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# **VERIFICATION AND CERTIFICATION REPORT**

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**International Bank for Reconstruction and  
Development**

**Guangrun Hydropower Project in  
Hubei Province, P.R. China**

UNFCCC Ref. No. 0904

The 2<sup>nd</sup> Monitoring period: 01/01/2011 to 28/02/2014 (both days  
inclusive)

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<b>Date of Issue:</b>	<b>Project Number:</b>
09/12/2014	CDM.VER0941 MP2
<b>Project Title:</b>	
Guangrun Hydropower Project in Hubei Province, P.R. China	
<b>Organisation:</b>	<b>Client:</b>
SGS United Kingdom Limited	International Bank for Reconstruction and Development
<b>Publication of Monitoring Report:</b>	
<b>Monitoring Period:</b>	01/01/2011 to 28/02/2014
First Monitoring Report Version and Date:	Version 01 dated 06/05/2014
Final Monitoring Report Version and Date:	Version 06 dated 04/12/2014
<b>Summary:</b>	
<p>SGS United Kingdom Ltd has performed the second periodic verification of the CDM project “Guangrun Hydropower Project in Hubei Province, P.R. China”, bearing UNFCCC reference number 0904, with registration date of 27/04/2007 and first crediting period from 30/06/2009 to 29/06/2016. The verification includes confirming the implementation of the revised monitoring plan (RMP) approved by the CDM EB on 27/12/2011 and the application of the monitoring methodology as per ACM0002 version 06 dated 19/05/2006. A site visit was conducted to verify the data submitted in the monitoring report. SGS confirms the following has been reviewed:</p> <ul style="list-style-type: none"> <li>(a) The registered PDD, approved RMP and the corresponding validation report;</li> <li>(b) The revised PDD including the monitoring plan submitted along with this report;</li> <li>(c) Monitoring report, ER calculation spreadsheet and previous verification report;</li> <li>(d) The applied monitoring methodology;</li> <li>(e) Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board;</li> <li>(f) All information and references relevant to the project activity resulting in emission reductions.</li> </ul> <p>Guangrun Hydropower Project in Hubei Province, P.R. China is located in the Jianshi County, Enshi Tujia and Miao Minority Autonomous Prefecture, Hubei Province, P. R. China. The objective of the project was to utilize water resource from the Majia River for electricity generation through the installation and operation of three hydro power stations. The total installed capacity of the project was 28MW. The electricity supplied by the project is sold to Jianshi electricity grid, which is part of the Hubei Provincial Power Grid (HPPG) and Central China Power Grid (CCPG). The monitoring plan in the registered PDD had been revised regarding the backup line, the position of the meters and the line diagram. The RMP was approved by the CDM EB on 27/12/2011.</p> <p>During this monitoring period, the project design was changed as one additional power station “Kongzishan Station” with the installed capacity of 400 kW was put into operation on 25/09/2012. The registered PDD was revised to reflect the change and validated by the assessment team. The revised PDD version 6.0 dated 04/12/2014 is submitted along with this issuance request.</p> <p>SGS confirms that the project is implemented in accordance with the revised PDD. 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 seen and evaluated we confirm that the implementation of the project has resulted in 43,249 tCO<sub>2</sub>e emission reductions during period 01/01/2011 up to 28/02/2014.</p>	
<b>Subject:</b>	
CDM Verification	
<b>Verification Team:</b>	
Michael WU Shimin – Lead Assessor/ Local Assessor/Technical Area Expert(TA1.2)	<input checked="" type="checkbox"/> No Distribution (without permission from the Client or responsible organisational unit)



<b>Technical Review:</b>				
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## Abbreviations

CAR	Corrective Action Request
CCPG	Central China Power Grid
CDM	Clean Development Mechanism
CERs	Certified Emission Reductions
CL	Clarification Request
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2</sub> e	Carbon Dioxide Equivalent
DRRs	Daily Reading Records
EF	Emission Factor
ERs	Emission Reductions
ETNs	Electricity Transaction Notes
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
KP	Kyoto Protocol
MR	Monitoring Report
MRRs	Monthly Reading Records
PDD	Project Design Document
PP	Project Participant
PS	Project Standard
PPA	Power Purchase Agreement
RMP	Revised Monitoring Plan
SGS	SGS United Kingdom Ltd
SN	Serial Number
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard

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## 1. Introduction

### 1.1 Objective

SGS United Kingdom Ltd has been contracted by International Bank for Reconstruction and Development (one of the project participants of the project) to perform an independent verification of its CDM project "Guangrun Hydropower Project in Hubei Province, P.R. China". CDM projects must undergo periodic audits and verification of emission reductions as the basis for issuance of Certified Emission Reductions (CERs).

The objectives of this verification exercise are, by review of objective evidence, to establish that:

- The emissions report conforms with the requirements of the monitoring plan in the PDD and the approved methodology; and
- The data reported are complete and transparent.

### 1.2 Scope

The scope of the verification is the independent and objective review and ex post determination of the monitored reductions in GHG emission by the project activity. The verification is based on the revised PDD and the monitoring report. The project is assessed against the requirements of the Kyoto Protocol, the CDM Modalities and Procedures and related rules and guidance.

SGS has, based on the recommendations in the Validation and Verification Standard, employed a risk-based approach in the verification, focusing on the identification of significant reporting risks and the reliability of project monitoring.

Due professional care has been exercised and ethical conduct has been followed by the assessment team during the verification process. The verification report is a fair presentation of the verification activity.

The verification is not meant to provide any consulting towards the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

### 1.3 Project Activity and Period Covered

This engagement covers emissions and emission reductions from anthropogenic sources of greenhouse gases included within the project boundary of the following project and period.

Title of Project Activity:	Guangrun Hydropower Project in Hubei Province, P.R. China
UNFCCC Registration Number:	0904
Monitoring Period Covered in this Report:	01/01/2011 to 28/02/2014
Project Participants:	<p>Host Country: <b>China</b> Guangrun Hydropower Development Company Ltd.</p> <p>Annex I Country: <b>Spain:</b> Endesa Generación, S.A. ; Hidroeléctrica del Cantábrico, S.A. ; Kingdom of Spain - Ministry of Agriculture, Food and Environment and Ministry of Economy and Competitiveness ; Gas Natural SDG, S.A. ; EDP – Energias de Portugal, S.A.</p> <p><b>Luxembourg:</b> Government of Luxembourg – Ministry of the Environment</p>

	<p><b>Italy:</b> Ministry for the Environment, Land and Sea</p> <p><b>Netherlands:</b> Netherlands' Ministry of Infrastructure and the Environment (IenM)</p> <p><b>Switzerland:</b> Schweizerische Rückversicherungsgesellschafts AG (Swiss RE)</p> <p><b>Belgium:</b> Kingdom of Belgium – Walloon Region Ministry of the Environment ; Bruxelles Environnement - IBGE</p> <p><b>Germany:</b> BASF SE ; KfW</p> <p><b>Japan:</b> Daiwa Securities Co. Ltd. ; FUJIFILM Corporation ; Idemitsu Kosan Co., Ltd. ; JX Nippon Oil &amp; Energy Corporation ; The Okinawa Electric Power Corporation, Incorporated</p> <p><b>Finland:</b> Ruukki Metals Oy</p> <p><b>Sweden:</b> Göteborg Energi AB</p> <p><b>Norway:</b> Statkraft Carbon Invest AS ; Statoil ASA</p> <p><b>Austria:</b> Kommunalkredit Public Consulting GmbH</p>
Bilateral and Multilateral Funds	Community Development Carbon Fund Managing company: International Bank for Reconstruction and Development (IBRD) as Trustee of the Community Development Carbon Fund (CDCF)
Location of the Project Activity:	Jianshi County, Enshi Tujia and Miao Minority Autonomous Prefecture, Hubei Province, P. R. China.

Guangrun Hydropower Project in Hubei Province, P.R. China is located in Jianshi County, Enshi Tujia and Miao Minority Autonomous Prefecture, Hubei Province, P. R. China. The objective of the project is to utilize water resource of the Majia River for electricity generation through the installation and operation of four hydro power stations. The total installed capacity of the project is 28.4 MW. The electricity supplied by the project is sold to Jianshi electricity grid, which is part of the Hubei Provincial Power Grid (HPPG) and Central China Power Grid (CCPG).

## 2. Methodology

### 2.1 General Approach

SGS performs the verification work using a Periodic Verification Checklist prepared following the VVS. The Periodic Verification Checklist describes the verification approach and the sampling plan.

The checklist gives the assessment team a full understanding of:

- Activities associated with all the sources contributing to the project emissions and emission reductions, including leakage if relevant;
- Protocols used to estimate or measure GHG emissions from these sources;
- Collection and handling of data;
- Controls on the collection and handling of data;
- Means of verifying reported data; and
- Compilation of the monitoring report.

Using the Periodic Verification Checklist, SGS verified the implementation of the monitoring plan and the data presented in the Monitoring Report for the period in question. This involved a site visit and a desk review of the monitoring report. This verification report describes the findings of this assessment.

Only verification activities undertaken after the publication of the monitoring report on the UNFCCC CDM website were used as a basis for SGS to conclude our verification and submit a request for issuance of CERs to the Board.

### 2.2 Verification Team for this Assessment

The team selected to perform the verification of the project is as follows:

Name	Role
Michael WU Shimin	Lead Assessor/Local Assessor/Technical Area Expert (TA1.2)

### 2.3 Means of Verification

#### 2.3.1 Review of Documentation

The validated PDD, the approved RMP, the revised PDD, the monitoring report submitted by the client and additional background documents related to the project performance were reviewed. A complete list of all documents reviewed is attached in section 8 of this report.



### 2.3.2 Site Visits

As part of the verification, the following on-site inspections have been performed by the assessment team.

<b>Location:</b> Jianshi County, Enshi Tujia and Miao Minority Autonomous Prefecture, Hubei Province, China		
<b>Date:</b> 28/05/2014		
<b>Coverage:</b>	<b>Source of Information / Persons Interviewed</b>	
1. Site assessment of the implementation and operation of the project activity as per the registered PDD and revised PDD;	Huang Guolin, Guangrun Development Company Ltd.	Hydropower
2. Check the implementation and operation status of the revised project design, and assess the impact of the design change.	Duan Huaming, Guangrun Development Company Ltd.	Hydropower
3. Review of information flows for generating, aggregating and reporting the monitoring parameters;	Xu Dingshan, Guangrun Development Company Ltd.	Hydropower
4. Interviews with local personnel to confirm that the operational and data collection procedures are implemented in accordance with the revised PDD;	Peng Zushu, Guangrun Development Company Ltd.	Hydropower
5. Cross-check between the information provided in the MR and data from other sources such as monitoring records, and sales receipts;	Luo Tingting, Guangrun Development Company Ltd.	Hydropower
6. A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the PDD and the selected methodology;	Guan Yisong, Guangrun Development Company Ltd.	Hydropower
7. Review of calculations and assumptions made in determining the GHG data and emission reductions;		
8. Identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters		

### 2.4 Reporting of Findings

As an outcome of the verification process, the team can raise different types of findings.

In general, where insufficient or inaccurate information is available and clarification or new information is required the team shall raise a Clarification Request (CL) specifying what additional information is required.

Where a non-conformance arises the team shall raise a Corrective Action Request (CAR). A CAR is issued, where:

- I. Non-compliance with the monitoring plan or methodology are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;
- II. Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants;

- III. Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;
- IV. Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.

The verification process may be halted until this information has been made available to comply with the requirements of the CDM Executive Board. Failure to address a CL may result in a CAR. Information or clarifications provided as a result of a CL may also lead to a CAR.

A clarification request (CL) will be raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met. All CARs and CLs raised during verification shall be resolved prior to submitting a request for issuance.

Corrective Action Requests and Clarification Requests are raised in the Periodic Verification Checklist. The Project Developer is given the opportunity to “close” outstanding CARs and respond to CLs.

Forward Action Requests (FARs) may be raised during verification for actions where the monitoring and reporting require attention and/or adjustment for the next verification period, which are for the benefit of future projects and future verification activities. These have no impact upon the completion of the verification activity.

All CARs, CLs and FARs for this verification period are included in this report.

## **2.5 Internal Quality Control**

Following the completion of the assessment process and a recommendation by the Assessment Team, all documentation is forwarded to a Technical Review Team. The task of the Technical Review Team is to check that all procedures have been followed and all conclusions are justified. The Technical Reviewer will either accept or reject the recommendation made by the assessment team.

### **Technical Review Team**

<b>Name</b>	<b>Role</b>
Joe SUN Guozhong	Technical Reviewer
Linda HU Mudan	Technical Area Expert (TA1.2)

### 3. Verification Findings

#### 3.1 Project Implementation

Based on the information from the UNFCCC website of the project, <http://cdm.unfccc.int/Projects/DB/DNV-CUK1169846013.46/view>, the project was registered on 27/04/2007 and the first crediting period for the project is from 30/06/2009 to 29/06/2016 (renewable) which was changed from 01/07/2008 to 30/06/2015 (/4/). This is the second periodic verification for the project and covers the period from 01/01/2011 to 28/02/2014. The start date of this monitoring period is right after the end date of the first monitoring period, and the end date of this monitoring period is within the first crediting period (/6/).

As per the description in the registered PDD (/1/) and approved RMP (/3/), the project was a 28MW hydropower project with two reservoirs of about 24.99 million m<sup>3</sup> storage which includes two plants: Hongwawu hydropower plant and Zhamushui hydropower plant. Hongwawu hydropower plant includes Hongwawu I station (8MW) and Hongwawu II station (10MW). Zhamushui hydropower plant has an installed capacity of 10 MW. The electricity generated by the project is supplied to the grid via the Jianshi Station.

Through onsite visit, it was confirmed that Zhamushui hydropower plant and Hongwawu hydropower plant (including Hongwawu I and Hongwawu II) have been installed and operated as per the registered PDD (/1/). As per the operational log (/15/), Hongwawu I (8MW), Hongwawu II (10 MW) and Zhamushui hydropower plant (10 MW) were put into operation on 20/09/2009, 29/11/2010 and 29/08/2012, respectively.

However, during the onsite visit, it was observed that two unit of 200 KW generators had also been installed at the Kongzishan Station of the project site. This is not consistent with the project design in the registered PDD.

The PP was requested to clarify this issue via CAR #1. The PP clarified that this was an auxiliary station which was put into operation on 25/09/2012 (/33/) and discussed the impact of the change of the project design in the revised PDD version 04.1 dated 02/09/2014 (/2/) and corresponding IRR sheet(/26//27/). The impacts of the change to the project design on the additionality, the scale of the project, the applicability of the methodology and the monitoring plan have been discussed in the revised PDD version 04.1 following paragraph 281 of Project Standard version 07.0. However, some information such as the power density and number of stations was not fully updated in the PDD version 04.1 and MR version 04; as a result this was again relayed by the team in CAR #1. It was addressed by the PP in the PDD version 5.0 dated 11/10/2014 and MR version 05 dated 15/10/2014.

In addition, the information of the PP for Canada (*Government of Canada-Ministry of Foreign Affairs & International Trade*) was removed in the PDD version 5.0 and MR version 05, as Canada withdrew from the KP effective 15/12/2012. CAR #1 was closed.

CAR #1 was reopened for the following issues:

1. The transfer of registered PDD to the latest PDD template was not complete, such as section B.5, Section D.1, section D.2, Section D.5, Section E.5. Also, section F of the transfer PDD is not from in the registered PDD.
2. Page 10 of the track change PDD vs. page 9 of the clean PDD version 5.0 dated 11/10/2014: the 1st table in the row entitled "annual output": the figures differ (90.49 vs. 90.4935). Also in the final row of this same table, the track change version does not show the text added to replace the text deleted. Also, Appendix 1, for the Italian PP: the contact numbers are in a different colour, this issue also occurred in the MR. Also; the PP was requested to clarify if there is contact information for the following PP "Gas Natural SDG. S.A, Daiwa Securities, Statkraft Carbon Invest and Statoil ASA"
3. Page 5, section A.5 of the MR version 05 dated 15/10/2014 does not state the length of the CP period; Page 7, Section B.2.4 of MR the addition of M7 and the change in annual output is not discussed;
4. ER spreadsheet:
  - a) "Cover" tab: the version of the PDD is not specified
  - b) "ER calculation" tab: Cell D22 and Cell D23 the description of the date is not accurate.

In response, the PP submitted the registered PDD in latest PDD template, the revised PDD version 6.0 dated 04/12/2014, revised MR version 06 dated 04/12/2014 and the revised ER spreadsheet version 06 dated 04/12/2014. After checking the registered PDD in the latest PDD template, it was confirmed that relevant information from the registered PDD and approved RMP has been correctly included;

After checking the revised PDD version 6.0 dated 04/12/2014, it was confirmed that the annual output track change has been correctly displayed, the last row of Table 1 has been adjusted to show it as addition. The text colour of the Italian PP is modified to be black and the PP confirmed that there is no contact for the PP Gas Natural SDG. S.A, Daiwa Securities, Statkraft Carbon Invest and Statoil ASA.

After checking the revised MR version 06 dated 04/12/2014, it was confirmed that the length of the crediting period is correctly reported in section A.5 of the MR and the addition of M7 and the change in annual output is now included in section B.2.4 of MR. It is also noted that the PP has included the relevant description of correction to the registered PDD in section 2.1 of the MR, which is found to be consistent with the revised PDD version 6.0 dated 04/12/2014.

After checking the revised ER calculation spreadsheet version 06 dated 04/12/2014, it was confirmed that the version of the PDD has been correctly quoted and the description of the date in Cell D22 and Cell D23 has been modified.

Detail of the assessment is included in section 3.2.3 of this report below.

The following has been checked to verify the applicability of the methodology to the project activity ACM0002 version 06 (/5/).

ACM0002 Ver. 06	Project Scenario	Compliance Conclusion
Grid-connected renewable power generation project activities that applies to electricity capacity additions from: <ul style="list-style-type: none"> <li>- Run-of-river hydro power plants; hydro power projects with existing reservoirs where the volume of the reservoir is not increased;</li> <li>- New hydro electric power projects with reservoirs having power densities (installed power generation capacity divided by the surface area at full reservoir level) greater than <math>4 \text{ W/m}^2</math>;</li> <li>- Wind sources;</li> <li>- Geothermal sources;</li> <li>- Solar sources;</li> <li>- Wave and tidal sources.</li> </ul>	The project is a Grid-connected renewable power generation project activity which consists of electricity capacity additions from new hydro electric power plants with reservoirs of power densities greater than $4 \text{ W/m}^2$	In compliance
This methodology is not applicable to project activities that involve switching from fossil fuels to renewable energy at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site;	The project is a new hydro power plant, thus does not involve fuel switch.	Not applicable.
The geographic and system boundaries for the relevant electricity grid can be clearly identified and information on the characteristics of the grid is available	The project is connected to the Central China Power Grid and information on the characteristics of the grid is available.	In compliance.

Therefore, it is concluded that the methodology ACM0002 version 06 is still applicable to the project.

During the second monitoring period, the project has been operated as per the revised PDD. Through document review of the line connection diagram of the project (/11/), the power purchase agreement signed with the grid company (PPA, /12/) and checking the transformers installed during the site visit, it is confirmed that the project has been connected with the CCPG, in accordance with the description in the registered and the revised PDD. There are no other sources of GHG emissions attributable to the project activity except the GHG sources included in the monitoring plan in the revised PDD version 6.0. This is verified through onsite visit and interview with the project participant (PP). Therefore, the project boundary was confirmed to be in conformance with the description in the revised PDD.

The estimated emission reduction was 264,707 tCO<sub>2</sub>e (83,652 tCO<sub>2</sub>e/365 day\*1155 day) for the period 01/01/2011 to 28/02/2014 as per the estimated annual average emission reductions (83,652 tCO<sub>2</sub>e) made in the revised PDD Version 6.0. The actual emission reduction has been verified as 43,249 tCO<sub>2</sub>e for the period 01/01/2011 to 28/02/2014 (both days included), which is 83.66% less than the estimated emission reduction for the same period.

### **3.2 Post registration changes**

#### **3.2.1 Temporary deviations from registered monitoring plan or applied methodology**

There are no temporary deviations from the registered monitoring plan or applied methodology in this monitoring period.

#### **3.2.2 Corrections**

There are corrections to the registered PDD in the revised PDD version 6.0 dated 04/12/2014 with regards to the following aspects;

- a) The PP information in section A.4, and Appendix 1 have been corrected to be consistent with the PP information on the UNFCCC website.
- b) The contact information of responsible personnel/entities has been added and Section F is completed as per the PDD template;
- c) The Jianshi Electric Power Company in the registered PDD was changed to be Hubei Electric Power Company since 26/11/2012. It was verified that the Hubei Electric Power Company still belongs to the CCPG as specified in the registered PDD and the revised PDD; and the monitoring point is not changed, therefore, there is no impact on the project from this change.

In accordance with para. 304 of VVS para. 7, it has been verified that the corrected information is an accurate reflection of actual project information. As the above corrections not affected the design of the project activity, and thus do not require prior approval by the Board.

#### **3.2.3 Permanent changes from registered monitoring plan or applied methodology**

The monitoring plan in the registered PDD was revised by the PP and approved by the board on 27/12/2011.

The monitoring plan was changed again during this monitoring period following the changes to the project design. Detail of the assessment is presented in section 3.2.4 of this report below.

### 3.2.4 Changes to project design of registered project activity

The project design was changed during this monitoring period. An auxiliary station with the capacity of 400 kW was put into operation on 25/09/2012. The reason for the change was to utilize the water resource that is used for municipal water supply from Zhamushui Reservoir for power generation. As the project was registered on 27/04/2007 and the Preliminary Design Report for Kongzishan station was completed on July 2009, the changes would not have been known prior to registration of the project. The capacity of the project was increased by 0.4MW, the change would have increased the emission reduction as stated in the registered PDD. The PDD was revised to include this change and the impacts of the change to the project design on the additionality, the scale of the project, the applicability of the methodology and the monitoring plan have been discussed in the revised PDD version 6.0 following paragraph 281 of Project Standard version 07.0.

The revised PDD version 6.0 has been viewed by the assessment team. It was confirmed that the description in the revised PDD reflects the implementation, operation and monitoring of the modified project activity via on-site inspection and document review of the Preliminary Design Report for Kongzishan station (/25/). This change falls in the category of changes in the effective output capacity due to increased number of units and increased installed capacity.

#### Impact on the additionality of the project activity:

Investment analysis was applied in the registered PDD to demonstrate the additionality. The benchmark method was used to demonstrate the unattractiveness of the investment on this project. Following the paragraph 282(a) of PS (/23/), the key parameter in the original spreadsheet affected by the actual modification to the project activity shall be modified. After checking the Preliminary Design Report for Kongzishan station, the parameters affected by the changes are the total investment and the electricity output. However, the PP clarified that the original IRR sheet is only available in pdf and word format and was not able to provide the excel version of the IRR sheet. Thus, the impact of the project design change on the IRR cannot be demonstrated with the IRR sheet used for registration. In order to demonstrate the impact of the change on the IRR, the PP provided a revised IRR calculation spreadsheet (/26//27/) using the current commonly used approach. The input values used were verified to be consistent with the ones applied for registration with the exception of the total investment and electricity output. The annual output of 89.28 GWh was applied by the PP for calculation of IRR and ex-ante ER calculation in the revised PDD for simplicity. It was accepted by the assessment team as it is more conservative to apply a higher output for IRR calculation. The IRR without CDM in the revised PDD was calculated to be 5.44% which was lower than the one (6.98%) in the registered PDD and the benchmark (8%), thus there was no impact on the additionality of the project. As the calculation process is different with the one used in the registered PDD, the IRR sheet is only used as a reference.

In order to demonstrate the impact of the change of total investment and output on the additionality of the project, the assessment team applied the result of the sensitivity analysis in the registered PDD for analysis.

Items	Registered PDD	Revised PDD	Change	The threshold in the sensitivity analysis	Conclusion
Total investment	274 Million	276.2576 Million	+0.82%	- 9.2%	No impact
Output	89.28 GWh	90.4935 GWh	+1.36%	+8.9%	No impact

It was concluded that the changes are within the threshold of the variation of the input values in the sensitivity analysis of registered PDD, thus the conclusion of the investment analysis is not affected by the change.

In addition, the actual electricity output since the start of the crediting period up until the end of this monitoring period (28/02/2014) was compared with the estimated value in the registered PDD for the same period. The result showed that the electricity supplied to the grid was far less than the estimation in the registered PDD. Therefore, it is unlikely that the output of the project will be increased by 8.9% to reach the benchmark.

In conclusion, the change to the project design has not impacted the additionality of the project.



### The impact on the scale of the project

According to the registered PDD, the project is a large scale project with the capacity of 28MW. The capacity of the project after the design change is 28.4 MW. Therefore, the project remains as a large scale project.

Item	Registered PDD	Revised PDD	Conclusion
Installed capacity	28 MW	28.4MW	The project is still a large scale project

### The impact on the applicability of the methodology:

The applicability of the methodology of the project was re-assessed by the assessment team. It was confirmed that the change to the project design has no impact on the applicability of the methodology.

Applicability of the methodology	Registered PDD	Revised PDD	Conclusion
Grid-connected renewable power generation project activities that applies to electricity capacity additions from: <ul style="list-style-type: none"> <li>- Run-of-river hydro power plants; hydro power projects with existing reservoirs where the volume of the reservoir is not increased</li> <li>- New hydro electric power projects with reservoirs having power densities (installed power generation capacity divided by the surface area at full reservoir level) greater than 4 W/m<sup>2</sup></li> <li>- Wind sources;</li> <li>- Geothermal sources;</li> <li>- Solar sources;</li> <li>- Wave and tidal sources.</li> </ul>	Applicable	Applicable, not affected by the design change.	No impact
This methodology is not applicable to project activities that involve switching from fossil fuels to renewable energy at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site;	Not applicable	Not applicable	No impact
The geographic and system boundaries for the relevant electricity grid can be clearly identified and information on the characteristics of the grid is available	Applicable	Applicable, not affected by the change.	No impact

### The impact on the monitoring plan

According to the monitoring plan in the revised PDD, a new meter (M7) is installed at the project site to monitoring the electricity generated from the newly installed generators. The electricity supplied to the grid and imported from the grid via the main line is still monitored by the main meter (M1), which is installed at the 110 kV Jianshi Station. The electricity imported from the grid via the backup lines are still monitored by the meters (M4, M5 and M6) installed at the 10kv backup lines. There is not impact on the monitoring of the parameter EGy from the project design change.

The monitoring of the parameter “Surface area at full reservoir level (area)” is related to the reservoirs which remain the same as in the registered PDD. Therefore, there is no impact on the monitoring of the parameter “area” from the project design change.

Therefore, it was concluded that the monitoring plan in the revised PDD is still in compliance with the monitoring methodology ACM0002 version 06 and the level of accuracy and completeness in the monitoring of the project activity is not affected by the design change.

It was thus verified that the change has no impact on the scale of the project, the additionality, applicability of the methodology and the level of accuracy and completeness in the monitoring of the project activity. Therefore, this change was considered as changes that do not require prior approval by the board in accordance with Appendix 1 of the Project Standard version 07.0 (/24/). The revised PDD is submitted along with the issuance request.

### 3.2.5 Changes to start date of crediting period

The start date of the crediting period was changed from 01/07/2008 to 30/06/2009 before the start of the first monitoring period. There was no change during this monitoring period.

### 3.3 Remaining Issues, CAR's, FAR's from Previous Validation or Verification

This is the second periodic verification for the project. There were no remaining issues from previous validation (/8/), the validation opinion of the RMP (/9/) and first periodic verification (/10/).

### 3.4 Completeness and accuracy of Monitoring

#### 3.4.1 Verification of monitoring of parameters

Monitoring of reductions in GHG emissions to result from the registered project have been implemented in accordance with the monitoring plan contained in the revised PDD version 6.0. The monitoring mechanism, including the data collection system, is effective and reliable.

#### (1) Surface area of the reservoir (Area)

Monitoring Plan in the revised PDD & Approved Methodology Monitoring Report, onsite checks	Data/Parameter	Description	Measured/Calculated/Default	Source data	of	Monitoring equipment	Measuring/Reading/Recording frequency	Calculation method (if applicable)	QA/QC procedures
<b>Requirement in the applicable methodology and relevant EB Documents</b>	Area	surface area at full reservoir level	Measured	Not mentioned		Not mentioned	At start of the project	Not applicable	Not mentioned
<b>Requirement in the monitoring plan of the revised PDD</b>	Area	surface area at full reservoir level	Measured	Measured		Be measured through reservoir map	At the start of the project	Not applicable	Not mentioned
<b>Implementation of the project</b>	Area	surface area at full reservoir level	Measured	Reservoir area measurement document		Hubei Institute of Survey&Design for Water Resources&Water Power Engineering conducted the ex-post measurement of the surface area.	At the start of the project	Not applicable	Not mentioned
<b>Conclusion on the compliance of the implementation with the monitoring plan &amp; applicable methodology.</b>	In compliance	In compliance	In compliance	In compliance		In compliance	In compliance	In compliance	In compliance

According to the monitoring plan in the revised PDD (/2/) and the methodology ACM0002 version 06, the surface area at full reservoir level is measured through reservoir map at the start of the project.

There are two reservoirs (Hongwawu reservoir and Zhamushui reservoir) involved in the project activity. The surface area at full reservoir of Hongwawu reservoir and Zhamushui reservoir was measured by Hubei Institute of Survey&Design for Water Resources&Water Power Engineering which was authorized by Ministry of Construction of the People's Republic of China. The Surface area certificate (0) and the accreditation certification of the Institute (/22/) have been supplied for verification. It was confirmed the surface area of the reservoir has been monitored in accordance with the monitoring plan in the revised PDD and the reported value in the MR version 06 is consistent with the value in the surface area certificate.



According to ACM0002 version 6, the project emissions from the reservoir have to be taken into account in case the power density of the project is between 4 W/m<sup>2</sup> and 10 W/m<sup>2</sup>. The power density of the project is calculated as follows:

$$\text{Hongwawu stations: } Powerdensity = \frac{CAP_{PJ}}{Area} = \frac{18,000,000W}{240,200m^2} = 74.94W / m^2$$

$$\text{Zhamushui station: } Powerdensity = \frac{CAP_{PJ}}{Area} = \frac{10,400,000W}{790,000m^2} = 13.16W / m^2$$

The power density of the project is verified to be higher than the 10 W/m<sup>2</sup>, therefore the project emission caused from the reservoir does not need to be taken into account for the project as per ACM0002 version 06.

### 3.4.2 Baseline emissions

#### 3.4.2.1 Electricity supplied to the grid by the project (EGy)

Monitoring Plan in the revised PDD & Approved Methodology Monitoring Report, onsite checks	Data/Parameter	Description	Measured/Calculated/Default	Source data	of	Monitoring equipment	Measuring/Reading/Recording frequency	Calculation method (if applicable)	QA/QC procedures
Requirement in the applicable methodology and relevant EB Documents	EGy	Electricity supplied to the grid by the project	Directly measured	Not mentioned		Not mentioned	hourly measurement and monthly recording	Not mentioned	Double check by receipt of sales
Requirement in the monitoring plan of the revised PDD	EGy	Electricity supplied to the grid by the project	Measured	Measured		electricity meters	hourly measurement and monthly recording	EGy is determined by electricity exported to the grid by the project, electricity imported from the grid via main line and electricity imported from the grid via backup lines	rechecked by comparing with the electricity sales receipt from power corporation
Implementation of the project	EGy	Net electricity supplied to the grid by the project	Measured	Monthly reading records of the main meter M1.		electricity meters	Continuously measured and monthly recording	The net electricity supplied to the grid is the electricity exported to the grid minus the electricity imported from the grid	Receipts for electricity sales are used for crosscheck
Conclusion on the compliance of the implementation with the monitoring plan & applicable methodology.	In compliance	In compliance	In compliance	In compliance		In compliance	In compliance	In compliance	In compliance

As per the monitoring plan in the revised PDD, Electricity supplied to the grid by the project (EG<sub>y</sub>) will be calculated as electricity exported to the grid by the project minus electricity imported from the grid via the main line and electricity imported from the grid via the backup lines. The electricity exported to and imported from the grid via the main line will be monitored by meter (M1) installed at Jianshi Substation. A meter M2 is installed at Hongwawu II Substation at the project site to measure the electricity exported and imported by Hongwawu I and II stations; a meter M7 is installed at 10kV Kongzishan Substation at the project site to measure the electricity exported and imported by the Kongzishan station; a meter M3 is installed at 110 kV Zhamushui Substation at the project site to measure the electricity exported and imported of the project.

Through onsite visit, it was confirmed that meters M1, M2, M3 and M7 have been installed as per the revised PDD. The accuracy of M1 (0.2s), M2 (0.5s), M3 (0.2s), M7 (0.2s) is in compliance with the monitoring plan. The main meter M1 (accuracy of 0.2s, Serial No. 09090158090077) used in the previous monitoring period was replaced by a new meter (accuracy of 0.2S, Serial No. 212484124) on 21/05/2013(/29/). The meter M7 (accuracy of 0.5s, Serial No. 20001110969988) was replaced by a new meter (accuracy of 0.2s, Serial No. 09090158090077) on 06/06/2013 (/30/).

The readings of meter M1 are recorded into Daily Reading Records (DRRs) on a daily basis by designated personnel of the project owner and the grid company (/13/). The data in DRRs are aggregated into Monthly Reading Records (MRRs /13/). The data in MRRs are used to calculate monthly electricity exported to and imported from the grid by the project. Electricity Transaction Notes and invoices (/14/) are issued based on the reading of the main meter M1.

As per the RMP, 10 kV backup line at each plant (Hongwawu I hydropower plant, Hongwawu II hydropower plant and Zhamushui hydropower plant) will be used to supply electricity to the plant in case of emergency when the main power line fails to supply power.

Meter M4 (SN: 20061174020308) and M5 (20070957010566) are installed to measure the electricity imported from the grid via the two 10 kV lines. The Meter M6 was still not installed during the monitoring period. The Kongzishan station is used as an auxiliary power source.

Through onsite visit, it was confirmed that the meters M4 and M5 are installed and their accuracy was 1.0 which is in line with the national standards DL/T448-2000 Technical administrative code of electric energy metering (/34/). The meters were read and recorded by designated staff of the grid company and sale receipts for the imported electricity through backup lines were monthly issued and submitted to the project owner.

Electricity supplied to the grid by the project (EG<sub>y</sub>) is calculated as electricity exported to the grid by the project minus electricity imported from the grid via the main line and electricity imported from the grid via the backup lines. Meter readings of electricity exported to the grid by the project and electricity imported from the grid via the main line have been cross checked by the corresponding sales receipts to ensure the conservativeness of the emission calculation. Values from the sales receipts of electricity imported from the grid via the backup lines will be used for emission calculation, which is in compliance with the monitoring plan in the revised PDD.

It is verified that reported amount of electricity exported to and imported from the grid by the project in the MR version 06 are consistent with the data in MRRs and the sale receipts (including ETNs and sales invoices(/13//14/)), and the conservative data were used to calculate the baseline emissions. ER calculation spreadsheet version 06 dated 04/12/2014 (/7/) has been checked and it is verified that the value of EG<sub>y</sub> in the spreadsheet was complete and accurate and the calculation was in compliance with the monitoring plan and the methodology applied.

The values of electricity exported to the grid by the project from the sale receipts for the period from 26/11/2012 to 31/05/2013, and July 2013 in the ER calculation spreadsheet were however inconsistent with the values from the sale invoices. In addition, the values of the electricity imported from the grid via the main line and backup lines taken from the sale receipts in the ER calculation spreadsheet were inconsistent with the values from the invoices. **CAR #3** was raised requesting the PP to address the inconsistencies. In response, the PP corrected the values and submitted the corresponding sale receipts and statements from the grid company confirming the values (/31//32/). After checking the reported data in the revised ER calculation spreadsheet against the sale receipts and the grid company confirmation, the assessment team confirmed the issues were addressed appropriately. CAR #3 was closed.

### 3.4.3 Leakage

As per page 23 of the registered PDD, the approved RMP, the revised PDD and applied methodology ACM0002 Version 06, no leakage needs to be considered.

### 3.4.4 Verification of implementation of sampling plan

No sampling plan was applied.

### 3.5 Accuracy of Equipment

According to the monitoring in the revised PDD, the meter M1 with the accuracy of 0.2s will be calibrated annually and the accuracy and the calibration of the meters M2, M3, M4, M5 and M7 are in accordance to the industrial standard DL/T448—2000.

Through on site verification, it is verified that the accuracy of the meters was in compliance with the monitoring plan and all the six meters mentioned above (M1, M2, M3, M4, M5 and M7) have been calibrated. Detailed parameters of the meters and calibration information are as follows:

Monitoring equipment	Monitoring parameter	S/N	Type	Level	Calibration frequency requirement	Calibration date	Validity	Are there delays in calibration?
M1 (old)	EGy	090901580 90077	Electricity meter	0.2s	Annually	31/03/2010 25/03/2011 20/03/2012 19/03/2013	18/03/2014	No
M1 (new)	EGy	212484124	Electricity meter	0.2s	Annually	21/05/2013 18/02/2014	17/02/2015	No
M2	n/a	96129233	Electricity meter	0.5s	Annually	16/09/2010 10/09/2011 10/09/2012 10/09/2013	09/09/2014	No.
M3	n/a	110607361 800035	Electricity meter	0.2s	Annually	20/08/2012 20/08/2013	19/08/2014	No.
M4	EGy	200611740 20308	Electricity meter	1.0	Five years	24/02/2007 15/02/2012	14/02/2017	No.
M5	EGy	200709570 10566	Electricity meter	1.0	Five years	24/08/2009 15/02/2012	14/02/2017	No.
M7 (old)	n/a	200011109 69988	Electricity meter	0.5s	Annually	02/09/2012	01/09/2013	No.
M7 (new)	n/a	090901580 90077	Electricity meter	0.2s	Annually	06/06/2013	05/06/2014	No.

All the meters were calibrated by the Metrology Institute of Jianshi Electric Power Company and Electric Power Measurement Center of Enshi Electric Power Company. The calibration certificates (/16/) were checked by the assessment team and the calibration information presented in the MR version 06 is found to be consistent with the calibration certificates. The accreditation certificates for the Metrology Institute of Jianshi Electric Power Company and Electric Power Measurement Center of Enshi Electric Power Company (/17//18/) were also obtained and verified to be valid for this monitoring period.

Through the on-site visit, it was verified that the meters M1, M4 and M5 were replaced during this monitoring period. Also, the grid company was changed from Jianshi Electric Power Company to Hubei Electric Power Company. Relevant information was not reported in the monitoring report. **CAR #2** was raised to request PP to provide transparent information of the monitoring meters and their calibration records, and the grid company in the monitoring report.

In response, the PP reported the replacement information of M1 in the revised MR and then submitted the replacement record and calibration records of both meters (old and new meter M1). The PP also clarified that the meters M4 and M5 were replaced after the end of the second monitoring period and provided the corresponding replacement confirmation from the grid company (/28/).

Since the change occurred outside of the monitoring period, the replacement of M4 and M5 is not reported in the MR. According to the monitoring plan in the revised PDD, a new meter (M7) is installed at the project site to monitoring the electricity generated from the newly installed generators. The PP also corrected the name of the grid company from Jianshi Electric Power Company to Hubei Electric Power Company in the revised PDD and MR and presented the relevant confirmation from the grid company. It was verified that the grid company still belongs to the CCPG as specified in the registered PDD and the revised PDD; and the monitoring point is not changed, therefore, there is no impact on the project from this change. It was also noticed that the calibration information of M1 was not complete in the MR Version 04 as the gap between two calibrations (20/03/2012 and 21/05/2013) exceeded one year. In response, PP provided the missing calibration certificate (dated 19/03/2013) in the MR Version 05. No delay in calibration was therefore observed. CAR #2 was thus closed.

### **3.6 Summary of compliance with the calibration frequency requirements for measuring instruments.**

The calibration of the meters (M1, M4 and M5) has an impact on the claimed emission reductions. All the meters have been calibrated as per the calibration frequency requirement specified in the monitoring plan.

### **3.7 Accuracy of Emission Reduction Calculations**

**CAR #3** has been raised regarding the accuracy of emission reduction calculation, the response to CAR #3 was satisfactory and these were closed. The details of the reported and the verified values for all parameters are listed in section 4, 'Calculation of Emission Reductions'.

It has been verified that:

- (a) All data were available for this monitoring period.
- (b) The reported data has been cross checked against the sale receipts from the grid company
- (c) Appropriate methods and formulae for calculating baseline emissions and project emissions have been followed;
- (d) The emission factors and default values that were applied in the calculations was consistent with the PDD.

### **3.8 Quality of Evidence to Determine Emission Reductions**

Critical parameters used for the determination of the Emission Reductions are discussed in section 3.4 above. All the data recorded is in compliance with the monitoring report.

### **3.9 Management and operational System and Quality Assurance**

Management and operational system is in place. QA/QC procedures stipulated in the approved RMP have been followed. Management system and quality assurance procedures have been stipulated in the CDM Project Management and Operating Procedures (/19/) and have been implemented during daily operation. Responsibility has been allocated as per the approved RMP. The monitoring staffs have been trained and have relevant sectoral knowledge and skills. This has been verified by on-site interview and document review of the training records and qualification certificates of the staff (/20/). Therefore we can affirm that the management system of the CDM project is in place with the responsibilities properly identified and in place.

### **3.10 Data from External Sources**

The external data for this project is:

- (1) The baseline emission factor: Based on the information in the registered PDD, the baseline emission factor ( $EF_y$ ) is determined ex-ante according to the applied approved methodology ACM0002 and is fixed for the first crediting period. The value of the baseline emission factor used in the monitoring report version 06 is 0.9244 tCO<sub>2</sub>e/MWh, which is the same as the one in the registered PDD and revised PDD Version 6.0.

#### 4. Calculation of Emission Reductions

Parameter	Reported Value in MR ver. 01	Verified Value in MR ver. 06
EG <sub>y</sub> (MWh)	48,088.130	46,786.552
EF <sub>y</sub> (tCO <sub>2</sub> e/MWh)	0.9244	0.9244
Area (m <sup>2</sup> )	Hongwawu reservoir : 240,200 Zhamushui reservoir: 790,000	Hongwawu reservoir : 240,200 Zhamushui reservoir: 790,000

Baseline emissions (BE<sub>y</sub>) for the monitoring period from 01/01/2011 to 28/02/2014 is

$$BE_y = EG_y \times EF_y = 46,786.552 \text{ MWh} \times 0.9244 \text{ tCO}_2\text{e/MWh} = 43,249 \text{ tCO}_2\text{e};$$

Project emission (PE<sub>y</sub>) for the monitoring period from 01/01/2011 to 28/02/2014 is zero;

$$PE_y = 0 \text{ tCO}_2\text{e};$$

Leakage(L<sub>y</sub>) is zero;

$$L_y = 0 \text{ tCO}_2\text{e};$$

Emission Reductions for the monitoring period from 01/01/2011 to 28/02/2014 (ER<sub>y</sub>) is:

$$ER_y = BE_y - PE_y - L_y = 43,249 \text{ tCO}_2\text{e} - 0 \text{ tCO}_2\text{e} - 0 \text{ tCO}_2\text{e} = 43,249 \text{ tCO}_2\text{e}$$

#### Emission Reduction:

Period	Reported Value (as per the web hosted MR) tCO <sub>2</sub> e	Verified Value tCO <sub>2</sub> e	If Different, Summary of Issues That Caused the Difference
01/01/2011 to 28/02/2014	44,452	43,249	CAR #3 was raised regarding the consistency of the values taken from sale receipts used for cross checking. Relevant values were corrected in the response to the finding.
CERs ( Up to 31 December 2012 (1st commitment period); )	20,685	20,566	
CERs (From 1 January 2013 onwards.	23,767	22,683	



## **5. Recommendations for Changes in the Monitoring Plan**

The monitoring plan was revised in this monitoring period. No further recommendation is made for the changes in the monitoring plan than those described in section 3.2 of this report.

## 6. Overview of Results

### Assessment Against the Provisions of Decision 17/CP.7:

Is the project documentation in accordance with the requirements of the registered PDD and relevant provision of decision 17/CP.7, EB decisions and guidance and the COP/MOP?

*Yes. The results of the compliance assessment are recorded in the verification checklist which is used as an internal report only.*

Have on-site inspections been performed that may comprise, inter alia, a review of performance records, interviews with project participants and local stakeholders, collection of measurements, observations of established practices and testing of the accuracy of monitoring equipment?

*Yes. The assessment team visited the site and undertook interviews, collected data, audited the implementation of procedures, checked calibration certificates and checked data, inter alia.*

*The results of the site visit are recorded in the verification checklist which is used as an internal report only.*

*The evidences have been checked and collected. The final monitoring report is attached with this verification report.*

Has data from additional sources been used? If yes, please detail the source and significance.

*Yes.*

- (1) *Based on the information in the registered PDD, the baseline emission factor (EF<sub>y</sub>) is determined ex-ante according to the approved methodology ACM0002 and is fixed for the first crediting period. The value of baseline emission factor used in the monitoring report version 06 is 0.9244 tCO<sub>2</sub>e/MWh, which is the same as the one in the registered PDD and revised PDD. The significance is high and the uncertainty is low.*

Please review the monitoring results and verify that the monitoring methodologies for the estimation of reductions in anthropogenic emissions by sources have been applied correctly and their documentation is complete and transparent.

*Yes. The monitoring methodology has been correctly applied and the monitoring report and supporting references are complete and transparent.*

Have any recommendations for changes to the monitoring methodology for any future crediting period been issued to the project participant?

*No.*

Determine the reductions in anthropogenic emissions by sources of greenhouse gases that would not have occurred in the absence of the CDM project activity, based on the data and information using calculation procedures consistent with those contained in the registered project design document and the monitoring plan.

*The data used in anthropogenic emission reduction calculation is consistent with those contained in the registered PDD and monitoring plan. The estimated emission reduction was 264,707 tCO<sub>2</sub>e for the period 01/01/2011 to 28/02/2014 as per the estimation made in the revised PDD. The actual emission reduction has been verified as 43,249 tCO<sub>2</sub>e for the same period.*





Identify and inform the project participants of any concerns related to the conformity of the actual project activity and its operation with the registered project design document. Project participants shall address the concerns and supply relevant additional information.

*The project design was change during this monitoring period. The PDD was revised to reflect this change. The impacts of the change to the project design on the additionality, the scale of the project, the applicability of the methodology and the monitoring plan have been discussed in the PDD following paragraph 281 of Project Standard version 07.0 and is addressed in section 3.2 of the report above. As this change occurred in this monitoring period, there is no impact on the previous verification.*

Post monitoring report on UNFCCC website

*Yes, the monitoring report is available at ref. 0904 on UNFCCC website*

<http://cdm.unfccc.int/Projects/DB/DNV-CUK1169846013.46/iProcess/SGS-UKL1399373047.63/view>

## 7. Verification and Certification Statement

SGS United Kingdom Ltd has been contracted by International Bank for Reconstruction and Development to perform the verification of the emission reductions reported for the CDM project "Guangrun Hydropower Project in Hubei Province, P.R. China" (UNFCCC ref. No. 0904) in the period 01/01/2011 to 28/02/2014 (both days included).

The verification is based on the validated and registered project design document and the monitoring report for this project. Verification is performed in accordance with section I of Decision 3/CMP.1, and relevant decisions of the CDM EB and CoP/MoP. The scope of this engagement covers the verification and certification of greenhouse gas emission reductions generated by the above project during the above mentioned period, as reported in the Monitoring report version 06 dated 04/12/2014.

The management of International Bank for Reconstruction and Development is responsible for the preparation, calculation and determination of GHG emission reductions from the project. The development and maintenance of records and reporting procedures are in accordance with the monitoring report.

It is our responsibility to express an independent GHG verification opinion on the GHG emissions and on the calculation of GHG emission reductions from the project for the period from 01/01/2011 to 28/02/2014 based on the reported emission reductions in the Monitoring Report version 06 dated 04/12/2014 for the same period.

Based on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these, SGS planned and performed our work to obtain the information and explanations that we considered necessary to provide sufficient evidence for us to give reasonable assurance that this reported amount of GHG emission reductions for the period is fairly stated.

SGS confirms that the project is implemented as described in the registered PDD and revised PDD. Based on the information we have seen and evaluated, we confirm the following:

Project Title:	Guangrun Hydropower Project in Hubei Province, P.R. China
UNFCCC Reference Number:	0904
Revised PDD Used for Verification:	Revised PDD version 6.0 dated 04/12/2014
Methodology Used for Verification:	ACM0002 Version 06 dated 19/05/2006
Applicable Period:	01/01/2011 – 28/02/2014
Total GHG Emission Reductions Verified:	43,249 tCO <sub>2</sub> e

### Signed on behalf of the Verification Body by Authorized Signatory



Signature:

Name: Jonathan Hall

Date: 19/12/2014

## 8. Document References

- /1/ PDD version 2.0 dated 12/11/2006
- /2/ Revised PDDs  
version 3.0 dated 15/07/2014  
version 4.0 dated 05/08/2014  
version 04.1 dated 02/09/2014  
Version 5.0 dated 11/10/2014  
Version 6.0 dated 04/12/2014
- /3/ Revised monitoring plan approved by EB on 27/12/2011
- /4/ Project information: <http://cdm.unfccc.int/Projects/DB/DNV-CUK1169846013.46/view>
- /5/ ACM0002 Version 06 dated 19/05/2006
- /6/ Monitoring reports of the project for the second monitoring period.
 

Version	Date	Nature of revisions
01	06/05/2014	Initial version for publication
02	16/07/2014	Revision of the MR to reflect the change to the project design in response to CAR #1; Revision of D.2 about the monitoring equipment in response to CAR #2; Revision of D.2 and section E in response to CAR #3;
03	06/08/2014	Update of the MR template in response to CAR #1; Revision of D.2 and section E in response to CAR #3
04	02/09/2014	Revision of D.2 and section E in response to CAR #3
05	15/10/2014	Revision of B.1 and D.2 in response to CAR #1 and CAR #2
06	04/12/2014	Revision of A.5, B.2.2, B.2.3 and B.2.4 in response to CAR #1
- /7/ Emission reduction spreadsheet  
version 01 dated 25/04/2014  
version 02 dated 15/07/2014  
Version 03 dated 05/08/2014  
Version 04 dated 02/09/2014  
Version 05 dated 11/10/2014  
Version 06 dated 04/12/2014
- /8/ Validation report issued by the DNV, Report No.:2006-2133 Revision No. 01 dated 25/01/2007
- /9/ Validation report issued by SGS for the revision of the monitoring plan Rev. 1 dated 10/02/2012
- /10/ Verification report for the first monitoring period of the project Revision No. 0 dated 29/02/2012
- /11/ Line connection diagram of the project
- /12/ Power Purchase Agreements (PPAs) signed between the grid company and the hydropower company dated 23/09/2011, 25/09/2012, year 2013 (not dated) and 07/05/2014
- /13/ Daily Reading Records (DRRs) of the project covering this monitoring period  
Monthly Reading Records (MRRs) of the project covering this monitoring period
- /14/ Sales receipts (ETNs and invoices) for the electricity exported to and imported from the grid by the project covering this monitoring period
- /15/ Operation logbooks of the project
- /16/ Calibration certificates of the meters M1, M2, M3, M4, M5 and M7, issued by Metrology Institute of Jianshi Power Company and Electric Power Measurement Center of Enshi Electric Power Company
- /17/ Accreditation Certificates of Metrology Institute of Jianshi Power Company accredited by Quality Technical Supervision Bureau of Enshi Tujia and Miao Minority Autonomous Prefecture dated 23/01/2010 valid till 22/01/2014
- /18/ Accreditation Certificates of Electric Power Measurement Center of Enshi Electric Power Company accredited by Quality Technical Supervision Bureau of Enshi Tujia and Miao Minority Autonomous Prefecture dated 11/08/2012 valid till 10/08/2016
- /19/ CDM Project Management and Operating Procedures
- /20/ Training records and qualification certificates of the staffs

- /21/ Surface area certificate issued by Hubei Institute of Survey&Design for Water Resources&Water Power Engineering dated 23/02/2010 and 10/03/2012
- /22/ Accreditation certificate of Hubei Institute of Survey&Design for Water Resources&Water Power Engineering issued by Ministry of Construction of the People's Republic of China dated 19/08/2004 (Certification No.170103-sj)
- /23/ Validation and verification Standard version 07.0 dated 01/06/2014
- /24/ Project Standard version 07.0 dated 01/06/2014
- /25/ Preliminary Design Report for Kongzishan station dated July 2009
- /26/ The revised IRR calculation spreadsheets dated 15/07/2014 and 05/08/2014
- /27/ The revised IRR calculation spreadsheet dated 05/08/2014 for test the IRR value when the preferential policies applied
- /28/ The replacement confirmation of the meter M4 (replaced on 24/05/2014) and M5 (replaced on 15/05/2014) issued by Jianshi County Power Supply Company dated 10/06/2014
- /29/ The replacement record (replaced on 21/05/2013) of meter M1 dated 04/06/2013
- /30/ The replacement record (replaced on 06/06/2013) of meter M7 dated June 2013
- /31/ The Confirmation of the amount of power purchased via the main line from Jan. 2013 to Feb. 2014 by the project by Enshi Electric Power Supply Company dated 25/08/2014
- /32/ The confirmation of the amount of power purchased via the backup line from Oct. 2013 to Feb. 2014 by the project by Jianshi Electric Power Supply Company dated 25/08/2014
- /33/ The confirmation of the commissioning date (25/09/2012) of the Kongzishan station from the grid company by Jianshi Electric Power Supply Company dated 25/10/2012
- /34/ DL/T448-2000 Technical administrative code of electric energy metering

## 9. Findings Overview

### Findings Overview Summary

	CARs	CLs	FARs
Total Number raised	3	0	0

Date:	03/06/2014	Raised by:	Assessment team		
Type:	CAR	Number:	1	Reference:	Section 2.2
<b>Lead Assessor Comment:</b>			<b>Date:</b> 03/06/2014		
Through site visit, it is observed that two unit of 200 KW generators were installed at the project site during this monitoring period, which is no in consistent with the project design in the registered PDD. Corrective action is required in this regards.					
<b>Project Participant Response:</b>			<b>Date:</b> 16/07/2014		
The designed and initial installed capacity of the project was originally assessed at 28MW. However, on 25/09/2012, an auxiliary station named Kongzishan station with installed capacity of 400kW (2x200kW) was implemented and put into commercial operation. Therefore, the installed capacity of the project is changed from 28 MW to 28.4 MW. The revised PDD version 3.0 dated 15/07/2014 was developed and submitted to EB for applying the approval of Changes to the project or programme design.					
<b>Documentation Provided as Evidence by Project Participant:</b>					
1. The revised PDD version 3.0 dated 15/07/2014					
2. ER_calculation_spreadsheet_Guangrun_Hydropower_20140715					
3. The Preliminary Design Report for Kongzishan station					
4. IRR spreadsheet dated 15/07/2014 received from the PP					
5. MR version 02 dated 16/07/2014					
<b>Information Verified by Lead Assessor:</b>					
PP provided the revised PDD version 3.0 dated 15/07/2014 applying the PDD template version 04.1 which was not the latest version of the PDD template on the UNFCCC website. Also, it is noticed that Appendix 6 of the PDD is not correctly completed because the information regarding the revised monitoring plan approved on 27/12/2011 was not provided there. Besides, the PP did not report relevant information in the revised PDD following Paragraph 281 of Project Standard version 07.0.					
The updated IRR and PDD were checked by the assessment team. It was observed that the parameters such as total investment, installed capacity and annual output were updated using the values from the Preliminary Design Report dated July 2009 for the newly added Kongzishan station. However, it is observed that the revised IRR was not calculated using the approach adopted in the registration of the project and the input value of Local Interest-free loan (66 million RMB) was not consistent with the one used for registration. Also, it was found that the MR version 02 did not applying the latest MR template.					
<b>Reasoning for not Acceptance or Acceptance and Close Out: 01/08/2014</b>					
The finding remains open for the following reasons:					
1. PDD template is not the latest version and revised PDD was not correctly completed following paragraph 281 of Project Standard version 07.0.					
2. It is not clarified why the revised IRR sheet was not calculated following the approach used in registration and input value for Local Interest-free loan is not correct.					
3. MR template is not the latest version.					

<b>Project Participant Response:</b>	<b>Date: 06/08/2014</b>																		
<p>1. The PDD template has been updated to the latest version. The revised PDD has been completed following paragraph 281 of Project Standard version 07.0.</p> <p>2. According to the Final Report of Financial Analysis on New Component of Hubei Province Generation Expansion Strategy Project, the Local Interest-free loan is 20 million RMB, which is a typo in the IRR calculation spreadsheet dated 15/07/2014.</p> <p>The project is one of the earliest CDM projects being developed back in 2005. The registration of the project was on 27/04/2007. Back then, there was no reference on standardized tools of additionality demonstration including investment analysis. The financial analysis of project was conducted and presented in the form of PDF document, which was approved by Executive Board and registered with UNFCCC as part of the registration package. Given the limited information presented in the registered financial document, it is nearly impossible to reproduce the investment analysis without understanding of assumptions and calculation method that were defined and applied in the original analysis. In order to demonstrate the investment return after the change of project design, the current commonly used approach for IRR calculation is applied. It is demonstrated that IRR value is 5.44% without CDM revenue, which is much lower than the benchmark 8%. Furthermore, since the IRR of the project is calculated at the investment-decision time of year 2005, some preferential policies, such as VAT deductible policy and VAT refund policy, were not put into effect and are therefore not applied. However, even with these preferential policies being taken into account, the IRR of the project is 7.01%, which is still lower than the benchmark of 8%. Therefore, the approach for IRR calculation in the revised IRR calculation spreadsheet is reasonable and has no impact on the analysis of the additionality of the project.</p> <p>3. The MR template has been updated to the latest version.</p>																			
<b>Documentation Provided as Evidence by Project Participant:</b>																			
<p>1. The revised PDD version 4.0 dated 05/08/2014</p> <p>2. The MR version 03 dated 06/08/2014 for the 2<sup>nd</sup> monitoring period</p> <p>3. The revised IRR calculation spreadsheet dated 05/08/2014</p> <p>4. The revised IRR calculation spreadsheet dated 05/08/2014 for test the IRR value when the preferential policies applied</p>																			
<b>Information Verified by Lead Assessor:</b>																			
<p>The MR template version 04.0 has been correctly applied.</p> <p>The revised PDD version 04 dated 05/08/2014 was provided. It was verified that the PDD template version 05.0 has been correctly applied. The summary of post registration changes have been completed to include the previous revision of monitoring plan and the change to the project design.</p> <p>The impacts of the change to the project design on the additionality, the scale of the project, the applicability of the methodology and the monitoring plan have been discussed in the PDD following paragraph 281 of Project Standard version 07.0.</p> <p>It was also clarified that the original IRR sheet is only available in pdf and word format. The PP was not able to provide the excel version of the IRR sheet. Thus, the impact of the project design change on the IRR cannot be demonstrated using the IRR sheet for registration. In order to demonstrate the impact of the change on the IRR, PP provided a revised IRR calculation spreadsheet dated 05/08/2014 using the current commonly used approach. The input values used were verified to be consistent with the ones applied for registration with the exception of the total investment and electricity output. The IRR without CDM was calculated to be 5.44% which was lower than the one (6.98%) in the registered PDD and the benchmark (8%), thus there was no impact on the additionality of the project. As the calculation process is different with the one used in the registered PDD, the IRR sheet is only used as a reference.</p> <p>In order to track the change of total investment and output on the project, the assessment team applied the result of the sensitivity analysis in the registered PDD.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th>Items</th> <th>Registered PDD</th> <th>Revised PDD</th> <th>Change</th> <th>The threshold in the sensitivity analysis</th> <th>Conclusion</th> </tr> </thead> <tbody> <tr> <td>Total investment</td> <td>274 Million</td> <td>276.2576 Million</td> <td>+0.82%</td> <td>- 9.2%</td> <td>No impact</td> </tr> <tr> <td>Output</td> <td>89.28 GWh</td> <td>90.4935 GWh</td> <td>+1.36%</td> <td>+8.9%</td> <td>No impact</td> </tr> </tbody> </table>		Items	Registered PDD	Revised PDD	Change	The threshold in the sensitivity analysis	Conclusion	Total investment	274 Million	276.2576 Million	+0.82%	- 9.2%	No impact	Output	89.28 GWh	90.4935 GWh	+1.36%	+8.9%	No impact
Items	Registered PDD	Revised PDD	Change	The threshold in the sensitivity analysis	Conclusion														
Total investment	274 Million	276.2576 Million	+0.82%	- 9.2%	No impact														
Output	89.28 GWh	90.4935 GWh	+1.36%	+8.9%	No impact														

It was concluded that the changes are within the threshold of the input values in the sensitivity analysis of registered PDD, thus the conclusion of the investment analysis is not affected by the change.			
	Registered PDD	Revised PDD	Conclusion
Installed capacity	28 MW	28.4MW	The project is still a large scale project
Investment analysis	<8%	<8%	Not financial attractive
Common practice	Not common	Not common	Not impacted by the design change
Additionality	Additional	Additional	The project is still additional
Applicability of the methodology	Applicable	Applicable	Not impacted by the design change
Monitoring plan	N/A	New meter installed for the Kongzishan station, with the same accuracy.	As the meters for the monitoring of the parameter <b>EG<sub>y</sub></b> are not changed. The level of accuracy and completeness in the monitoring of the project activity is not affected by the change.
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>			
The change to the project design has been correctly reflected in the revised PDD version 04 and its impact has been discussed in the appendix 6 and verified to be appropriate. CAR #1 was closed.			
<b>Acceptance and Close out by Lead Assessor:</b>		<b>Date:</b> 22/08/2014.	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>			
CAR #1 was re-opened for the following issues:			
1. In revised PDD and MR, <b>Government of Canada – Ministry of Foreign Affairs &amp; International Trade</b> is listed. Canada withdrawn from KP from 15/12/2012, please keep the consistency of information;			
2. Some inconsistencies were found in revised PDD: power density is not recalculated in revised PDD (page 6, 19), and name of 110KV substation is inconsistent. Please correct.			
3. Some inconsistencies were found in MR version 04: the number of hydropower stations are wrong (section A.1), the end date of this monitoring period is wrong (section A.1), version number and version date of revised PDD are wrong (section B.1), the amount of EG <sub>y</sub> reported in section E.1 is wrong. Please correct.			
<b>Project Participant Response:</b>		<b>Date:</b> 11/10/2014	
1. The information of Government of Canada-Ministry of Foreign Affairs & International Trade have been deleted in the revised PDD and MR.			
2. About the inconsistencies in revised PDD:			
(1) The power density of the project is 27.56W/m <sup>2</sup> (13.16W/m <sup>2</sup> for Zhamushui station and Kongzishan station and 74.94W/m <sup>2</sup> for Hongwawu station). The description in revised PDD are all corrected.			
(2) The name of 110kV substation is Jianshi substation. The description in Section A.3 has been corrected.			
3. About the inconsistencies in MR:			
(1) The number of hydropower stations is four. The description in Section A.1 has been corrected.			
(2) The description of the version number and version date of the revised PDD are all updated.			
(3) The electricity exported to the grid by the project is 47,219.392MWh. The description in Section E.1 has been corrected.			
<b>Documentation Provided as Evidence by Project Participant:</b>			
1. Revised PDD version 5.0 dated 11/10/2014			
2. MR version 05 dated 15/10/2014			



<b>Information Verified by Lead Assessor:</b>					
The revised PDD version 5.0 dated 11/10/2014 and MR version 05 dated 15/10/2014 have been reviewed:					
1. The Government of Canada-Ministry of Foreign Affairs & International Trade was deleted in the revised PDD and MR.					
2. The inconsistency of the power density and name of the substation has been corrected in the PDD version 5.0.					
3. The inconsistency of the number of stations, the version and date of the MR, the EGy in E.1 were corrected in the MR version 05.					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>					
Issues are addressed and CAR #1 was closed.					
<b>Acceptance and Close out by Lead Assessor: Michael Wu</b>				<b>Date: 22/10/2014</b>	

Date:	03/06/2014		Raised by:	Assessment team	
Type:	CAR	Number:	#2	Reference:	Section 3.1.1
<b>Lead Assessor Comment:</b>				<b>Date: 03/06/2014</b>	
Through site visit, it was verified that the meters M1, M4 and M5 were replaced during this monitoring period. Also, the grid company was changed from Jianshi Electric Power Company to Hubei Electric Power Company during this monitoring period. Relevant information was not reported in the monitoring report. PP was requested to provide transparent information of the monitoring meters and their calibration records, and the grid company in the monitoring report.					
<b>Project Participant Response:</b>				<b>Date: 16/07/2014</b>	
The main meter M1 was replaced by a new one on 21/05/2013. The meter M7 was replaced by a new one on 06/06/2013. The meter M4 and M5 were replaced by new ones on 24/05/2014 and 15/05/2014, respectively. The replacement information of the meter M1 and M7 have been added into the MR version 02. The replacements of the meter M4 and M5 occurred beyond this monitoring period. Therefore, replacement information of the meter M4 and M5 were not included in the MR version 02. Before 26/11/2012, the Electric Power Company is Jianshi Electric Power Company. From 26/11/2012 on, the Electric Power Company is changed to Hubei Electric Power Company. The two companies have all identified the exact points at which the amount of electricity exported to and imported from the grid will be measured together with the project company. The relevant information has been added into the MR version 02.					
<b>Documentation Provided as Evidence by Project Participant:</b>					
1. MR version 02 dated 16/07/2014					
2. Calibration reports for the new meter M1, the old meter M7, the new meter M7					
3. The illustration about the replacement of the meter M4 and M5					

<b>Information Verified by Lead Assessor:</b>					
The replacement of M1 was added in the revised MR version 02 dated 16/07/2014, which is consistent with the ETN from Jianshi Electric Power Company for May 2013. The information of M7 and its replacement was provided in the revised MR version 02 dated 16/07/2014 and verified to be consistent with the calibration records and replacement record. A statement from the Jianshi Power Supply Company was provided by PP to confirm that the meter M4 and M5 were replaced on 24/05/2014 and 15/05/2014. As they were replaced beyond this monitoring period, it is accepted to report the original meters in the MR. The grid company that the project sold electricity to was changed from Jianshi Electric Power Company to Hubei Electric Power Company on 26/11/2012. It was confirmed that both companies belong to the CCPG and the monitoring points were not changed. Therefore, this has no impact on the project. The calibration reports of the meters submitted have been checked. Relevant information has been correctly provided in the MR.					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>					
The information of M1 and M7 as well as the grid company have been correctly reported in the revised MR version 02 dated 16/07/2014. CAR #2 was closed.					
<b>Acceptance and Close out by Lead Assessor: Michael Wu</b>				<b>Date: 18/07/2014.</b>	



<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
CAR #2 was re-opened for the following issues: As per the calibration information reported in MR V04, the calibration of M1 (old) was delayed. Please clarify and take corrective actions.	
<b>Project Participant Response:</b>	<b>Date:</b> 15/10/2014
The last calibration of M1 (old) was carried out on 19/03/2013. The validity is from 19/03/2013 to 18/03/2014. Hence, there is no delay. The calibration report of M1 (old) has been provided to DOE. The relevant description in MR has been updated.	
<b>Documentation Provided as Evidence by Project Participant:</b>	
1. The calibration report of M1 (old) carried out on 19/03/2013	
2. MR version 05 dated 15/10/2014	
<b>Information Verified by Lead Assessor:</b>	
It was verified that the meter M1 was calibrated on 19/03/2013 with the validity till 18/03/2014. Therefore, there is no delay in calibration. The information has been provided in the MR version 05 dated 15/10/2014.	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
Calibration information has been reported and valid for this monitoring period. CAR #2 was closed.	
<b>Acceptance and Close out by Lead Assessor: Michael Wu</b>	<b>Date:</b> 22/10/2014
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
CAR #2 was re-opened for the following issues:	
5. The transfer of registered PDD to the latest PDD template was not complete, such as section B.5, Section D.1, section D.2, Section D.5, Section E.5. Also, section F of the transfer PDD is not from in the registered PDD. Please check	
6. Page 10 of the track change PDD vs. page 9 of the clean PDD: the 1st table in the row entitle "annual output": the figures differ (90.49 vs. 90.4935). Also the final row of this same table, the track change version does not show the text added to replace the text deleted. Also, Appendix 1, for the Italian PP: the contact numbers are in a different colour, same in MR. Also; please clarify if there is contact information for the following PP "Gas Natural SDG. S.A, Daiwa Securities, Statkraft Carbon Invest and Statoil ASA"	
7. Page 5, section A.5 of the MR does not state the length of the CP period; Page 7, Section B.2.4 of MR the addition of M7 and the change in annual output is not discussed;	
8. ER spreadsheet:	
a) "Cover" tab: please specify the version of the PDD	
b) "ER calculation" tab: Cell D22 and Cell D23 the description of the date is not accurate.	
<b>Project Participant Response:</b>	<b>Date:</b> 04/12/2014
1. 1) Section B.5 of the registered PDD has been added into Section B.7.4 of the PDD in the latest template. 2) Section D.1 of the registered PDD has been added into Section B.1 of the PDD in the latest template. 3) Section D.2 of the registered PDD has been added into Section B.2 of the PDD in the latest template. 4) Section D.5 of the registered PDD has been added into Section B.7.4 of the PDD in the latest template. 5) Section E.5 of the registered PDD has been added into Section B.6.3 of the PDD in the latest template. 6) In the registered PDD, there isn't any Section as the same as the Section F of the latest PDD template. Hence, the Section F of the PDD in the latest template remains blank.	
2. 1) It was caused by the procedure of transferring the track change version to the clean version that the figures differ in the row entitle "annual output", which has been corrected. 2) The final row of Table 1 doesn't exist in the registered PDD version 2.0 dated 12/11/2006, which is newly added in the revised PDD. Hence, no text in the row is deleted. In order to avoid misunderstandings, the format of the row title has been updated. 3) In Appendix 1, the colour of the contact numbers of Ministry for Environment, Land and Sea is a little lighter than the colour of the other texts, which has been updated to the same colour as the other texts.	

<p>4) There is no contact information for the following PP “Gas Natural SDG. S.A, Daiwa Securities, Statkraft Carbon Invest and Statoil ASA”.</p>	
<p>3. The project applies renewable crediting period (3x7 years). For the first crediting period, the length is 7 years. Due to the change of the installed capacity, the expected annual output of the project changes from 89.28 GWh/year to 90.4935 GWh/year. In addition, the electricity monitoring meter M7 is installed in 10kV Kongzishan Substation to measure the electricity export and import of Kongzishan Station. The above contents have been added into the MR.</p>	
<p>4. ER spreadsheet:</p> <p>a) In the “Cover” tab, the estimated amount of reductions are sourced from the revised PDD version 6.0 dated 04/12/2014. The version of PDD has been specified.</p> <p>b) The description of the date in Cell D22 and Cell D23 of the “ER calculation” tab have been updated to “Emission reductions achieved during the period up to 31 December 2012” and “Emission reductions during the period from 1 January 2013 onwards”, respectively.</p>	
<p><b>Documentation Provided as Evidence by Project Participant:</b></p>	
<p>1. Registered PDD in the latest template</p> <p>2. Revised PDD version 6.0 dated 04/12/2014</p> <p>3. MR version 06 dated 04/12/2014</p> <p>4. ER calculation spreadsheet version 06 dated 04/12/2014</p>	
<p><b>Information Verified by Lead Assessor:</b></p>	
<p>After checking the registered PDD in the latest PDD template, it was confirmed that relevant information from the registered PDD has been correctly included;</p> <p>After checking the revised PDD version 6.0 dated 04/12/2014, it was confirmed that the annual output track change has been correctly displayed, the last row of the Table 1 has been adjusted to show it as addition. Colour of the Italian PP is modified to be black. And it was confirmed by PP that there is no contact for the PP Gas Natural SDG. S.A, Daiwa Securities, Statkraft Carbon Invest and Statoil ASA.</p> <p>After checking the revised MR version 06 dated 04/12/2014, it was confirmed that the length of the crediting period is correctly reported in section A.5 of the MR, and the addition of M7 and the change in annual output is now included in section B.2.4 of MR. It is also noticed that PP has included the relevant description of correction to the registered PDD in section 2.1 of the MR, which is found to be consistent with the revised PDD version 6.0 dated 04/12/2014.</p> <p>After checking the revised ER calculation spreadsheet version 06 dated 04/12/2014, it was confirmed that the version of the PDD has been correctly quoted and the description of the date in the Cell D22 and Cell D23 has been modified.</p>	
<p><b>Reasoning for not Acceptance or Acceptance and Close Out:</b></p>	
<p>Issues are addressed. CAR #2 was closed.</p>	
<p><b>Acceptance and Close out by Lead Assessor: Michael Wu</b></p>	<p><b>Date: 08/12/2014</b></p>

Date:	03/06/2014	Raised by:	Assessment team		
Type:	CAR	Number:	#3	Reference:	Section 3.1.1
Lead Assessor Comment:			Date: 03/06/2014		
The values of electricity exported to the grid by the project from the sale receipts for the period from 26/11/2012 to 31/05/2013, and July 2013 in the ER calculation spreadsheet are found to be inconsistent with the values from the sale invoices. The values of the electricity imported from the grid via the main line and backup lines from the sale receipts in the ER calculation spreadsheet are found to be inconsistent with the values from the invoices. CAR #3 was raised requesting PP to make corrective action in these regards.					
Project Participant Response:			Date: 16/07/2014		
The electricity sourced from the sale receipt for the period from 26/11/2012 to 31/12/2012 is 350.064 MWh. The electricity sourced from the sale receipts for the period from 01/01/2013 to 31/05/2013 is 4978.083 MWh. The relevant data in ER calculation spreadsheet version 01 are typo, which have been updated to be consistent in ER calculation spreadsheet version 02. The invoices of the electricity imported from the grid via the main line and backup lines have been rearranged. The relevant values have been updated to be consistent with the values from the invoices.					
Documentation Provided as Evidence by Project Participant:					
1. ER calculation spreadsheet version 02 dated 15/07/2014 2. The invoices of the electricity imported from the grid via the main line 3. The invoices of the electricity imported from the grid via the backup line					
Information Verified by Lead Assessor:					
PP has provided the ER calculation spreadsheet version 02 dated 15/07/2014 and the corresponding invoices of the period in question. After comparing the data in the ER sheet with the evidences obtained, i.e, the invoices for the electricity imported via main line and backup line, it was concluded: 1. The value of $EG_y$ from invoice for the period from 26/11/2012 to 31/12/2012, 01/01/2013 to 31/05/2013, and July 2013 is consistent with the reported value. 2. The value of electricity imported via main line from invoice for the period from 01/08/2013 to 28/02/2014 is marked as zero, please provide relevant confirmation. 3. The value of electricity imported via backup line from invoice for the period from 01/10/2013 to 28/02/2014 is marked as zero, please provide relevant confirmation.					
Reasoning for not Acceptance or Acceptance and Close Out: 21/07/2014					
This finding remains open. Please provide relevant confirmation for the electricity imported via main line from 01/08/2013 to 28/02/2014 and electricity imported via backup line from invoice for the period from 01/10/2013 to 28/02/2014.					
Project Participant Response:			Date: 06/08/2014		
The invoices for the electricity imported via main line from 01/08/2013 to 30/09/2013 have been obtained and provided to DOE. From 01/10/2013 to 28/02/2014, the electricity imported via main line has not been settled at present. Therefore, there is no invoice and the value is marked as zero. So, for this period, in the ER calculation spreadsheet, the value from electricity meter reading is applied for ER calculation, which is conservative. The invoice for the electricity imported via backup line from 01/10/2013 to 31/10/2013 has been obtained and provided to DOE. From 01/11/2013 to 28/02/2014, no electricity was imported via backup line. Therefore, there is no invoice and the value is marked as zero. The relevant data in the ER calculation spreadsheet and MR have been updated due to the changes of the values mentioned above.					
Documentation Provided as Evidence by Project Participant:					
1. The invoices for the electricity imported via main line from 01/08/2013 to 30/09/2013 2. The invoice for the electricity imported via backup line from 01/10/2013 to 31/10/2013 3. ER calculation spreadsheet version 03 dated 05/08/2014					

<b>Information Verified by Lead Assessor:</b>	
<p>The ER calculation spreadsheet version 03 dated 05/08/2014 has been checked against the invoices provided.</p> <p>Please clarify if the invoices from 01/08/2013 to 30/09/2013 are for the electricity imported via the backup line because the same invoices have been provided for the backup line.</p> <p>Also, please clarify if the invoice for October 2013 is for mainline or backup line.</p>	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
CAR #3 remains open.	
<b>Project Participant Response:</b>	<b>Date: 02/09/2014</b>
<p>The project owner rearranged the invoices, and clarified as follows:</p> <p>The invoices from 01/08/2013 to 30/09/2013 are indeed for the electricity imported via the backup line, which was a mistake in the response dated 06/08/2014. In fact, during the period from 01/10/2013 to 28/02/2014, no electricity was imported via the backup line. Therefore, there is no invoice and the value is marked as zero. The relevant evidence has been provided to DOE.</p> <p>The invoice for October 2013 is for the electricity imported via the main line, which was also a mistake in the response dated 06/08/2014. In fact, during the period from 01/11/2013 to 28/02/2014, the electricity imported via the main line has not been settled at present. Therefore, there is no invoice and the value is marked as zero. So, for this period, in the ER calculation spreadsheet, the value from electricity meter reading is applied for ER calculation, which is conservative. The relevant evidence has been provided to DOE.</p> <p>The relevant data in the ER calculation spreadsheet and MR have been updated due to the changes of the values mentioned above.</p>	
<b>Documentation Provided as Evidence by Project Participant:</b>	
<ol style="list-style-type: none"> <li>1. The Confirmation of the amount of power purchased via the main line from Jan. 2013 to Feb. 2014 by the project</li> <li>2. The confirmation of the amount of power purchased via the backup line from Oct. 2013 to Feb. 2014 by the project</li> </ol>	
<b>Information Verified by Lead Assessor:</b>	
The invoices and the confirmation from the grid company about the electricity purchased via main line and backup line have been checked by the assessment team. Consistency was found among the reported value and the provided invoices and confirmation.	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
It was verified that the electricity exported to the grid via main line and purchased via main line and backup lines have been cross checked against the invoices and confirmation from the grid company. CAR #3 was closed.	
<b>Acceptance and Close out by Lead Assessor: Michael Wu</b>	<b>Date: 15/09/2014</b>



## 10. Statement of Competence

### Statement of Competence

Name: Michael Wu

#### Status

- Lead Assessor	x	- Expert	x
- Assessor	x	- Financial Expert	
- Local Assessor	China	- Technical Reviewer	x

#### Scopes of Expertise

<b>1. Energy Industries (renewable / non-renewable)</b>	x
Technical Area(s): TA 1.2 Energy generation from renewable energy sources	
<b>2. Energy Distribution</b>	
Technical Area(s):	
<b>3. Energy Demand</b>	
Technical Area(s):	
<b>4. Manufacturing</b>	
Technical Area(s):	
<b>5. Chemical Industry</b>	
Technical Area(s):	
<b>6. Construction</b>	
Technical Area(s):	
<b>7. Transport</b>	
Technical Area(s):	
<b>8. Mining/Mineral Production</b>	
Technical Area(s):	
<b>9. Metal Production</b>	
Technical Area(s):	
<b>10. Fugitive Emissions from Fuels (solid, oil and gas)</b>	
Technical Area(s):	
<b>11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride</b>	
Technical Area(s):	
<b>12. Solvent Use</b>	
Technical Area(s):	
<b>13. Waste Handling and Disposal</b>	
Technical Area(s):	
<b>14. Afforestation and Reforestation</b>	
Technical Area(s):	
<b>15. Agriculture</b>	
Technical Area(s):	

Approved Member of Staff by: Siddharth Yadav Date: 19/10/2012



## Statement of Competence

Name: Joe Sun

### Status

- Lead Assessor	<input type="checkbox"/>	- Expert	<input type="checkbox"/>
- Assessor	<input type="checkbox"/>	- Financial Expert	<input type="checkbox"/>
- Local Assessor	<input type="checkbox"/>	- Technical Reviewer	<input checked="" type="checkbox"/>

### Scopes of Expertise

<b>1. Energy Industries (renewable / non-renewable)</b>	<input type="checkbox"/>
Technical Area(s):	
<b>2. Energy Distribution</b>	<input type="checkbox"/>
Technical Area(s):	
<b>3. Energy Demand</b>	<input type="checkbox"/>
Technical Area(s):	
<b>4. Manufacturing</b>	<input type="checkbox"/>
Technical Area(s):	
<b>5. Chemical Industry</b>	<input type="checkbox"/>
Technical Area(s):	
<b>6. Construction</b>	<input type="checkbox"/>
Technical Area(s):	
<b>7. Transport</b>	<input type="checkbox"/>
Technical Area(s):	
<b>8. Mining/Mineral Production</b>	<input type="checkbox"/>
Technical Area(s):	
<b>9. Metal Production</b>	<input type="checkbox"/>
Technical Area(s):	
<b>10. Fugitive Emissions from Fuels (solid, oil and gas)</b>	<input type="checkbox"/>
Technical Area(s):	
<b>11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride</b>	<input type="checkbox"/>
Technical Area(s):	
<b>12. Solvent Use</b>	<input type="checkbox"/>
Technical Area(s):	
<b>13. Waste Handling and Disposal</b>	<input type="checkbox"/>
Technical Area(s):	
<b>14. Afforestation and Reforestation</b>	<input type="checkbox"/>
Technical Area(s):	
<b>15. Agriculture</b>	<input type="checkbox"/>
Technical Area(s):	

Approved Member of Staff by: Siddharth Yadav Date: 11/09/2012



## Statement of Competence

Name: Linda Hu

### Status

- Lead Assessor	x	- Expert	x
- Assessor	x	- Financial Expert	
- Local Assessor	China	- Technical Reviewer	x

### Scopes of Expertise

<b>1. Energy Industries (renewable / non-renewable)</b>	<b>x</b>
Technical Area(s): 1.2 Energy generation from renewable energy sources	
<b>2. Energy Distribution</b>	
Technical Area(s):	
<b>3. Energy Demand</b>	
Technical Area(s):	
<b>4. Manufacturing</b>	
Technical Area(s):	
<b>5. Chemical Industry</b>	
Technical Area(s):	
<b>6. Construction</b>	
Technical Area(s):	
<b>7. Transport</b>	
Technical Area(s):	
<b>8. Mining/Mineral Production</b>	
Technical Area(s):	
<b>9. Metal Production</b>	
Technical Area(s):	
<b>10.Fugitive Emissions from Fuels (solid, oil and gas)</b>	
Technical Area(s):	
<b>11.Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride</b>	<b>x</b>
Technical Area(s): TA 11.2 GHG capture and destruction	
<b>12.Solvent Use</b>	
Technical Area(s):	
<b>13.Waste Handling and Disposal</b>	
Technical Area(s):	
<b>14.Afforestation and Reforestation</b>	
Technical Area(s):	
<b>15.Agriculture</b>	
Technical Area(s):	

Approved Member of Staff by:

Siddharth  
Yadav

Date:

10/09/2012



## 11. Photographic Evidence

Unique reference number: 212484124

Parameter: EGy

Name of equipment: Electricity Meter (M1)

Date: 28/05/2014



Unique reference number: 96129233

Parameter: N/A

Name of equipment: Electricity Meter (M2)

Date: 28/05/2014



Unique reference number: 110607361800035

Parameter: N/A

Name of equipment: Electricity Meter (M3)

Date: 28/05/2014





Unique reference number: 20061174020308

Parameter: EGy

Name of equipment: Electricity Meter (M4)

Date: 28/05/2014

Note: Meter was replaced after the end of the second monitoring period.

Unique reference number: 20070957010566

Parameter: EGy

Name of equipment: Electricity Meter (M5)

Date: 28/05/2014

Note: Meter was replaced after the end of the second monitoring period.

Unique reference number: 09090158090077

Parameter: N/A

Name of equipment: Electricity Meter (M7)

Date: 28/05/2014



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