation of leakage GHG emissions

<b>Means of verification</b>	The calculation process of the leakage GHG emissions has been verified against the methodology and the registered PDD.
<b>Findings</b>	According to the Methodology ACM0002, there will be no leakage caused by the Project activity. Thus, leakage is 0.
<b>Conclusion</b>	The leakage GHG emissions during this monitoring period are 0.

#### E.8.4. Summary calculation of GHG emission reductions or net anthropogenic GHG removals by sinks

<b>Means of verification</b>	The calculation process of the GHG emission reductions has been verified against the methodology and the registered PDD.
<b>Findings</b>	The GHG emission reductions equal to the baseline GHG emissions minus the project GHG emissions and the leakage GHG emissions.
<b>Conclusion</b>	The verification team confirmed that the GHG emission reductions during this monitoring period have been correctly calculated and reported.

#### E.8.5. Comparison of actual GHG emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

<b>Means of verification</b>	The verification team verified the comparison process of actual GHG emission reductions with the estimates in registered PDD.
<b>Findings</b>	The estimated emission reduction in the fixed crediting period is 95,802 tCO <sub>2e</sub> per year. The period of 01/01/2013-24/05/2014 includes 502 days. So, the estimated emission reduction is: $95,802 / 365 * 502 = 133,597 \text{ tCO}_2\text{e}$ .
<b>Conclusion</b>	The verification team confirmed that the calculation of the estimated value during this monitoring period in the registered PDD is correct. The actual values achieved during this monitoring period are lower than the estimates in the registered PDD which is not overestimated.

#### E.8.6. Remarks on difference from estimated value in registered PDD

<b>Means of verification</b>	The verification team verified the explanation in the MR of the difference from the estimated value in the registered PDD.
<b>Findings</b>	The actual emission reductions are lower than the values estimated in the registered PDD and the verification consider this is acceptable as conservativeness.
<b>Conclusion</b>	The actual emission reductions are lower than the values estimated in the registered PDD, which has been explained. The verification team confirmed the explanation is appropriate.

**E.8.7. Actual GHG emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards**

<b>Means of verification</b>	The verification team confirmed the calculation of actual GHG emission reductions in the MR during the second commitment period and the period from 01/01/2013 onwards.
<b>Findings</b>	Whole GHG emission reductions of this monitoring period are from 01/01/2013 onwards.
<b>Conclusion</b>	Whole GHG emission reductions of this monitoring period are from 01/01/2013 onwards. Therefore, in the MR the presentation of GHG emission reductions from 01/01/2013 onwards are correct.

**E.9. Assessment of reported sustainable development co-benefits**

<b>Means of verification</b>	Not applicable.
<b>Findings</b>	Not applicable.
<b>Conclusion</b>	Not applicable.

**E.10. Global stakeholder consultation**

<b>Means of verification</b>	The verification team checked the comments from UNFCCC and verified if such comments are authentic and relevant to CDM matters.
<b>Findings</b>	There were no comments received for the project during this monitoring period.
<b>Conclusion</b>	There were no comments received for the project during this monitoring period.

**SECTION F. Internal quality control**

&gt;&gt;

As a final step for verification, the final documentation, including the verification report, has to undergo an internal quality control by the Technical Reviewer(s) to be approved.

Details of the Technical Reviewer(s) are provided within the verification report in Section B.2. and Appendix 2 for further references of knowledge and capability to conduct the quality checking.

After the Technical Review process, the final documentation may undergo a final quality checking process called Administrative Review, done by the Applus+ Certification's Project Manager and/or Technical Support.

For final approval, the final set of documents are prepared by the DOE's Technical Manager or its deputy and signed by the authorized signatory of the DOE.

In case any of the persons performing this final internal quality control approval process has acted as a part of the Assessment Team or Technical Review team, the approval can only be given by DOE's authorized personnel who are not part of those teams.

If the final set of documents has been satisfactorily approved, a Request for Issuance is submitted to the UNFCCC CDM EB along with the relevant documents.

**SECTION G. Verification opinion**

&gt;&gt;

Applus+ Certification has been engaged by Huayuan ChunJiang Power Generation Co., Ltd. to perform the second periodical verification of the Hunan Zhugaotan Hydropower Project (UNFCCC Ref. No. 4713).

The management of Huayuan ChunJiang Power Generation Co., Ltd. is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project's Monitoring Plan in the PDD version 05 completed on 01/04/2011 and the applied methodology ACM0002 version 11.0.

Our verification approach was based on the requirements as defined under the Kyoto Protocol, Marrakesh accord, as well as those defined by the CDM Executive Board. 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 operated as planned and described in the project design document approved by the EB;
- the monitoring plan is as per the applied methodology;
- the monitoring in Monitoring Report is as per the PDD and the monitoring plan approved by the EB;
- the development and maintenance of records and reporting procedures are in accordance with the registered monitoring plan;
- 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.

In our opinion, the GHG emission reductions for Hunan Zhugaotan Hydropower Project for the monitoring period 01/01/2013 to 24/05/2014 as reported in Monitoring Report, prepared on the basis of the project's Monitoring Plan are fairly stated.

**SECTION H. Certification statement**

&gt;&gt;

Based on the information we have seen and evaluated, we confirm the following statement:

Reporting period:	From 01/01/2013-24/05/2014
Verified emissions in the above reporting period:	
Leakage emissions	0 tCO <sub>2</sub> equivalents
Project emissions	0 tCO <sub>2</sub> equivalents
Baseline emissions	95,790 tCO <sub>2</sub> equivalents
<b>Emission reductions</b>	95,790 tCO <sub>2</sub> equivalents
Actual values achieved up to 31 December 2012	0 tCO <sub>2</sub> equivalents
Actual values achieved from 1 January 2013 onwards	95,790 tCO <sub>2</sub> equivalents

## Appendix 1. Abbreviations

Abbreviations	Full texts
ACM	Approved Consolidated Methodology
AM	Approved Methodology
AMS	Approved Methodology Small Scale
Applus+ Certification	LGAi Technological Center, S.A. (Applus)
BM	Build Margin
CAR	Corrective Action Request
CCPG	Central China Power Grid
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CER	Certified Emission Reduction
CM	Combined Margin
CMP	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
DNA	Designated National Authority
DOE	Designated Operational Entity
EF	Emission Factor
EIA	Environmental Impact Assessment
ER	Emission Reduction
FAR	Forward Action Request
FSR	Feasibility Study Report
GHG	Greenhouse Gas(es)
IPCC	Intergovernmental Panel on Climate Change
IRL	Information Reference List
IRR	Internal Rate of Return
KP	Kyoto Protocol
MP	Monitoring Plan
MR	Monitoring Report
NGO	Non-Governmental Organization
OM	Operational Margin
PDD	Project Design Document
PP	Project Participant
UNFCCC	United Nations Framework Convention for Climate Change
VVS	Validation and Verification Standard

## Appendix 2. Competence of team members and technical reviewers

According to the applicable sectoral scope / technical area and experience in the sectoral or national business environment, Applus+ Certification has composed an assessment team in compliance with the Contract Review and Assessment Team appointment rules in the internal Quality Management System of Applus+ Certification as well as in compliance with the applicable requirements in the Accreditation Standard.

The composition of the Assessment Team (Applus+ Certification's verification team) has been approved by Applus+ Certification during the Contract Review process ensuring that the required skills and capabilities are covered.

The qualification levels for Assessment Team members that are assigned by aforementioned appointment rules are as presented below:

- Lead Auditor (LA).
- Auditor (A).
- Technical Expert (TE).
- Technical Reviewer (TR).
- Any of the above mentioned roles in training (iT, e.g. AiT for auditor in training).

The Sectoral Scope / Technical Area required knowledge linked to the applied methodology(ies) is covered by the Assessment Team as shown below:

Name	Role	SS/TA Knowledge	Financial Expertise	Attendance to on-site visit
Mr. Denny Xue	LA/ TE	YES (1.2)	n/a	YES
Mr. Simon Shen	TR /TE	YES (1.2)	n/a	n/a

A brief Curriculum Vitae (CV) of the Assessment Team members is provided below:

**Denny Xue** (Master Degree in Environmental Engineering, Bachelor Degree in Thermal Engineering) is a lead auditor appointed by Applus+ Certification for the GHG project assessment. He is based on Shanghai. He has 1.5 years of work experiences in CDM project development. Before he joined Applus+ Certification, he has been worked for Shanghai Chuanji Investment and Management which is a CDM consultancy company as a project manager for CDM project development.

**Simon Shen** (Master Degree in Thermal Energy Engineering, Bachelor Degree in Environmental Engineering) has been appointed as a Technical Reviewer by Applus+ Certification for the GHG project assessment. He is based in Shanghai. He has several years of work experience in environmental protection field. Before he joined Applus+ Certification, he had been worked for TÜV SÜD as a GHG Validator/Verifier and ISO 9001/14001 Lead Auditor for 3.5 years.

### Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	Project owner	Monitoring Report, version 01	08/05/2021	Project participants
2	Project owner	Monitoring Report, version 02	10/06/2021	Project participants
3	Project owner	ER calculation spreadsheet	/	Project participants
4	Project owner	Registered PDD Version 05	01/04/2011	Project participants
5	TÜV Rheinland Japan Ltd.	Validation Report Version 03	06/04/2011	Others
6	Project owner	Nameplate of equipment and monitoring equipment	/	Project participants
7	UNFCCC	Information on UNFCCC:	<a href="https://cdm.unfccc.int/Projects/D/B/TUEV-RHEIN1303176054.3/view">https://cdm.unfccc.int/Projects/D/B/TUEV-RHEIN1303176054.3/view</a>	Others
8	Project owner	CDM management manual	/	Project participants
9	UNFCCC	CDM validation and verification standard for project activities version 02.0	/	Others
10	UNFCCC	ACM0002 version 11.0	/	Others
11	Xiangxi metering center of Hunan Electric Power Co., Ltd.	Calibration certificates for electricity meters	Covering the whole monitoring period	Others
12	Power Grid Company	Electricity Transaction Note (ETNs)	Covering the whole monitoring period	Others
13	Project owner	Monthly Reading Records	Covering the whole monitoring period	Project participants
14	Power Grid Company	Statement issued by power grid company	Covering the whole monitoring period	Others
15	Power Grid Company	Power Purchase Agreement (PPA)	/	Others
16	Project owner	Operational Log	Covering the whole monitoring period	Project participants
17	Quality and Technology Supervision Bureau of Hunan Province	Accreditation Certificate for Xiangxi metering center of Hunan Electric Power Co., Ltd.	Covering the whole monitoring period	Others
18	Xiangxi Autonomous Prefecture Water Conservancy and Hydropower Survey and Design Research Institute	Survey report	Covering the whole monitoring period	Others

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

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

<b>FAR ID</b>	xx	<b>Section no.</b>	E.2	<b>Date:</b> DD/MM/YYYY
<b>Description of FAR</b>				
<b>Project participant response</b>				<b>Date:</b> DD/MM/YYYY
<b>Documentation provided by project participant</b>				
<b>DOE assessment</b>				<b>Date:</b> DD/MM/YYYY

Table 2. CL from this verification

<b>CL ID</b>	01	<b>Section no.</b>	E.6.1	<b>Date:</b> 09/06/2021
<b>Description of CL</b>				
Please explain why the data and parameters fixed ex ante in the MR is different with the same in the registered PDD.				
<b>Project participant response</b>				<b>Date:</b> 10/06/2021
Most of ex-ante parameters are used to calculate the emission factor ( $EF_y$ ), then in the MR, only $EF_y$ was included. For rest of parameters as $Cap_{BL}$ and $A_{BL}$ have also been included in the MR.				
<b>Documentation provided by project participant</b>				
Updated MR				
<b>DOE assessment</b>				<b>Date:</b> 11/06/2021
By checking updated MR, it is confirmed reasonable explanation for $EF_y$ has been included and for the rest of parameters are all consistent with registered PDD. CL01 is closed out.				

Table 3. CAR from this verification

<b>CAR ID</b>	01	<b>Section no.</b>	E.8	<b>Date:</b> 09/06/2021
<b>Description of CAR</b>				
The ER spreadsheet is missing for verification.				
<b>Project participant response</b>				<b>Date:</b> 10/06/2021
ER spreadsheet has been provided.				
<b>Documentation provided by project participant</b>				
ER spreadsheet				
<b>DOE assessment</b>				<b>Date:</b> 11/06/2021
By checking ER spreadsheet, it is confirmed the calculation of ER is in line with the requirement of registered PDD. CAR01 is closed out.				

Table 4. FAR from this verification

<b>FAR ID</b>	xx	<b>Section No.</b>		<b>Date:</b> DD/MM/YYYY
<b>Description of FAR</b>				
<b>Project participant response</b>				<b>Date:</b> DD/MM/YYYY
<b>Documentation provided by project participant</b>				
<b>DOE assessment</b>				<b>Date:</b> DD/MM/YYYY

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**Document information**

<i>Version</i>	<i>Date</i>	<i>Description</i>
04.0	6 April 2021	Revision to: <ul style="list-style-type: none"> <li>• Reflect the “Clarification: Regulatory requirements under temporary measures for post-2020 cases” (CDM-EB109-A01-CLAR).</li> </ul>
03.0	31 May 2019	Revision to: <ul style="list-style-type: none"> <li>• Ensure consistency with version 02.0 of the “CDM validation and verification standard for project activities” (CDM-EB93-A05-STAN);</li> <li>• Make structural and editorial improvements.</li> </ul>
02.1	11 January 2018	Editorial revision to correct the numbering of appendices in the instructions.
02.0	31 October 2017	Revision to align with the requirements of the “CDM validation and verification standard for project activities” (version 01.0).
01.0	23 March 2015	Initial publication.

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