VALIDATION REPORT

"Jiangxi Xiajiang Hydropower Project"

IN CHINA

REPORT NO. 00281

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VALIDATION REPORT

Date of first issue: 09/04/2012	Project No.: 00281
Approved by: INANAGA, Hiroshi	Organizational unit: Deloitte Tohmatsu Evaluation and Certification Organization
Client: J-TEC Co., Ltd.	Client ref.:

Summary:

Deloitte Tohmatsu Evaluation and Certification Organization (“Deloitte-TECO”) has performed a validation of the "Jiangxi Xiajiang Hydropower Project” (hereafter called “the project”) to confirm whether it has met the UNFCCC criteria for the CDM and host country criteria, as well as the criteria required for consistent project operations, monitoring, and reporting. The above-mentioned UNFCCC criteria refer to Article 12 of the Kyoto Protocol, CDM modalities and procedures, as well as subsequent decisions by the CDM Executive Board. This validation report summarizes the findings of the validation conducted by Deloitte-TECO.

The validation process covered three phases: i) a review of the PDDs, ii) follow-up interviews with project stakeholders, and iii) a resolution of the outstanding issues and the issuance of the final validation report and opinion.

In the opinion of Deloitte-TECO, project, as described in the PDD version 04 of 13/12/2012, meets all relevant UNFCCC requirements for the CDM and correctly applies the approved baseline and monitoring methodology of ACM0002 version 12.2.0. with achievement of the estimated amount of emission reductions of 682,642 tCO_2e/year during the first crediting period (769,117 tCO_2e/year as annual average after full operation). Deloitte-TECO requests the Jiangxi Xiajiang Hydropower Project be registered as a CDM project activity.

Report No.: 00281	Subject Group: Environment	
Report title: Jiangxi Xiajiang Hydropower Project		
Work carried out by: OTANI, Yuichi (Team leader/Lead auditor) SHI, Xueting (Team member/Lead Auditor) WU, Fenlin (Team member/Auditor) ZHAI, Jiajia (Observer)		
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Indexing terms

Climate Change, Kyoto Protocol, Validation, Clean Development Mechanism

Abbreviations

BM	Build Margin
CAR	Corrective Action Request
CCPG	Central China Power Grid
CDM	Clean Development Mechanism
CEF	Carbon Emission Factor
CER	Certified Emission Reduction
CL	Clarification Request
CM	Combined Margin
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
DNA	Designated National Authority
DOE	Designated Operational Entity
EIA	Environmental Impact Assessment
FSR	Feasibility Study Report
GHG	Greenhouse Gas(ses)
GSP	Global Stakeholder Process
IPCC	Intergovernmental Panel on Climate Change
LOA	Letter of Approval
MP	Monitoring Plan
NDRC	National Development and Reform Commission
ODA	Official Development Assistance
OM	Operational Margin
PDD	Project Design Document
PLF	Plant Load Factor
FSR	Feasibility Study Report
PO	Project Owner
PP	Project Participants
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual

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History of this document

Version	Date	Nature of revision
0.1	09/04/2012	Initial preparation
1.0	31/08/2012	First revision after internal review
2.0	14/09/2012	Second version after internal review
3.0	27/12/2012	Revision based on request for review

1 EXECUTIVE SUMMARY

Deloitte-TECO has performed a validation of the "Jiangxi Xiajiang Hydropower Project". The validation was performed on the basis of the UNFCCC criteria for the CDM and host-party criteria, as well as the criteria provided for consistent project operations, monitoring, and reporting.

The review of the PDD and the subsequent follow-up interviews have provided by Deloitte-TECO with sufficient evidence to determine the fulfillment of the stated criteria.

This proposed project correctly applies ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" (version 12.2.0, EB 65) and other relevant tools.

During the desk review and follow-up interviews, a couple of outstanding issues were identified as 2 CARs and 40 CLs and were eventually closed. The following major CARs were identified:

- It is requested to add the main parameters and the associated manufactures of the turbines and generators in Table A.4.3-1 of the PDD.
- It is requested to revise the description and the starting date of each unit, in total nine units, and calculate the annual emission reductions during the first crediting period in accordance with the expected date for each unit to put into operation. Please also revise Table A.4.4-1 and Table B.6.4 of the PDD.

Details of the outstanding issues, including how corrective actions were implemented with relevant evidence, are dealt with in the following part of this report and Appendix A.

In conclusion, it was demonstrated that this proposed project "Jiangxi Xiajiang Hydropower Project" as described in the PDD (version 04, 13/12/2012) meets all the relevant UNFCCC requirements for the CDM and all the relevant host-country criteria and correctly applies the baseline and monitoring methodology ACM0002 (version 12.2.0, EB 65). The CARs and CLs identified were corrected and closed.

2 INTRODUCTION

2.1 Objective of CDM Validation

J-TEC Co., Ltd. has commissioned Deloitte-TECO to validate the "Jiangxi Xiajiang Hydropower Project" (hereafter called "the project"). The purpose of a validation is to conduct an independent third-party assessment of the project design. In particular, the project's baseline, the monitoring plan (hereafter called "MP"), and the project's compliance with the relevant criteria of UNFCCC and the host country are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is a requirement for all CDM projects and is seen as necessary to provide assurance to stakeholders on the quality of the project and its intended generation of CERs. The criteria of UNFCCC refer to the Kyoto Protocol criteria and the CDM rules and modalities as agreed in the Bonn Agreement and the Marrakesh Accords.

2.2 Scope

The validation scope is defined as an independent and objective review of the PDD, the project's baseline study, the MP and other relevant documents. The information in these documents is reviewed against the Kyoto Protocol requirements, UNFCCC rules, and associated interpretations. Deloitte-TECO has used a risk-based approach in the validation process, based on the recommendations in the Validation and Verification Manual (hereafter called "VVM"), focusing on the identification of significant risks to project implementation and the generation of CERs.

While validation is a third-party exercise that is completely distinct from consulting, the stated requests for clarifications and/or corrective actions may provide input for improvement of the project design. The validation process applied the CDM ACM0002 version 12.2.0. baseline monitoring methodology and included a review of the following documents:

- PDD
- Feasibility Study Report (hereafter called "the FSR")
- IRR calculation spreadsheet
- Environmental Impact Assessment (hereafter called "the EIA")
- Summary of comments by local stakeholders
- Supporting documents made available to the validators
- Information collected through performing interviews and during the on-site assessment

3 VALIDATION APPROACH

In order to ensure transparency, a validation protocol was customized for the project, according to the CDM VVM (Version 01.2 EB55). The protocol which was prepared in a transparent manner, in accordance with the VVM shows, in a transparent manner, criteria (requirements), means of verification, and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organizes, details, and clarifies the requirements that a CDM project is expected to meet; and
- It ensures a transparent validation process where the validator(s) will document how a particular requirement has been validated and the result of the validation.

The validation protocol consists of three tables as described in Figure 1 below. The completed validation protocol is enclosed in Appendix A to this report.

Figure 1 Validation protocol tables

Validation Protocol Table A1: Validation Checklist based on VVM (ver01.2)						
ID	***Checklist Question***	***Reference***	***Means of verification (MoV)***	***Draft Conclusion***	***Comment***	***Final Conclusion***
requirement No. of CDM VVM	*The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organized in seven different sections. Each section is then further sub-divided. The lowest level constitutes a checklist question.*	*Gives reference to documents where the answer to the checklist question or item is found.*	*Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.*	*The conclusion of both the document review and the on-site assessment is stated in the section. This is either acceptable based on evidence provided (**OK**), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question (See below). **Clarification (CL)** is used when the validation team has identified a need for further clarification.*	*The section is used to elaborate and discuss the checklist question and/or the conformance to the question after the on-site assessment of the validation. It is further used to explain the conclusions reached.*	*The conclusion of all of validation process is stated in the section. This is either acceptable based on evidence provided (**OK**), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question (See below). **Clarification (CL)** is used when the validation team has identified a need for further clarification.*

Validation Protocol Table A2: Investment Checklist based on EB51 Annex 58				
Category	***Guidance***	***Comment***	***Draft Concl***	***Final Concl***
As shown in Guidance	*Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.*	*The conclusion of both the document review and the on-site assessment is stated in the section. This is either acceptable based on evidence provided (**OK**), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question (See below). **Clarification (CL)** is used when the validation team has identified a need for further clarification.*	*The section is used to elaborate and discuss the checklist question and/or the conformance to the question after the on-site assessment of the validation. It is further used to explain the conclusions reached.*	*The conclusion of all of validation process is stated in the section. This is either acceptable based on evidence provided (**OK**), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question (See below). **Clarification (CL)** is used when the validation team has identified a need for further clarification.*

Validation Protocol Table A3: Resolution of Corrective Action and Clarification Requests			
Draft report clarifications and corrective action requests	***Ref. to checklist question in table 2***	***Summary of project owner response***	***Validation conclusion***
If the conclusions from the draft Validation are either a Corrective Action Request or a Clarification Request, these should be listed in this section.	*Reference to the checklist question number in Table 2 where the Corrective Action Request or Clarification Request is explained.*	*The responses given by the Client or other project participants during the communications with the validation team should be summarized in this section.*	*This section should summarize the validation team's responses and final conclusions. The conclusions should also be included in Table 2, under "Final Conclusion".*

4 VALIDATION METHODS

The validation process consisted of the following three phases:

I A desk review of the PDD
II Follow-up interviews with the project stakeholders
III The resolution of the outstanding issues and issuance of the final validation report and opinion.

4.1 Document Review and Risk Analysis

The PDD submitted by the client and the additional background documents related to the project design and baseline were reviewed. A complete list of all documents and evidence reviewed is included in the "Reference" section of this report. The PDD (ver. 01) was submitted to the DOE for completeness check on 14/02/2012 before going to the GSP.

According to *"Summary of the major issues that trigger a request for review and their justification"* on Annex5 of EB50 (Proposed Agenda - Annotations), a risk analysis was conducted before the on-site visit, and these risks raised by Deloitte-TECO were more significant and focused on during on-site assessment.

Through the analysis, the following items were identified as relatively higher risk items, which were mainly confirmed at the on-site validation:

- Accuracy of financial (IRR) calculations
- Suitable benchmark applied for the type of financial indicator
- The following investment indicator is reasonable: Total static investment (CNY) per kW?
- Plant load factor (estimated operation hours/8,760h) is reasonable
- Coefficient of effective electricity generation is reasonable
- Electricity tariff is reasonable
- The period of time between PDR finalization and CDM decision is sufficiently short
- CDM benefits were considered
- Start date substantiated and according to "Glossary of Terms (Implementation, Construction, and Real action)"
- Means of implementation for ex-post reporting and verification (methodologies and PDD)
- Not a de-bundled large-scale project?
- LOA from all parties: Corrected and cross referenced?
- Any inconsistency and details of the local stakeholder consultation (e.g., benefits of the CDM)?
- Local residents are resettled with sufficient compensations?
- EIA

The results of the risk analysis are attached in this report as Appendix A-2.

4.2 Follow-up Interviews

During the period of 05-08/03/2012, Deloitte-TECO conducted interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of Jiangxi CPI Xiajiang Power Generation Co., Ltd., and related stakeholders were interviewed. The details of interviewees and the main topics of the interviews are summarized in the table below:

Interview Schedule, Interviewees, and Main Topics

Date	05/03/2012
Topic	1. Opening meeting 2. Document check for validation
Name/ Organization	• Zeng Xiaoning/Jiangxi CPI Xiangjiang Power Generation Co., Ltd. • Zhang Yulin/Jiangxi CPI Xiangjiang Power Generation Co., Ltd. • Guo Jian/Jiangxi CPI Xiangjiang Power Generation Co., Ltd. • Chen Yingwen/Shanghai Weitai Environment Co., Ltd.

Date	06/03/2012
Topic	1. On-site investigation 2. Interview with local stakeholders 1).Local residents - Confirmation of questionnaire response - The influence on the immigrants by the project - Interviewees' attitudes toward compensations - The impact of the project on the local economic development, including future employment, income, etc. - The expected environmental quality of reservoir area after project completion - Interviewees' expectations regarding the project 2).Water Conservancy Bureau - Attitude toward the hydropower project - Status of the river basin (including expected impact of this project) - Status of the hydropower project in the same river basin 3.) Grid Company - Attitude toward the hydropower project - Method of measuring electricity generation - Status of the hydropower project in the same river basin 4).Environment Protection Bureau - Attitude toward the hydropower project - Inspection methods - Environmental impact and the protection measures 5). Migration Office - Immigrants and land occupation - Compensations for immigrants and land occupation - Supporting measures 6).Design Institute - Project experiences of the design institute

	- Electricity coefficient, tariff price, and governmental policy toward the proposed projects related to the FSR
Name/ Organization	• Mao Xinwen/fourth group of Jiangsha Village • Mao Benzhu/fifth group of Jiangsha Village • Du Weihong/first group of Jiangsha Village • Hu Xiaoqing/Second group of Jiangsha Village • Xiao Chunying/Water Conservancy Bureau of Xiajiang Baqiu Town • Hu Jian/Xiajiang County Power Grid • Hu Wei/Supervision Team of Jiangxi Xiajiang Environment Protection Bureau • Xiao Yingchun/Xiajiang County Baqiu Town Migration Office • Deng Biao/Jiangxi Province Water Conservancy Plan and Design Institute

Date	07-08/03/2012
Topic	Meeting with the consultant and closing meeting 1. Questions from the checklist 2. Closing meeting
Name/ Organization	• Zhang Yulin/Jiangxi CPI Xiangjiang Power Generation Co., Ltd. • Guo Jian/Jiangxi CPI Xiangjiang Power Generation Co., Ltd. • Chen Yingwen/Shanghai Weitai Environment Co., Ltd.

4.3 Resolution of Clarification Requests and Corrective Action Requests

The objective of this phase of the validation was to resolve the requests for corrective actions, clarifications, and other outstanding issues which were required to be resolved prior to Deloitte-TECO's positive conclusion of the project design. The CARs and CLs issued by Deloitte-TECO were resolved through communications between the client and Deloitte-TECO. To guarantee the transparency of the validation process, the concerns raised and responses given are described in the Validation Protocol in Appendix A.

After the on-site visit, Deloitte-TECO prepared a CL and CAR list on 09/03/2012. The final response with the final PDD from the PP was submitted to Deloitte-TECO on 27/12/2012. Since modifications to the PDD were necessary to resolve Deloitte-TECO's concerns, the PP decided to revise and resubmit the PDD. After reviewing the revised and resubmitted project document, Deloitte-TECO issued this final validation report and its opinion.

4.4 Internal Quality Control

The draft and final validation reports were reviewed according to Deloitte-TECO's internal quality control policy. A technical review was performed by a technical reviewer meeting Deloitte-TECO's qualification criteria for CDM validation as follows:

Engagement Quality Assurance Review System

		Objective	【IN】	【OUT】	Detail
Level	Reviewer	Responsibility	Information	Reports	Comments
1	Quality Control Group[*4]	1) Validation Review the validation to be implemented effectively and efficiently from an independent standpoint, in conformity with the step. Validation check list (Internal Review). Review technically the additionality, baseline methodology, and monitoring methodology. 2) Verification Review the reduction of CDM Verification check list (Internal Review). Review the reduction of GHG.	1) Validation PDD (MP) Audit plan document Validation/Verification draft report VVM 2) Verification Monitoring report, verification report, and related documents	1) Validation Completion of correction requested Confirmation of evidence for VVM Abstract of Audit outcome Witness Review sheet Validation internal review checklist. Appropriateness of applied methodologies *3Confirmation of accuracy and reliability of data and equations, review sheet 2) Verification Review sheet Verification internal review checklist	1) Validation /Verification Check mark Add comments to the abstract Comments to the materiality and uncertainty, consistency of reports etc. In terms of request for review and other requests, it will be implemented by using validation/verification review sheet during technical reviews.
	English proof reader	Review and check English grammar, spelling, and imprecision of expressions.	Draft report of Validation/Verification/Certification	Corrections to the grammatical, spelling mistakes and expressions.	File the result of English proofreading
2	GHG Team Leader (Engagement Quality Assurance Reviewer)	Review the appropriateness of the process from ordering the CDM project to requesting the registration and issuance to CDM Executive Board, based on "Operational Management Procedure CDM (Validation/Verification)"	Statement on procedure Abstract of Audit outcome Witness	Engagement Quality Assurance statement for Operational procedure OMP sheet	Fill concerns in the comment field
3	Judgment Committee	Perform the Engagement Quality Assurance Review for the determination of submission to register CDM project and/or the response to the request for review from CDM EB, in order to judge under objective and fair rules, based on the steps (1) and (2), in case of request from the GHG Team Leader/CDM Manager	PDD (MP) Draft report of Validation/Verification/Certification	Minute of Judgment Committee	Add comments to the minute
4	Chief Executive Officer	Express the final opinion, based on (1), (2), and (3),for Validation/Verification/Certification	Engagement Quality Assurance statement for Operational procedure	Expression of opinion (Validation/Verification/certification report)	Need to comment if it is an adverse opinion

* 1. Competency of reviewers shall be equal or higher than an audit team leader.
* 2. Audit team leader, Audit Director and EQAR shall not be served concurrently by the same personnel.
* 3. Title(s) of evidential document for important expressions specifically representing numeric values and conclusions shall be clearly indicated in reports and VVM checklists.
* 4. Technical reviewer shall be designated by agreement of CDM Manager and Quality Control Group Manager.

5 GLOBAL STAKEHOLDER CONSULTATION PROCESS

The PDD was made publically available on the UNFCCC website on 17/02/2012. All parties, including the stakeholders and non-governmental organizations, were invited to make comments until 17/03/2012. No comments were received.

6 VALIDATION FINDINGS

The findings of the validation are stated in the following sections. The findings of each validation subject are presented as follows:

1) The findings from the desk review of the original PDD and the findings from the follow-up interviews performed during and after the on-site visit are summarized. A more detailed record of these findings can be found in the Validation Protocol in Appendix A.
2) Where Deloitte-TECO had identified issues that required further clarification or that represented a risk to the fulfillment of the project objectives, a CL, or CAR, respectively, would be issued. The CL and CAR issued during the validation are described and accounted for in this section and are further documented in the Validation Protocol in Appendix A. The validation of the project resulted in 4 CARs and 12 CLs.
3) Where CLs or CARs had been issued, the communications between the client and Deloitte-TECO to resolve these CLs or CARs are summarized.
4) The conclusions for the validation subjects are presented.

The final PDD dated 13/12/2012 (ver. 04), was revised and resubmitted by the PP, served as the basis of the assessment described here.

6.1 Approval of the Project Activity

6.1.1 Confirmation of ratification

The ratification by both parties, China and Japan, to the Kyoto protocol has been confirmed via the UNFCCC website as follows:

- Ratification by China: 30/08/2002
- Ratification by Japan: 04/06/2002

6.1.2 Confirmation of DNA

The DNAs of the respective parties have been confirmed via the DNA lists on the UNFCCC website. LOAs received for the projects were issued by both DNAs. During the on-site assessment, Deloitte-TECO could not confirm the LOAs of both Chinese and Japanese DNA. After the on-site assessment, LOAs were submitted by the PP and confirmed their authenticity.

- LOA issued by the Chinese government: No. 1070 (Chinese Version) and No. 3918(English Version), issued on 18/04/2012.
- LOA issued by the Japanese government: No. 20120829-2, issued on 29/08/2012

6.2 Approval of Project Participants

The LOAs issued by the respective DNA of both PP authorized voluntary participation in the project activity. The title of the proposed CDM project was referred to in the LOAs exactly as it was appeared in the PDD submitted for registration. The LOA confirms that the project activity's contribution to the sustainable development of the host party, China. The approval was unconditional. Also, it was confirmed that no official development funding was involved in this project.

6.3 Project Design Document

It was confirmed that the latest CDM- PDD form, version 03, was used. A completeness check was conducted on the original PDD before the GSP, assessing whether it complied with "Guidelines for completing the project design document (CDM-PDD) and the proposed new baseline and monitoring methodologies (CDM-NM) ver. 07". No significant issues were found.

6.4 Project Description

6.4.1 The nature of the project activity

The project is located on Gan River in Baqiu Town, Xiajiang County, Ji'an City, 6 km away from Baqiu Town, People's Republic of China. The GPS coordinates at the plant of the project activity are 115°07′52″E and 27°31′04″N. This is revised from the PDD for GSC by according to the actual data observed/monitored on-site.
This is a renewable energy project connected to the national grid, employing a newly built seasonal regulating water hydropower station with a dam, a spillway weir, a powerhouse, and a booster station. The proposed project will achieve GHG emission reductions by displacing a portion of the electricity generated by thermal power stations connected to the CCPG.

According to the PDD, the installed capacity of the proposed project activity is 360 MW (40 MW *9 units). It was observed during the on-site assessment that the project activity had been carried out partly, however, it was necessary to confirm the total capacity of the installed equipment at the first verification, but in the validation stage, it was confirmed that there was no discrepancy between the installed capacity of the PDD and that of the FSR. It was also confirmed that the FSR was completed by a certified institute, the Jiangxi Provincial Water Conservancy Planning and Designing Institute.

As mentioned above, the proposed project is a newly built seasonal regulating hydropower station and it is stated in the purchase contract that newly manufactured equipment will be installed. There is no leakage from this proposed project activity.

6.4.2 Technological aspects

The project employs a newly built seasonal regulating hydropower station. It consists of a dam, a spillway weir, a power house with five water turbines (GZ4BNXJ-WP-780), five generators (SFWG40-84/8820), four water turbines (GZD615-WP-770), four generators (SFWG40-84/8650), a booster station, and a monitoring system. The proposed project involves the installation of nine sets of water turbines and generators (WTG). Each generator has a rated output of 40 MW, providing a total capacity of 360 MW. The electricity generated by the nine sets of WTG will be stepped up by the booster station and then the electricity is connected to the substation in the CCPG. The parameters of the equipment used in the proposed project were reviewed and modified in the final PDD, according to the purchase contract of turbine, generator, and other equipment.

The hydropower technology employed in the project is a commonly used renewable energy technology that contributes to long-term GHG emission reductions. Since the technology is already available in the host country, no technology transfer is envisaged for the project. All the equipment, including turbines and generators, are produced domestically. Implementation of this project does not result in the generation of GHG within the boundary.

6.4.3 Project duration and crediting period

According to Section C1 of the PDD and confirmed against the FSR, the project is to last for duration of 46 years (6 years of construction and 40 years of operation according to FSR). The project's crediting period of 7 years may be renewed up to two times. The starting date for the crediting period is 01/08/2013 or the registration date, whichever is later. During the on-site visit, it was observed that the construction works were ongoing. The project is expected to proceed as scheduled. As above, the accuracy and completeness of the project desciption has been validated.

6.5 Baseline and Monitoring Methodology

6.5.2 The selected methodology

This proposed project adopts the approved consolidated baseline and monitoring methodology of ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" (version 12.2.0, EB65) and also applied version 02.2.1 of "Tool to calculate the emission factor for an electricity system" and version 06.0.0 of "Tool for the demonstration and assessment of additionality."

6.5.3 Applicability of the selected methodology to the project activity

The applicability of the selected methodology was confirmed as shown below.

Applicability of the approved methodology

Criteria	Compliance	Project activity
Install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project	Yes	Newly developed hydropower station connected to the CCPG

activity (greenfield plant)		
New single or multiple reservoirs and the power density of each reservoir, as per the definitions given in the Project Emissions section, is greater than 4 W/m^2	Yes	New reservoir with power density of 11.41 W/m^2
No switching from fossil fuels at the site of project activity is involved	No	Newly developed hydropower station

From the document review and on-site visit, Deloitte-TECO has also confirmed the justification of the choice for methodology documented in Section B.2 in the PDD.

According to "Tool to calculate the emission factor for an electricity system" (version 02.2.1), a simple OM method can be used when low-cost/must-run resources constitute less than 50% of the total grid generation in the average of the five most recent years. This proposed project employs hydropower to supply electricity to the CCPG. The proportion of low-cost/must-run resources to the total amount of grid generation was between 35.1% and 39.5%, far lower than 50%, from 2005 to 2009. Thus, it is applicable to apply a simple OM method.

The power density of 11.41 W/m^2, which was verified to be correctly calculated by dividing the installed capacity of 360 MW by the flooded area of 31,547,000 m^2, is larger than 10 W/m^2.

6.5.4 Project boundary

The project boundary was clearly defined and confirmed during the on-site visit. The identified boundaries and selected sources and gases were justified for the project activity through the desk review of the PDD and the on-site visit that included an inspection of the project site area, design book, and facilities as well as personal interviews. It was concluded that no other emission sources, other than CO_2, exist for this project and no deviations were found within the project boundary.

According to ACM0002, "Consolidated baseline and monitoring methodology for grid-connected electricity generation from renewable sources (ver. 12.2.0)," the GHG emission from this project activity is zero.

6.5.5 Baseline identification

The baseline scenario defined for the project activity is as follows:

> Electricity delivered to the grid by the proposed project would have otherwise been generated by the grid-connected power plants and by the addition of new generation sources within the CCPG, as reflected in the calculation of the CM as described in the "Tool to calculate the emission factor for an electricity system (version 02.2.1, EB 63)."

It was confirmed that this definition is for a project activity installation of a new grid-connected renewable power plant/unit based on ACM0002 (version 12.2.0). Therefore, the defined baseline scenario is appropriate for this project and the basline and monitoring methodologies are confimred correctly applied and are not subject to a calarification, revision or deviation.

6.5.6 Algorithm/formulae used to determine emission reductions and calculate GHG emissions

The emission reductions were calculated according to the methodology applied in ACM0002 version 12.2.0 and the emission factor was also calculated based on the approved methodology of, "Tool to calculate the emission factor for an electricity system (ver. 02.2.1)". The project has selected the simple OM method and the ex-ante option with fixed emission factors for both OM and BM calculations. Throughout the website "CDM in China," the Chinese Government (NDRC) provides a clear explanation of the tool for adequate utilization, under the simple OM method and the ex-ante option, with concrete emission factors for defined areas in China to support the PP. The OM and BM values used in the PDD were checked against the date in the NDRC website data issued on 20/10/2011.

NDRC issued emission factors of CCPG			Calculated CM
Issuing date	OM	BM	
20/10/2011	1.0297	0.4191	0.7244

Deloitte-TECO concluded that all the methods and options used to calculate emission factors were appropriate. Since low-cost/must-run resources operating on the CCPG for the last five years constituted less than 50% of total grid generation, totaling 38.6%, 35.1%, 35.5%, 39.5%, and 37.9% for the years 2005, 2006, 2007, 2008, and 2009, respectively. In this case, a simple OM method can be used. The amount of electricity generated is estimated to be 1,141,560 MWh. Taking effective coefficient (95%) in consideration, the actual electricity supply will be sent directly to the grid with an amount of 1,061,730 MWh/year after deducting self-consumption electricity (0.1%) and transmission loss (2%). The GHG reduction is determined to be 769,117 tCO_2e after all generators will be in operation. However, for the first monitoring period, the GHG reduction is expected as 682,642 tCO_2e annually since the generators are expected to be put into operation in succession from 01/08/2013. All assumptions and data used by the PP are listed in the PDD. It was confirmed that the IRR was calculated as 7.27%, still less than the benchmark of 8%, even if a coefficient of 1 was applied without considering any transmission loss or internal consumption.

No discrepancy was found between the contents of the PDD and the data as well as the assumptions in the reference documents. The data referred to in the PDD is appropriate and reasonable. The calculation of the baseline emissions are replicable using data and values listed in the PDD and the parameters are fixed ex-ante (not need to monitor) during the project activity crediting period. Thus, as mentioned in the section on the application of the methodology, the methodology has been applied correctly. The guidelines provided on the Chinese government website have been followed to verify the data used to calculate the emission factors.

6.6 Additionality of the Project Activity

The "Tool for the demonstration and assessment of additionality (ver. 06.0.0)" was applied to demonstrate the additionality of the project. The data used was estimated by the Jiangxi Provincial Water Conservancy Planning and Designing Institute. The figures were confirmed through a review of evidentiary documents during the on-site visit. An IRR study concluded that the project was neither feasible nor attractive without CER, because the IRR was less than the

Chinese government's official 8% benchmark figure for all medium and large-scale hydropower project (more than 50 MW) in China, according to the Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects, Beijing: China Electric Power Press, 2003. The findings and the results of the validation of additionality are presented in detail below.

6.6.1 Prior consideration of the CDM

Based on EB 62, Annex 13 "GUIDELINES ON THE DEMONSTRATION AND ASSESSMENT OF PRIOR CONSIDERATION OF THE CDM," this proposed project has been defined as "New project activities" with a starting date after 02/08/2008, therefore, the PP must inform a host-party DNA and the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek a CDM status.

The DOE has confirmed its notification of "Prior Consideration of the CDM Form" approved by the Chinese DNA on 14/03/2011 and its notification of "Prior Consideration of the CDM Form" received by the UNFCCC secretariat on 22/02/2011.

The FSR of this project, which was completed in 04/2010, concluded that it was not feasible as the IRR calculated was lower than the benchmark, which indicated that the project was not financially attractive. Based on this, the incentive of the CDM was demonstrated in the FSR that CERs would improve the financial situation of the project. Eventually, the project owner decided to develop this project as a CDM project on 01/09/2010. Moreover, it was also confirmed that the action had been taken within five months between the FSR completion and the CDM consideration decision, which was a sufficiently short period. Furthermore, the milestones of the project development were confirmed through interviews with staff and the owner during the on-site visit and details are summarized in the following table.

Milestones of the project development

Time	Milestones	Evidences/Remarks	Reference No.
08/2009	The EIA was completed	EIA	5
30/10/2009	Approval of the EIA	EIA approval letter	6
04/2010	The FSR was completed. It was concluded that without CDM, the proposed project is not viable and with CDM the IRR can be improved.	FSR	2
15/07/2010	Approval of the FSR	Approval letter for the FSR	3
16/08/2010	Based on the FSR, the board meeting on CDM consideration was held.	Minutes of the board meeting	7
01/09/2010 (serious CDM consideration)	Based on FSR, the board meeting on CDM decision was held.	Minutes of the board meeting	14
26/09/2010	Signing of the water turbines and generators purchase agreements	Water turbines and generators purchase agreements	9/13
08/10/2010	Signing of the construction contract	Construction contract	22
21/01/2011	Signing of the CDM consulting agreement	CDM consulting agreement	12
22/02/2011	Notification on Prior Consideration of the CDM to the UNFCCC secretariat.	http://cdm.unfccc.int/Projects/PriorCDM/notifications/index_html	29
14/03/2011	Notification on Prior Consideration of the CDM to Chinese DNA	Notification on Prior Consideration of the CDM confirmed by China DNA	30
26/10/2011	Signing of the emission reduction purchase agreement	ERPA	16

17/02/2012 – 17/03/2012	GSP	http://cdm.unfccc.int/Projects/Validation/DB/YDQ3PHNSGZ5AHQ1K6OZWSMXZ1IZO3T/view.html	-
18/04/2012	Chinese LOA was obtained	Chinese LOA	10
29/08/2012	Japanese LOA was obtained	Japanese LOA	11
01/08/2013	Electricity generation started	Expected	-

All documentary evidences were available, which demonstrated continuing and real actions had taken place. In conclusion, the proposed project activity complied with the requirements of the guidelines.

6.6.2 Starting date of the project activity

It was defined that the date when the turbine and generator purchase contracts were signed, being 26/09/2010, was the starting date of the project activity in the PDD (ver.01) for the GSP.

The definition of "starting date of the project activity" is set out in the CDM Glossary of Terms which is stated as "the starting date of a CDM project activity is the earliest date at which either the implementation or consideration or real action of a project activity begins" (CDM Glossary of Terms Version 03). The definition was further discussed in paragraph 67 of EB41 meeting report and clarified as "under the above definition, the starting date shall be considered to be the date on which the PP has committed to expenditures related to the implementation or related to the construction of the project activity. This, for example, can be the date on which contracts have been signed for equipment or construction/operation services required for the project activity."

During the on-site assessment, it was confirmed that:

- the water turbines and generators purchase agreements were signed on 26/09/2010.
- the construction contract was signed on 08/10/2010

Therefore, based on the information above, Deloitte-TECO confirmed that the starting date of the project activity was the date when the turbine and generator purchase contracts were signed on 26/09/2010 for this proposed project and this definition is appropriate.

6.6.3 Identification of alternatives

In B.5, Step 1 of the PDD, four scenarios are identified as realistic and credible alternatives available to the project activity. Scenario 1 was eliminated as being a viable alternative since without CDM revenue, the project's IRR would be 6.71%, less than the benchmark of 8%. This IRR indicates the project would be economically unattractive to investors. An analysis of the project's IRR demonstrated in Step 2 of the PDD was verified in greater detail as described below. Scenarios 2 and 3 were also disregarded. Regarding Scenario 2, it was known that construction of coal-fired power plants with installed capacity below 135 MW is not in compliance with current regulation requirements in China. This regulation can be found in this URL (http://www.gov.cn/gongbao/content/2002/content_61480.htm). In addition, Scenario 3 was also excluded due to lack of resources, especially wind power, geothermal power, and solar photovoltaic power due to geographical climatic conditions of this proposed project. Furthermore, biomass power was also excluded due to higher cost as identified in related official documentation. As a result, Scenario 4 was considered to be the only plausible and viable

alternative.
Deloitte-TECO concluded that the analysis presented in B.5, Step 1 is reasonable and is sufficiently supported by the reference documents described in the PDD.

Alternatives identified in PDD

	Alternatives
1	Implementing the proposed project, but not as a CDM project
2	Adding a new thermal plant providing the same annual electricity output
3	Adding a new renewable power plant other than hydropower providing the same annual electricity output
4	Providing the same amount of electricity by the CCPG

6.6.4 Assessment of investment analysis

Deloitte-TECO confirmed that all data used in the PDD were derived from the FSR, including investment costs, O&M costs, annual grid-in electricity, grid-in tariff, etc., except the repair cost rate is derived from the Interim Regulation of Financial Assessment (SL16-94) promulgated by Programming and Design Institute of Water Resources and Hydropower of Water Resources Ministry and Power Ministry, which is explained below.

The FSR was prepared by a qualified design institute, Jiangxi Provincial Water Conservancy Planning and Designing Institute. It was completed in 04/2010 and approved by the NDRC on 15/07/2010. An investment decision was made at the board meeting held on 01/09/2010, within five months after the completion of the FSR. Deloitte-TECO verified the dates of each event and concluded that the time between the completion of the FSR and investment decision was sufficiently short and that it was highly unlikely that the data presented in the FSR would have changed significantly. Since the analysis of the investment input values from the FSR were deemed to be appropriate, the project has been confirmed as complying with EB38, 54 (a).

6.6.4.1 Consistency between figures stated in the PDD and the FSR

Except the repair costs included in the annual O&M cost, all the other parameters in the final PDD (ver. 04) were drawn from the FSR. In the validation process, each value of the parameter was checked for consistency and applied in a conservative manner. No inconsistencies were found in the assessment.

6.6.4.2 Cross-checking input values between PDD and FSR

In order to further confirm the applicability of the input values, cross-checking was conducted in accordance with EB62, Annex 5 (Guidelines on the assessment of investment analysis, Version 05) during the on-site validation. Input parameters of the PDD were assessed and cross-checked with those of the FSR and evidential documents. However, during the validation period, the new version of the guideline, EB61 Annex 13, “Guideline on the Assessment of Investment Analysis,” was issued. Therefore, additional items were also used to confirm the appropriateness of the investment analysis.

In addition, the input parameters from similar projects, those that were registered as CDM projects and located in Jiangxi Province, are summarized in the table below. Those parameters,

such as annual operational hours (and PLF), total province, were analyzed in the "Registered CDM projects" in investment cost and annual O&M cost were also compared with those of this proposed project at "Input parameter analysis" as below.

All assessments had been dealt with as follows:

Input parameter analysis

Parameters	Values	Data source	Assessments
Installed Capacity (M/W)	360	FSR	There are nine sets of 40 MW rated output water turbines (GZ4BNXJ-WP-780 and GZD615-WP-770) and generators (SFWG40-84/8820 and SFWG40-84/8650). The total installed capacity is 360 MW. In order to counter-check its capacity of this proposed project, the values of installed capacity were confirmed with the purchase contract of turbines and generators. It was concluded that all the values were in line with the PDD.
Annual Operation hours	3,171	FSR	The annual operational hours were demonstrated in the FSR. The average water flow of the project is determined from the hydrological data based on past 55 years (1953~2007), as stated in the FSR. This value was validated in comparison with eight similar CDM projects in the same area of Jiangxi Province, as shown in the table "Registered CDM projects in Jiangxi" below showed that their annual operational hour range is between 2,268 and 4,077 hours. For more analysis, the Plant Load Factor ("PLF") was calculated as 36.20% (=3,171hrs/8,760hrs) which is derived from parameters of the annual electricity generation and the installed capacity (1,141,560MWh/360MW=3,171hrs). All the parameters used in this calculation, the annual electricity generation and installed capacity, are quoted from the FSR, which is produced by the Jiangxi Provincial Water Conservancy Planning and Designing Institute, a third party contracted by the PP, prior to creating the PDD. Also, the FSR is approved by the NDRC. Deloitte-TECO tested the plant load factor of the proposed project. The PLF of some registered CDM project activities of hydropower generation in Jiangxi province (some PLF of projects were calculated with their expected annual generated electricity and capacities) are 25.89%~46.54% and average is 35.93%. The PLF of the proposed project is in this range, reasonable in comparison. From those facts, Deloitte-TECO concluded that the PLF of this project was derived in accordance with the options listed in EB48 Annex 11, 3(a) and (b), and was correctly determined. Therefore, it was concluded that the annual operational hours were validated as reasonable.
Total static investment (Million CNY)	2,983.63 million CNY	FSR	It was confirmed that the value of total static investment stated at B.5, was consistent with the FSR. Based on the supervision report issued by the third supervision company on 30/08/2012, the project is still under construction, up to 29/08/2012, the incurred investment for the project is about 1900million RMB, which is about 63.68% of the total static investment estimated in the FSR. In order to investigate the adequacy of the project's investment cost, the total static investment cost per installation capacity was compared with the following CDM registered hydropower projects shown in the table "Registered CDM projects in Jiangxi" below. The comparison revealed that the investment cost per installation capacity ranges from 5,160 CNY/kW (Ref. 2745) to 19,071 CNY/kW (Ref. 4091). The proposed project was calculated as 8.288 CNY/kW, which indicates that the investment cost falls within a reasonable range. Therefore, the validation team concluded that the total investment assumed in the PDD is traceable and reasonable.
Annual O&M	42.50	FSR and	The annual O&M cost is described in the FSR. It was confirmed at validation that the

cost (Million CNY)	(1.42% of Total static investment)	"Interim Regulation of Financial Assessment (SL16-94)"	annual O&M cost consisted of repair costs, labor costs and pension, material costs, reservoir maintenance fee, water resource fee, and other costs. Except for the repair cost, all the other parameters included in the annual O&M cost are from the FSR. -As for the repair cost, the FSR and the GSC PDD adopted the value of 1.5%, which was cross-checked by the Interim Regulation of Financial Assessment (SL16-94) promulgated by the Programming and Design Institute of Water Resources and the Hydropower of Water Resources Ministry and Power Ministry on 14/06/1994. Based on SL 16-94, the repair cost should be 1.0%, so it was confirmed that it was more appropriate and conservative to adopt the value of 1% for the proposed project other than the value of 1.5% from FSR. -As for the labour costs and pension, based on the average salary of Jiangxi province in 2008 and the "Notice on Interim Rules on Financial Assessment of Electric Power Engineering Technical Retrofit Projects." it was confirmed that the labor costs and pension of RMB22,000 was reasonable. -The material costs of 3.1 CNY/kW was cross-checked with the Interim Rules on Financial Assessment of Hydro Projects issued on 14/06/1994 by the Ministry of Electricity and Ministry of Water Resources, which defined that the material cost for the hydropower project with installed capacity between 260 MW and 500 MW should be 3.1 CNY/kW. -The other costs of 15.6 CNY/kW was cross-checked with the Interim Rules on Financial Assessment of Hydro Projects issued on 14/06/1994 by the Ministry of Electricity and Ministry of Water Resources, which defined that the other cost for the hydropower project with installed capacity between 260 MW and 500 MW should be 15.6 CNY/kW. -The reservoir maintenance fee of 0.001 CNY/kWh was cross-checked with the Interim Regulation of Financial Assessment which was promulgated by the Programming and Design Institute of Water Resources and Hydropower of Water Resources Ministry and Power Ministry on 14/06/1994, which defined that the reservoir maintenance fee should be 0.001 CNY/kWh. -The water resource fee of 0.0015 CNY/kWh was cross-checked with The Regulation of the Water Resource Fee Collection in Jiangxi province issued by the Jiangxi Provincial Government on 08/11/2001, which defined that all the water resource fee for the hydropower Project in Jiangxi Province is 0.0015 CNY/kWh. In addition, the annual O&M cost was cross-checked with the registered CDM projects in Jiangxi (table "Registered CDM projects in Jiangxi Province"), which showed a range of O&M cost of investment between 0.90% (Ref. 4091) and 2.18% (Ref. 4312). This proposed project has 1.42% of O&M cost of total investment, which indicates the proportion of the annual O&M cost of the project falls within a reasonable range.
Annual grid-in electricity	1,061,730 MWh	FSR	The annual grid-in electricity 1,061,730 MWh was confirmed in the FSR. The value of annual generated electricity of 1,141, 560 MWh was confirmed based on the PLF which was analyzed at the section of annual operational hours and the installed capacity of generators and turbines had also been cross-checked with the equipment purchase agreements. The annual grid-in electricity of 1,061,730 MWh was calculated, with consideration of the effective coefficient (95%), the transmission loss rate (2.0%), and the power consumption rate (0. 1%) as follows:

1,061,730 = Annual electricity generation (1,141, 560MWh) × Effective coefficient (0.95) × (1-Rate of internal consumption (0.1%)) × (1- transmission loss rate (2.0%))

In order to validate the appropriateness of effective electricity rate of 0.95, the DOE referred to SL 16-95, "the Economic Evaluation Code for Small Hydropower Projects". During the validation process, it was confirmed that although SL 16-95 is a standard applicable for small-scale hydropower project, it was conventional to refer to SL 16-95 for effective electricity rate determination since there were no standards for middle or large-scale hydropower projects. SL 16-95 stipulates effective electricity rate as follows.

"Table of effective electricity"

Type of hydropower stations	Effective electricity rate
1. Grid connected, annual/ multiyear regulating hydropower stations	0.95-1.00
2. Grid-connected, seasonal regulating hydropower stations	0.90-0.95
3. Grid-connected, monthly/weekly/daily/no regulating hydropower stations	
- The grid will take all electricity generated in rainy season and night	0.80-0.90
- The grid will only take part of the electricity generated in rainy season and night	0.70-0.80
4. Not connected to the grid, daily/no regulating capacity	0.60-0.70

The DOE considered from the on-site visit interview that this proposed project should fall into type 2, "Grid connected, seasonal regulating hydropower stations," which was within the range of 0.90-0.95. It was concluded that the applied effective electricity rate was determined conservatively in line with the standard SL 16-95 and was thus reasonable.

The rate of internal power use was cross-checked with the official code of "Hydro energy design code for small hydropower projects (SL76-94)". It is also a code relevant for small-scale hydropower, however, it is conventionally applied to large scale for the same reason as SL 16-95. According to SL 76-94, the self-consumption rate of the small hydropower station should be 0.5-1%. Therefore, the rate of 0.1% applied in the proposed project was considered to be conservative and thus reasonable.

As for the value of transmission loss rate of 2% , based on the "Explanation Letter about the Transmission Loss and the Plant Consumption Rate of the Project" issued by the FSR author of the Jiangxi Provincial Water Conservancy Planning and Designing Institute, it was confirmed that: there were no specific provisions for the value of the loss rate of designated matching power transmission and transforming equipment but it can be referred to the case study list in the "Economic Evaluation of Hydro Construction Project" and "Interim Provisions on the Financial Evaluation of Hydro Construction Project" that the loss rate of power transmission and transforming equipment designated for hydropower stations is valued between 1.7%~2.64%. Furthermore, based on the experience of calculation parameters in the economic evaluation of hydropower projects in Jiangxi Province, the loss rate of matching power transmission and transforming equipment designated for the proposed project is valued at 2%.

Based on the calculation above, setting the effective electricity rate (100%), the transmission loss rate (0%), and the power consumption rate (0%) as the most

			conservative estimate, the annual electricity generation becomes 1,141,560 MWh and the IRR became 7.27%, still lower than the benchmark of 8%. Thus, the validation team concluded that the estimated grid-in electricity and annual electricity generation were reasonable in the additionality assessment.
Grid-in tariff (including value-added tax (VAT)) (%)	0.38 CNY/ kWh	FSR	The estimated grid-in tariff of 0.38 CNY/kWh (including VAT 17%) in the PDD was confirmed in the FSR. Meanwhile, the DOE observed the following two findings during the validation, which were related to the assessment of sensitivity analysis: The DOE confirmed that the price of 0.38 CNY/kWh (including VAT 17%) was reasonable based on the official document regarding the tariff by Jiangxi Provincial Development Reform Committee. The official notification "Ganfagaishangjiazi[2009]No.2079", issued on 20/11/2009, was the most recent official approved tariff judgment at the time of FSR produced and mentioned about the tariff price. -The information about the hydropower stations located on the same river basin, including the tariff information had been received and confirmed during the on-site interview. According to the "Gan River Basin Plan", there were totally eight hydropower located on the Gan River basin, two of them had been put into operation, while the other six hydropower projects were under construction or under the initial planning stage. The approved tariff for the two operated hydropower projects, Wan'an Hydropower Project and Shihutang Hydropower Project, are 0.282 CNY/kWh(including VAT) and 0.34 CNY/kWh (including VAT), while the project adopted the value of 0.38RMB/kWh, which was conservative compared with the tariff of the similar hydropower projects located on the same river basin. -The tariff approvals issued by the government from 2004 to 2009 had been received. It was confirmed that the newly approved tariff for the hydropower project in Year 2009 was from 0.282 CNY/kWh to 0.448 CNY/kWh, while the average value was 0.374 CNY/kWh. The project which got tariff of 0.448 CNY/kWh started operation in 2002, when the reform electric power system occurred, and therefore has different investment environment from the proposed project. So the tariff of this project cannot be referred. Except this data, the tariff will range from 0.280 CNY/kWh to 0.404 CNY/kWh, while the average is 0.347 CNY/kWh. And among those projects, only Wan'an project is located in the same river basin as the proposed project, whose tariff is only 0.280 CNY/kWh. Therefore, the Project adopt the tariff of 0.38 CNY/kWh is reasonable and in a higher level. Even apply the highest tariff of them, 0.404 CNY/kWh, the IRR will reach 7.11%, still lower than the benchmark of 8%. Therefore, the project which adopted the tariff of 0.38 CNY/kWh was reasonable. Furthermore, by referring to "Information Note on the highest tariffs applied by the executive board in its decisions on registration of projects in the People's Republic of China, ver. 02" for para. 78 of EB 61, there was no information about the tariff for large-scale hydropower projects and the highest applicable tariff of registered small hydropower projects in Jiangxi Province (reservoir type) was 0.350 CNY/kWh (including 6% VAT) (0.330 excluding 6% VAT) from Ref. 1850 project referred by EB reference, i.e., the highest applicable tariff of registered small hydropower projects in Jiangxi Province (reservoir type) is almost the same as the value adopted by the project. The DOE-validated the appropriateness of the grid-in tariff based on the above notification of tariff and the DOE concluded that the grid-in tariff of this project of 0.38 CNY/kWh was appropriate.
Rate of VAT (%)	17	FSR and State Tax Law	-The VAT of 17% was cross-checked with the "Provisional regulations of VAT in China" (China State Council [2008] No. 538) issued by the China State Council on 05/11/2008, which was the latest regulation about VAT at the FSR phase. The document

Rate of additional tax on city building (%)	1	FSR and State Tax Law	of China State Council [2008] No. 538 was also the current valid regulation for VAT. -The rate of additional tax on city building of 1% was cross-checked with the "People's Republic of China Additional Tax on City Building Provisional Regulations" (Guofa [1985] No. 19) issued by the China State Council on 08/02/1985, which was the latest regulation about additional tax on education at the FSR phase. The document of Guofa [1985] No. 19 is also the current valid regulation for additional tax on city building. -The rate of additional tax on education of 3% was cross-checked with the "Decision on the amendment of < Provisional Regulations of Additional Tax on Education >" (China State Council [2005] No. 448) issued by the China State Council on 20/08/2005, which was the latest regulation about additional tax on education at the FSR phase. The document of the China State Council [2005] No. 448 is also the current valid regulation for additional tax on education. -The income tax rate of 25% was cross-checked with the "People's Republic of China Enterprise Income Tax Provisional Regulations" (Order of the President of the People's Republic of China No. 63) issued on 16/03/2007, which was the latest regulation about income tax at the FSR phase. The document of order of the President of the People's Republic of China No. 63 is also the current valid regulation for income tax.
Rate of additional tax on education (%)	3	FSR and State Tax Law	
Income tax rate (%)	25	FSR and State Tax Law	
Residual value rate (%)	5%	FSR	All input values were confirmed in the FSR. It was confirmed with the financial accounting criteria of the Accounting System for Business Enterprise and the depreciation rate was calculated from other two values. According to the document of Caifazi [1994] No. 3, the residual value is less than 5% of original value and the enterprise has discretionary power. The DOE also checked that all input values were correctly applied to the IRR calculation spreadsheet.
Depreciation rate of station	2.5%	FSR	
Surplus reserves rate	10%	FSR and Corporation Law	Surplus reserves rate of 10% was confirmed by Corporation Law of P.R.C which was issued on 27/10/2005 and put into effect on 01/01/2006 as No.42 President Order of P.R.C. In Clause 167, it was stated that "When distribute the company's profit (after tax) in the current year, 10% of the profit should be extracted for in the surplus reserves." The DOE also checked that it was correctly applied to the IRR calculation spreadsheet.
Interest rate	5.94%	FSR	It was confirmed that the IRR of the project activity was calculated applying post-tax benchmark and actual interest payable was taken into account in the calculation of income tax. The interest rate of 5.94% was determined according to the latest standard interest rates for long-term loans more than five years issued by China Bank issued on 23/12/2008 at the FSR stage and still valid at the time CDM decision was taken. (URL:http://www.pbc.gov.cn/publish/zhengcehuobisi/631/2011/20110708142554799484598/20110708142554799484598_.html)

Registered CDM projects in Jiangxi Province

No.	ID.	Capacity (MW)	Annual electricity generation (MWh)	O&M Cost (Million CNY)	Total Investment (Million CNY)	Investment per capacity (CNY/kW)	Annual Operation Hours	PLF	Electricity Tariff (with VAT) (CNY/kWh)	O&M cost/ investment (%)
1	1400	36	82,630	N/A	249.04	6918	2,268	25.89%	0.280	N/A
2	1850	20	62,250	2.48	148.88	7444	3,500	39.95%	0.350	1.67%
3	2039	25	77,900	2.09	179.43	7177	3,116	35.57%	0.310	1.16%
4	2745	25	62,480	2.17	129.00	5160	2,840	32.42%	0.300	1.68%
5	3789	21	71,040	3.29	202.38	9637	3,383	38.62%	0.380	1.63%
6	3978	16	46,510	2.17	136.58	8536	2,907	33.18%	0.404	1.59%
7	4091	120	489,220	20.71	2,288.47	19071	4,077	46.54%	0.340	0.90%
8	4312	36	111,250	8.00	366.29	10175	3,090	35.27%	0.400	2.18%
Maximum		120	489,220	20.71	2,288.47	19071	4,077	46.54%	0.404	2.18%
Minimum		16	46,510	2.09	129.00	5160	2,268	25.89%	0.280	0.90%
Average		37	125,410	5.84	462.51	9265	3,148	35.93%	0.347	1.54%

6.6.4.3 IRR analysis

A spreadsheet version of the investment analysis was obtained and assessed. It was confirmed that the input values applied in the spreadsheet were all taken from the FSR except the repair cost; the IRR checklist based on EB62 Annex 55 (Guidance on the Assessment of Investment Analysis ver. 05) was used to confirm the appropriateness of the investment analysis.

Before carrying out the IRR analysis, accurate translation check from Chinese to English was done by the consulting company. The benchmark analysis was selected to assess the financial viability of the project activity. As described in the PDD, a benchmark IRR of 8% was applied to this project in accordance with the "Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects, Beijing: China Electric Power Press, 2003" issued by the Ministry of Water Resources of the People's Republic of China. The regulation is still valid and applicable to the project.

During the on-site validation, it was confirmed that the calculation of IRR without CER had a figure of 6.71%, which is far less than 8%. This indicates the proposed project is neither economically or financially attractive nor feasible without CER and demonstrates the additionality of the proposed project.

6.6.4.4 IRR-sensitivity analysis

- **Selection of variable parameters**
  Deloitte-TECO assessed the variable parameters in accordance with the guidelines stated in paragraph 19 of EB 62 Annex 5, "Guidance on the Assessment of Investment Analysis (Version 05.0)."

  A sensitivity analysis in the PDD demonstrated that the project activity was unlikely to be financially viable under reasonable variations in the critical assumptions, i.e., fluctuation range of ±10%, in the four selected financial parameters, including "Total static Investment," "Annual grid-in electricity," "The grid-connected tariff," and "Annual O&M cost," Deloitte-TECO concluded that that selected variable parameters were adequate.

- **Range of variations**
  While the validation process concluded that the proposed project was neither feasible nor attractive without CERs, and the calculated IRR of 6.71%, which can be increased to 8.33% if CER was included as an additional revenue source.

  The percentage at which the benchmark would be reached is summarized in the table below.

Parameter	Variation to reach the benchmark
Total static investment	-15.3%
Annual grid-in electricity	+17.6%
Grid-in tariff	+17.4%
Annual O&M cost	-137.0%

- **Total static investment**
  The proportion by which the IRR of the proposed project would reach the benchmark of 8% was calculated to be a decrease of 15.3% in its total static investment. According to China statistical yearbook 2011 (http://www.stats.gov.cn/tjsj/ndsj/2011/indexch.htm) issued by the China Statistics Bureau, the price index for investment in fixed assets, purchasing price index for raw material, fuel and power, and index for wage bill of employed persons from 2006-2010, respectively, are also shown in the following table.

Price index from Years 2006 to 2010

Year	2006	2007	2008	2009	2010	Total increasing rate (2005-2010)[1]
Price index for investment in fixed assets (*preceding year=100)*	101.5	103.9	108.9	97.6	103.6	16.12%[2]
Purchasing price index for raw material, fuel, and power (*preceding year=100)*	106.0	104.4	110.5	92.1	109.6	23.44%[3]
Index for wage bill of employed persons (*preceding year=100)*	113.3	119.9	116.8	112.2	113.8	102.59%[4]

Note: [1] Year 2005 is the base year and preceding year = 100 for each years.
[2] (101.5/100)(103.9/100)*(108.9/100)*(97.6/100)*(103.6/100)=1.1612, so the total increasing rate from 2005 to 2010 is 16.12%.*
[3] (106.0/100)(104.4/100)*(110.5/100)*(92.1/100)*(109.6/100)=1.2344, so the total increasing rate from 2005 to 2010 is 23.44%.*
[4] (113.3/100)(119.9/100)*(116.8/100)*(112.2/100)*(113.8/100)=2.0259, so the total increasing rate from 2005 to 2010 is 102.59%.*

The table indicates that during the recent five years, other than Year 2009, the price for investment in fixed assets, raw material, fuel and power, and wage bill of employed persons had been increasing and the rates of increase from 2005 to 2010 were 16.12%, 23.44%, and 102.59%, i.e., it shows an upward trend in the recent years in China.

Therefore, it is not reasonable that the total static investment will be decreased by 15.3% and the IRR cannot reach the benchmark of 8% with the actual total static investment.

- **Annual grid-in electricity**
  The annual grid-in electricity needs to be increased by 17.60% in order to reach the IRR benchmark of 8%. The annual grid-in electricity of 1,061,730 MWh was calculated, with consideration of the effective coefficient (95%), the transmission loss rate (2.0%), and the power consumption rate (0. 1%). The average water flow of the project is determined from the hydrological data based on 55-year (1953~2007) historical hydrological data, stated in the FSR. The long-term variations of water flow in the flooding and dry seasons have been taken into consideration, so the annual electricity generation of the project is stable. As analyzed in the table of "Input parameter analysis" above, the values of effective coefficient, transmission loss rate, and internal power consumption rate are reasonable. Even by setting the effective electricity rate (100%), the transmission loss rate (0%), and the power consumption rate (0%) as the most conservative estimate, the annual electricity generation becomes 1,141,560 MWh and the IRR becomes 7.27%, still lower than the benchmark of 8%. Therefore, increasing the annual grid-in electricity by more than 17.60% is concluded not to be feasible.

- **Grid-in-Tariff**
  When the grid-in tariff increases by 17.40% (i.e., 0.446 CNY/kWh, including VAT), the IRR of the project would reach 8%. By referring to “Information Note on the highest tariffs applied by the executive board in its decisions on registration of projects in the People’s Republic of China, ver. 02” for para. 78 of EB 61, there is no information about the tariff for large-scale hydropower projects in Jiangxi Province, and the highest applicable tariff of registered small hydropower projects in Jiangxi Province (reservoir type) is 0.350 CNY/kWh (including 6% VAT) (0.330, excluding 6%VAT) from Ref. 1850 project referred by the EB reference, i.e., the highest applicable tariff of registered small hydropower projects in Jiangxi Province (reservoir type) is almost the same as the value adopted by the project.
  In addition, the tariff was cross-checked with the registered CDM projects in Jiangxi (table “Registered CDM projects in Jiangxi Province”), which showed a range of tariff between 0.280 CNY/kWh and 0.404 CNY/kWh, and the average of tariff is 0.38 CNY/kWh, which is the same as the value adopted by the project. Even the project adopts the tariff of 0.404 CNY/kWh, the IRR will be 7.19%, still lower than 8%. Therefore, it is concluded that increasing the tariff by more than 17.40% is not reasonable.

- **Annual O&M cost**
  When the annual O&M cost decreases by 137.0%, the IRR without CER revenue will reach the benchmark, i.e., even if there is no annual O&M cost, the IRR will be 7.94%, still lower than 8%. Therefore, it is concluded that a drop by 137.0% is not reasonable.

6.6.5 Barrier analysis

As per the “Tool for the demonstration and assessment of additionality” Ver. 5.2.1, the barrier

analysis was not necessarily required. In the PDD, the PP did not carry out the barrier analysis for the project activity.

6.6.6 Common practice analysis

Deloitte-TECO implemented the common practice analysis based on the methodological tool "Demonstration and assessment of additionality (version 06.0.0)" in order to determine whether this proposed project is a common practice in the applicable area or not.

The common practice analysis of the proposed project includes the following steps:

Step 1: Calculate the applicable output range as +/-50% of the design output or capacity of the proposed project activity.

Deloitte-TECO confirmed that the applicable output range as +/-50% of the design output or capacity of the proposed project activity is 180 MW to 540 MW.

Step 2: In the applicable geographical area, identify all plants that deliver the same output or capacity, within the applicable output range calculated in Step 1, as the proposed project activity and have started commercial operation before the start date of the project. Note their number N_{all}. Registered CDM project activities shall not be included in this step.

According to the Paragraph 5 of the methodological tool for "Demonstration and assessment of additionality" (version 06.0.0), applicable geographical area covers the entire host country as a default. On the other hand, the hydropower technology highly depends on local condition, which is a province-specific technology, and the justification is as the follows:

1. Water resources

According to the Introduction about the Water Resource Amount and Distribution Feature of China (Annex 1) issued by Hydrochina Corporation, a state-owned enterprise and qualified design institute with Grade A certificate (Annex 2, Annex 2.1), water resources are unevenly distributed in China due to different terrain, river and rainfall, etc. Water resource in the western twelve provinces accounts 81.46% of total amount in China. Eight provinces in the middle China share 13.66% while the remaining eleven provinces in eastern China only account 4.88%.

2. Investment climate

(1) Industrial development level

The mainland of China includes total 31 provinces, autonomous region and municipality. According to the “Number of Legal Entities by Three Strata of Industry and Type of Institutions and Region (2010)” (Annex 3) from the Chinese State Statistics Bureau , the industrial development situation in these 31 provinces, autonomous regions and municipalities are quite different.

(2) Water resource fee

According to “Regulation on the Administration of the License for Water Drawing and the Levy of Water Resource Fees” issued by the State Council of P. R. China on 21st

February 2006 and came into effect on 15th April 2006 (Annex 4), the standard of water resource fee is regulated by the price management department with the finance department and water administration department of the same level of the governments of each province, autonomous region, municipality. Therefore, the water resource fee is varied and distinguished from one province to another.

(3) Tax policies

In China, the different preferential tax policies are implemented for different areas. The Suggestions on the Implementation of Policies and Measures Pertaining to the Development of the Western Region (Annex 5, issued by the General Office of the State Council on 29/09/2001, regulated the preferential income tax in the business of transportation, electric power, water conservancy, postal service and broadcasting for the development of the western region. Specifically, the income tax shall be exempted in the first two years, and half imposed from the third to the fifth years. In addition, according to the Notice on the Expansion of VAT Offset in Northeast of China, issued by the State Administration of Taxation on 14/09/2004, more VAT occurred such for the purchase of equipment can be offset in northeast of China (Annex 6). Since the project is located in middle China, the different tax policies are applied.

(4) Electricity Tariff

According to the Notification on Adjusting Electricity Tariffs of the CCPG (Annex 7) issued by NDRC on 18/11/2009, the CCPG consists of six provincial power grids including Jiangxi province. All of these six provinces execute different electricity tariffs, which are regulated by local government, respectively as per the national regulation.

In conclusion, based on the analysis above, the hydropower technology depends on local conditions, and the water resource and investment environment including the industrial investment level, water resource fee, tax policies and electricity tariff are different in each province. Deloitte-TECO concluded that the hydropower technology is province-specific technology in China, and the “Applicable geographical area” covers Jiangxi Province for a common practice analysis of this proposed project is appropriate.

Deloitte-TECO assessed publicly available data source for similar projects. In accordance with the China Water Resources Yearbook (2003-2010), no hydropower project in the range of 180 MW to 560 MW is identified. According to the on-site interview with the representative of Water Conservancy Bureau of Xiajiang Baqiu Town during on-site assessment, Wan'an Hydropower Project located on the Gan River had been put into operation in 1990s before the stating date of the proposed project.

The information of Wan'an Hydropower Project was further checked by the “The Information of Wan’an Hydro Power Project” (Annex 8) published on the website of Large Dam Safety Supervision Center, State Electricity Regulatory Commission (Annex 8). It shows that Wan'an Hydropower Project with installed capacity of 500MW was put into operation in 1991. Large Dam Safety Supervision Center is a national governmental

department affiliated to the State Electricity Regulatory Commission. Therefore, it is confirmed that the publicly available information about Wan'an Hydropower Project is credible.

Thus Deloitte-TECO concluded that there is one hydropower project to be included in the N_{all}.

Step 3: For the plants identified in Step 2, identify those that apply technologies different from the technology applied in the proposed project activity. Note their number N_{diff}.

According to the "Demonstration and assessment of additionality (version 06.0.0)," technologies were defined as five items, i) energy source/fuel; ii) feed; iii) size of installation (power capacity); iv) investment climate in the date of the investment decision; and v) other features. Of the five items, Deloitte-TECO had considered item iv) investment climate in the date of the investment decision. Deloitte-TECO confirmed that in China, 2002 was a landmark year for the power industry because in that year, the National Council of the PRC issued the "Notice of National Council Issued about the Power System of Organization Reform Programme [2002 No. 5]" and had a reform in the China's power industry. The reform obviously changed the existing electricity tariff mechanism and the investment environment of power industry. After that, the power plant developers had to face high financial risk. As a result of this step, no project has been left.

Hydropower projects with installed capacity between 180 MW and 540 MW in Jiangxi province was concluded as applying technologies different from the technology applied in the proposed project, and so N_{diff} is as 1.

Step 4: Calculate the factor $F=1-N_{diff}/N_{all}$ representing the share of plants using technology similar to the technology used in the proposed project activity in all plants that deliver the same output or capacity as the proposed project activity.

From the above steps 2 and 3, Deloitte-TECO analyzed and concluded that N_{all} is 1 and N_{diff} is 1.

The calculation factor $F = 1-N_{diff}/N_{all} = 1-1/1$, which is computed as 0.

Therefore, Deloitte-TECO concluded that this proposed project is a not common practice in Jiangxi province because the factor F is smaller than 0.2 and $N_{all} - N_{diff}$ is smaller than 3 based on "Demonstration and assessment of additionality (version 06.0.0)".

6.7 Monitoring Plan

6.7.1 Collecting data and reporting

The project MP was confirmed to comply with the requirements of the ACM0002 ver. 12.2.0 monitoring methodology, which is applicable to the project since it is a large-scale hydropower project. A power system diagram of the proposed project was in the PDD in order to identify project details specifically, such as the number of meters and its location, etc. The revised MP

was assessed and confirmed as providing detailed information related to the collection and archiving of all relevant data needed to:

- **Estimate or measure emissions occurring within the project boundary**

  Deloitte-TECO confirmed that there were no emissions within the project boundary.

  As for the water surface of the reservoir, based on the "Explanation Letter about the Submergence Area of Jiangxi Xiajiang Hydropower Project" issued by the FSR author of the Jiangxi Provincial Water Conservancy Planning and Designing Institute, it was confirmed that the flooded area ((C1'+C2')*L) due to the construction of the project was 25.6 km^2, which defines that the C1' and C2' are the increased river width as a result of the project, measured on the water surface, and L is the backwater distance.

  And the flooded area ((C1+C2)*L) due to the construction of the project is 31.547 km^2, which defines that C1 and C2 are the increased river width as a result of the project, measured at the bottom of the reservoir from the projection of the increased water surface area at the bottom of the reservoir, and L is the backwater distance.

  According to the clarification issued by the "Meth Panel" in the Meth Panel meeting held during 09-13/07/2007 together with the "Calculation of Power Density/AM_CLA_0049," it was clarified that *"in order to calculate the power density, the correct equation will be the increased power capacity divided by the increased flooded area measured in the water surface:*

  *Power density = (Total installed capacity after project implementation - Total installed capacity before project implementation) / (C1' + C2') * L."*

  Therefore, it was reasonable and conservative that the PDD adopted the value of 31.547 km^2 ((C1+C2) * L), which was derived from the approved FSR instead of 25.6 km^2 ((C1'+C2') * L) when calculating the power density, i.e., the power density of the proposed project was calculated as 360,000,000 W / 31,547,000 m^2 = 11.41 W/m^2, which was more than 10 W/m^2. According to ACM0002, leakage is not an issue. The electricity supplied by the CCPG is measured using both the main meter and back-up meter installed on the site at the booster station. It was confirmed that the supplied electricity was deducted from the electricity delivered to the grid when calculating emission reductions.

- **Determine the baseline emissions**

  Delivered electricity is measured by the main meter installed on site at the booster station. The baseline emission is calculated by multiplying the net delivered electricity by the emission factor as defined in B.6.1 and B.6.3 in the PDD.

- **Estimated changes in emissions outside the project boundary**

  No changes in emissions will occur outside the project boundary.

It was confirmed that all important indicators for monitoring and reporting project performance had been incorporated in the MP.

6.7.2 Monitoring system

- **Meter accuracy and calibration frequency**

The electric energy metering, bidirectional electric energy meters (main and back-up meter) with accuracy of at least 0.5s will be equipped according to the requirements of the Technical Administrative Code of Electric Energy Metering (DL/T448-2000). In terms of calibration, the meters will be calibrated once a year by a qualified third-party entity or the grid company according to Verification Regulation of Electrical Energy Meters with Electronics (JJG 596-1999).

	Meter accuracy	Calibration frequency
Main meter	At least 0.5s	once a year
Back-up meter	At least 0.5s	once a year

- **Monitoring parameters and frequency**

Deloitte-TECO confirmed that the following parameters will be monitored during the project crediting period and complying with the monitoring methodology.

Parameter	Description	Monitoring method	Frequency
$EG_{facility,y}$ (MWh/yr)	Quantity of net electricity generation supplied by the project plant/unit to the CCPG in year y	Electric meter system reads continuously. The representatives of the grid company and the project will jointly read the main meter monthly.	Measured continuously and recorded monthly
Cap_{PJ} (W)	Installed capacity of the hydro power plant after the implementation of the project activity.	Reading nameplates	Yearly
A_{PJ} (m^2)	Area of the single or multiple reservoirs measured in the surface of the water, after the implementation of the project activity, when the reservoir is full.	Measured from topographical surveys, maps or satellite images	Yearly

- **Responsibility**

The PO will establish the monitoring team in complying with the monitoring methodology to ensure the completion, coherence and accuracy of monitoring and calculation of the emission reductions from the project during crediting period. The monitoring team's role and responsibility are confirmed as follows:

	Role/Responsibility
Project owner and local power grid	Responsible for installation, maintenance, and supervision of these meters
CDM Team Leader	Overall responsibility for monitoring and verification process, training and managing all CDM team members; and act as the focal point for the DOE, DNA and other organizations relating to CDM.
CDM Assistant	Assist CDM Team Leader to supervise data monitoring, negotiations with the grid company, and to collect the electricity settlement receipts.
Operators	Inspecting and maintaining the equipment, measuring and recording relevant readings, collecting, checking, archiving and managing data, and making summary according to the CDM project's requirements in a regular basis, and so on.

- **Training**

Qualified staff will be hired and a "Monitoring and Operation Manual" will be compiled and accessible to staff. It was confirmed that the project owner would provide regular training if necessary.

- **QA/QC**

Quality Assurance and Quality Control (QA&QC) measures will be established by the project owner to effectively control and manage data reading, recording, auditing, as well as archiving data and all relevant documents. These monitoring arrangements are feasible to implement within the project design.

It is concluded that the PO has sufficient ability to implement the monitoring plan during the crediting period.

6.8 Sustainable Development

The contribution to sustainable development by the project was stated in the LOA issued by the Chinese DNA. It was also confirmed through interviews during the on-site validation that this proposed project would create positive impact to the local economy, including promoting shipping ability and generating electricity. In addition, higher employment and better income would also be expected by developing this proposed project.

6.9 Local Stakeholder Consultation

In order to investigate the attitudes and views of the public and local government regarding the proposed project, a public investigation was opened during November and December 2008. Moreover, questionnaire investigations were carried out both for the local residents and for local government, respectively. For cross-checking of these investigations, the validation team carried out interviews with local residents during the on-site assessment and obtained satisfactory results. According to the PDD, 648 out of 680 questionnaires were returned from the local residents. Based on the returned questionnaires, it was confirmed that face-to-face communications, CDM stakeholder's meetings held by immigration office periodically, worked well for the residents to understand the proposed project.

By analyzing the results of the questionnaires, the majority of respondents were worried about any negative impact of the project on the environment and related effects, such as land flood, soil erosion, and ecological damages. Regarding those issues, the DOE assessed the questionnaires prepared by the PP and conducted independent interviews with the local stakeholders during the on-site visit. Those respondents were stakeholders who actually lived near the project site and that the local stakeholders were satisfied about the project since it could help to improve their living conditions. Through interviews and review of evidential documents, it was noted that local compensations, such as for houses and land occupation, had already been implemented in line with national policy. Furthermore, the validation team received pictures about infrastructures, such as houses, etc. as supporting evidence. It was confirmed that the project owner had been making efforts to minimize the environmental impact during the construction and operation phases of the project.

In conclusion, Deloitte-TECO confirmed that the selection of respondents for the questionnaires was adequate and the comments by local stakeholders as described in the PDD were substantiated with satisfactory results.

6.10 Environmental Impacts

As regulated by the China Environmental Protection Law, the EIA was conducted for this project and completed in August 2009, which was approved by the Ministry of Environment Protection of the PRC on 30/10/2009 (Huanshen[2009]No.466). Deloitte-TECO also confirmed that the project owner had been making efforts to minimize environmental impacts during the construction and operation phases of the project, based on local regulations.

In the "Approval Letter on Environmental Impact Assessment Report of Jiangxi Xiajiang Hydropower Project, general requirements are requested to the PO such as ensuring water supply to downstream; water quality prevention; soil erosion prevention; maintain fish ladder; pollution accident prevention, etc. like any other hydropower projects. Other than that, there is no other additional/critical requirement for implementing this project activity is described in the approval letter of the EIA report.

The validation team additionally confirmed based on the on-site visit that the project owner had paid compensations and had plan to migrate local residents to a new village in line with the compensation regulations.

7 VALIDATION OPINION

Deloitte-TECO has performed a validation of the Jiangxi Xiajiang Hydropower Project. This validation was performed on the basis of the UNFCCC criteria and host country criteria, as well as the criteria given to provide for consistent project operations, monitoring, and reporting. The validation process comprised of a desk review and risk analysis, an on-site visit, follow-up assessment, and finalized conclusion based on the evidence collected during the validation. A profile of the CDM team members as shown in section "8.1 Team". Further information on quality controls within the team and about the validation process are shown in "4.4 Internal Quality Control". Public comments were invited through the GSP. Since no comments were received, no modifications were made.

The validation process found no information indicating that the project had received any public funding which could result in a diversion of the ODA.
The review of the PDD and the subsequent follow-up interviews have provided Deloitte-TECO with sufficient evidence to determine the fulfillment of stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria. Deloitte-TECO has also reviewed a LOA from the host party confirming that the project activity will assist in achieving sustainable development. Hence, the project will be recommended by Deloitte-TECO for registration with the UNFCCC.

By displacing fossil fuel-based electricity with electricity generated from a renewable source, the project will result in reductions of CO_2 emissions that are real, measurable, and give long-term benefits to the mitigation of climate change. An analysis of the investment barriers demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented as designed, the project is likely to achieve the estimated amount of emission reductions.

If the project is implemented as designed, the project is likely to achieve the estimated amount of emission reductions (682,642 tCO_2e/year during the first crediting period (769,117 tCO_2e/year as annual average after full operation)) under the assumptions made applying ACM0002 version 12.2.0 methodology for calculating emission reductions as specified in the final PDD version 04 dated 13/12/2012.

27/12/2012

Hiroshi Inanaga

Chief Executive Officer

Deloitte Tohmatsu Evaluation and Certification Organization

Tokyo, Japan

8 VALIDATION TEAM

8.1 Team

Name	Organization	Role	Auditor Status	CDM Audit Type (Validation/Verification)	Competences						Task/Role			
					Host Country Experience	Host Country Language	Country Regulatory Aspect	Environmental Aspect	Financial Aspect	Technical Area	Document Review	Site Visit/Interview	Report Writing	Supervision
OTANI, Yuichi	Deloitte-TECO	Team Leader	Lead Auditor	Val/ Ver	Y	-	Y	Y	-	Y	Y	Y	Y	Y
SHI, Xueting	Deloitte-TECO	Team Member	Lead Auditor	Val/ Ver	Y	Y	Y	Y	Y	Y	Y	-	Y	Y
WU, Fenlin	Deloitte-TECO	Team Member	Auditor	Val/	Y	Y	Y	Y	-	-	Y	Y	Y	-
ZHAI, Jiajia	Deloitte-TECO	-	Observer	Val/	-	Y	Y	-	-	-	-	Y	-	-

8.2 Reviewer

Name	Organization	Role	Host Country Experience	Host Country Language	Country Regulatory Aspect	Environmental Aspect	Financial Aspect	Technical Area
PARK, Yongtae	Deloitte-TECO	Technical Reviewer	Y	-	Y	Y	-	Y
INANAGA, Hiroshi	Deloitte-TECO	Engagement Quality Assurance	-	-	-	Y	-	Y
ICHIKAWA, Masahiko	CDM Judging Committee	Judging Committee Chair	-	-	-	-	-	-
INANAGA, Hiroshi	Deloitte-TECO	Chief Executive Officer	-	-	-	Y	-	Y

9 REFERENCE

No.	Title	Date
1	PDD for GSP	07/02/2012
2	FSR	04/2010
3	FSR approval letter (Fagainong jing[2010]No.1546)	15/07/2010
4	Certificate of FSR author (Grade A)	10/12/2007
5	EIA report	08/2009
6	EIA approval letter	30/10/2009
7	Meeting summary on CDM consideration	16/08/2010
8	IRR and sensitivity analysis spreadsheet (including formula)	14/02/2012
9	Equipment contract with specification signed with Dongfang Electric Machinery Co., Ltd. (Ref. JXXJ/CG-SN-JD-01(B2))	26/09/2010
10	LOA of China (Fagaiqihou[2012]No.1070)	18/04/2012
11	LOA of Japan	29/08/2012
12	CDM consultancy contract between the project owner and the consulting company	21/01/2011
13	Equipment contract with specification signed with D Tianjin ALSTOM Hydro Co., Ltd. (Ref. JXXJ/CG-SN-JD-01(B1))	26/09/2010
14	Minutes of the board meeting for CDM decision	01/09/2010
15	Technical administrative code DL-T448-2000	01/01/2001
16	Emission Reduction Purchase Agreement (ERPA) between the project owner and J-TEC Co., Ltd.	26/10/2011
17	Maps of river basin in which the project hydropower plant is located	N/A
18	Maps of the project site and identifiable facilities	N/A
19	Power system diagram	N/A
20	Business license of the project owner	26/09/2010
21	Construction schedule	N/A
22	Contract for construction	08/10/2010
23	Exchange rate for calculating CER price in the IRR analysis	01/09/2010
24	Tariff notification (Ganfagaishangjiazi[2009]No.2079)	20/11/2009
25	Explanation about the transmission loss and the plant consumption rate of Jiangxi Xiajiang Hydropower Project	12/04/2012
26	Loan contract (Ref No.: 3600103029011061080)	19/05/2011
27	China Electric Power Yearbook (2006-2010) for low cost / must run	2006-2010

28	Stakeholder list / 648 questionnaires	12/2008
29	CDM prior consideration of the project to UNFCCC	22/02/2011.
30	CDM prior consideration of the project to NDRC	14/03/2011
31	"Guidance on Industrial Structural Adjustment 2005" issued by the NDRC of China	02/12/2005
32	Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects, China Electric Power Press	2003
33	Explanation about the Submergence Area of Jiangxi Xiajiang Hydropower Project	10/04/2012
34	China Water Resource Yearbook, 2003 -2010	2003-2010
35	Jiangxi Statistical Yearbook 2009	2009
36	Notice on Interim Rules on Financial Assessment of Electric Power Engineering Technical Retrofit Projects	10/09/2002
37	China Energy Statistical Yearbook 2009	N/A
38	2006 IPCC Guidelines for National GHG Inventories	N/A
39	2011 baseline emission factors for regional power grids in China	20/10/2011
40	Footnote data	N/A
41	Version 12.2.0 of ACM0002: "Consolidated baseline methodology for grid-connected electricity generation from renewable sources"	N/A
42	Paragraph 12, Annex 5, EB 62: Guidelines on Assessment of Investment Analysis, Version 05	N/A
43	Version 02.2.1 of the "Tool to calculate the emission factor for an electricity system"	N/A
44	Version 06.0.0 of the "Tool for the demonstration and assessment of additionality"	N/A
45	Lifetime for financial analysis was based on the lifetime of equipment according to EB 50, Annex 15	N/A
46	Guideline on common practice (version 01.0), EB 63 Annex 12	N/A
47	Questionnaires from the DOE to local stakeholders (grid company, water resource bureau, local residents)	06/03/2012
48	Financial statements of the project owner (Gannenghuiyanzi[2010]No.13)	09/2010
49	Statement about the investment plan of Xiajiang Hydropower Project	11/06/2012
50	Compensation payment records for land occupation	04/11/2010
51	Information of Wan'an Hydropower Station	N/A
52	Information of Zhelin Hydropower Station	N/A
53	Information of Sanhe Shangyoujiang Hydropower Station	N/A
54	Information of Sanhe Hongmen Hydropower Station	N/A
55	Information of Sanhe Hydropower Station	N/A
56	Information of Sanhe Liangfang Hydropower Station	N/A
57	Electricity tariff approved in Jiangxi Province from 2004 to 2009	N/A

58	Registered CDM hydropower projects in Jiangxi Province	N/A
59	Interim Regulation of Financial Assessment (SL16-94)	14/06/1994
60	Regulation of the water resource fee collection in Jiangxi province	08/11/2001
61	Economic Evaluation Code for Small Hydropower Projects (SL16-95)	02/06/1995
62	Information Note on the highest tariffs applied by the executive board in its decisions on registration of projects in the People's Republic of China, ver. 02	N/A
63	Provisional regulations of VAT in China (China State Council [2008]No.538)	05/11/2008
64	People's Republic of China Additional Tax on City Building Provisional Regulations (Guofa [1985]No.19)	08/02/1985
65	Decision on the amendment of <Provisional Regulations of Additional Tax on Education> (China State Council [2005]No.448)	20/08/2005
66	People's Republic of China Enterprise Income Tax Provisional Regulations (Order of the President of the People's Republic of China No. 63)	16/03/2007
67	Provisional Regulation on Implementation Details of Enterprise Income Tax (Caifazi[1994]No.3)	04/03/1994
68	Estimated CER calculation for 1st crediting period spreadsheet	N/A
69	Stakeholder consultation publication on website	18/12/2008
70	EIA summary published on website	27/03/2009
71	Calculation of power density /AM_CLA_0049	17/07/2007
72	Thresholds and criteria for the electricity of hydroelectric power plants with reservoirs as CDM project activities (EB23, Annex5)	N/A
73	Corporation Law of P.R.C (No.42 President Order of P.R.C.)	27/10/2005
74	Supervision Report	30/08/2012
75	Verification Regulation of Electrical Energy Meters with Electronics (JJG 596-1999)	21/10/1999
76	Technical Administrative Code of Electric Energy Metering (DL/T448-2000)	03/11/2000
77	Introduction about the Water Resource Amount and Distribution Feature of China (Annex 1)	N/A
78	Certificate of Zhongnan Institute of Hydrochina Corporation (Grade A) (Annex 2)	
79	Certificate of Hydrochina Corporation (Annex 2.1)	21/11/2011
80	Number of Legal Entities by Three Strata of Industry and Type of Institutions and Region (2010) (Annex 3)	2010
81	Regulation on the Administration of the License for Water Drawing and the Levy of Water Resource Fees (Annex 4)	21/02/2006
82	Suggestions on the Implementation of Policies and Measures Pertaining to the Development of the Western Region (Annex 5)	29/09/2001
83	Notice on the Expansion of VAT Offset in Northeast of China (Annex 6)	14/09/2004
84	Notification on Adjusting Electricity Tariffs of the CCPG (Annex 7)	18/11/2009
85	The Information of Wan'an Hydro Power Project (Annex 8)	N/A

Appendix A: Validation Protocol

Table A-1 Requirements Checklist

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
	1. Approval						
1	44. All Parties involved have approved the project activity.	45. The DOE shall determine whether each letter confirms that: (a) The Party is a Party to the Kyoto Protocol; (b) Participation is voluntary; (c) In the case of the host Party, the proposed CDM project activity contributes to the sustainable development of the country; (d) It refers to the precise proposed CDM project activity title in the PDD being submitted for registration. 46. The DOE shall determine whether the letter(s) of approval is unconditional with respect to (a) to (d) above. 47. The DOE shall confirm the letter(s) of approval has been issued by the respective Party's designated national authority (DNA) and is valid for the proposed CDM project activity under validation. A list of DNAs is available on the UNFCCC CDM website. 48. If the DOE doubts the authenticity of the letter of approval, the DOE shall verify with the DNA that the letter of approval is authentic.	It is necessary to confirm whether the exact title of the proposed project and the name of the project participants described in the letter of approval are consistent with those of the PDD or not. Documents to be submitted: - LoA from both countries (China and Japan) - Please submit any evidential document, if CER buyer has been changed comparing with the initial letter(s) of approval.	#10 #11	・It was confirmed from the interview that LOAs from China and Japan had not been issued. It was expected to issue the LOAs at the following date: ・LOA from Chinese DNA: 05/2012. ・LOA from Japanese DNA: 05/2012 It is necessary to submit the LOAs from both parties once issued. (07/03/2012) PP's Response: The LOA of China has been provided. Please refer to Annex 11 (30/05/2012) The LOA of Japan will be provided when received. (30/05/2012) DOE: The LOA from China DNA on 18/04/2012 had been received and confirmed that the exact title of the proposed project and the name of the PP described in the LOA from Chinese DNA were consistent with those of	CL	OK

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					the PDD. It is necessary to submit the LOA from Japan DNA once it is issued. (07/06/2012) The LoA from Japan DNA issued on 29/08/2012 has been received, and confirmed that the exact title of the proposed project and the name of the PP described in the LoA from Japan DNA were consistent with those of the PDD. The CL was closed.		
	2. Participation						
2	51. All project participants have been listed in a consistent manner in the project documentation, and their participation in the project activity has been approved by a Party to the Kyoto Protocol.	52. The DOE shall confirm that the project participants are listed in tabular form in section A.3 of the PDD and that this information is consistent with the contact details provided in annex 1 of the PDD. The DOE shall determine whether the participation of each project participant has been approved by at least one Party involved, either in a letter of approval or in a separate letter specifically to approve participation. 53. The DOE shall ensure that the approval of participation has been issued from the relevant DNA and if in doubt shall verify with the DNA that the approval of participation is valid for the proposed CDM project participant. The DOE shall confirm that no entities other than those approved as project participants are	It is necessary to confirm all project participation by any evidential documents, except the LoAs. Documents to be submitted: - Emission Reduction Purchase Agreement - CDM consulting agreement between the project owner and the consulting company - CDM service contract between buyer and consulting company - Operating license - Financial statements of the project owner, if possible	#12 #16 #20	The following documents were obtained during the on-site assessment: ・ERPA signed between Jiangxi CPI Xiajiang Power Generation Co., Ltd. and J-TEC Co., Ltd. on 26/10/2011 ・CDM consultancy contract signed between PO and consultancy company on 21/01/2011 ・Operating license issued on 26/09/2010 by Xiajiang Business Administration Management Bureau. ・Financial statements of the project owner issued by Jiangxi Ganneng Certified Public Accountants Co., Ltd. 08/09/2010.	OK	OK

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		included in these sections of the PDD.					
	3. Project design document						
3	55. The PDD used as a basis for validation shall be prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM website.	56. The DOE shall determine whether the PDD is in accordance with the applicable CDM requirements for completing PDDs.	It is necessary to confirm that the latest CDM-PDD form is used.		It was confirmed that the latest CDM-PDD form (Version 03) had been used.	OK	OK
	4. Project description						

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4	58. The PDD shall contain a clear description of the project activity that provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation.	59. The DOE shall confirm that the description of the proposed CDM project activity as contained in the PDD sufficiently covers all relevant elements, is accurate and that it provides the reader with a clear understanding of the nature of the proposed CDM project activity.	It is necessary to confirm the nature of the proposed CDM project activity, referring to the project description. Documents to be submitted: - FSR and the approval letter of the FSR Historical hydrological data, quantity of flow, dam, annual operation hours, the normal water level, the water surface of the reservoir, coefficient of effective, transmission loss, and self-consumption, plant load factor - Certificate of the FSR compiler - Map of the project site including all major facilities - Check if there is a substation between power plant and National grid	#2 #3 #4 #17 #18 #19	The information indicated in the PDD and the following relevant documents will be confirmed during on-site assessment: ・FSR finished by Jiangxi Provincial Water Conservancy Planning and Designing Institute in 04/2010. - historical hydrological data: 55 years (1953-2007) - operation hours/ PLF: 3,171hours - the normal water level: 46m - coefficient of effective factor: 0.95 - transmission loss rate: 2% - self-consumption rate: 0.1% ・FSR approval issued by NDRV Document on 15/07/2010 with Document No.Fagainongjing [2010]No.1546. ・Certificate of the FSR compiler issued by the NDRC on 10/12/2007. ・Map of the project site including all major facilities: dam, spillway weir, power house and switch station. ・It was confirmed that the monitoring meters will be installed on-site in the booster station. It is requested to clarify the water surface of the reservoir before the implementation of the project activity and after the implementation of the project activity, when the reservoir is full. PP's Response: The clarification has been provided (Please refer to Annex 6 (08/05/2012)) It is requested to clarify the value of	CL	OK

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					transmission loss rate of 2% during the FSR phase. (07/03/2012) PP's Response: The value of transmission loss rate of 2% during the FSR phase had been clarified by the Design Institute. (Please refer to Annex 7 (08/05/2012)) DOE: > As for the water surface of the reservoir Based on the "Explanation Letter about the Submergence Area of Jiangxi Xiajiang Hydropower Project" issued by the FSR author of the Jiangxi Provincial Water Conservancy Planning and Designing Institute, it was confirmed that the flooded area ((C1'+C2')*L) due to the construction of the project is 25.6km^2, which defines that the C1' and C2' are the increased river width as a result of the project, measured on the water surface, and L is the backwater distance. And the flooded area ((C1+C2)*L) due to the construction of the project is 31.547km^2, which defines that C1 and C2 are the increased river width as a result of the project, measured at the bottom of the reservoir from the projection of the increased water surface area at the bottom of the reservoir, and L is the backwater distance. According to the clarification issued by the "Meth Panel" on the Meth Panel meeting held during 9-13/07/2007 together with the "Calculation of Power Density/AM_CLA_0049", it was clarified		

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					that "in order to calculate the power density, the correct equation will be the increased power capacity divided by the increased flooded area measured in the water surface: Power density = (Total installed capacity after project implementation - Total installed capacity before project implementation) / (C1' + C2') * L. Therefore, it was reasonable and conservative that the PDD adopted the value of 31.547km2 ((C1+C2)*L) which was derived from the approved FSR instead of 25.6km^2 ((C1'+C2')*L) when calculating the power density i.e, the power density of the proposed project was calculated as 360,000,000W/31,547,000m2 = 11.41W/m2. >As for the value of transmission loss rate of 2% during the FSR phase Based on the "Explanation Letter about the Transmission Loss and the Plant Consumption Rate of Jiangxi Xiajiang Hydropower Project: issued by the FSR author of the Jiangxi Provincial Water Conservancy Planning and Designing Institute, it was confirmed that there were no specific provisions for the value of the loss rate of designated matching power transmission and transforming equipment or the value of electricity rate of the plant consumption in the economic evaluation of hydropower station, but reference could be made to the case study list in the "Economic Evaluation of Hydro Construction Project " and " Interim		

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					Provisions on the Financial Evaluation of Hydro Construction Project" that the loss rate of power transmission and transforming equipment designated for hydropower stations was valued between 1.7%~2.64%, and the electricity rate of the plant consumption was valued between 0.2%~1.0%. Furthermore, based on the experience of the calculation parameters in the economic evaluation of hydropower projects in Jiangxi Province, the loss rate of matching power transmission and transforming equipment designated for the proposed project was valued at 2%, and the electricity rate of the plant consumption was valued at 0.1%. The CL was closed. (23/05/2012)		

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5		60. For proposed CDM project activities in existing facilities or utilizing existing equipments, the DOE shall conduct a physical site inspection to confirm that the description in the PDD reflects the proposed CDM project activity for the following types of CDM project activities unless other means are specified in the methodology: (a) Large scale projects; (b) Non-bundled small scale projects with emission reductions exceeding 15,000 tones per year;	Site inspection needs to be implemented. Documents to be submitted: - Purchase agreement of equipments with specifications (Is plant capacity fixed?)	#9 #13	・It was confirmed that because the production period for the nine units was very long, so two manufacturers of the water turbines and generators were chosen. The purchase contract of five units of turbines and generators was signed with Tianjin ALSTOM Hydro Co., Ltd. on 26/09/2010,and the purchase contract of four units of turbines and generators was signed with Dongfang Electric Machinery Co., Ltd It is necessary to add the main parameters, and the associated manufactures of the turbines and generators in Table A.4.3.-1. (07/03/2012) PP's Response: The main parameters and the associated manufacturers of the turbines and generators had been added in Table A.4.3.-1. (28/03/2012) DOE: It was confirmed that the main parameters and the associated manufacturers of the turbines and generators had been added in Table A.4.3-1. However, according to the submitted turbine and generator purchase contract signed with Dongfang Electric Machinery Co.,Ltd , there was no information about the parameter of "Rated head of 8.6m" as stated in the PDD. Please provide the relevant data resource. (08/04/2012) PP's Response: The information on "Rated head of 8.6m" has been provided.v(Please	CAR	OK

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					refer to Annex 10 (08/05/2012)) DOE: It was confirmed that the information on "Rated head of 8.6m" had been included in the submitted turbine and generator purchase contract. The CAR was closed. (23/05/2012)_		
6		(c) Bundled small scale projects, each with emission reductions not exceeding 15,000 tones per year; in such case the number of physical site visits may however be based on sampling, if the sampling size is appropriately justified through statistical analysis.	To be checked on-site.	#1 #2	It was confirmed during the on-site assessment.	OK	OK
7		61. For other individual proposed small scale CDM project activities with emission reduction not exceeding 15,000 tones per year the DOE may conduct a physical site visit as appropriate.	In case that the project is SSC, does the emission reduction exceed 15,000t-CO2e?	#1	It was confirmed during the on-site assessment.	OK	OK
8		62. For all other proposed CDM project activities not referred to in paragraphs 59 - 61, the DOE shall undertake the validation by reviewing available designs and feasibility studies and may conduct comparison analysis to equivalent projects, as appropriate. The DOE may conduct physical site visit to assess the plan. For proposed CDM project activities for which the DOE does not undertake a physical site inspection this shall be appropriately justified.	In case that the project is a large scale and/or not retrofit project, is the on-site assessment undertaken?	#1	It was confirmed during the on-site assessment that the project was a large newly built project, not a retrofit project.	OK	OK

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9		63. If the proposed CDM project activity involves the alteration of an existing installation or process, the DOE shall ensure that the project description clearly states the differences resulting from the project activity compared to the pre-project situation.	To be checked on-site.	#1	It was confirmed during on-site assessment that the project was a large newly built project, not a retrofit project.	OK	OK
	5. Baseline and monitoring methodology (a) General requirement						
10	65. The DOE shall ensure that the baseline and monitoring methodologies selected by the project participants comply with the methodologies previously approved by the CDM Executive Board.		It is necessary to identify the approved methodology which the proposed project selected.	#1	・It was confirmed that the latest ACM0002 (Version 12.2.0) had been applied in the PDD. - As for the applicability of the approved methodology, it is requested to clarify the explanation in section B.2. to make it more accurate in line with the approved methodology. (07/03/2012) PP's Response: The explanation in section B.2 had been revised to make it more accurate in line with the approved methodology. (28/03/2012) DOE: It was confirmed that the applicability of the approved methodology had been revised. The CL was closed. (09/04/2012)	CL	OK
11	66. DOE shall determine whether: (a) The selected methodology is		It is necessary to confirm the applicability of the approved methodology for the proposed project. The detail findings are	#1	Refer ID. # 10 (07/03/2012) The CL was closed. (09/04/2012)	CL	OK

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	applicable to the project activity; (b) The PP has correctly applied the selected methodology. 67. The DOE shall ensure that the selected methodology applies to the project activity and has been correctly applied with respect to following: (a) Project boundary; (b) Baseline identification; (c) Algorithms and/or formulae used to determine emission reductions; (d) Additionality (See Chapter V, sections 6); (e) Monitoring methodology.		confirmed in the respective sections below.				
	(b) Applicability of the selected methodology to the project activity						

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12	68. The DOE shall validate that the selected baseline and monitoring methodology previously approved by the CDM Executive Board, is applicable to the project activity, including that the used version is valid.	70. The DOE shall determine whether the methodology is correctly quoted and applied by comparing it with the actual text of the applicable version of the methodology available on the UNFCCC CDM website.	It is necessary to confirm the approved methodology applied in the proposed project activity is **the latest version before commencement of the GSP**.	#1	It was confirmed that the project adopted the latest version before commencement of the GSP.	OK	OK
13	69. The DOE shall apply specific guidance provided by the CDM Executive Board in respect to any approved methodology.	71. A selected approved methodology applies to the project activity if the applicability conditions of the methodology are met and the project activity is not expected to result in emissions other than those allowed by the methodology. The DOE shall determine whether the choice of methodology is justified and the project participants have shown that the project activity meets each of the applicability conditions of the approved methodology or any tool or other methodology component referred to therein. This shall be done by validating the documentation referred to in the PDD and by verifying that its content is correctly quoted and interpreted in the PDD. If the DOE, based on local and sectoral knowledge, is aware that comparable information is available from sources other than that used in the PDD, then the DOE shall cross check the PDD against the other sources to confirm that the project activity meets the applicability conditions of the methodology.	It is necessary to determine whether the choice of methodology is justified and the project activity meets; - Confirm the applied methodology and tools	#41 #42 #43 #44	・Refer ID. # 10 ・Version 12.2.0 of ACM0002: "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" has been applied in the PDD. ・Version 05 of the " Guidelines on Assessment of Investment Analysis", has been applied in the PDD. ・Version 02.2.1 of the "Tool to calculate the emission factor for an electricity system" has been applied in the PDD. ・Version 06.0.0 of the "Tool for the demonstration and assessment of additionality" has been applied in the PDD.	OK	OK

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14		72. If the DOE cannot make a determination regarding the applicability of the selected methodology to the proposed CDM project activity then the DOE shall request clarification of the methodology in accordance with the guidance provided by the CDM Executive Board. 73. If the DOE determines that the proposed CDM project activity does not comply with the applicability conditions of the methodology the DOE may proceed by means of requesting revision to or deviation from the methodology in accordance with the guidance provided by the CDM Executive Board.18 74. If the DOE has requested clarification of, revision to or deviation from a methodology, the DOE shall not submit a request for registration until the CDM Executive Board has approved the proposed deviation or revision.	N/A		N/A	N/A	N/A
15		75. Under no circumstance shall the DOE consider the submission of a request for registration as a means of seeking clarification from the CDM Executive Board on the applicability of a methodology.	N/A		N/A	N/A	N/A
	(c) Project boundary						

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16	78. The PDD shall correctly describe the project boundary, including the physical delineation of the proposed CDM project activity included within the project boundary for the purpose of calculating project and baseline emissions for the proposed CDM project activity.	79. Based on documented evidence and corroborated by a site visit where required by paragraphs 59-62 above, the DOE shall determine whether the delineation in the PDD of the project boundary is correct and meets the requirements of the selected baseline methodology. The DOE also shall confirm that all sources and GHGs required by the methodology have been included within the project boundary. If the methodology allows project participants to choose whether a source or gas is to be included within the project boundary, the DOE shall determine whether the project participants have justified that choice. The DOE shall confirm that the justification provided is reasonable, based on assessment of supporting documented evidence provided by the project participants and corroborated by observations if required.	Confirm definition of boundary described in the approved methodology; - a delineation of spatial project boundary (incl. between project activity site and Grid - all sources & GHGs included in project boundary Documents to be submitted: - A map of river basin that the project site is identifiable, to clarify site boundary in the PDD.	#1 #17 #18 #19	The following information and documents was confirmed during the on-site assessment. ・No fossil fuel will be used (including diesel generation) for usage of emergency. Only battery is used for emergency. ・ The map of river basin ・ Power system diagram ・Map of the project site and facilities are identifiable	OK	OK
	(d) Baseline identification						
17	81. The PDD shall identify the baseline for the proposed CDM project activity, defined as the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the proposed	83. If the methodology requires several alternative scenarios to be considered in the identification of the most reasonable baseline scenario, the DOE shall, based on financial expertise and local and sectoral knowledge, determine whether all scenarios that are considered by the project participants and are supplementary to those required by the methodology, are reasonable in the context of the proposed CDM project activity and that no reasonable alternative scenario has been excluded.	It is necessary to confirm all of alternatives are identified in accordance with the approved methodology.	#1	As for the identification of alternatives, it is requested to clarify the explanation in Step.1, section B.5. of the PDD, to make it more accurate in line with the approved methodology. (07/03/2012) PP's Response: More explanations had been added in the Step 1 of section B.5 and conclusions had been added to make it more accurate in line with the approved methodology. (28/03/2012). DOE: It was confirmed that the explanations about the identification of alternatives had been	CL	OK

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	CDM project activity.				revised in line with the approved methodology. The CL was closed. (08/04/2012).		
18	82. The DOE shall confirm that any procedure contained in the methodology to identify the most reasonable baseline scenario, has been correctly applied. If the selected methodology requires use of tools (such as the "Tool for the demonstration and assessment of additionality" and the "Combined tool to identify the baseline scenario and demonstrate additionality") to establish the baseline	84. The DOE shall determine whether the baseline scenario identified is reasonable by validating the assumptions, calculations and rationales used, as described in the PDD. It shall ensure that documents and sources referred to in the PDD are correctly quoted and interpreted. The DOE shall cross check the information provided in the PDD with other verifiable and credible sources, such as local expert opinion, if available.	It is necessary to determine whether the baseline scenario identified is reasonable by validating the assumptions, calculations and rationales used, as described in the PDD. the baseline scenario applied; - validated - referenced - reasonable to occur without CDM - no reasonable baselines excluded	#1	Refer ID. # 10 (07/03/2012) The CL was closed. (08/04/2012).	CL	OK

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	scenario, the DOE shall consult the methodology on the application of these tools. In such cases, the guidance in the methodology shall supersede the tool. The DOE shall check each step in the procedure described in the PDD against the requirements of the methodology.						
19		85. The DOE shall determine whether all applicable CDM requirements have been taken into account in the identification of the baseline scenario for the proposed CDM project activity, including “relevant national and/or sectoral policies and circumstances.” Drawing on its knowledge of the sector and/or advice from local experts, the DOE shall confirm that all relevant policies and circumstances have been identified and correctly considered in the PDD, in accordance with the guidance by the CDM Executive Board.	Confirm "relevant national and/or sectoral policies and circumstances" as follows: - Renewable energy policy - Energy saving policy - Law such as mid-long term plan of the national or local government that facilitates hydropower. Annex32 of EB53 (E+/E-)		N/A	N/A	N/A

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20		86. The DOE shall determine whether the PDD provides a verifiable description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed CDM project activity.	It is necessary to confirm a transparent and detailed description of the identified baseline scenario, including; - a description of the technology that would be employed, and/or - the activities that would take place in the absence of the proposed project activity.	#1	N/A	N/A	N/A
	(e) Algorithms and/or formulae used to determine emission reductions						
21	89. The steps taken and equations applied to calculate project emissions, baseline emissions, leakage and emission reductions shall comply with the requirements of the selected baseline and monitoring methodology.	90. The DOE shall determine whether the equations and parameters in the PDD have been correctly applied by comparing them to those in the selected approved methodology. If the methodology provides for selection between different options for equations or parameters, the DOE shall confirm that adequate justification has been provided (based on the choice of the baseline scenario, context of the proposed CDM project activity and other evidence provided) and that the correct equations and parameters have been used, in accordance with the methodology selected.	Confirm the appropriateness of selection of options in the adopted methodologies and tools by verifying evidential documents and data; - Equations & parameters correctly applied - Justification of the choice of data - Parameters used in the equations	#1 #36 #37 #38 #39 #41 #43	・Based on ACM0002(Version 12.2.0), Version 02.2.1 of the "Tool to calculate the emission factor for an electricity system" (Version 02.2.1), and 2011 emission factor issued by China DNA, the following had been confirmed: - Equations & parameters correctly applied - Justification of the choice of data - Parameters used in the equations	OK	OK

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22		91. The DOE shall verify the justification given in the PDD for the choice of data and parameters used in the equations. If data and parameters will not be monitored throughout the crediting period of the proposed CDM project activity but have already been determined and will remain fixed throughout the crediting period, the DOE shall assess that all data sources and assumptions are appropriate and calculations are correct, applicable to the proposed CDM project activity and will result in a conservative estimate of the emission reductions. If data and parameters will be monitored on implementation and hence become available only after validation of the project activity, the DOE shall confirm that the estimates provided in the PDD for these data and parameters are reasonable.	It is necessary to confirm the appropriateness and correctness of selection and definition of parameters according to adopted methodologies and tools. Documents to be submitted: - Data for rate of low cost/must-run sources based on generation by the DNA China as of 2011.	#27 #39	Please revise the results of the rate of low cost/must-run sources of the PDD in accordance with the China Electric Yearbook 2006-2010. (07/03/2012) PP's Response: The result of the rate of low cost/must-run sources had been revised in the Section B.6.1. of the PDD in accordance with the China Electric Yearbook 2010. (28/03/2012) DOE: It was confirmed that the results of the rate of low/must-run sources had been revised in the PDD in accordance with the submitted China Electric Yearbook 2006-2010. The CL was closed. (08/04/2012)	CL	OK
	6. Additionality of a project activity						
23	94.The PDD shall describe how a proposed CDM project activity is additional.	95. The DOE shall assess and verify the reliability and credibility of all data, rationales, assumptions, justifications and documentation provided by project participants to support the demonstration of additionality. This requires the DOE to critically assess the presented evidence, using local knowledge and sectoral and financial expertise.	Confirm that all of evidential documents, which demonstrate additionality, are authorized/approved by local sectoral and financial expertise with local knowledge.		Refer ID 33-73 (07/03/2012) Refer ID 33 -73, the CL was closed.	CL	OK
24		96. The DOE shall consider tools and documents provided by the CDM Executive Board to demonstrate the additionality of proposed CDM project activities, as well as specific complementary or alternative requirements included in approved CDM	It is necessary to confirm whether Additionality tool (Version 6.0.0), which was described in the PDD, is correctly applied.		Refer ID. # 13	OK	OK

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		methodology.					
	(a) Prior consideration of the clean development mechanism						
25	98. If the project activity start date is prior to the date of publication of the PDD for stakeholder comments it shall be demonstrated that the CDM benefits were considered necessary in the decision to undertake the project as a proposed CDM project activity.	99. The DOE shall confirm that the start date of the project activity, reported in the PDD, is in accordance with the "Glossary of CDM terms". If the reported date is not in accordance with the glossary, the DOE shall raise a CAR to ensure that the start date is correctly reported in a revised PDD. In particular, for project activities that require construction, retrofit or other modifications, the date of commissioning cannot be considered the project activity start date.	It is necessary to confirm the start date of the project activity, according to Glossary of Terms: -Implementation -Construction -Real action "The project participant has committed to expenditures related to the implementation or related to the construction of the project activity."(para67 of EB41) Documents to be submitted: - Construction Contract - Purchase Agreement of Turbines and Generators - Evidential documents on expected lifetime of the project (FSR/PDR) - Is the starting date of the first crediting period still valid even by considering the current construction progress? - The starting date of project activity	#7 #9 #14 #21 #22 #29 #30	The following documents for the determination of starting date will be confirmed during the on-site assessment : -Construction contract signed on 08/10/2010; -Turbine and generator purchase contract signed on 26/09/2010 -Meeting summary on CDM consideration approved on 16/08/2010. -Meeting summary on CDM decision approved on 01/09/2010. - Prior CDM consideration of the project was received by the UNFCCC on 22/02/2011. - Prior CDM consideration of the project was received and recorded by the NDRC on 14/03/2011. It is requested to revise the description and the starting date of all the 9 units, and calculate the annual emission reductions during the first crediting period in accordance with the expected date for each unit to put into operation. Please also revise Table A.4.4.-1 and Table in B.6.4. (07/03/2012) PP's Response: The description and the starting date of all the 9 units, and the calculation of the annual emission reductions during the first crediting period in accordance with the expected date for each unit being put into operation had been revised in Table A.4.4.-1 and Table B.6.4. The estimated CER	CAR	OK

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			(yyyy/mm/dd)		calculation sheet for the first crediting period is provided (Annex 5) (28/03/2012) DOE: It was confirmed that the description and the starting date of all the 9 units, and the calculation of the annual emission reductions during the first crediting period had been revised in accordance with the expected date for each unit being put into operation. Table A.4.4.-1 and Table B.6.4. had been revised accordingly. The CAR was closed. (08/04/2012)		
26		100. The DOE, in accordance with the guidance from the Board, shall determine whether it is a new project activity (project activities with staring date on or after 02 August 2008) or an existing project activity (project activities with a start date before 02 August 2008).	Determine whether it is a new project activity (project activities with staring date on or after 02 August 2008) or an existing project activity (project activities with a start date before 02 August 2008). If it is defined as a new project activity, it is necessary for the PP to submit "Prior Consideration of the CDM Form" to EB. Such notification must be made within six months of the project activity start date.	#9 #22 #29 #30	・ The starting date is indicated in the PDD as 26/09/2010, which is after 02/08/2008, which will be confirmed during on-site assessment. -It was confirmed based on the UNFCCC website that the EB had received the CDM prior consideration on 22/02/2011. http://cdm.unfccc.int/Projects/PriorCDM/notifications/index_html --Prior consideration of the project by the NDRC on 14/03/2011 as indicated in the PDD will be confirmed during on-site assessment.	OK	OK

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
27		101. For a new project activity with a start date on or after 2 August 2008 and for which PDD has not been published for global stakeholder consultation or a new methodology proposed to the Executive Board before the project activity start date, the DOE shall ensure by means of confirmation from the DNA or UNFCCC secretariat that PPs had informed the Host Party DNA and/or the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status.	It is necessary to confirm a notification of Prior Consideration of CDM, if this proposed project has started after 02 Aug 2008. http://cdm.unfccc.int/Projects/PriorCDM/notifications/index_html Submission to DNA should also be confirmed.		Ref. ID#26	OK	OK
28		102. For an existing project activity with a start date before 2 August 2008, for which the start date is prior to the date of publication of the PDD for global stakeholder consultation, the DOE shall assess the project participant's prior consideration of the CDM through document reviews and shall satisfy following requirements: (a) Evidence that must indicate that awareness of the CDM prior to the project activity start date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project. Evidence to support this would include, inter alia, minutes and/or notes related to the consideration of the decision by the Board of Directors, or equivalent, of the project participant, to undertake the project as a proposed CDM project activity.	It is necessary to confirm the PP's prior consideration of the CDM. It will be confirmed that when the board meeting for CDM consideration was held, and what decision was made referring to any inputs. Documents to be submitted: - The board meeting minutes for CDM consideration	#7 #14	The documents of prior consideration of the CDM were confirmed.	OK	OK

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
29		(b) Reliable evidence from project participants that must indicate that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation. Evidence to support this should include, inter alia, contracts with consultants for CDM/PDD/methodology services, Emission Reduction Purchase Agreements or other documentation related to the sale of the potential CERs (including correspondence with multilateral financial institutions or carbon funds), evidence of agreements or negotiations with a DOE for validation services, submission of a new methodology to the CDM Executive Board, publication in newspaper, interviews with DNA, earlier correspondence on the project with the DNA or the UNFCCC secretariat.	It is necessary to confirm continuing and real actions that were taken to secure CDM status for the project activity after CDM decision making. Documents to be submitted: - All of evidences listed in the milestones in the PDD (section B.5)	#7 #9 #14 #21 #22 #29 #30	Refer. ID. # 25	OK	OK
30		103. If evidence to support the serious prior consideration of the CDM as indicated above is not available the DOE shall determine that the CDM was not considered in the decision to implement the project activity.	It is necessary to check whether any evidence to support the serious prior consideration of the CDM is available or not. Refer ID 28		Refer ID #28	OK	OK
	(b) Identification of alternatives						

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31	105. The PDD shall identify credible alternatives to the project activity in order to determine the most realistic baseline scenario, unless the approved methodology that is selected by the proposed CDM project activity prescribes the baseline scenario and no further analysis is required (e.g., methodology ACM0002).	106. The DOE shall assess the list of alternatives given in the PDD and ensure that: (a) The list of alternatives includes as one of the options that the project activity is undertaken without being registered as a proposed CDM project activity; (b) The list contains all plausible alternatives that the DOE, on the basis of its local and sectoral knowledge, considers to be viable means of supplying the outputs or services that are to be supplied by the proposed CDM project activity; (c) The alternatives comply with all applicable and enforced legislation.	It is not necessary to assess the list of alternatives in the PDD, if the applied approved methodology prescribes the baseline scenario and no further analysis is required.		N/A	N/A	N/A
	(c) Investment analysis						

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
32	108. If investment analysis has been used to demonstrate the additionality of the proposed CDM project activity, the PDD shall provide evidence that the proposed CDM project activity would not be: (a) The most economically or financially attractive alternative; or (b) Economically or financially feasible, without the revenue from the sale of certified emission reductions (CERs).	111. To verify the accuracy of financial calculations carried out for any investment analysis, the DOE shall: (a) Conduct a thorough assessment of all parameters and assumptions used in calculating the relevant financial indicator, and determine the accuracy and suitability of these parameters using the available evidence and expertise in relevant accounting practices;	Confirm the appropriateness of all calculation and parameters in the Sec.B.5. by comparing with similar project in the same grid, public information and other methods	#2 #8	It is requested to submit the following information/evidence: (1) The value resource of the annual O&M cost (2) The value resource of the Tax (3) The evidence of the residual value rate It is requested to revise the IRR calculation in accordance with the FSR, including the operation period. It is requested to clarify why the investments of the third and fourth years are much larger than that of the other years. (07/03/2012) PP's Response: The evidences for the resources of each input data of the annual O&M cost, the Taxes and the residual value rate had been provided during the on-site assessment. The IRR calculation had been revised according to the FSR. The operation period of 45 years which was wrongly applied in the PDD and IRR had been revised in accordance with the approved FSR. . (28/03/2012) DOE: The following information/evidences were confirmed/received: (1) The annual O&M cost: -The material cost of 3.1RMB/kW was cross-checked with the "Interim Rules on Financial	CL	OK

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
					Assessment of Hydro Projects" issued on 14/06/1994 by the Ministry of Electricity and Ministry of Water Resources, which defined that the material cost for the hydropower project with installed capacity between 260MW and 500MW should be 3.1RMB/kW. -The other cost of 15.6 CNY/kW was cross-checked with the "Interim Rules on Financial Assessment of Hydro Projects" issued on 14/06/1994 by the Ministry of Electricity and Ministry of Water Resources, which defined that the other cost for the hydropower project with installed capacity between 260MW and 500MW should be 15.6RMB/kW. -The reservoir maintenance fee of 0.001RMB/kWh was cross-checked with the "Interim Regulation of Financial Assessment" which was promulgated by the Programming and Design Institute of Water Resources and the Hydropower of Water Resources Ministry and Power Ministry on 14/06/1994, which defined that the reservoir maintenance fee should be 0.001RMB/kWh. -The water resource fee of 0.0015RMB/kWh was cross-checked with "The Regulation of the Water Resource Fee Collection" in Jiangxi province issued by the Jiangxi Provincial Government on 08/11/2001, which defined that all the water resource fee for the hydropower Project in Jiangxi Province is 0.0015CNY/kWh. (2)Tax - The VAT of 17% was cross-checked with		

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					the "Provisional Regulations of VAT in China" (China State Council [2008] No.538) issued by the China State Council on 05/11/2008 , which was the latest regulation about VAT at the FSR phase. The document of China State Council [2008] No.538 is also the current valid regulation for VAT. - The rate of additional tax on city building of 1% was cross-checked with the "People's Republic of China Additional Tax on City Building Provisional Regulations" (Guofa [1985]No.19) issued by the China State Council on 08/02/1985 , which was the latest regulation about additional tax on education at the FSR phase. The document of Guofa [1985] No.19 is also the current valid regulation for additional tax on city building. - The rate of additional tax on education of 3% was cross-checked with the "Decision on the amendment of < Provisional Regulations of Additional Tax on Education >" (China State Council [2005] No.448) issued by the China State Council on 20/08//2005, which was the latest regulation about additional tax on education at the FSR phase. The document of the China State Council [2005] No.448 is also the current valid regulation for additional tax on education. - The income tax rate of 25% was cross-checked with the "People's Republic of China Enterprise Income Tax Provisional Regulations" (Order of the President of the People's Republic of China No. 63) issued on 16/03/2007, which was the latest regulation		

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					about income tax at the FSR phase. The document of Order of the President of the People's Republic of China No. 63 is also the current valid regulation for income tax. (3) Residual value rate According to the document of Caifazi [1994] No.3, the residual value is less than 5% of the original value, and the enterprise has discretionary power. It was confirmed that the operation period in the IRR calculation had been revised in line with the FSR. -The repair cost of 1.5% was cross-checked with the SL16-94. According to the "Interim Regulation of Financial Assessment" which was promulgated by the Programming and Design Institute of Water Resources and Hydropower of Water Resources Ministry and Power Ministry on 14/06/1994, the repair cost should be 1.0%, while the repair cost of 1.5% was adopted by the FSR and in the IRR calculation sheet. Please clarify the reasonableness of the adopted value. PP's Response: According to the "Interim Regulation of Financial Assessment" which was promulgated by the Programming and Design Institute of Water Resources and Hydropower of Water Resources Ministry and Power Ministry on 14/06/1994, the repair cost is calculated according to the average value of statistics of the grids for the latest three years.		

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					In case of lacking of data, the repair cost rate will be 1% of fixed assets." Therefore, it is reasonable to adopt the value of 1.5% on the basis that this value was calculated according to the average value of statistics of the grids for the latest three years. Meanwhile, even though the repair cost of 1.0% is adopted, the IRR without CER is 6.71% which is still lower than the benchmark of 8%. (08/05/2012) - Please submit the data resource of the labor costs and pension of CNY22,000 included in the O&M cost. (09/04/2012) The annual labor costs and pension included in the O&M cost is CNY22,000. According to the average salary of Jiangxi province in 2008, the average annual salary of staffs in power generation and supply sector is CNY27,894. And based on the "Notice on Interim Rules on Financial Assessment of Electric Power Engineering Technical Retrofit Projects" issued on 10/09/2002 by the National Power Corporation, in which it is stated the labor welfare is 14% of the total salary, all the insurance including labor insurance, medical insurance and housing fund is calculated as 34.5%~36.5% of total salary. So the minimum annual labor costs and pension can be calculated as CNY27,894*(1+14%+34.5%) =CNY41,423, which is much higher than the CNY22,000 as applied in the IRR. Therefore, the labor costs and pension of CNY22,000 was conservatively adopted.(Annex 8, 9) (08/05/2012)		

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					DOE: Based on the average salary of Jiangxi province in 2008 and the “Notice on Interim Rules on Financial Assessment of Electric Power Engineering Technical Retrofit Projects", it was confirmed that the the labor costs and pension of CNY22,000 was reasonable. As for the repair cost included in the O&M cost, it was requested to provide the evidence to demonstrate that "the value of 1.5% is the average value of statistics of the grids for the latest three years." PP’s Response: The repair cost of 1.5% is revised to 1% according to the "Interim Regulation of Financial Assessment" which was promulgated by the Programming and Design Institute of Water Resources and the Hydropower of Water Resources Ministry and Power Ministry on 14/06/1994, the IRR without CER is now 6.71% which is still lower than the benchmark of 8%. Please refer to Annex 12. (30/05/2012) DOE: As for the repair cost, the FSR and the GSC PDD adopted the value of 1.5%, which was cross-checked with the "Interim Regulation of Financial Assessment" (SL16-94) promulgated by the Programming and Design Institute of Water Resources and the Hydropower of Water Resources Ministry and Power Ministry on 14/06/1994. Based on		

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					SL16-94, the repair cost should be 1.0%. So it was confirmed that it was more appropriate and conservative to adopt the value of 1% for the proposed project rather than the value of 1.5% from the FSR. Please revise the PDD accordingly. It is requested to clarify why the investments of the third and fourth years are much larger than that of the other years. (07/06/2012) PP's Response: The PDD has been revised accordingly. Please refer to the revised PDD (Annex 13). The investments of the third and fourth years were much larger than that of the other years, because in the first 2 years, the main task of the project was water and power supply system establishment, road construction and levelling the land, therefore the investment was relatively small. In the third and fourth years, with the commencement of the civil works such as that of dam and reservoir, followed by the installation of electromechanical equipment, the construction work had therefore reached its peak, which had resulted in higher level of investment. In the last two years, the project construction was almost complete, and the investment had dropped again.. The explanation has been provided by the PO. Please refer to the document (Annex 14).		

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					DOE: The revised PDD was received and confirmed in accordance with the IRR spread sheet. It was confirmed via the explanation letter by the PO and the FSR report that due to the uneven distribution of the construction works during the construction programme, a majority of the investment occurred in the third and fourth years during the construction period, so the investment of the third and fourth years were much larger than that of the other years. The CL was closed.		

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33	109. Project participants can show this through one of the following approaches: (a) Demonstrate that the proposed CDM project activity would produce no financial or economic benefits other than CDM-related income. Document the costs associated with the proposed CDM project activity and the alternatives identified and demonstrate that there is at least one alternative which is less costly than the proposed CDM project activity; (b) The proposed CDM project activity is less economically or financially attractive than at	(b) Cross-check the parameters against third-party or publicly available sources, such as invoices or price indices;	Confirm the information about other registered similar CDM hydropower projects in China or the similar local area.	#2 #3 #8	Refer ID 32. · Please provide the parameters of a list of similar CDM registered hydropower projects in Jiangxi Province to confirm if the parameters used for this project are appropriate. (07/03/2012) PP's Response: The parameters of a list of similar CDM registered hydropower projects in Jiangxi Province were summarized in an Excel worksheet (Annex 3) (28/03/2012). DOE: A list of similar CDM registered hydropower projects had been received, and it was confirmed that the investment per capacity of the project, O&M cost, operation hour, and tariff were reasonably compared with the similar CDM registered hydropower projects. The CL was closed. (08/04/2012)	CL	OK
34		(c) Review feasibility reports, public announcements and annual financial reports related to the proposed CDM project activity and the project participants;	It is necessary to review public announcements and annual financial reports related to the project participants.	#2 #8 #48	· The financial statements was reviewed during the on-site assessment.	OK	OK

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
	least one other credible and realistic alternative;		Documents to be submitted: - Financial statement (including ratio of Capital distribution and Assets evaluation report) - Supervision report (if any)				
35	(c) The financial returns of the proposed CDM project activity would be insufficient to justify the required investment.	(d) Assess the correctness of computations carried out and documented by the project participants	It is necessary to confirm the accuracy of IRR calculations as follows: - all basic parameters - formulas - translation of each items - IRR calculating period (construction + operation) - CER issuance period - sensitivity analysis - other	#1 #2 #3 #8 #16	Ref.ID 32# (07/03/2012) Ref ID 32#, the CL was closed.	CL	OK
36		(e) Assess the sensitivity analysis by the project participants to determine under what conditions variations in the result would occur, and the likelihood of these conditions.	As for sensitivity analysis, it is necessary to confirm that the following points are complete and reasonable. - Selection of variable parameters - Fluctuation of range - Variation of parameters to reach benchmark	#1 #2 #8	It is requested to add the description about the selection of variable parameters in accordance with Annex 5 EB62 Please submit the evidence of the footnotes, and add the general description about them. (07/03/2012) PP's Response: The selection of variable parameters, fluctuation of range, and the variation of parameters to reach the benchmark had been described in the PDD. The evidences of footnotes had been provided during the on-site assessment (28/03/2012). DOE: It was confirmed that the description about the selection of variable parameters and the	CL	OK

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
					general description about the footnote about sensitivity analysis had been added in the PDD. The evidence of the footnotes had been received. The CL was closed.(08/04/2012)		
37		112. To confirm the suitability of any benchmark applied in the investment analysis, the DOE shall: (a) Determine whether the type of benchmark applied is suitable for the type of financial indicator presented;	It is necessary to confirm whether a suitable benchmark is applied for the type of financial indicator or not.	#32	The total installed capacity of the project is 360MW, and the benchmark of 8% was adopted in the PDD. The benchmark of 8% was confirmed by "Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects, China Electric Power Press, 2003" during on-site assessment, and DOE confirmed that the benchmark of 8% is reasonable.	OK	OK
38		(b) Ensure that any risk premiums applied in determining the benchmark reflect the risks associated with the project type or activity;	N/A		N/A	N/A	N/A
39		(c) Determine whether it is reasonable to assume that no investment would be made at a rate of return lower than the benchmark by, for example, assessing previous investment decisions by the project participants involved and determining whether the same benchmark has been applied or if there are verifiable circumstances that have led to a change in the benchmark.	N/A		N/A	N/A	N/A

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
40		113. The CDM Executive Board clarified that in cases where project participants rely on values from Feasibility Study Reports (FSR) that are approved by national authorities for proposed project activities, DOEs are required to ensure that: (a) The FSR has been the basis of the decision to proceed with the investment in the project, i.e. that the period of time between the finalization of the FSR and the investment decision is sufficiently short for the DOE to confirm that it is unlikely in the context of the underlying project activity that the input values would have materially changed;	It is necessary to determine the period of time between the finalization of the FSR and the investment decision, and confirm that it is sufficiently short.	#1 #3 #14	-FSR finalization: 04/2010 -Investment decision: 01/09/2010. The time gap between the FSR finalization and the investment decision was about 5 months, which was sufficiently short, and the documents were reviewed during the on-site assessment.	OK	OK
41		(b) The values used in the PDD and associated annexes are fully consistent with the FSR, and where inconsistencies occur the DOE should validate the appropriateness of the values;	It is necessary to check the consistency of value in the FSR/PDR with values in the PDD.	#1 #2 #8	Ref.ID 32#. (07/03/2012) Ref ID 32#, the CL was closed.	CL	OK
42		(c) On the basis of its specific local and sectoral expertise, confirmation is provided, by cross-checking or other appropriate manner, that the input values from the FSR are valid and applicable at the time of the investment decision.	Installed capacity	#1 #2 #9	The installed capacity was confirmed based on the purchase contracts of turbines and generators during the on-site assessment.	OK	OK
43			Operation hours: 3,171h Plant load factor 36.2% (estimated operation hours/8,760h) is reasonable? (Actual achievement/data of the similar projects)	#2 #3	According to Annex 11 of EB48, it is necessary to add and discuss the PLF issues in the PDD. (07/03/2012) PP's Response: The description of PLF had been added in section A.4.3 of the PDD (28/03/2012). DOE: It was confirmed that the description about the PLF had been added in the PDD in line with Annex 11 of EB48.	CL	OK

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
					The CL was closed.(08/04/2012)		
44			Annual supplied electricity Coefficient of effective electricity generation is reasonable? - Effective coefficient - Transmission loss - Rate of internal consumption	#2 #3 #19	It is requested to clarify the value of transmission loss rate of 2% during the FSR phase. (07/03/2012) PP's Response: The clarification of the value of transmission loss rate of 2% during the FSR phase by the design institute had been provided.(please refer to Annex 7 (08/05/2012)) DOE: Based on the "Explanation Letter about the Transmission Loss and the Plant Consumption Rate of Jiangxi Xiajiang Hydropower the Project" issued by the FSR author of the Jiangxi Provincial Water Conservancy Planning and Designing Institute, it was confirmed that there were no specific provisions for the value of the loss rate of designated matching power transmission and transforming equipment or the value of electricity rate of the plant consumption in the economic evaluation of hydropower station, but reference could be made to the case study list in the "Economic Evaluation of Hydro Construction Project " and " Interim Provisions on the Financial Evaluation of Hydro Construction Project" that the loss rate of power transmission and transforming equipment designated for hydropower stations was valued between 1.7%~2.64%, and the	CL	OK

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					electricity rate of the plant consumption was valued between 0.2%~1.0%. Furthermore, based on the experience of calculation parameters in the economic evaluation of hydropower projects in Jiangxi Province, the loss rate of matching power transmission and transforming equipment designated for the proposed project was valued at 2%, and the electricity rate of the plant consumption was valued at 0.1%. The CL was closed. (23/05/2012)		
45			Construction period Operation period Crediting period	#2 #3 #21	It was confirmed during on-site assessment: -Construction period: 6 years -Operation period: 40 years -First crediting period: 01/08/2013-31/07/2020 Ref.ID#25. It is requested to revise the construction period in the PDD and IRR calculation sheet. (07/03/2012) PP's Response: The construction period in the PDD and IRR calculation sheet had been revised to 40 years (28/03/2012). DOE: It was confirmed that the construction period in the PDD and IRR calculation sheet had been revised in line with the FSR. The CL was closed.(08/04/2012)	CL	OK

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
46			Total investment cost - Investment estimated in FSR - Actual investment - Total investment cost (RMB) per kW?	#2 #3 #9 #22	The following information was confirmed during on-site assessment: -Total static investment estimated in the FSR/PDD: 2,983.63million CNY -Actual investment (N/A) -Total static investment cost (CNY) per kW: 8,288CNY per kW -It is requested to revise the total static investment of PDD in accordance with the FSR. (07/03/2012) PP's Response: The total static investment of PDD had been revised in accordance with the FSR (28/03/2012). DOE: It was confirmed that total static investment in the PDD had been revised in line with the FSR. The CL was closed.(08/04/2012)	CL	OK

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
47			Tariff (Electricity price)	#2 #3 #24	・The value of tariff 0.38 CNY/kWh (with VAT) was adopted in the PDD. ・The tariff notification with Document Ganfagaishangjiazi [2009] No. 2079 dated 20/11/2009 was confirmed during the on-site assessment. -The PP is requested to provide further data of similar CDM projects in the same local area (including registered hydropower CDM projects) (Refer ID33). -It is requested to provide the tariff approval of the similar hydropower projects located in the same river. (07/03/2012) PP's Response: The data of similar CDM projects in the same local area was summarised in an Excel worksheet with evidences provided (Annex 3) The tariff approval of the hydropower project located in the same river was summarised in an Excel worksheet with evidences provided (Annex 1). In addition, the tariff approvals issued during 2004~2009 in Jiangxi province had been collected and referred in the PDD. The evidences were provided.(Annex 2) (28/03/2012) DOE: -A list of similar CDM registered hydropower projects had been received, and it was confirmed that the tariff of the project was reasonably compared with the similar CDM	CL	OK

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
					registered hydropower projects. -The information about the hydropower stations including the tariff information had been received and confirmed during the on-site interviews. According to the Gan River Basin Plan, there were totally eight hydropower projects located on the Gan River basin, two of which had been put into operation, while the other six were still under construction or under the initial planning stage. The approved tariff for the two operated hydropower projects, Wan'an Hydropower Project and Shihutang Hydropower Project were 0.282CNY/kWh(incl.VAT) and 0.34CNY/kWh(incl.VAT), while the project adopted the value of 0.38CNY/kWh, which was conservative compared with the tariff of the similar hydropower projects located on the same river basin. - The tariff approvals issued by the government since Year 2004 until Year 2009 had been received. It was confirmed that the newly approved tariff for the hydropower project in Year 2009 is from 0.365CNY/kWh to 0.448 CNY/kWh, while the average value is 0.374CNY/kWh. Therefore, the project which adopted the tariff of 0.38CNY/kWh was reasonable. The CL was closed. (08/04/2012)		

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
48			Total annual O&M cost	#2	Ref. ID# 32 (07/03/2012) Ref ID 32#, the CL was closed.	CL	OK
49			Tax Value added tax rate, Income tax rate, additional tax on city building, additional tax on education	#2	It is requested to submit the associate tax regulation of the value added tax rate, income tax rate, additional tax on city building and additional tax on education. (07/03/2012) PP's Response: The tax regulation of the value added tax rate, income tax rate, additional tax on city building and additional tax on education had been provided during the on-site assessment. (28/03/2012) DOE: - VAT of 17% was cross checked by the "Provisional regulations of VAT in China" (China State Council [2008]No.538) issued by China State Council on 05/11/2008 , which was the latest regulation about VAT at the FSR phase. The document of China State Council[2008]No.538 is also the current valid regulation for VAT. - Rate of additional tax on city building of 1% was cross checked by "People's Republic of China Additional Tax on City Building Provisional Regulations" (Guofa [1985]No.19) issued by China State Council on 08/02/1985 , which was the latest regulation about additional tax on education at the FSR phase. The document of Guofa [1985]No.19 is also the current valid regulation for additional tax on city building. -Rate of additional tax on education of 3%	CL	OK

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					was cross checked by "Decision on the amendment of < Provisional Regulations of Additional Tax on Education >" (China State Council [2005]No.448) issued by China State Council on 20/08/2005 , which was the latest regulation about additional tax on education at the FSR phase. The document of China State Council [2005]No.448is also the current valid regulation for additional tax on education. - Income tax rate of 25% was cross checked by "People's Republic of China Enterprise Income Tax Provisional Regulations" (Order of the President of the People's Republic of China No. 63) issued on 16/03/2007, which was the latest regulation about income tax at the FSR phase. The document of Order of the President of the People's Republic of China No. 63 is also the current valid regulation for income tax. The CL was closed. (08/04/2012)		
50			Residual value rate	#2	It is requested to submit the evidence of the residual value date of Zero. (07/03/2012) PP's Response: The evidence of the residual value date of Zero has been provided during the on-site assessment (28/03/2012). DOE: According to the document of Caifazi[1994]No.3 , the residual value is less than 5% of original value, and enterprise has discretionary power. The CL was closed. (08/04/2012)	CL	OK

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
51			Others	#2	It was confirmed that the expected CER price of the project was USD18, and the exchange date of 1USD=6.8126CNY on 01/09/2010 when the CDM decision was made by the project pwner was adopted.	OK	OK
	"Guidelines on the assessment of investment analysis (Version05)" on Annex5 of EB62						
52	110. The DOE shall comply with the latest version of the ""“Guidance on the Assessment of Investment Analysis”" as provided by the CDM Executive Board and with other relevant guidance including the latest guidelines on plant load factors “guidelines for the reporting and validation of plant load factors”	General issues in calculation and presentation 3-1. The period of assessment should not be limited to the crediting period of the project activity. Both project IRR and equity IRR calculations shall as a preference reflect the period of expected operation of the underlying project activity (technical lifetime). If shorter period is chosen - include the fair value of the PoA assets at the end of the assessment period. (In general a minimum period of 10 years and a maximum of 20 years will be appropriate)	3-1. The period of assessment should not be limited to the crediting period of the project activity. Both project IRR and equity IRR calculations shall as a preference reflect the period of expected operation of the underlying project activity (technical lifetime). If shorter period is chosen - include the fair value of the PoA assets at the end of the assessment period. (In general a minimum period of 10 years and a maximum of 20 years will be appropriate)	#8	Refer ID. #45. (07/03/2012) The CL was closed.(08/04/2012)	CL	OK
53		3-2. The IRR calculation may include the cost of major maintenance and/or rehabilitation if these are expected to be incurred during the period of assessment.	3-2. The IRR calculation may include the cost of major maintenance and/or rehabilitation if these are expected to be incurred during the period of assessment.	#8	It was confirmed that the O&M cost was included in the IRR calculation.	OK	OK
54		4-1. The fair value of any project activity assets	4-1. The fair value of any	#8	Refer ID. # 32. (07/03/2012)	CL	OK

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
		at the end of the assessment period should be included as a cash inflow in the final year.	project activity assets at the end of the assessment period should be included as a cash inflow in the final year.		Refer ID # 32, the CL was closed.		
55		4-2. The fair value should be calculated in accordance with local accounting regulations where available, or international best practice. It is expected that such fair value calculations will include both the book value of the asset and the reasonable expectation of the potential profit or loss on the realization of the assets.	4-2. The fair value should be calculated in accordance with local accounting regulations where available, or international best practice. It is expected that such fair value calculations will include both the book value of the asset and the reasonable expectation of the potential profit or loss on the realization of the assets.	#8	Refer ID. # 32. (07/03/2012) Refer ID # 32, the CL was closed.	CL	OK
56		5-1. Depreciation, and other non-cash items related to the project activity, which have been deducted in estimating gross profits on which tax is calculated, should be added back to net profits for the purpose of calculating the financial indicator (e.g. IRR, NPV).	5-1. Depreciation, and other non-cash items related to the project activity, which have been deducted in estimating gross profits on which tax is calculated, should be added back to net profits for the purpose of calculating the financial indicator (e.g. IRR, NPV).	#8	Refer ID. # 32. (07/03/2012) Refer ID # 32, the CL was closed.	CL	OK
57		5-2. Taxation should only be included as an expense in the IRR/NPV calculation in cases where the benchmark or other financial indicator is intended for post-tax comparisons.	5-2. Taxation should only be included as an expense in the IRR/NPV calculation in cases where the benchmark or other financial indicator is intended for post-tax	#8	The post-tax figure was adopted in the IRR calculation, and it was confirmed that taxation was included.	OK	OK

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
			comparisons.				
58		6. Input values used in all investment analysis should be valid and applicable at the time of the investment decision taken by the project participant. The DOE is therefore expected to validate the timing of the investment decision and the consistency and appropriateness of the input values with this timing. The DOE should also validate that the listed input values have been consistently applied in all calculations.	6. Input values used in all investment analysis should be valid and applicable at the time of the investment decision taken by the project participant. The DOE is therefore expected to validate the timing of the investment decision and the consistency and appropriateness of the input values with this timing. The DOE should also validate that the listed input values have been consistently applied in all calculations.	#8	Ref.ID #32. (07/03/2012) Refer ID # 32, the CL was closed.	CL	OK
59		7. In the case of project activities for which implementation ceases after the commencement and where implementation is recommenced due to consideration of the CDM the investment analysis should reflect the economic decision making context at point of the decision to recommence the project. Therefore capital costs incurred prior to the revised project activity start date can be reflected as the recoverable value of the assets. (Capital expenditures should be included not at the original investment costs but at the market fair value at the point of the decision to proceed with the investment, demonstrating the value through assessments done by chartered specialists).	7. In the case of project activities for which implementation ceases after the commencement and where implementation is recommenced due to consideration of the CDM the investment analysis should reflect the economic decision making context at point of the decision to recommence the project. Therefore capital costs incurred prior to the revised project activity start date can be reflected	#8	It was confirmed based on the construction schedule and the interviews during the on-site assessment. It was not applicable.	OK	OK

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
			as the recoverable value of the assets. (Capital expenditures should be included not at the original investment costs but at the market fair value at the point of the decision to proceed with the investment, demonstrating the value through assessments done by chartered specialists).				
60		8. Project participants should supply spreadsheet versions of all investment analysis. All formulas used in this analysis be readable and all relevant cells be viewable and unprotected. The spreadsheet will be made available to the Executive Board, UNFCCC secretariat and others contracted to assess the request for registration on behalf of the Board including assigned members of the Registration and Issuance Team.	8. Project participants should supply spreadsheet versions of all investment analysis. All formulas used in this analysis be readable and all relevant cells be viewable and unprotected. The spreadsheet will be made available to the Executive Board, UNFCCC secretariat and others contracted to assess the request for registration on behalf of the Board including assigned members of the Registration and Issuance Team.	#8	Ref.ID#32. (07/03/2012) Refer ID # 32, the CL was closed.	CL	OK
61		9. The cost of financing expenditures (i.e. loan repayments and interest) should not be included in the calculation of project IRR.	9. The cost of financing expenditures (i.e. loan repayments and interest)	#8	・It was confirmed that the cost of financing expenditures (i.e. loan repayments and interest) was not included in the IRR	N/A	N/A

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
			should not be included in the calculation of project IRR.		calculation.		
62		10. In the calculation of equity IRR only the portion of investment costs which is financed by equity should be considered as the net cash outflow, the portion of the investment costs which is financed by debt should not be considered a cash outflow.	10. In the calculation of equity IRR only the portion of investment costs which is financed by equity should be considered as the net cash outflow, the portion of the investment costs which is financed by debt should not be considered a cash outflow.		N/A	N/A	N/A
63		11. Due to the impact of loan interest on income tax calculations it is recommended that when a project IRR is calculated to demonstrate additionality a pre-tax benchmark be applied. In cases where a post-tax benchmark is applied the DOE shall ensure that actual interest payable is taken into account in the calculation of income tax. In such situations interest should be calculated according to the prevailing commercial interest rates in the region, preferably by assessing the cost of other debt recently acquired by the project developer and by applying a debt-equity ratio used by the project developer for investments taken in the previous three years.	11. Due to the impact of loan interest on income tax calculations it is recommended that when a project IRR is calculated to demonstrate additionality a pre-tax benchmark be applied. In cases where a post-tax benchmark is applied the DOE shall ensure that actual interest payable is taken into account in the calculation of income tax. In such situations interest should be calculated according to the prevailing commercial interest rates in the region, preferably by assessing the cost of other debt recently acquired by the project developer and by	#8	・It was confirmed that the post-tax benchmark was employed for the project in the IRR spreadsheet.	OK	OK

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
			applying a debt-equity ratio used by the project developer for investments taken in the previous three years.				
64		Selection and Validation of Appropriate Benchmarks 12. In cases where a benchmark approach is used the applied benchmark shall be appropriate to the type of IRR calculated. Local commercial lending rates or weighted average costs of capital (WACC) are appropriate benchmarks for a project IRR. Required/expected returns on equity are appropriate benchmarks for an equity IRR. Benchmarks supplied by relevant national authorities are also appropriate if the DOE can validate that they are applicable to the project activity and the type of IRR calculation presented.	12. In cases where a benchmark approach is used the applied benchmark shall be appropriate to the type of IRR calculated. Local commercial lending rates or weighted average costs of capital (WACC) are appropriate benchmarks for a project IRR. Required/expected returns on equity are appropriate benchmarks for an equity IRR. Benchmarks supplied by relevant national authorities are also appropriate if the DOE can validate that they are applicable to the project activity and the type of IRR calculation presented.	#8	Ref ID 37	OK	OK
65		13. In the cases of projects which could be developed by an entity other than the project participant the benchmark should be based on parameters that are standard in the market. The DOE s validation of the benchmark shall also include its opinion on whether a company-	13. In the cases of projects which could be developed by an entity other than the project participant the benchmark should be based on parameters that		N/A	N/A	N/A

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
		specific benchmark or a benchmark based on parameters that are standard in the market is suitable in the context of the underlying project activity.	are standard in the market. The DOE's validation of the benchmark shall also include its opinion on whether a company-specific benchmark or a benchmark based on parameters that are standard in the market is suitable in the context of the underlying project activity.				
66		14-1. Internal company benchmarks / expected returns (including those used as the expected return on equity in the calculation of a weighted average cost of capital - WACC), should only be applied in cases where there is only one possible project developer and should be demonstrated to have been used for similar projects with similar risks, developed by the same company or, if the company is brand new, would have been used for similar projects in the same sector in the country/region.	14-1. Internal company benchmarks / expected returns (including those used as the expected return on equity in the calculation of a weighted average cost of capital - WACC), should only be applied in cases where there is only one possible project developer and should be demonstrated to have been used for similar projects with similar risks, developed by the same company or, if the company is brand new, would have been used for similar projects in the same sector in the country/region.		N/A	N/A	N/A
67		14-2. This shall require as a minimum clear evidence of the resolution by the company's Board and/or shareholders and will require the validating DOE to undertake a thorough	14-2. This shall require as a minimum clear evidence of the resolution by the company's Board and/or		N/A	N/A	N/A

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
		assessment of the financial statements of the project developer - including the proposed WACC - to assess the past financial behavior of the entity during at least the last 3 years in relation to similar projects.	shareholders and will require the validating DOE to undertake a thorough assessment of the financial statements of the project developer - including the proposed WACC - to assess the past financial behavior of the entity during at least the last 3 years in relation to similar projects.				
68		15. If the benchmark is based on parameters that are standard in the market, the cost of equity should be determined either by: (a) selecting the values provided in Appendix A; or by (b) calculating the cost of equity using best financial practices, based on data sources which can be clearly validated by the DOE, while properly justifying all underlying factors. The values in the table in Appendix A may also be used, as a simple default option, if a company internal benchmark is used.	15. If the benchmark is based on parameters that are standard in the market, the cost of equity should be determined either by: (a) selecting the values provided in Appendix A; or by (b) calculating the cost of equity using best financial practices, based on data sources which can be clearly validated by the DOE, while properly justifying all underlying factors. The values in the table in Appendix A may also be used, as a simple default option, if a company internal benchmark is used.	#8	N/A	N/A	N/A
69		16. If a company's internal benchmark is used	16. If a company's internal		N/A	N/A	N/A

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		for the expected return on equity, the cost of debt should be based on the weighted average cost of debt financing of the legal entity owning the CDM project activity. For loans, use the weighted average cost of outstanding long-term debt. For bonds, use the weighted average yield of the bonds during the last three months prior to the submission of the CDM-PDD for validation or prior to the investment decision, whichever is earlier. The use of bonds to determine the cost of debt is only appropriate for corporate bonds issued in the host country of the CDM project. In cases where the debt finance structure of the project is not yet available (e.g. a letter of intent for debt funding is not available), the cost of debt can be assumed as the commercial lending rate in the country or the yield of a 10 year bond issued by the government of the host country or, if this is not available, the bond with the maturity which is closest to 10 years. The following should be documented in the CDM-PDD: (a) for bonds: the key parameters of the bond including the time of maturity, yield, registration issuance in the financial system and set-up in the market; (b) for loans from a financial institution: the contract of lending between the financial institution and the legal entity owning the assets of the project activity, or, in absence of the contract, a letter from the bank stating its intention to award the loan and the key terms for the loan; (c) for debt financing from a parent company: the transfer of capital to the legal entity, documented with the contract of lending between the parent company and the legal entity owning the assets of the project activity and/or the parameters of the corporate bonds as	benchmark is used for the expected return on equity, the cost of debt should be based on the weighted average cost of debt financing of the legal entity owning the CDM project activity. For loans, use the weighted average cost of outstanding long-term debt. For bonds, use the weighted average yield of the bonds during the last three months prior to the submission of the CDM-PDD for validation or prior to the investment decision, whichever is earlier. The use of bonds to determine the cost of debt is only appropriate for corporate bonds issued in the host country of the CDM project. In cases where the debt finance structure of the project is not yet available (e.g. a letter of intent for debt funding is not available), the cost of debt can be assumed as the commercial lending rate in the country or the yield of a 10 year bond issued by the government of the host country or, if this is not available, the bond				

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
		mentioned above. This latter option is only valid for corporate bonds issued in the host country of the CDM project activity. If the benchmark is based on parameters that are standard in the market, the cost of debt should be calculated as the cost of financing in the capital markets (e.g. commercial lending rates and guarantees required for the country and the type of project activity concerned), based on documented evidence from financial institutions with regard to the cost of debt financing of comparable projects. In cases where this data is not available, use the commercial lending rate in the host country to calculate the cost of debt.	with the maturity which is closest to 10 years. The following should be documented in the CDM-PDD: (a) for bonds: the key parameters of the bond including the time of maturity, yield, registration issuance in the financial system and set-up in the market; (b) for loans from a financial institution: the contract of lending between the financial institution and the legal entity owning the assets of the project activity, or, in absence of the contract, a letter from the bank stating its intention to award the loan and the key terms for the loan; (c) for debt financing from a parent company: the transfer of capital to the legal entity, documented with the contract of lending between the parent company and the legal entity owning the assets of the project activity and/or the parameters of the corporate bonds as mentioned above. This latter option is only valid for corporate bonds				

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
			issued in the host country of the CDM project activity. If the benchmark is based on parameters that are standard in the market, the cost of debt should be calculated as the cost of financing in the capital markets (e.g. commercial lending rates and guarantees required for the country and the type of project activity concerned), based on documented evidence from financial institutions with regard to the cost of debt financing of comparable projects. In cases where this data is not available, use the commercial lending rate in the host country to calculate the cost of debt.				
70		17. If a company's internal benchmark is used for the expected return on equity, then the percentage of debt financing and equity financing should reflect the long-term debt/equity finance structure of the legal entity owning the assets of the project activity. The percentage should be determined based on the latest balance sheet provided under local fiscal/accounting standards and rules if: (a) the legal entity owning the assets of the project activity has balance sheets audited by a third	17. If a company's internal benchmark is used for the expected return on equity, then the percentage of debt financing and equity financing should reflect the long-term debt/equity finance structure of the legal entity owning the assets of the project activity. The percentage		N/A	N/A	N/A

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		party within two years prior to the submission of the CDM-PDD for validation; and (b) the accounting books of the legal entity reflect at least the total value of all the assets needed for the project activity. If the debt/equity finance structure is not yet available, 50% debt and 50% equity financing may be assumed as a default.	should be determined based on the latest balance sheet provided under local fiscal/accounting standards and rules if: (a) the legal entity owning the assets of the project activity has balance sheets audited by a third party within two years prior to the submission of the CDM-PDD for validation; and (b) the accounting books of the legal entity reflect at least the total value of all the assets needed for the project activity. If the debt/equity finance structure is not yet available, 50% debt and 50% equity financing may be assumed as a default.				
71		18. If the benchmark is based on parameters that are standard in the market, then the typical debt/equity finance structure observed in the sector of the country should be used. If such information is not readily available, 50% debt and 50% equity financing may be assumed as a default.	18. If the benchmark is based on parameters that are standard in the market, then the typical debt/equity finance structure observed in the sector of the country should be used. If such information is not readily available, 50% debt and 50% equity financing may be assumed as a default.	#8	N/A	N/A	N/A
72		Investment comparison analysis and benchmark	19. If the proposed		N/A	N/A	N/A

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
		analysis 19. If the proposed baseline scenario leaves the project participant no other choice than to make an investment to supply the same (or substitute) products or services, a benchmark analysis is not appropriate and an investment comparison analysis shall be used. If the alternative to the project activity is the supply of electricity from a grid this is not to be considered an investment and a benchmark approach is considered appropriate.	baseline scenario leaves the project participant no other choice than to make an investment to supply the same (or substitute) products or services, a benchmark analysis is not appropriate and an investment comparison analysis shall be used. If the alternative to the project activity is the supply of electricity from a grid this is not to be considered an investment and a benchmark approach is considered appropriate.				
73		Sensitivity analysis 20. Only variables, including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues should be subjected to reasonable variation (all parameters varied need not necessarily be subjected to both negative and positive variations of the same magnitude). The results of this variation should be presented in the PDD and be reproducible in the associated spreadsheets. Where a DOE considers that a variable which constitute less than 20% have a material impact on the analysis they shall raise a corrective action request to include this variable in the sensitivity analysis.	20. Only variables, including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues should be subjected to reasonable variation (all parameters varied need not necessarily be subjected to both negative and positive variations of the same magnitude). The results of this variation should be presented in the PDD and be reproducible in the associated spreadsheets. Where a	#8	Refer ID. # 36. (07/03/2012) The CL was closed.(08/04/2012)	CL	OK

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
			DOE considers that a variable which constitute less than 20% have a material impact on the analysis they shall raise a corrective action request to include this variable in the sensitivity analysis.				
74		21-1. The DOE should assess in detail whether the range of variations is reasonable in the project context. Past trends may be a guide to determine the reasonable range. As a general point of departure variations in the sensitivity analysis should at least cover a range of +10% and -10%, unless this is not deemed appropriate in the context of the specific project circumstances.	21-1. The DOE should assess in detail whether the range of variations is reasonable in the project context. Past trends may be a guide to determine the reasonable range. As a general point of departure variations in the sensitivity analysis should at least cover a range of +10% and -10%, unless this is not deemed appropriate in the context of the specific project circumstances.	#8	It was confirmed that the sensitivity analysis was conducted within a range of +10% and -10%.	CL	OK
75		21-2. In cases where a scenario will result in the project activity passing the benchmark or becoming the most financially attractive alternative the DOE shall provide an assessment of the probability of the occurrence of this scenario in comparison to the likelihood of the assumptions in the presented investment analysis, taking into consideration correlations between the variables as well as the specific socio-economic and policy context of the project activity.	21-2. In cases where a scenario will result in the project activity passing the benchmark or becoming the most financially attractive alternative the DOE shall provide an assessment of the probability of the occurrence of this scenario in comparison to the likelihood of the	#8	Ref.ID#36. (07/03/2012) The CL was closed.(08/04/2012)		OK

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
			assumptions in the presented investment analysis, taking into consideration correlations between the variables as well as the specific socio-economic and policy context of the project activity.				
76		In situations where an investment analysis is carried out in nominal terms, project participants can convert the real term values provided in the table below to nominal values by adding the inflation rate. The inflation rate shall be obtained from the inflation forecast of the central bank of the host country for the duration of the crediting period. If this information is not available, the target inflation rate of the central bank shall be used. If this information is also not available, then the average forecasted inflation rate for the host country published by the IMF (International Monetary Fund World Economic Outlook) or the World Bank for the next five years after the start of the project activity shall be used.	In situations where an investment analysis is carried out in nominal terms, project participants can convert the real term values provided in the table below to nominal values by adding the inflation rate. The inflation rate shall be obtained from the inflation forecast of the central bank of the host country for the duration of the crediting period. If this information is not available, the target inflation rate of the central bank shall be used. If this information is also not available, then the average forecasted inflation rate for the host country published by the IMF (International Monetary Fund World Economic Outlook) or the World	#8	The inflation rate was not considered to calculate IRR for the project.	N/A	N/A

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			Bank for the next five years after the start of the project activity shall be used.				
	(b) Barrier analysis						
77	115. If barrier analysis has been used to demonstrate the additionality of the proposed CDM project activity, the PDD shall demonstrate that the proposed CDM project activity faces barriers that: (a) Prevent the implementation of this type of proposed CDM project activity; (b) Do not prevent the implementation of at least one of the alternatives.	116. Issues that have a clear direct impact on the financial returns of the project activity cannot be considered barriers and shall be assessed by investment analysis. This does not refer to either (a) Risk related barriers, for example risk of technical failure, that could have negative effects on financial performance, or (b) Barriers related to the unavailability of sources of finance for the project activity.	It is necessary to determine whether barrier other than the financial returns of the project activity should be considered as barrier analysis or not.		N/A	N/A	N/A

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
78		117. The DOE shall apply a two-step process to assessing the barrier analysis performed, as follows: (a) Determine whether the barriers are real. The DOE shall assess the available evidence and/or undertake interviews with relevant individuals (including members of industry associations, government officials or local experts if necessary) to determine whether the barriers listed in the PDD exist. The DOE shall ensure that existence of barriers is substantiated by independent sources of data such as relevant national legislation, surveys of local conditions and national or international statistics. If existence of a barrier is substantiated only by the opinions of the project participants, the DOE shall not consider this barrier to be adequately substantiated. If the DOE considers, on the basis of its sectoral or local expertise, that a barrier is not real or is not supported by sufficient evidence, it shall raise a CAR to have reference to this barrier removed from the project documentation;	It is necessary to assess the barrier analysis, in accordance with Additionality tool, for the followings: - investment barriers - economic/financial, technological barriers - barriers due to prevailing practice - other barriers, specified in methodology		N/A	N/A	N/A
79		(b)Determine whether the barriers prevent the implementation of the project activity but not the implementation of at least one of the possible alternatives. Since not all barriers present an insurmountable hurdle to a project activity being implemented, the DOE shall apply its local and sectoral expertise to judge whether a barrier or set of barriers would prevent the implementation of the proposed CDM project activity and would not equally prevent implementation of at least one of the possible alternatives, in particular the identified baseline scenario.	See above.		N/A	N/A	N/A

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
	(e) Common practice analysis						
80	119. For large-scale CDM project activities, unless the proposed project type is first-of-its kind, common practice analysis shall be carried out as a credibility check of the other available evidence used by the project participants to demonstrate additionality. This is a test to complement the investment analysis (Step 2 of the additionality tool) or barrier analysis (Step 3 of the additionality tool) to confirm that the project activity is not widely observed and commonly carried out in the region.	120. The DOE shall use its local and sectoral expertise to: (a) Assess whether the geographical scope (e.g. the defined region) of the common practice analysis is appropriate for the assessment of common practice related to the project activity's technology or industry type. For certain technologies the relevant region for assessment will be local and for others it may be transnational/global. If a region other than the entire host country is chosen, the DOE shall assess the explanation why this region is more appropriate;	It is necessary to confirm whether there is any hydropower project, which is or is not registered as CDM, in the same river basin during the on-site assessment. Interviewing Water Resource Authority is also necessary.		It was confirmed during interview with the Water Resource Bureau that Wan'an Hydropower Project located in the Gan River had been put into operation in 1990s before the stating date of the project. It is requested to add the analysis about the Wan'an Hydro Power Project in the common practice analysis and provide the relevant evidence. (07/03/2012) PP's Response: The analysis about Wan'an Hydropower Project had been added in the discussion of common practice analysis in the PDD and the relevant evidence had been provided (Annex 3) (28/03/2012). DOE: It was confirmed that the analysis about Wan'an Hydropower Project had been added in the common practice analysis, and the relevant evidence had been received. The CL was closed.(08/04/2012)	CL	OK

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
81		(b) Using official sources and local and industry expertise, determine to what extent similar and operational projects (e.g., using similar technology or practice), other than CDM project activities, have been undertaken in the defined region;	Extent of similar & operational non-CDM projects in region, distinctions between CDM project & other similar activities		Ref ID #80 (07/03/2012) The CL was closed.(08/04/2012)	CL	OK
82		(c) If similar and operational projects, other than CDM project activities, are already "widely observed and commonly carried out" in the defined region, assess whether there are essential distinctions between the proposed CDM project activity and the other similar activities.	It is necessary to confirm - the appropriateness of capacity range chosen as similar. - whether hydropower plants with chosen range of capacity included in the grid are all covered in the analysis. Documents to be submitted: - Selected similar project activities		-The appropriateness of the capacity range was chosen from 180MW to 540MW (+/-50% of the installed capacity of the project as 360MW), which was reasonable. -It is necessary to choose the latest Yearbooks for China Water Resources covering 2003 to 2010 as the resource, but not the Yearbooks covering 2003 to 2008 only as indicated in the PDD. (07/03/2012) PP's Response: The data source of the latest Yearbooks for China Water Resources 2003 to 2010 had been updated in the PDD in Section B.5. (28/03/2012). DOE: So far, only the Yearbooks for China Water Resources covering 2003-2008 had been received. It is necessary to provide the Yearbooks for China Water Resources of 2009-2010 to cross check whether all the similar projects have been included in the Common Practice Analysis. (08/04/2012) PP's Response: It was confirmed that there were no Yearbooks for China Water	CL	OK

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
					Resources of 2009 and 2010. Therefore, it was not applicable. (08/05/2012) DOE: The explanation had been confirmed. The CL was closed. (23/05/2012)		
	7. Monitoring plan						
83	122. The PDD shall include a monitoring plan. This monitoring plan shall be based on the approved monitoring methodology applied to the proposed CDM project activity.	123. The DOE shall apply a two-step process to assessing compliance with this requirement, as follows: (a) Compliance of the monitoring plan with the approved methodology. The DOE shall: (i) By means of document review, identify the list of parameters required by the selected approved methodology;	It is necessary to confirm that the list of parameters required by the selected approved methodology is clearly described in the PDD.	#1 #41	・The PP is requested to provide evidence of local standard for meter accuracy and calibration frequency regarding $EG_{facility,y,}$, and it is requested to add the description in the PDD. It is requested to clarify the value of A_{BL} and A_{PJ}. (07/03/2012) PP's Response: The local standard for meter accuracy and calibration frequency regarding $EG_{facility,y,}$, were provided (Annex 4) and the description in the PDD had been updated in Section B.7.2.. The A_{PJ} is derived from the approved FSR, and the A_{BL} is 0 as it is a new reservoir. (28/03/2012) DOE: -The national standard of JJG 596-1999 had been received, and it was confirmed that the meters would be calibrated annually in accordance with JJG 596-1999, and the description had been added in the PDD. PP's Response: The clarification of the surface area of the project had been provided by the design institute. (Annex 6).	CL	OK

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
					(08/05/2012) DOE: Refer to ID No.4, the clarification about the A_{PJ} had been confirmed. The CL was closed.(23/05/2012)		
84		(ii) Confirm that the monitoring plan contains all necessary parameters, that they are clearly described and that the means of monitoring described in the plan complies with the requirements of the methodology;	It is necessary to confirm all parameters to be monitored are covered and all needed information is filled in each tables. Documents to be submitted: - Diagram of the power system - Power Purchase Agreement or Connection Agreement	#19 #41	It was confirmed through the diagram of the power system and the on-site interviews that one main meter and one backup meter would be installed on-site, and it is requested to revise the relevant description in the PDD accordingly. (07/03/2012) PP's Response: The relevant description had been revised in Section A.4.3. and B.7.2, and Figure 2 had also been revised accordingly. (28/03/2012). DOE: It was confirmed the PDD had been revised accordingly. The CL was closed. (08/04/2012)	CL	OK
85		(b) Implementation of the plan. The DOE shall, by means of review of the documented procedures, interviews with relevant personnel, project plans and any physical inspection of the proposed CDM project activity site in accordance with paragraphs 59-62, assess whether: (i) The monitoring arrangements described in the monitoring plan are feasible within the	It is necessary to assess the appropriateness of the followings: - Authority & responsibility of monitoring team - Meter - Calibration - Monitoring frequency	#15 #19 #41	Ref ID#83, #84. (07/03/2012) The CL was closed.(08/04/2012)	CL	OK

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
		project design;					
86		(ii) The means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures, are sufficient to ensure that the emission reductions achieved by/resulting from the proposed CDM project activity can be reported ex post and verified.	It is necessary to assess the appropriateness of the followings: - Data management - Procedure of QA/QC (incl. Internal Audit & Management Review) - Procedure of staffs education & Training	#1 #49	It is requested to add the description about the use of backup meter when abnormity handling. (07/03/2012) PP's Response: The relevant description had been revised in Section B.7.2. (28/03/2012). DOE: It was confirmed the description about the use of backup meter when abnormity handling had been added in the PDD. The CL was closed. (08/04/2012)	CL	OK
	8. Sustainable development						
87	125. CDM project activities shall assist Parties not included in Annex I to the Convention in achieving sustainable development.	126. The DOE shall determine whether the letter of approval by the DNA of the host Party confirms the contribution of the proposed CDM project activity to the sustainable development of the host Party.	It is necessary to confirm the contribution of the proposed CDM project activity to the sustainable development of the host party.	#7 #10 #11	It was confirmed based on the interviews during on-site assessment.	OK	OK
	9. Local stakeholder consultation						

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
88	128. Local stakeholders shall be invited by the PPs to comment on the proposed CDM project activity prior to the publication of the PDD on the UNFCCC website.	129. The DOE shall, by means of document review and interviews with local stakeholders as appropriate, determine whether: (a) Comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity, have been invited;	It is necessary to confirm details of the local stakeholder consultation. Documents to be submitted: - Stakeholder list - Questionnaires for stakeholders' comments (all) - Records of meetings if forums for dialogue with stakeholders on the project were set up.	#5 #28	It is requested to revise Section E.1 of the PDD in accordance with the EIA, including adding the questionnaire for the organization in 11/2008, and the notification for stakeholders' comments in 03/2009 during the EIA stage. (07/03/2012) PP's Response: The relevant description in Section E.1 had been revised to include the questionnaire for the organization and the notification for stakeholders' comments with evidences provided during the on-site assessment. (28/03/2012). DOE: It was confirmed that Section E.1 of the PDD had been revised in accordance with the EIA. The questionnaire for the organization in 11/2008, and the notification for stakeholders' comments in 03/2009 during the EIA stage had been added in the PDD. The CL was closed. (08/04/2012)	CL	OK
89		(b) The summary of the comments received as provided in the PDD is complete;	It is necessary to confirm the summary of the comments.	#5 #28	Please revise the summary of the comments in Section E.2 of the PDD in accordance with the EIA. (07/03/2012) PP's Response: The summary of comments in Section E.2. had been revised to include the feedback from the organization.(28/03/2012). DOE: It was confirmed that the summary of the comments in Section E.2 of the PDD had been revised in accordance with the EIA. The CL was closed. (08/04/2012)	CL	OK

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
90		(c) The project participants have taken due account of any comments received and have described this process in the PDD.	It is necessary to confirm whether there is local resident, who is resettled and/or land occupied, and sufficient compensation has been paid in line with the regulation? Documents to be submitted: - Evidential document of the revoked land area shall be compensated in accordance with applicable regulations/policies set forth by Chinese Government and approved by a Committee - Evidential document for applicable regulations/policies on compensation for affected households	#50	・The evidence of the compensations/ resettlement will be confirmed during the on-site assessment. (07/03/2012) PP's Response: The evidences of the compensations/resettlement such as "Migration Resettlement Planning Report", the approval of the report, the contracts for resettlement, and relevant regulations etc. had been provided during the on-site assessment.(28/03/2012). DOE: The evidence of the compensations/resettlement had been received and confirmed, which was deemed reasonable in line with the relevant regulations. According to the interviews during the on-site assessment, the local residents were satisfied with the compensations and resettlement plan. The CL was closed. (08/04/2012)	CL	OK
	10. Environmental impacts						

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
91	131. Project participants shall submit documentation to the DOE on the analysis of the environmental impacts of the project activity in accordance with paragraph 37(c) of the CDM modalities and procedures	132. The DOE shall confirm, by means of a document review and/or using local official sources and expertise, whether the project participants have undertaken an analysis of environmental impacts and, if required by the host Party, an environmental impact assessment.	It is necessary to confirm whether information on items in the EIA (air pollution, wastewater and sewage, noise, land use, vegetation, animals (especially in the river), ecological system, cultural heritage, and resettlement etc.) are described cyclopaedically, especially on negative information, as a summary of the EIA. Documents to be submitted: - EIA report - Certificate of the EIA preparer - Approval letter of the EIA report It is necessary to assess whether additional requirement for implementing this project activity is described in the approval letter of the EIA report or not.	#5 #6	The following documents were reviewed during on-site assessment: -The EIA report was completed by the Shanghai Investigation Design & Research Institute in 08/2009. -The EIA approval was issued by the Ministry of Environmental Protection of the People's Republic of China on 30/10/2009 -Certificate of EIA author: Grade A was issued by the National Environment Protection Bureau on 25/12/2006. It is requested to add the detailed information about the impact on aquatic ecology in the PDD. (07/03/2012) PP's Response: The detailed information about the impact on aquatic ecology had been added in Section D.1. (28/03/2012). DOE: It was confirmed that the detailed information about the impact on aquatic ecology had been added in the PDD. The CL was closed. (08/04/2012)	CL	OK

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
	F. Specific validation activities 2. Project design of small-scale clean development mechanism project activities						
92	135. The DOE shall determine whether a proposed small-scale project activity meets the requirements of the simplified modalities and procedures for small-scale CDM project activities.		It is necessary to confirm that the plant capacity is fixed and below 15MW. Documents to be submitted: - Equipment contract		N/A	N/A	N/A
93	136. During its validation of a small-scale project activity, the DOE shall confirm that: (a) The project activity qualifies within the thresholds of the three possible types of small-scale project activities. It may include more		It is necessary to determine which the following types the project is categorized into? Type(i):Renewable energy projects Type(ii):Energy efficiency improvement projects Type(iii):Other project activities		N/A	N/A	N/A

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
	than one component; for example, a type III methane recovery component activity and a type I electricity component activity;						
94	(b) The project activity conforms to one of the approved small-scale categories and applies the relevant tool or methodology. The DOE shall confirm that the small-scale methodologies are applied in conjunction with the general guidelines to SSC CDM methodologies, which provides guidelines on equipment capacity, equipment performance/life time, baseline identification for		Please check the applicability of the SSC methodology (AMS-I.D.): Refer to "Applicable Methodology"-sheet.		N/A	N/A	N/A

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
	type-II/III Greenfield project activities, sampling and other monitoring-related issues;.						
95	(c) The project activity is not a debundled component of a large-scale project, in accordance with the rules defined in appendix C of the simplified modalities and procedures for small-scale CDM project activities; (d) Whether an assessment of the environmental impacts of the proposed CDM project activity is required by the host Party		Please check the guideline of the debundling of SSC project activities (EB36, Annex27). A proposed small-scale project activity shall be deemed to be a debundled component of a large project activity if there is a registered small-scale CDM project activity or an application to register another small-scale CDM project activity: (a) With the same project participants; (b) In the same project category and technology/measure; and (c) Registered within the previous 2 years; and (d) Whose project boundary is within 1 km of the project boundary of the proposed small-scale activity at the closest point.		N/A	N/A	N/A

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
96	137. In assessing the additionality of small scale CDM project activities, the DOE shall refer to the specific requirements on demonstration of additionality for small scale project activities together with the guidance in chapter V, section E, subsection 6 and the "“Non-binding best practice examples to demonstrate additionality for SSC project activities"”.		Please check "Additionality of a project activity" (chapter V, section E, subsection 6) and the guideline of the " Non-binding best practice examples to demonstrate additionality for SSC project activities" (EB35, Annex34).		N/A	N/A	N/A
	6. Renewal of crediting period						
97	169. When contracted to validate a proposed CDM project activity for a second or further crediting period, the DOE shall undertake a thorough		Please check the scope of the validation contract whether validation of the proposed CDM project activity for a second or further crediting period is involved or not.		N/A	N/A	N/A

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
	reassessment of the validity of the original baseline or any updates thereto proposed by the project participants. This assessment shall be based on the latest version of the procedures for renewing the crediting period, the latest applicable version of approved methodology and the means of validation described in this Manual.						
	7. Changes to the start date of the crediting period						
98	170. The CDM Executive Board has revised procedures for requesting post-registration changes to the start date of the crediting period		Please confirm whether the project participants wish to delay the start date of the crediting period by more than one year or not.	#1	The expected start date of the crediting period was confirmed during the on-site assessment.	OK	OK

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
	in which the requirement for the Host Country to reconfirm that the delay in the start date of crediting period will not affect project's contribution to sustainable development has been removed and these revised procedures also contain provisions for project activities hosted in Least Developed Countries (LDCs). If project participants wish to delay the start date of the crediting period by more than one year but less than two years, and if project participants of projects hosted by a LDC wish to delay the start date of the crediting period						

D No.	VVM Requirements	Means of Validation	Concrete Questions	Ref. No.	DOE comment after Interview (and/or summery of additional requests)	Draft Concl	Final Concl
	by more than two year but less than four years, the DOE shall validate the baseline scenario in accordance with chapter V, section E, subsection 5(d) above.						
99	171. The validation report shall contain a description of the progress made in project implementation. Further, the DOE shall validate that the project participants have obtained written confirmation from the host Party that the delay will not alter the project's contribution to sustainable development.		Please check the progress of the project implementation. Documents to be submitted: -Construction schedule	#21	The construction schedule was confirmed during the on-site assessment.	OK	OK

Table A-2 Risk analysis before on-site assessment

*Evaluation: High = No descriptions in the PDD / Moderate = some descriptions but necessary to cross-check / Low = descriptions confirmed

ID	Risk		Checkpoint	H/M/L	Comment
1	Additionality requirements	Investment analysis (VVM paragraph 109-112, EB41 Annex46)	Accuracy of financial (IRR) calculations?	M	Need to check the calculation formula, input data and algorithms of the IRR calculation sheet.
2			Sensitivity analysis: parameter selection complete & reasonable?	L	4 parameters are adopted, and those are generally employed in other CDM hydropower projects. It is ok.
3			Sensitivity analysis: fluctuation of range complete & reasonable?	L	The adopted range of -10%-+10% is common for other CDM hydropower projects. Moreover, a fluctuation range assessment, where the IRR might go beyond the benchmark of 8%, has been taken into consideration.
4			Suitable benchmark applied for the type of financial indicator?	M	As per the "Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects", the financial benchmark IRR of the total investment is 8% (after tax).
5			The following investment indicator is reasonable? Total static investment (CNY) per kW?	M	Total static investment (RMB) per kW 2,983.63Million CNY/360MW=8,288RMB/kW It is necessary to compare with other similar hydropower projects in China or the same local area.
6			Plant load factor (estimated operation hours/8760h) is reasonable?	M	Annual operation hour:3,171hour It is necessary to compare with other similar hydropower projects in China or the same local area.
7			Coefficient of effective electricity generation is reasonable?	M	It is necessary to confirm the internal consumption and transmission loss with documentary evidences.
8			Electricity tariff is reasonable?	M	The applied tariff is 0.38 CNY/kWh (including VAT), which was determined by the authorized design institute. It is necessary to confirm by evidential documents and its appropriateness during the on-site assessment.
9		Prior CDM consideration (VVM paragraph 96-102, EB41 Annex 46)	The period of time between PDR finalization and CDM decision is sufficiently short?	M	The period between the FSR (04/ 2010) and the investment decision (09/2010) is five months, which is sufficiently short. It is necessary to confirm the date of the CDM decision by evidential documents.

10			CDM benefits were considered?	M	It is necessary to confirm by evidential document (Board meeting minutes for serious CDM consideration).
11			Start date substantiated? & according to Glossary of Terms -Implementation -Construction -Real action	M	The start date of the project is 26/09/2010. It is necessary to confirm whether it is consistent with the definition in the Glossary and para 67 of EB41 (Turbine and generator purchase contract). Necessary documents of prior consideration of the CDM are going to be submitted ahead of the on-site assessment. This needs to be confirmed.
12			Real & continuing action after CDM decision making?	L	The continuous CDM status will be confirmed by evidential documents of each event during the on-site assessment.
13		Common practice analysis (VVM paragraph 117-119, Add. Tool)	Extent of similar & operational non-CDM projects in region, distinctions between CDM project & other similar activities (VVM paragraph 117-119, Add. Tool)	N/A	
14		Barrier analysis (Add. Tool)	Investment barriers, other than the economic/financial, technological barriers, barriers due to prevailing practice, other barriers, specified in methodology	L	According to 'Tool for the demonstration and assessment of additionality ', investment analysis was implemented.
15	Baseline methodology	Baseline identification (VVM paragraph 80-87)	Baseline scenario applied validated, referenced, & reasonable to occur without CDM, identification of alternatives, supplementary & no reasonable baselines excluded	L	It is necessary to confirm by evidential document.
16		Methodology specific requirements	Requirements as specified in the approved methodology used?	L	It is necessary to confirm by evidential document.
17		Applicability conditions (VVM paragraph 68-75, Deviation at registration & methodology revision procedures)	Substantiate methodology applicability conditions, request a revision to or a deviation from the methodology	L	The applicability of the methodology (ACM0002 version 12.2.0.), relevant tools (additionality and emission factor calculation), and calculation of EF (OM, BM and CM) in China.
18		Algorithms and/or formulae (VVM paragraph 88-92)	Equations & parameters correctly applied, justification of the choice of data & parameters used in the equations	L	Some descriptions on formulae and in tables of parameters should be carefully checked.
19		Project boundary (VVM paragraph 77-81)	Correct delineation of project boundary & meets requirements, all sources & GHGs included in project boundary	L	The project boundary and sources and GHGs included are consistent with the definitions in the applied methodology. The power density of the proposed project will be confirmed at the on-site assessment.

20	Emission reduction	Baseline emissions	The entities involved in the study are reliable?	L	It is necessary to confirm the profile and actual performance of the entities (consulting firm) by the evidential documents. It is also necessary to confirm that the design institute for the FSR is authorized by the local government.
21			External data sources are appropriate?	L	Emission factors, which were issued by the Chinese DNA on20/10/2011, are adopted.
22		Project emissions	Major emission sources, if any?	L	According to the applied methodology (ACM0002 version 12.2.0.), there is no project emission.
23	Monitoring methodology	MP compliance	All parameters provided	L	It is in accordance with the applied methodology.
24			Means & provision for monitoring	L	Basic information seems to be covered in the PDD. Details need to be confirmed by the on-site assessment and evidential documents (if any at present status).
25			Reporting & verification (methodologies & PDD)	L	Basically information seems to be covered in the PDD. Details need to be confirmed by the on-site assessment and evidential documents (if any at present status).
26		Implementation of the plan	monitoring arrangements feasible	L	Basically information seems to be covered in the PDD. Details need to be confirmed by the on-site assessment and evidential documents (if any at present status).
27			Means of implementation for ex-post reporting & verification (methodologies & PDD)	M	Basically information seems to be covered in the PDD. Details need to be confirmed by the on-site assessment and evidential documents (if any at present status).
28	Participation requirements	Project description (VVM paragraph	Not a de-bundled large scale project?	M	It is necessary to confirm at the on-site assessment and interviews.
29			In terms of retrofit, are any differences compared to pre-project?	L	The proposed project is Greenfield hydropower project. It is necessary to confirm at the on-site assessment.
30			Leakage covered?	L	According to the applied methodology, there is no leakage. It is necessary to confirm during the on-site assessment.
31			Bundled project?	L	The proposed project is not a bundled project. It is necessary to confirm at the on-site assessment.
32			Increase in fuel or production?	L	The proposed project is a hydropower project, and doesn't need fuel consumption basically.
33			Is plant capacity concrete?	L	It is necessary to confirm based on the review of the specification and/or purchase agreement of the turbines and generators and at the on-site assessment.

34		LoA from Parties (VVM paragraph 44-50)	Provided & complete?	L	LOA from parties have not been published. It is necessary to confirm during the validation
35			Correct & cross references?	H	LOA from parties have not been published. It is necessary to confirm during the validation. .
36		PDD (VVM paragraph 55-57)	As per template & guidance?	L	The received PDD is the latest version of the template.
37	Consultation requirements	Local stakeholder	Inconsistency & details of the local stakeholder consultation? (e.g. benefits of the CDM)	M	It is necessary to confirm through the local stakeholder interview.
38			Local residents are resettled with sufficient compensation?	M	It is necessary to confirm at the on-site assessment and interviews.
39		Global stakeholder	Inconsistency & details of the global stakeholder consultation? (e.g. different approved methodology applied)	L	Still under the process of the GSP. It is necessary to confirm through public comments.
40	EIA		Licensed?	M	It is necessary to confirm at the on-site assessment.
41			Any further requirements when approved?	L	It is necessary to confirm by the EIA approval letter.

Appendix B: Qualifications

Name:	OTANI, Yuichi		
Position:	☒ 1. Lead Auditor ☐ 2. Auditor ☐ 3. Technical Expert		
Fields of Expertise:	**Sectoral Scopes (SS)**	**Technical Areas (TA)**	
	SS 1: Energy industries (renewable/non-renewable sources)	☐	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar (COMPLEX)
		☒	TA 1.2: Energy generation from renewable energy sources
	SS 2: Energy distribution	☐	TA 2.1: Electricity distribution
		☐	TA 2.2: Heat distribution
	SS 3: Energy demand	☐	TA 3.1: Energy demand
	SS 4: Manufacturing industries	☐	TA 4.1: Cement sector (COMPLEX)
		☐	TA 4.2: Aluminum (COMPLEX)
		☐	TA 4.3: Iron and steel (COMPLEX)
		☐	TA 4.4: Refinery (COMPLEX)
	SS 5: Chemical industry	☐	TA 5.1: Chemical process industries (COMPLEX)
	SS 6: Construction	☐	TA 6.1: Construction
	SS 7: Transport	☐	TA 7.1: Transport
	SS 8: Mining/mineral production	☐	TA 8.1: Mining and mineral processes, excluding those included in TA 8.2 below
		☐	TA 8.2: Oil and gas industry, coal mine methane recovery and use (COMPLEX)
	SS 9: Metal production	☐	TA 9.1: Metal production
	SS 10: Fugitive emissions from fuels (solid, oil and gas)	☐	TA 10.1: Mining and mineral processes, excluding those included in TA 10.2 below
		☐	TA 10.2: Oil and gas industry, coal mine methane recovery and use (COMPLEX)
	SS 11: Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride	☐	TA 11.1: Chemical process industries (COMPLEX)
		☐	TA 11.2: GHG capture and destruction
	SS 12: Solvents use	☐	TA 12.1: Chemical process industries (COMPLEX)
	SS 13: Waste handling and disposal	☒	TA 13.1: Waste handling and disposal
		☐	TA 13.2: Animal waste management
	SS 14: Afforestation and reforestation	☐	TA 14.1: Forestry
	SS 15: Agriculture	☒	TA 15.1: Agriculture
		☐	TA 15.2: Animal waste management
Approved by:	INANAGA, Hiroshi, Chief Executive Officer of Deloitte-TECO		

NOTE: In accordance with Deloitte-TECO's "Auditor's List with Technical Areas of Sectoral Scopes"

Name:	SHI, Xueting		
Position:	☒ 1. Lead Auditor ☐ 2. Auditor ☐ 3. Technical Expert		
Fields of Expertise:	**Sectoral Scopes (SS)**	**Technical Areas (TA)**	
	SS 1: Energy industries (renewable/non-renewable sources)	☐	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar (COMPLEX)
		☒	TA 1.2: Energy generation from renewable energy sources
	SS 2: Energy distribution	☐	TA 2.1: Electricity distribution
		☐	TA 2.2: Heat distribution
	SS 3: Energy demand	☐	TA 3.1: Energy demand
	SS 4: Manufacturing industries	☐	TA 4.1: Cement sector (COMPLEX)
		☐	TA 4.2: Aluminum (COMPLEX)
		☐	TA 4.3: Iron and steel (COMPLEX)
		☐	TA 4.4: Refinery (COMPLEX)
	SS 5: Chemical industry	☐	TA 5.1: Chemical process industries (COMPLEX)
	SS 6: Construction	☐	TA 6.1: Construction
	SS 7: Transport	☐	TA 7.1: Transport
	SS 8: Mining/mineral production	☐	TA 8.1: Mining and mineral processes, excluding those included in TA 8.2 below
		☐	TA 8.2: Oil and gas industry, coal mine methane recovery and use (COMPLEX)
	SS 9: Metal production	☐	TA 9.1: Metal production
	SS 10: Fugitive emissions from fuels (solid, oil and gas)	☐	TA 10.1: Mining and mineral processes, excluding those included in TA 10.2 below
		☐	TA 10.2: Oil and gas industry, coal mine methane recovery and use (COMPLEX)
	SS 11: Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride	☐	TA 11.1: Chemical process industries (COMPLEX)
		☐	TA 11.2: GHG capture and destruction
	SS 12: Solvents use	☐	TA 12.1: Chemical process industries (COMPLEX)
	SS 13: Waste handling and disposal	☐	TA 13.1: Waste handling and disposal
		☐	TA 13.2: Animal waste management
	SS 14: Afforestation and reforestation	☐	TA 14.1: Forestry
	SS 15: Agriculture	☐	TA 15.1: Agriculture
		☐	TA 15.2: Animal waste management
Approved by:	INANAGA, Hiroshi, Chief Executive Officer of Deloitte-TECO		

NOTE: In accordance with Deloitte-TECO's "Auditor's List with Technical Areas of Sectoral Scopes"

Name:	WU, Fenlin		
Position:	☐ 1. Lead Auditor ☒ 2. Auditor ☐ 3. Technical Expert		
Fields of Expertise:	**Sectoral Scopes (SS)**	**Technical Areas (TA)**	
	SS 1: Energy industries (renewable/non-renewable sources)	☐	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar (COMPLEX)
		☐	TA 1.2: Energy generation from renewable energy sources
	SS 2: Energy distribution	☐	TA 2.1: Electricity distribution
		☐	TA 2.2: Heat distribution
	SS 3: Energy demand	☐	TA 3.1: Energy demand
	SS 4: Manufacturing industries	☐	TA 4.1: Cement sector (COMPLEX)
		☐	TA 4.2: Aluminum (COMPLEX)
		☐	TA 4.3: Iron and steel (COMPLEX)
		☐	TA 4.4: Refinery (COMPLEX)
	SS 5: Chemical industry	☐	TA 5.1: Chemical process industries (COMPLEX)
	SS 6: Construction	☐	TA 6.1: Construction
	SS 7: Transport	☐	TA 7.1: Transport
	SS 8: Mining/mineral production	☐	TA 8.1: Mining and mineral processes, excluding those included in TA 8.2 below
		☐	TA 8.2: Oil and gas industry, coal mine methane recovery and use (COMPLEX)
	SS 9: Metal production	☐	TA 9.1: Metal production
	SS 10: Fugitive emissions from fuels (solid, oil and gas)	☐	TA 10.1: Mining and mineral processes, excluding those included in TA 10.2 below
		☐	TA 10.2: Oil and gas industry, coal mine methane recovery and use (COMPLEX)
	SS 11: Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride	☐	TA 11.1: Chemical process industries (COMPLEX)
		☐	TA 11.2: GHG capture and destruction
	SS 12: Solvents use	☐	TA 12.1: Chemical process industries (COMPLEX)
	SS 13: Waste handling and disposal	☒	TA 13.1: Waste handling and disposal
		☐	TA 13.2: Animal waste management
	SS 14: Afforestation and reforestation	☐	TA 14.1: Forestry
	SS 15: Agriculture	☒	TA 15.1: Agriculture
		☐	TA 15.2: Animal waste management
Approved by:	INANAGA, Hiroshi, Chief Executive Officer of Deloitte-TECO		

NOTE: In accordance with Deloitte-TECO's "Auditor's List with Technical Areas of Sectoral Scopes"