



VALIDATION REPORT

CARBON ASSET MANAGEMENT SWEDEN AB

VALIDATION OF THE

LIXIAN YIKEYIN SMALL HYDROPOWER PROJECT

BUREAU VERITAS CERTIFICATION

REPORT No. BVC/CHINA-VAL/0021/2008

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VALIDATION REPORT

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Carbon Asset Management Sweden AB	Mr. Marco Berggren

Summary:

Bureau Veritas Certification has made the validation of Lixian Yikeyin Small Hydropower Project of Li County Jiujiayi Hydropower Development Co. Ltd. The Project is a bundled small hydro power plants (4MW of Stage 1 and 9.6MW of Stage 2) newly built in Putou Village, Li County, Sichuan Province, P.R.China on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study, monitoring plan and other relevant documents, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final validation report and opinion. The overall validation, from Contract Review to Validation Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the validation process is a list of Clarification and Corrective Actions Requests (CL and CAR), presented in Appendix A. Taking into account this output, the project proponent revised its project design document.

In summary, it is Bureau Veritas Certification's opinion that the project correctly applies the baseline and monitoring methodology AMS-I.D version 13 for small scale CDM projects and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.

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Abbreviations

BM	Build Margin
BVC	Bureau Veritas Certification
CAR	Corrective Action Request
CCPG	Central China Power Grid
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CH ₄	Methane
CL	Clarification Request
CO ₂	Carbon Dioxide
DIS	Draft of International Standard
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
DRC	Development & Reform Commission
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
EPC	Equipment Purchase Contract
ERPA	Emission Reduction Purchase Agreement
FSR	Feasibility Study Report
GHG	Green House Gas(es)
GSP	Global Stakeholders Process
GWP	Global Warming Potential
I	Interview
IETA	International Emissions Trading Association
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
ISCH	International Stakeholder Consultation
ISO	International Organization for Standardization
LoA	Letter of Approval
MoV	Means of Verification
MP	Monitoring Plan
NDRC	National Development Reform Commission
NGO	Non Government Organization
ODA	Official Development Assistance
PDD	Project Design Document
PLF	Plant Load Factor
PP	Project Proponent (project owner)
PPA	Power Purchase Agreement
UNFCCC	United Nations Framework Convention for Climate Change
VVM	Validation & Verification Manual

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1 INTRODUCTION

Carbon Asset Management Sweden AB has commissioned Bureau Veritas Certification Holding SAS (hereafter called “BVC”) to validate the CDM project Lixian Yikeyin Small Hydropower Project (hereafter called “the Project”) of Li County Jiujiayi Hydropower Development Co. Ltd. at Putou Village, Li County, Sichuan Province, P.R.China.

This report summarizes the findings of the validation of the Project, performed on the basis of UNFCCC criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1 Objective

The validation serves as project design verification and is a requirement of all projects. The validation is an independent third party assessment of the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design, as documented, is sound and reasonable, and meet the stated requirements and identified criteria. Validation is a requirement for all CDM projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reductions (CERs).

UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

1.2 Scope

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

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

1.3 Validation team

BVC consists of the following personnel:

(Jasmine) Tang Xuemei	Team Leader, BVC, Climate Change Verifier
Liao Ling	Team Member, BVC, Climate Change Verifier
Zeng Ziyuan	Team Member, BVC, Climate Change Verifier

2 METHODOLOGY

The overall validation, from Contract Review to Validation Report & Opinion, was conducted using BVC internal procedures.

In order to ensure transparency, a validation protocol was customized for the Project, according to the version 01 of the Clean Development Mechanism Validation and Verification Manual issued by the Executive Board at its 44 meeting on 28/11/2008. ^[2] The protocol 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 a CDM project is expected to meet;



It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.

The validation protocol consists of two tables. The different columns in these tables are described in below **Figure 1**. The completed validation protocol is enclosed in Appendix A to this report.

Validation Protocol Table 1: Requirements checklist				
Checklist Question	Reference	Means of verification(MoV)	Comment	Draft and/or Final Conclusion
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organized in several sections. Each section is then further subdivided. 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 section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	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 Request (CL) is used when BVC has identified a need for further clarification.

Validation Protocol Table 2: Resolution of Corrective Action and Clarification Requests			
Report clarifications and corrective action requests	Ref. to checklist question in table 1	Summary of project owner response	Validation conclusion
If the conclusions from the 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 1 where the Corrective Action Request or Clarification Request is explained.	The responses given by the Client or other project participants during the communications with BVC should be summarized in this section.	This section should summarize BVC's responses and final conclusions. The conclusions should also be included in Table 1, under "Final Conclusion".

Figure 1. Validation Protocol Tables

2.1 Review of Documents

The Project Design Document (PDD) submitted by Carbon Asset Management Sweden AB and additional background documents related to the project design and baseline, i.e. country Law, Guidelines for Completing the Project Design Document (SSC-CDM-PDD),¹⁰/ Approved methodology, Kyoto Protocol, Clarifications on Validation Requirements to be Checked by a Designated Operational Entity were reviewed.

To address BVC corrective action and clarification requests Carbon Asset Management Sweden AB revised the PDD and resubmitted it on 17/04/2009 and the validation findings



presented in this report relate to the Project as described in the PDD version 04 dated 17/04/2009.(Ref-2)

2.2 Follow-up Interviews

On 28/02/2008 BVC performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of the PP, the consultant and local stakeholders were interviewed (see Section **6-References**). The main topics of the interviews are summarized in Table 1.

Table 1 Interview Topics

Interviewed organization	Interview topics
Li County Jiujiayi Hydropower Development Co. Ltd. (Project owner)	<ul style="list-style-type: none"> ↔ Project background information and CDM consideration. ↔ Project technology, operation, maintenance and monitoring capability. ↔ Project monitoring and management plan. ↔ Stakeholder consultation process. ↔ Project approval status (incl. EIA approval, CDM project approval status) ↔ Hydro power development in the area ↔ Government policies related to small hydro power projects
Local Stakeholder	<ul style="list-style-type: none"> ↔ Project background in details ↔ Stakeholder comments ↔ Social and environmental impact of the project
College of Environmental Science and Engineering, Hunan University and Foshan Perfect Carbon Co. Ltd. (CDM Consultant)	<ul style="list-style-type: none"> ↔ Applicability of selected methodology. ↔ Baseline determination. ↔ Emission reductions calculation. ↔ Emission reduction monitoring plan.

2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation is to raise the requests for corrective actions and clarification and any other outstanding issues that needed to be clarified for BVC positive conclusion on the project design.

Corrective Action Requests (CAR) is issued, where:

- (a) The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
- (b) The CDM requirements have not been met;
- (c) There is a risk that emission reductions cannot be monitored or calculated.

BVC may also use the term Clarification Request (CL), if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

To guarantee the transparency of the validation process, the concerns raised are documented in more detail in the validation protocol in the Appendix **A**.

3 VALIDATION CONCLUSIONS


In the following sections, the findings of the validation are stated.




The findings from the desk review of the original project design documents and the findings from interviews during the follow up visit are described in the Validation Protocol Appendix A. The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Validation Protocol in Appendix A. The validation of the Project resulted in 4 Corrective Action Requests and 8 Clarification Requests. The number between brackets at the end of each section corresponds to the VVM paragraph.

3.1 Approval


The letter of approval has been received and the following support documentation:

 The China's DNA has issued the Letter of Approval (NO. 1013) on 25/02/2008, authorizing Li County Jiujiayi Hydropower Development Co. Ltd. as the Project Participant and confirmed that the Project contributes to China's Sustainable development and later on 03/09/2009, issued a confirmation letter as an annex to the approval to confirm that the Project is a bundled CDM project consisting of Lixian Yikeyin Stage 1 Small Hydropower Project and Lixian Yikeyin Stage 2 Small Hydropower Project. (Ref-3)

 The Sweden's DNA has issued a Letter of Approval dated 18/03/2008, authorizing Carbon Asset Management Sweden AB as the Project Participants for the Project. (Ref-4)


BVC received the above letters from the PP and does not doubt its authenticity by checking the relevant official information.

The letters of approval do not contain a specific version of both the PDD and the validation report.


 Complying with para.49, 50 and 125/VVM, BVC recognizes that Lixian Yikeyin Small Hydropower Project of Li County Jiujiayi Hydropower Development Co. Ltd. is helping country fulfill its goals of promoting sustainable development. The Project implementation is expected to be in line with host-country specific CDM requirements because it-

- (a) Reducing CO₂, SO₂ and NO_x emissions;
- (b) Creating local employment opportunity during the assembly and installation of hydro turbines, and for operation of the Project;
- (c) Reducing other particulate pollutants resulting from the fossil fuel fired power plants compared with a business-as-usual scenario.

There is also evident in various approvals issued by the local government of host country China. There are as below,

 The project activity of Grid connected hydro power and the development of such Grid connected hydro power is listed in the Renewable Energy Law, in the 2005 Guiding Catalogue of Industrial Structure Regulation Issued by National Development and Reform Commission. (Ref-5)

 Feasibility Study Report (FSR) of the Project approved by the Development & Reform Committee of Aba Autonomous Prefecture on 23/10/2006. (Ref-7)

 Environment Impact Assessment (EIA) approved by Environmental Protection Bureau of Aba Autonomous Prefecture of Sichuan Province on 28/04/2006. (Ref-8)

The Project Scenario is considered additional in comparison to the baseline scenario, and therefore eligible to receive Certified Emissions Reductions (CERs) under the CDM, based on the investment analysis and prevailing practice, addressed in the PDD.



The overall layout of the Project is sound and the geographical (Putou Village, Li County, Sichuan Province, People's Republic of China) and temporal (7 years) boundaries of the Project are clearly defined.

✌ The validation did not reveal any information that indicates that the Project can be seen as a diversion of official development assistance (ODA) funding towards the host country.

3.2 Participation

The participation for each project participant has been approved by a Party of the Kyoto Protocol.

✌ Complying with para.54/VVM, BVC hereby confirms that by referring to the information on UNFCCC website i.e.

<http://maindb.unfccc.int/public/country.pl?country=CN>; and

<http://maindb.unfccc.int/public/country.pl?country=SE>

3.3 Project design document

✌ Complying with para.57/VVM, BVC hereby confirms that the PDD complies with the latest Project Design Document Form (CDM-SSC-PDD) version 03 and guidance documents for completion of PDD version 05.

3.4 Project description

The Project has a total installed capacity of 13.6MW including two run-of-river small hydropower plants without reservoir (hereafter called Stage 1 and Stage 2). Both the Stage 1 and Stage 2 are located on the Rijiaogou River which is a branch of Zagunao River.

The geographical coordinate of Stage 1 is North Latitude 31°07'54"~31°16'40" and East Longitude 102°32'46"~102°50'30".

The geographical coordinate of Stage 2 is North Latitude 31°16'42"~31°26'10" and East Longitude 102°52'32"~103°02'12".

The Stage 1 located on the upriver of Stage 2 in Rijiaogou River. The distance is 5 km far from the powerhouse of the Stage 2. The tailing water of Stage 1 will be channeled directly to the Stage 2 for power generation of the Stage 2. The constructions of the two plants include tunnel, pressure regulation house, steel penstock, and power house. There is not submerged area for the Project./Ref.6/

The two sets of domestic-made CJA475-W-120/2*13.5 type hydro turbines are designed for the Stage 1 and three sets of domestic-made CJA237-W-130/1x14 type hydro turbines are designed for the Stage 2 to generation electricity with efficiency factor of 0.8. The electricity generated by the Stage 1 will be transmitted firstly to the step-up substation installed in the project site of the Stage 2, from which the electricity generated by the Project will be exported to the Central China Power Grid (CCPG).

Based on the installed capacity of 4MW (2MW x 2) with rated head of 167m, rated flux of 1.46m³/s and equivalent operation hours of 4,842hours per year, the annual electricity delivered to the grid by Stage 1 is 18,300MWh;

Based on the installed capacity of 9.6 MW (3.2MW x3) with rated head of 365m, rated flux of 1.1m³/s and equivalent operation hours of 4,502hours per year, the annual electricity delivered to the grid by Stage 2 is 40,850MWh;



In general, the annual electricity delivered to the CCPG is designed as 59,150MWh, as a consequence the estimated annual emission reductions of the Project are 57,674 tCO₂e in its first crediting period.

The process undertaken to validate the accuracy and completeness of the project description was including the document review and cross-check with the relevant approvals issued by local governments by BVC.

✌ Complying with para.64/VVM, BVC hereby confirms that the project description in PDD (Ref-2) is accurate and complete in all respects.

3.5 Baseline and monitoring methodology

3.5.1 Baseline and monitoring methodology

The Project uses the simplified baseline and monitoring methodology for small-scale CDM project activity i.e. AMS.I.D “Grid connected renewable electricity generation (version13, valid from 14/12/2007 onwards)” /1/ falling in Type-I, Category I.D as defined in the Appendix B of the Simplified Modality and Procedure for the Small Scale CDM Project Activity./8/

The assessment of the relevant information contained in the PDD against each applicability condition is described below:

- ✌ The Project involves electricity capacity addition not exceed the limit of 15MW from hydro sources; and
- ✌ The Project is connected to the grid; and
- ✌ The Project does not involve switching from fossil fuels to renewable energy at the site of the project activity; and
- ✌ The geographic and system boundaries for the Central China Power Grid (CCPG) can be clearly identified and information on the characteristics of the grid is available.
- ✌ The Project is not a debundled component of a larger project activity. (Ref-3) There is no registered small-scale CDM project activity or an application to register another small-scale CDM project activity within 1km of the project boundary of the Project at the closest point. /9/

BVC hereby confirms that the selected baseline and monitoring methodology is previously approved by the CDM Executive Board, and is applicable to the Project, which complies with all the applicability conditions therein.

Based on the on-site assessment, BVC hereby confirms that, as a result of the implementation of the proposed CDM project activity, there are no greenhouse gas emissions occurring within the proposed project boundary, which are expected to contribute more than 1% of the overall expected average annual emissions reductions, which are not addressed by the applied methodology.

3.5.2 Project boundary

The spatial extent of the Project boundary is clearly defined in line with AMS.I.D version 13 as the physical, geographical site of Project and all other power plants connected physically to the CCPG that the Project is connected to.

✌ Complying with para.57/VVM, BVC hereby confirms that the identification of Project boundary is in line with the delineation of grid boundaries as provided in the latest version of “Notification on Determining Baseline Emission Factor of China’s Grid” published by China’s DNA on 09/08/2007 (hereafter called “Notification of China-Grid EF”). (Ref-9)



3.5.3 Baseline identification

As the Project is the installation of two newly built and grid-connected renewable power plants that delivers the generated electricity to the grid (CCPG), hence, according to methodology AMS.I.D. the baseline scenario is determined properly as “continued operation of the existing power plants in the CCPG and the addition of new generation sources to meet increased electricity demand” and the baseline emission is therefore defined as “fuel consumption of the technologies that would have been used in the absence of the project activity times an emission coefficient for the fossil fuel displaced” as reflected in the combined margin (CM) calculations described in the “*Tool to calculate the emission factor for an electricity system*” version 01.1 dated 19/12/2007 (hereafter called “*Tool-Grid EF*”).^{13/}

According to the “*Notification of China-Grid EF*”, the delineation of grid boundaries of the Project is the CCPG. Furthermore, the baseline of the Project determined in the PDD is transparent and deemed to be reasonable.

☞ Complying with para.80 and 81/VVM, BVC hereby confirms that:

- (a) All the assumptions and data used by the project participants are listed in the PDD, including their references and sources;
- (b) All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD;
- (c) Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable;
- (d) Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD;
- (e) The approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed CDM project activity.

3.6 Additionality

3.6.1 Prior consideration of the CDM

The additionality of the Project has been assessed in accordance with the “*Attachment A to Appendix B of the Simplified modalities and procedures for small-scale CDM project activities*” and further “*Tool for Demonstration and Assessment of Additionality*” version 05.2 dated 26/08/2008 (hereafter called “*Tool-Additionality*”).^{14/}

The start date of the Project identified in the PDD is 26/05/2007, on which the PP launched the ground engineering of the construction of the Project, (Ref-14) prior to the PDD submitted to BVC for validation.(Ref-16) The PDD has addressed the serious consideration on the incentives from CDM prior to the Project implementation as per the “*Guidance on the demonstration and assessment of prior consideration of the CDM*” version 01 (Annex 46, EB 41) (hereafter called “*Guidance-Prior Consideration*”).^{15/}

☞ Complying with para.102/VVM, BVC verified this issue which was considered much related to the additionality of the Project and can conclude that the serious consideration under the context of the Project has been addressed appropriately in accordance with the above guidance, consequently, the chronological events described with the relevant documented evidences can form the objective basis of the validation opinions of BVC. Accordingly BVC summarized a timeline as Table 2 below and raised Clarification Requests for submission of the corresponding documented evidences.

**Table 2 Timeline of the Project implementation**

Date	Activities	Reasons or Impacts	Evidences verified
Aug. 2006	Completion of the Feasibility Study Report (FSR)	The project IRR is lower than the benchmark of 10%. The PP created the need to CDM development	Ref-6 ✓
16/09/2006	Investment decision on the Project made by the PP		Ref-11 ✓
16/10/2006	Signing the consulting agreement on CDM development between the PP and the consultant	The PP decided to apply for CDM support.	Ref-22 ✓
23/10/2006	FSR approved by the local government		Ref-7 ✓
Apr. 2007	Completion of the draft PDD and negotiation with the CER buyer		
<u>26/05/2007</u>	The construction permit issued.	Start date of the Project	Ref-14 ✓
18/07/2007	Launch of the tunnel construction.	Secure the progress of the CDM development in parallel with the implementation of the Project.	Ref-15 ✓
30/07/2007	Signing the purchase agreements of key equipment between the PP and suppliers	Secure the progress of the CDM development in parallel with the implementation of the Project.	Ref-13 ✓
30/08/2007	Signing the ERPA between the PP and Carbon Asset Management Sweden AB	Secure the progress of the CDM development in parallel with the implementation of the Project.	Ref-1 ✓ Ref-12 ✓
Nov.2007	Submitted PDD to China's DNA for applying LoA		Ref-23 ✓
Dec.2007	Negotiation with BVC on the validation contract	Secure the progress of the CDM development in parallel with the implementation of the Project.	Ref-12 ✓
12/05/2008	Earthquake occurred in the area and the construction paused		Ref-25 ✓
Jan. 2010	Expected date of starting operation		



BVC has checked all physical documents mentioned above and was able to verify that all documents are substantial at that situation in the host country. From the table above, BVC confirms that the start date of project activity is 26/05/2007, the date of the construction permit issued by local authority, which is the earliest date at which the implementation or construction or real action of the project activity began.

According to the approved FSR, the Project is financially unfeasible as the project IRR of the Project is lower than the benchmark; on the contrary, the project IRR can achieve benchmark with consideration to the CDM revenue. Therefore, based on the conclusion of the FSR, the PP finally made the investment decision of the Project based on the seriously consideration on the incentives from the CDM and then was pushing the CDM development continuously in parallel with the implementation of the Project.

BVC was able to verify that the incentives of the CDM were seriously considered prior to the start of the project activity and continuing and real action were taken to secure CDM status for the project in parallel with its implementation, which are evident accordance with the "Guidance-Prior Consideration".

✌ By assessing the material actions taken by the PP, BVC confirmed that the PP considered seriously the incentives from CDM in the context of the Project before taking its real actions, which is in accordance with the requirements of "Guidance –Prior consideration". /5/

✌ According to the latest Glossary of CDM terms version 04 and the Paragraph 67 of EB 41st, /7/ BVC was able to verify the start date of the Project identified in the PDD is appropriate.

3.6.2 Investment analysis

Considering the baseline scenario as above identified, the Benchmark Analysis (option III) is applied in the investment analysis in accordance with the *Sub-step 2b* of **Step 2** of "Tool-Additionality".

BVC verified the applicability of the benchmark that project IRR of 10% used in the Project and can confirm that the data source mentioned in the PDD, i.e. the *Economic Evaluation Code for Small Hydropower Projects* (Code No. SL16-95) issued in 1995 by Ministry of Water Resources of P.R,China for small hydropower plants with installed capacity no more than 25MW (Ref-10) and found the suitability and validity of using this benchmark in the hydro power sector in China.

Before reviewing the IRR calculation, BVC validated the basic parameters listed in the PDD in accordance with the Guidance of paragraph 54 of EB 38th. /6/

a) The input values used in the financial analysis were taken from the FSR completed by Sichuan Province Dazhou City Hydropower Survey & Design Institute in August 2006, (Ref-6) and approved by Development & Reform Committee of Aba Autonomous Prefecture on 23/10/2006 (Ref-7). The FSR was finalized in August 2006, and investment decision was soon made on 16/09/2006, (Ref-11) the period of time between the finalization of the FSR and the PP's final decision is thus considered sufficient short.

✌ Therefore, BVC can confirm that the input values used in the financial analysis are credible and reliable, and it is unlikely that the input values would have materially changed.

b) All input values are sourced from the approved FSR.

Furthermore, validation team has reviewed the IRR calculation sheet and cross checked the relevant regulations/laws/evidences and confirmed that:



- The **tariff** of 0.173 CNY/kWh was cross-checked with the guided tariff issued by local pricing administration as referred to in the FSR (Ref-19) and further with the power connection agreement signed with the local grid company (Ref-18), and found consistency between the values in the FSR and PDD.
- Realizing the Project is still undergoing construction due to the influence by the earthquake in May 2008, the actual values of **total investment** of the Project cannot be verified exactly. BVC reviewed the main equipment purchase contracts (Ref-13) signed with the suppliers, the appended investment after the earthquake, and found that the verifiable investment has been exceeded the corresponding sub-items as defined in the approved FSR.
- The **operating period** of 30 years were selected reasonably following the requirements of “Economic Evaluation Code for Small Hydropower Projects (Code No. SL16-95)”.
- The **annual electricity output** of the Project was determined through:
 - ↪ the hydro resource data more than 40 years (1958 to 2002) in the region, the annual power generation is 19,360MWh for the stage 1 and 43,220MWh for the stage 2;
 - ↪ Taking into account overall the Effective electricity coefficient (95% for both the stage 1 and stage 2) and the captive power of the power plant (0.5% for both the stage 1 and stage 2), the annual power supplied to CCPG is defined as 59,150MWh (18,300MWh+40,850MWh);
- The value of **Annual O&M Cost** was studied based on the “*Economic Evaluation Code for Small Hydropower Projects*” (Code No. SL16-95).(Ref-10). Based on tendency of the increasing cost both of the materials and manpower in recent years in China the costs would be expended on the operation of the Project is unlikely to be less than the values used in the FSR. (Ref-21)
- BVC also verified values of various **taxes** through cross-check with the taxation rules conducted by local government and found to be fully consistent.

✌ In summary, given above reliable data sources, BVC was able to confirm that the input values from the approved FSR are valid and applicable at the time of making the investment decision of the PP. Therefore, BVC confirmed that the input values used in the PDD met the guidance of **EB 38 paragraph 54(a),(b) and (c)**.

Based on the above conclusion, BVC reviewed the IRR calculation and found that the calculation is correct and in accordance with “*Guidance on the assessment of investment analysis*” Version 02 (as the annex of “*Tool- Additionality*” Ver.05.2)/4/. As it shows, without CDM income, the project IRR of the Stage 1 is 7.14%, for the Stage 2 is 7.54%, lower than the benchmark (10%). (Ref-17)

In the step of Sensitivity analysis, four financial indicators were identified for evaluation at the variation range over $\pm 10\%$ and further at the critical point.

- [a]. Total (Static) investment
- [b]. Annual electricity output
- [c]. Electricity tariff
- [d]. Annual O&M cost



As it shows, the IRR will remain below the benchmark from -10% to +10%.

BVC reviewed the sensitivity analysis in the FSR and confirmed that the indicators identified and the variation range employed in the PDD are consistent with the approved FSR and also in accordance with the prescription of the “*Economic Evaluation Code for Small Hydropower Projects*” (Code No.SL16-95).(Ref-10). Then, BVC reproduced the calculation based on the IRR spreadsheet and drew the same outcomes as it shows.

Furthermore, an elaboration was presented in the PDD to show the variables range so as to the IRR of the Stage 1 and Stage 2 could reach the benchmark. If the total static investment decreases by 24.85%, or the annual O&M cost decreases by above 90%, or the tariff increases by 27.76%, or the annual electricity output increases by about 27.76%, the IRR of the Stage 1 will achieve the benchmark. Similarly, for the Stage 2, the corresponding critical points are 18.73%, 90%, 21.22% and 21.22%. However, all these four parameters will not change at so wide range, because:

[a], [d].

As described above, the contract value of signed equipment purchase contract and construction contract are higher than those estimated in the FSR, and considering increasing price level of construction materials, and employee wages in China in recent years.(Ref-21) BVC can confirm that the total investment would not be decreased by over 24.85%, or annual O&M cost decreased by over 90%.

[b]

According to the FSR, the annual supply power is estimated by a professional third party based on the data of local hydro power resources of above 40 years. Therefore BVC confirms that it is unlikely that the annual electricity output increases frequently over 27%.

[c].

The tariff for the Stage 1 and Stage 2 confirmed by the local grid is 0.173CNY/kWh (Incl.VAT) (Ref-18), which is a long-term fixed price for unstable output by the small power plants like the Project, the tariff is therefore unlikely to increase by 27% taking into consideration the dominant position of the grid.

Considering of the CERs sales revenues (calculated with 9 US\$/tCO₂e), the project IRR of the Project can be improved to above 11% to above the benchmark.

☞ Complying with para.112/VVM, BVC can conclude that both of the variation range and relevant assumptions stated in the PDD are robust and the investment of the Project is deemed to be financially unfeasible.

3.6.3 Barrier analysis

The **Step 3** Barrier analysis was not applied for the Project.

3.7 Calculation of GHG Emissions

According to the methodology AMS.I.D version 13 and “*Tool-Grid EF*” version 01.1, the emission reductions from the Project were calculated by step wise. In addition, the calculation in the PDD refers to the latest “*Notification of China-Grid EF*” published by China’s DNA on 09/08/2007 prior to the validation. (Ref-9)

As per “*Tool-Grid EF*” version 01.1, six steps therein are applied to calculate the emission factor:

Step 1.-Identify the relevant electric power system.



The Central China Power Grid is selected as the electric power system of the Project as there are no net electricity imports from connected power grid to the CCPG.

✌ BVC was able to verify the data sources of “*Notification of China-Grid EF*”, and confirmed that the identified electric power system is appropriate.

Step 2.-Select an operating margin (OM) method.

For the calculation of the OM emission factor, the simple OM emission factor calculation method is selected because low cost/ must-run projects constitute less than 50% of the total grid generation during the last 5 years.

✌ BVC has checked the calculation for low cost/ must-run constitution of the total grid generation and confirmed the calculation is correct. Therefore, simple OM emission factor calculation method is selected reasonable. Data from China Electric Power Yearbook 2002-2006 has been applied correctly.

Step 3.-Calculate the operating margin emission factor according to the selected method.

The data on electricity generation and auxiliary electricity consumption are obtained from the China Electric Power Yearbook from 2002 to 2006 (published annually). The data on different fuel consumptions for power generation and the net caloric values of the fuels are obtained from the China Energy Statistical Yearbook from 2002 to 2006. The emission factors of the fuels adopted are obtained from Table 1-2 and Table 1-4 of the “*2006 IPCC Guidelines for National Greenhouse Gas Inventories: Workbook.*”

The renewable crediting period is adopted for the Project and the OM will be fixed for the first crediting period.

✌ The data source are deemed reasonable and BVC confirms that the calculation can be replicated using the data and parameter provided in the PDD.

Step 4.-Identify the cohort of power units to be included in the build margin (BM).

The set of power capacity additions in the electricity system that comprise 20% of the system generation (in MWh) and that have been built most recently (Option b) is adopted properly for the Project.

Considering data availability, deviation accepted by EB was used in the PDD i.e.

- 1) Use of capacity additions during the last 1~3 years for estimating the build margin emission factor for grid electricity.
- 2) Use of weights estimated using installed capacity in place of annual electricity generation.

✌ BVC hereby confirms that the data source and approaches taken are deemed reliable.

Step 5.-Calculate the build margin emission factor.

The BM emission factor of the power grid is calculated by multiplying the emission factor of the thermal power with the share of the thermal power in the most recently added approach to 20% of total installed capacity. The emission factor for thermal power is determined based on the most advanced and commercially available technology endorsed by China’s DNA.

✌ BVC hereby confirms that the data sources are deemed reliable and calculation is appropriate.



Step 6.-Calculate the combined margin (CM) emissions factor.

According to the “*Tool-Grid EF*” the default weights: $\omega_{OM} = 0.5$ for Operating Margin and $\omega_{BM} = 0.5$ for build Margin in the first crediting period of hydro Power Projects are adopted.

In line with the “*Tool-Grid EF*”, the baseline emission sources considered are the emission reduction ER_y during the crediting period is the difference between baseline emissions, project emissions and leakage. These are:

- 1) Baseline emissions: baseline emissions BE_y (tCO₂) are equal to baseline emission factor $EF_{grid,CM,y}$ (tCO₂/MWh) times the net electricity supplied to the grid EG_y (MWh).
- 2) Project Emissions: the project emissions are regarded as zero for small scale hydro power projects as per the AMS.I.D version 13.
- 3) Leakage: no leakage has to be considered for the proposed project activity since no energy generating equipment is transferred from or to the project site.
- 4) Emission reductions:

$$ER_y = BE_y - PE_y - LE_y = BE_y = EF_{grid,CM,y} \times EG_y$$

With reference to the Tool-Grid EF, the Simple OM emission factor ($EF_{grid,OM,y}$) of CCPG is calculated as 1.29086 tCO₂e/MWh. Similarly, the build margin emission factor ($EF_{grid,BM,y}$) of the CCPG is calculated ex-ante as 0.65923 tCO₂e/MWh.

Therefore the combined baseline emission factor is determined ex-ante and will remain fixed during the first crediting period, viz.

$$EF_{grid,CM,y} = 1.29086 \times 0.5 + 0.65923 \times 0.5 = 0.97505 \text{ (tCO}_2\text{e/MWh)}$$

According to the estimated annual electricity delivered to the grid 59,150MWh, the estimated annual emission reductions of the Project is 57,674 tCO₂e during the first crediting period represents a reasonable estimation using the assumptions given by the Project.

☞ Complying with para.91 and 92/VVM, BVC hereby confirms that:

- (a) All assumptions and data used by the project participants are listed in the PDD, including their references and sources;
- (b) All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD;
- (c) All values used in the PDD are considered reasonable in the context of the proposed CDM project activity;
- (d) The methodology AMS.I.D and “*Tool-Grid EF*” has been applied correctly to calculate project emissions, baseline emissions, leakages and emission reductions;
- (e) All estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.

3.8 Monitoring Plan

The Project uses the approved monitoring methodology AMS.I.D version13 for grid connected electricity generation from renewable sources.

Applicability of this methodology is justified in PDD as it involves grid connected renewable power generation using hydro energy. Refer discussions on the validity of the methodology at Section 3.5.1 above.



The combined margin emission factor is determined ex-ante based on the most recent information available. Accordingly the monitoring plan includes quantity of electricity exported to and quantity of electricity imported from the grid.

According to AMS.I.D, no leakage need to be considered for the Project since no energy generating equipment is transferred from or to the site, viz. $LE_y=0$.

Operational management for the project activity is comprehensively detailed in PDD and this includes description of the responsibility, training, procedure reference, equipment details, calibration frequency and maintenance needs are clearly mentioned. Archiving of the records was indicated and BVC is of the opinion that the retrievability of relevant CDM project activity records is pro-actively considered satisfactorily.

The Main meter-M4 (revenue meter) will be installed in the substation in the grid side, and the backup meter-M3 will be installed at the on-site substation of the Stage 2 for measuring the total electricity outputs by Stage 1 and Stage 2. The accuracy class both of the above two meters is 0.5s. The data will be continuously measured and recorded on a monthly basis; and double checked by receipt of sales or commercial data.

Monitoring of sustainable development indicators is not required for such Projects in China in the light of minor environmental impacts.

☞ Complying with para.122/VVM, BVC hereby confirms that the project participants are able to implement the monitoring plan.

3.9 Environmental Impacts

BVC has ensured that the Environmental Impact Assessment (EIA) for Stage 1 and Stage 2 of the Project was respectively completed by Research Institute of Environment Science of Chengdu University in April 2004 and approved by Li County Environmental Protection Bureau of Aba Autonomous Prefecture on 28/04/2006 (Ref-8)

The environmental impact results from the Project have been identified and analyzed in the PDD. The environmental impacts result from the two plants have been identified and analyzed respectively in the PDD. By checking the EIA report BVC is able to ensure that the only construction activity of the Project will result relevant impact on water resource, ecological system, soil erosion and air but would be within an acceptable limit by carrying out corresponding mitigation measures as per the statement of the EIA.

The barrage constructed as part of the Project will reduce the water flow and during the dry season there may be an impact on the aquatic life and surrounding flora downstream. According to the statement of EIA report a minimum ecological flow 0.17m³/s of Stage 1 /7/ and 0.3m³/s of Stage 2 /8/ throughout the dry season is required to be ensured.

Wastewater generated during the construction phase will from production and living activities of contractors. Major pollutants from production of wastewater are suspending particles, which are innocuous, and after removing the suspending particles by means of sedimentation tank.

Waste gas, dust generated by the excavation and construction facilities during the construction of the Project will have certain impacts on the air environment of the construction area. Measures to reduce the above impacts will be taken i.e. introduce a wet approach in construction to reduce the dust, a watering cart waters the ground every day in dryspell.

The hydro power plant does not have any adverse impact as low noise emitted by hydro turbines. The noise generated in construction phase is caused by the vehicle, construction facilities. The noise will be avoided by means of using construction facilities low noise type.



The waste residue generated in the construction will be transported to the appointed dumping sites instead of direct discharge. The domestic refuses need to be collected and transported by landfill

Vegetation damage will be occur in the process of construction including earth and rock excavation and collect soil, sand and gravel from a small quarry. According to the statement of EIA, the vegetation damaged is required to be recovered by local species after construction.

☞ Complying with para.131/VVM, BVC hereby confirms that the Project will not have any significant impacts on the environment by means of measures of pollution avoidance and control as well as ecological recovery.

3.10 Local Stakeholder consultation

In April 2007, the Project owner introduced the hydropower station to the habitants nearby the project site by taking the form of visiting or symposium respectively, and then distributed questionnaires and posted bulletins in nearby several villages to invite public comments with active arrangement of village head.

According to the 50 filled questionnaires with 100% return rate the outcome of this survey show that the interested stakeholder agreed that the project actively decrease environment pollution and mitigate local environmental quality. In addition, the construction of the Project will renovate the local grid system, promote development of other industries. All the local stakeholders supported the construction of the Project.

The survey shows that the proposed project has strong local support among the local people. They all believe the proposed project will promote the local economic development and agree the project construction. No negative comments received. BVC interviewed the local stakeholders during the on-site visit of the validation process and received the consistent responses. Furthermore, BVC also assessed the questionnaires answered by the stakeholders, and found the adequacy of the local stakeholder consultation.

☞ Complying with para.128/VVM, BVC hereby confirms that the local stakeholder consultation was performed, the Project will benefit to the local sustainable development without positively affect to the local stakeholders.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

According to the modalities for the Validation of CDM projects, the DOE shall make publicly available the project design document and receive, within 30 days, comments from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available.

No comments were received during this period.

☞ Complying with para.166/VVM, BVC published the project documents on the UNFCCC CDM website on 24/01/2008 and invited comments within 22/02/2008 by Parties, stakeholders and non-governmental organizations.

5 VALIDATION OPINION

Bureau Veritas Certification has performed a validation of the Lixian Yikeyin Small Hydropower Project in P.R.China. The validation was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.



The validation consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) the resolution of outstanding issues and the issuance of the final validation report and opinion.

Project participant/s used the *Attachment A to Appendix B of the Simplified Modalities and Procedures for Small-scale CDM Project Activities* and the latest *Tool for demonstration and assessment of additionality (version 05.2), Paragraph 54 of EB 38* and the “*Guidance-Prior consideration*” -*Guidance on the demonstration and assessment of prior consideration of the CDM (version 01)* to demonstrate the additionality of the Project. In line with this tool, the PDD provides analysis of investment barriers to determine that the project activity itself is not the baseline scenario. The latest *Tool to calculate the emission factor for an electricity system (version 01.1)* is also applied to determine the emission factor of Central China Power Grid (CCPG).

By synthetic description of the project, the Project is likely to result in reductions of GHG emissions partially. An analysis of the financial 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 and maintained as designed, the project is likely to achieve the estimated amount of emission reductions.

The review of the project design documentation (version 04) and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfillment of stated criteria. In our opinion, the project correctly applies and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.

The validation is based on the information made available to us and the engagement conditions detailed in this report.

6 REFERENCES

Category 1 Documents:

Documents provided by Type the name of the company that relates directly to the GHG components of the project.

Ref-1.	PDD Version 01 dated 20/08/2007
Ref-2.	PDD Version 04 dated 17/04/2009
Ref-3.	Letter of Approval from DNA of the host country dated 25/02/2008. Confirmation letter on bundled project dated 03/09/2009 as a annex to the approval above.
Ref-4.	Letter of Approval from DNA of Sweden dated 18/03/2008
Ref-5.	National Renewable Energy Law issued by NDRC of China effective from 01/01/2006. http://www.windpower.org.cn/news/links/fl_2005_0510_02.htm
Ref-6.	Feasible Study Report (FSR) completed by Sichuan Province Dazhou City Hydropower Survey & Design Institute in August 2006
Ref-7.	Feasibility Study Report (FSR) of the Project approved by the Development & Reform Committee of Aba Autonomous Prefecture on 23/10/2006 (Code: A Zhou Fa Gai [2006]490 for Stage 1, and A Zhou Fa Gai [2006]491 for Stage 2).



Ref-8.	EIA report for Lixian Yikeyin Stage 1 plant completed by Research Institute of Environment Science of Chengdu University, for Lixian Yikeyin Stage2 plant completed by Sichuan Provincial Research Institute of Environment Science in April 2004. The two reports and approved by Li County Environmental Protection Bureau of Aba Autonomous Prefecture on 28/04/2006.(Document No. Azhou Huan Jian Han [2006]154)
Ref-9.	Notification on Determining Baseline Emission Factor of China's Grid dated on 09/08/2007. http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File2190pdf
Ref-10.	Economic Evaluation Code for Small Hydropower Projects issued by the Ministry of Water Resources in 1995 (Document No. SL16-95)
Ref-11.	PP's Board Meeting Minutes made on 16/09/2006.
Ref-12.	ERPA signed with Carbon Asset Management on 30/08/2007
Ref-13.	The purchase contract on the generator and turbine signed between the project owner and Hunan Linglin Electricity Generation Instruments Co. Ltd. dated 30/07/2007
Ref-14.	Construction permit issued by local DRC dated 26/05/2007
Ref-15.	Permit of the tunnel construction made by the supervising party on 18/07/2007
Ref-16.	Validation contract signed between BVC and Carbon Asset Management AB
Ref-17.	IRR spreadsheet of the Stage 1 and the Stage 2.
Ref-18.	Grid connection agreement for Yikeyin Hydropower Plant signed with the Grid Company on 30/12/2006.
Ref-19.	Evidence of Local stakeholders' comments viz. 50 pieces of filled questionnaires; Statement of villager representative to the construction of the Project and, Local stakeholders meeting minute.
Ref-20.	The notification of electricity tariff in Li County (Doc.No: A Zhou Jia Tiao [2004]33)
Ref-21.	The price of raw materials, fuel and electricity grew by 4.4% in 2007. http://www.stats.gov.cn/was40/gjtjj_detail.jsp?searchword=%C9%CC%C6%B7%C1%E3%CA%DB%BC%DB%B8%F1%D6%B8%CA%FD&channelid=6697&record=7
Ref-22.	The Agreement about CDM development cooperation signed between the PP and Foshan Perfect Carbon Co. Ltd. on 16/10/2006.
Ref-23.	Notice of 40 th assessing meeting of CDM projects issued by China's DNA dated 20/11/2007 http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File1543.pdf
Ref-24.	The electricity export system design report written by Sichuan Province Xichang Electricity Technology Co. Ltd. in Nov. 2006.
Ref-25.	The losses in the earthquake. http://www.zf119.com/Article/niugu/qfii/200808/74034.htm

Category 2 Documents:

Background documents related to the design and/or methodologies employed in the design or other reference documents.

- /1/ AMS.I.D version 13 valid from 14/12/2007 onwards.
- /2/ Validation and Verification Manual Version 01 dated 28/11/2008 EB 44th Annex 3
- /3/ Tool to calculate the emission factor for an electricity system Version 01.1 dated 29/07/2008
- /4/ Tool for demonstration and assessment of additionality Version 05.2 dated



26/08/2008

- /5/ Guidance on the demonstration and assessment of prior consideration of the CDM Version01 (Annex 46, EB 41st)
- /6/ Paragraph 54 of EB 38th dated 14/03/2008.
- /7/ Glossary of CDM terms Version 04.and paragraph.67 of EB 41st
Appendix B of the Simplified Modality and Procedures for Small-Scale CDM
- /8/ Project Activity (contained in annex II to decision 21/CP.8, see document FCCC/CP/2002/7/Add.3)
Appendix C of the Simplified Modalities and Procedures for Small-Scale CDM
- /9/ Project Activity (contained in annex II to decision 21/CP.8, see document FCCC/CP/2002/7/Add.3)
- /10/ Compendium of guidance on the debundling for SSC project activities (EB36 Annex 27)
- /11/ The Guidelines for Completing SSC-CDM-PDD, – Ver.05 .2 dated 14 /09/2007
- /12/ Indicative Simplified Baseline and Monitoring Methodologies for Selected Small-Scale CDM Project Activity Categories Version 12 (EB 41 Annex 20)

Persons interviewed:

List persons interviewed during the validation or persons that contributed with other information that are not included in the documents listed above.

- /1/ Mr. Lai Yangxian, President of Lixian Jiujiayi Hydropower Development Co. Ltd
- /2/ Mr. Wang Mingjun, Villager of Rijiaogou Village of Li County
- /3/ Ms. Wang Hongyan, Villager of Yikeyin Village of Li County
- /4/ Mr. Xia Jiahua, Engineer of Sangzhi Nanfang Hydropower Co.Ltd.
- /5/ Mrs. Liu Hongyu, CDM Consultant of the Project

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APPENDIX A: CDM PROJECT VALIDATION PROTOCOL

Validation Protocol

Table 1. Validation requirements based on the Validation and Verification Manual (EB44 Annex 3)

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl.	Final Concl.
1. Approval			<i>COUNTRY A (China)</i>	<i>COUNTRY B (Sweden)</i>		
1.1. Have all Parties involved approved the project activity?	VVM	44	CAR-1 Letter of Approval from China's DNA not presented.	CAR-2 Letter of Approval from Sweden's DNA not presented yet.	CAR-1 CAR-2	OK
1.2. Has the DNA of each Party indicated as being involved in the proposed CDM project activity in section A.3 of the PDD provided a written letter of approval? (If yes, provide the reference of the letter of approval, any supporting documentation, and specify if the letter was received from the project participant or directly from the DNA)	VVM	45	Pending close CAR-1	Pending close CAR-2	Pending	OK
1.3. Does the letter of approval from DNA of each Party involved:	VVM	45	Pending close CAR-1	Pending close CAR-2	Pending	OK
1.3.1. Confirm that the Party is a Party of the Kyoto Protocol?	VVM	45.a	P. R. China has ratified the Kyoto Protocol on	Sweden has ratified the Kyoto Protocol on	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl.	Final Concl.
			30/08/2002,	31/05/2002,		
1.3.2. Confirm that participation is voluntary?	VVM	45.b	Pending close CAR-1	Pending close CAR-2	Pending	OK
1.3.3. Confirm that, in the case of the host Party, the proposed CDM project activity contributes to the sustainable development of the country?	VVM	45.c	Pending on CAR-1	Pending on CAR-2	Pending	OK
1.3.4. Refers to the precise proposed CDM project activity title in the PDD being submitted for registration?	VVM	45.d	Pending on CAR-1	Pending on CAR-2	Pending	OK
1.4. Is(are) the letter(s) of approval unconditional with respect to (1.3.1) to (1.3.4) above?	VVM	46	No. It is conditional in China	No. It is conditional in Sweden.	OK	OK
1.5. Has(ve) the letter(s) of approval been issued by the respective Party's designated national authority (DNA)?	VVM	47	China's DNA is NDRC	Sweden's DNA is Swedish Energy Agency	OK	OK
1.6. If there is doubt with respect to (1.5) above, was verified with the DNA that the letter of approval is valid for the proposed CDM project activity under validation?	VVM	47	Pending on CAR-1	Pending on CAR-2	Pending	OK
2. Participation						
2.1. Have all project participants been listed in a consistent manner in the project documentation?	VVM	51	Pending on CAR-1	Pending on CAR-2	Pending	OK
2.2. Has the participation of the project participants in the project activity been approved by a Party to	VVM	51	Yes. Refer to http://maindb.unfccc.int	Yes. Refer to http://maindb.unfccc.int/	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl.	Final Concl.
the Kyoto Protocol?			/public/country.pl?country=CN	public/country.pl?country=SE		
2.3. Are the project participants listed in tabular form in section A.3 of the PDD?	VVM	52	Yes	Yes	OK	OK
2.4. Is the information in section A.3 consistent with the contact details provided in Annex 1 of the PDD?	VVM	52	Yes	Yes	OK	OK
2.5. Has the participation of each of the project participants been approved by at least one Party involved, either in a letter of approval or in a separate letter specifically to approve participation? (Provide reference of the approval document for each of the project participants)	VVM	52	Pending close CAR-1	Pending close CAR-2	Pending	OK
2.6. Are any entities other than those approved as project participants included in these sections of the PDD?	VVM	52	No.		OK	OK
2.7. Has the approval of participation issued from the relevant DNA?	VVM	53	Pending on CAR-1	Pending on CAR-2	Pending	OK
3. Project design document						
3.1. Is the PDD used as a basis for validation prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM website?	VVM	55	Yes. The Latest Guidelines for Completing SSC-CDM-SSC-PDD, – Ver.05 .2 – 14 Sep 2007		OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.									
3.2. Is the PDD in accordance with the applicable CDM requirements for completing the PDD?	VVM	56	Pending close Findings in the Section 3.	Pending	OK									
3.3. In CDM-SSC -PDD section A.1, are the following provided?	EB 34	Ann 09												
3.3.1. Title of project	EB 34	Ann 09	Lixian Yikeyin Small Hydropower Project	OK	OK									
3.3.2. Current version number and date of document	EB 34	Ann 09	<table border="1"> <thead> <tr> <th>PDD version</th> <th>Version.No.</th> <th>Finish date</th> </tr> </thead> <tbody> <tr> <td>GSP</td> <td>01</td> <td>20/08/2007</td> </tr> <tr> <td>Final</td> <td>04</td> <td>17/04/2009</td> </tr> </tbody> </table>	PDD version	Version.No.	Finish date	GSP	01	20/08/2007	Final	04	17/04/2009	OK	OK
PDD version	Version.No.	Finish date												
GSP	01	20/08/2007												
Final	04	17/04/2009												
3.4. In CDM-SSC-PDD section A.2, are following provided (max. one page)?	EB 34	Ann 09												
3.4.1. A brief description of the project activity covering purpose which includes the scenario existing prior to the start of project, present scenario and baseline scenario	EB 34 VVM 58-60	Ann 09	<p>Yes</p> <p>The proposed CDM project activity is a newly – built large scale hydro farm project.</p> <p>Thus the baseline scenario is the same with the scenario existing prior to the start of the project, i.e. generation of electricity by grid connected power plants.</p> <p>The Project involves two nearby power plants, called “Stage 1” and “Stage 2”, The tailing water of Stage 1 will be conducted to Stage 2 to</p>	OK	OK									

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
			<p>generate electricity.</p> <p>Stage 1 has installed capacity of 4MW (2MW * 2), with a rated water head of 167m, rated flux of 1.5 m³/s, and 4842 hours of annual equivalent generation.</p> <p>Stage 2 is installed capacity of 9.6MW (3.2MW * 3), with a rated water head of 366m, rated flux of 1.15 m³/s, and 4502 hours of annual equivalent generation.</p> <p>The Project is expected to supply 59,150MWh electricity power to the CCPG annually.</p>		
3.4.2. Explanation on how the GHG emission reductions are effected	EB 34	Ann 09	<p>Yes.</p> <p>To utilize the hydro resource for power generation which will be delivered to the CCPG and displace the power from thermal power plants.</p>	OK	OK
3.4.3. The PP's vies on the contribution of project activity to sustainable development	EB 34	Ann 09	<p>Yes.</p> <p>The contribution to sustainable development is included in Section A.2 of the PDD has been checked against the approved FSR of the Project.</p>	OK	OK
3.5. In CDM-SSC-PDD section A.3 , are following provided in the tabular format?					
3.5.1. List of project participants and parties	EB 34	Ann 09	<p>Yes.</p> <p>The private entities involved in the project activity are listed at section A.3 of the PDD.</p>	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
			Host Party (P.R.China): Li County Jiujiayi Hydropower Development Co. Ltd. Annex I Party (Sweden.): Carbon Asset Management Sweden AB		
3.5.2. Identification of Host Party	EB 34	Ann 09	Yes. P.R. China	OK	OK
3.5.3. Indication whether the Party wishes to be considered as project participant	EB 34	Ann 09	Not considered as PP.	OK	OK
3.6. In CDM-SSC-PDD section A.4.1 , are following provided?	EB 34	Ann 09			
3.6.1. Technical description, location, host party(ies) and address as required	EB 34	Ann 09	Yes. Yihong Town, Putou Village, Li County, Sichuan Province, People's Republic of China, The hydro turbines and generators assembly are manufactured by a domestic manufacture	OK	OK
3.6.2. Detailed physical location with unique identification of the project activity (e.g. Longitude/latitude)	EB 34	Ann 09	Yes. The geographical coordinates of Stage 1 is: longitude 102°32'46"~102°50'30" East and latitude 31°07'54"~ 31°16'40" North; of Stage 2 is longitude 102°52'32" ~ 103°02'12" East and latitude 31°16'42" ~ 31°26'10" North;	OK	OK
3.7. In CDM-SSC-PDD section A.4.2, is the list of	EB	Ann	Scope 1: Energy Industries (renewable sources)	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
categories of project activities provided?	34	09			
i. the list of categories of project activities as per the latest categorization of Appendix B to the simplified modalities and procedures for small-scale CDM project activities, hereafter referred to as Appendix B. (refer http://cdm.unfccc.int/methodologies/SSCmethodologies)	EB 34	Ann 09			
ii. A description of how environmentally safe and sound technology and know how is being applied by the project activity inter alia technology transfer to the Host Party(ies) for application in the project activity	EB 34	Ann 09			
3.8. In CDM-SSC-PDD section A.4.3, is the estimation of emission reductions provided, as requested, in a tabular format?	EB 34	Ann 09	Yes. 7×3 renewable crediting periods were chosen; Annual emission reductions of 57,674tCO ₂ e are estimated for the first crediting period;	OK	OK
3.9. In CDM-SSC-PDD section A.4.4, is information regarding Public funding provided?	EB 34	Ann 09	Yes. No public funding involved confirmed with the approved FSR	OK	OK
3.10. In CDM-SSC-PDD section A.4.5, is information regarding public funding provided?	EB 34	Ann 09	Yes. No public funding involved confirmed with the approved FSR	OK	OK
3.11. In CDM-SSC-PDD section A.4.5 are following	EB	Ann			

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
provided?	34	09			
i. Confirmation that the small-scale project activity is not a debundled component of a larger project activity.	EB 34	Ann 09	Yes. Pending close CAR-1 for confirmation on bundle project made by China's DNA	Pending	OK
ii. Indication if there is a registered small-scale project activity under the CDM or an application to register another small-scale project activity under the CDM	EB 34	Ann 09	Yes. Pending close CAR-1 for confirmation on bundle project made by China's DNA	Pending	OK
a. With the same project participants	EB 34	Ann 09	Not identified	GL-1	OK
b. Registered within the period of 2 years	EB 34	Ann 09	Not identified	GL-1	OK
c. Whose project boundary is within 1 km of the project boundary of the proposed small-scale activity under the CDM at the closest point.	EB 34	Ann 09	Addressed. No projects identified there	OK	OK
3.12. In CDM-SSC-PDD section B.1 is the approved baseline and monitoring methodology and version number correctly quoted?	EB 34 VVM	Ann 09 65-67	Yes. AMS.I.C ver. 13 valid from 14/12/2007 onwards is correctly quoted a in the PDD ver. 1.0. <i>"Grid connected renewable electricity generation"</i>	OK	OK
3.13. In CDM-SSC-PDD section B.2 are the following provided?	EB 34	Ann 09		OK	OK
3.13.1. Justification of the choice of project activity and category?	EB 34	Ann 09	Yes. Justified per the description in PDD A.4.2, Type I: Renewable Energy Project	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
	VVM	68,69	Category 1.D: Grid connected renewable electricity generation.		
3.13.2. Demonstration that the project activity qualifies as a small-scale project activity and that it will remain under the limits of small-scale project activity types during every year of the crediting period as per the following: For Type I : the capacity of the proposed project activity will not exceed 15 MW (or an appropriate equivalent); For Type II: the annual energy savings on account of efficiency improvements will not exceed 60 GWh (or an appropriate equivalent) in any year of the crediting period; For Type III: the estimated emission reductions of the project activity will not exceed 60 ktCO ₂ e in any year of the crediting period.	EB 34	Ann 09	Addressed but the data sources are not cited.	CL-2	OK
3.13.3. Are the applicability conditions of the methodology met?	VVM	70	Yes. The Project fulfills the criteria of AMS.I.C ver. 13. The Project utilizes hydro energy resources and supplies and displaces electricity from CCPG (a electricity distribution system from).	OK	OK
3.13.4. Is the project activity expected to result in emissions other than those allowed by the methodology?	VVM	70	No other emissions other than CO ₂ are identified as per the AMS.I.D.	OK	OK
3.13.5. Is the DOE, based on local and sectoral	VVM	70	Yes. The consistent information has been	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
knowledge, aware that comparable information is available from sources other than that used in the PDD?			verified against the approval of the FSR of the Project as listed in <u>6 References of this report.</u>		
3.13.6. Can a determination regarding the applicability of the selected methodology to the proposed CDM project activity be made?	VVM	71~73	Yes. The applicability can be confirmed.	OK	OK
3.14. In CDM-SSC-PDD section B.3 , is the project boundary of the project activity, based on the guidance of the applicable project category, provided?	EB 34 VVM	Ann 09 77-78	Yes. The boundary is identified as CCPG. The spatial scope of the Project boundary identified is covering the Project site and all power plants connected physically into CCPG.	OK	OK
3.14.1. Does the delineation in the PDD of the project boundary meet the requirements of the selected baseline?	VVM	78	Yes. As the Project is designed to generate and supply electricity to CCPG.	OK	OK
3.14.2. Have all sources and GHGs required by the methodology been included within the project boundary??	VVM	78	Yes. No other emissions other than CO2 are identified as per the AMS.I.D.	OK	OK
3.14.3. Is the justification provided reasonable? (provide reference to the supporting documented evidence provided by the project participants)	VVM	78	Yes. The FSR of the Project with the consistent description has been approved and presented.	OK	OK
3.15. In CDM-SSC-PDD section B.4 , are following provided?	EB 41 VVM	Ann 12 80-85			

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
3.15.1. The baseline for the proposed project activity with reference to the chosen project category	EB 41 VVM	Ann 12 80 85	As AMS.I.D prescribed the baseline emissions are the fuel consumption of the technologies that would have been used in the absence of the project activity times an emission coefficient for the fossil fuel displaced. Therefore there is no need to take steps to identify the baseline scenarios. Both the baseline scenario and baseline emissions are not specified in PDD B.4.	CL-3	OK
3.15.2. Has any procedure contained in the methodology to identify the most reasonable baseline scenario, been correctly applied?	VVM	81	Yes. The baseline scenario has been stipulated in the AMS.I.D ver.13 and correctly applied in the PDD.	OK	OK
3.15.3. Does the selected methodology require 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 scenario?	VVM	81	Not applicable for AMS.I.C.		
3.15.4. Justification of key assumptions and rationales	EB 34 VVM	Ann 09 82	Not applicable.	OK	OK
3.15.5. Transparent illustration of all data used to determine the baseline emissions (variables, parameters, data sources etc)	EB 34	Ann 09	Not applicable.	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
	VVM	83,84			
3.16. In CDM-SSC-PDD section B.5 , are following provided?	EB 34	Ann 09			
3.16.1. Explanation that the proposed project activity is additional as per options provided under Attachment A to Appendix B of the Simplified Modalities and Procedures for Small-scale CDM project activities	EB 34	Ann 09	The "Attachment A" Not cited Investment analysis used for demonstration of the additionality.	CAR-3	OK
3.16.2. National policies and circumstances relevant to the baseline of the proposed project activity	EB 34	Ann 09	Yes. The relevant national policies, standards are used for financial analysis, in particular the benchmark widely used in hydro power sector.	OK	OK
3.16.3. Evidence that the incentive from the CDM was seriously considered in the decision to proceed with the project activity, if the starting date of the project activity is before the date of validation.	EB 34	Ann 09	Not addressed. The starting date is not described clearly.	CAR-4 GL-4	OK
3.17. Do the steps taken and equations applied to calculate project emissions, baseline emissions, leakage and emission reductions in PDD Section B.6.1 comply with the requirements of the selected baseline and monitoring?	VVM	88	Yes. "Tool -Grid EF" Version 01.1 to calculate the emission factor for an electricity system is correct applied in the PDD Section 6.1	OK	OK
3.17.1. Have the equations and parameters in the PDD been correctly applied with respect	VVM	89	Yes.	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
those in the select approved methodology,			The equations stipulated in the Tool is correct applied.		
3.17.2. If the methodology provides selection between different options for equations or parameters, has adequate justification been provided (based on the choice of the baseline scenario, context of the proposed CDM project activity and other evidence provided)?	VVM	89	Not available selection for hydro power projects stipulated in the methodology.	OK	OK
3.17.3. Will data and parameters be monitored throughout the crediting period of the proposed CDM project activity?	VVM	90	No data need to be monitored as the Emission Factor of CCPG is determined ex-ante per the Tool-Grid EF and methodology.	OK	OK
3.17.4. If no, and these data and parameters will remain fixed throughout the crediting period, are all data sources and assumptions:	VVM	90	The Emission Factor of CCPG will be updated after the first 7 years crediting period. Refer to PDD Section C.	OK	OK
3.17.5. If data and parameters be monitored on implementation and hence become available only after validation of the project activity, are the estimates provided in the PDD for these data and parameters reasonable?	VVM	90	Not applicable. Refer to above 3.21.	OK	OK
3.18. In CDM-SSC-PDD section B.6.2, are following provided?	EB 34	Ann 09			
3.18.1. A compilation of information on the data and parameters that are not monitored	EB 34	Ann 09	Yes. Complying with "Tool-Grid EF", the necessary	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
throughout the crediting period but that are determined only once and thus remains fixed throughout the crediting period AND that are available when validation is undertaken			official data of power grid made publically by NDRC are available and determined during validation.		
3.18.2. Explanation and justification for the choice of the source of data	EB 34	Ann 09	The official data i.e. "Notification of China Grid EF" were based on the data of China Energy Statistical Yearbook and China Power Yearbook, and authorities' expertise.	OK	OK
3.18.3. Clear and transparent references or additional documentation in Annex 3	EB 34	Ann 09	Yes.	OK	OK
3.18.4. Where values have been measured, a description of the measurement methods and procedures (e.g. which standards have been used), indicated the responsible person/entity having undertaken the measurement, the date of measurement(s) and the measurement results	EB 34	Ann 09	It is not applicable in this case as the emission factor is determined ex-ante as per the options in "Tool-Grid EF"	OK	OK
3.19. In CDM-SSC-PDD section B.6.3, are following provided?	EB 34	Ann 09			
3.19.1. A transparent <i>ex ante</i> calculation of project emissions, baseline emissions (or, where applicable, direct calculation of emission reductions) and leakage emissions expected during the crediting period, applying all relevant equations provided in the	EB 34	Ann 09	Yes. The calculation process is in line with the steps taken prescribed in "Tool-Grid EF" and addressed in PDD B.6.3 and Annex 3.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
approved methodology					
3.19.2. Documentation how each equation is applied, in a manner that enables the reader to reproduce the calculation	EB 34	Ann 09	Yes. The emission reduction calculation spreadsheet have been provided and checked.	OK	OK
3.19.3. Additional background information and/or data in Annex 3, including relevant electronic files (i.e. spreadsheets)	EB 34	Ann 09	Yes. The calculation spreadsheet has been presented for re-produce.	OK	OK
3.19.4. Emission reduction calculations for each component are provided separately if more than one component activity is applied	EB 34	Ann 09	In addition to electricity generation no other component activity applicable for the Project.	OK	OK
3.20. In CDM-SSC-PDD section B.6.4 are, the results of the ex ante estimation of emission reductions for all years of the crediting period, provided in a tabular format?	EB 34	Ann 09	Yes. From 2009 to 2015 with year-wise data of emission reductions.	OK	OK
3.21. In CDM-SSC-PDD section B.7.1 , are following provided?	EB 34	Ann 09			
3.21.1. Specific information on how the data and parameters that need to be monitored would actually be collected during monitoring for the project activity	EB 34	Ann 09	Yes. EG _y : Net electricity supplied by the project activity to the grid.	OK	OK
3.21.2. For each parameter the following below information, using the table provided:	EB 34	Ann 09			

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
a. The source(s) of data that will be actually used for the proposed project activity (e.g. which exact national statistics). Where several sources may be used, explain and justify which data sources should be preferred.	EB 34	Ann 09	N/A No other outside source(s) of data should be used.	OK	OK
b. Where data or parameters are supposed to be measured, specify the measurement methods and procedures, including a specification which accepted industry standards or national or international standards will be applied, which measurement equipment is used, how the measurement is undertaken, which calibration procedures are applied, what is the accuracy of the measurement method, who is the responsible person/entity that should undertake the measurements and what is the measurement interval; (i) A description of the QA/QC procedures (if any) that should be applied; (ii) Where relevant: any further comment. Provide any relevant further background documentation in Annex 4.	EB 34	Ann 09	The necessary data are mentioned in Section B.7.2.and Annex 4 Monitoring Information of the PDD. The data will be measured continuously. The power system connecting the two plants. However, the installation place of the meters is not described clearly.	CL-4	OK
3.22. In CDM-SSC-PDD section B.7.2, are following provided?	EB 34	Ann 09			
3.22.1. A detailed description of the	EB	Ann	Yes.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
monitoring plan	34	09	The relevant details are addressed.		
3.22.2. The operational and management structure that the project operator will implement in order to monitor emission reductions and any leakage effects generated by the project activity	EB 34	Ann 09	Yes. No project emission and leakage need to be considered as per ACM0002.	OK	OK
3.22.3. The responsibilities for and institutional arrangements for data collection and archiving	EB 34	Ann 09	Yes. The structure covered from general management to meters recorder.	OK	OK
3.22.4. Does the monitoring plan reflect good monitoring practice appropriate to the type of project activity	EB 34	Ann 09	Pending close CL- 4 above 3.20.2.b.	Pending	OK
3.22.5. Relevant further background information in Annex 4	EB 34	Ann 09	Not addressed separately. Same to PDD Section B.7.2	OK	OK
3.23. In CDM-SSC-PDD section B.8 , are following provided?	EB 34	Ann 09	Yes	OK	OK
3.23.1. Date of completion of the application of the methodology to the project activity study in DD/MM/YYYY	EB 34	Ann 09	Yes. 16/05/2008.	OK	OK
3.23.2. Contact information of the person(s)/entity(ies) responsible for the application of the baseline and monitoring methodology to the project activity	EB 34	Ann 09	Yes. College of Environmental Science and Engineering, Hunan University and	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
			Foshan Perfect Carbon Co. Ltd.(The consultant) are responsible for the baseline and monitoring methodology.		
3.23.3. Indication if the person/entity is also a project participant listed in Annex 1	EB 34	Ann 09	Yes. The person/entity is not the project participant (Annex I party)	OK	OK
3.24. In CDM-SSC-PDD section C.1.1, are following provided?	EB 34	Ann 09			
3.24.1. The starting date of a CDM project activity, which is the earliest of the date(s) on which the implementation or construction or real action of a project activity begins/has begun (EB33, Para 76/CDM Glossary of terms/EB41, Para 67)	EB 34	Ann 09	Pending on CAR-4 as above 3.16. 3.	Pending	OK
3.24.2. A description of how this start date has been determined, and a description of the evidence available to support this start date	EB 34	Ann 09	Pending on CAR-4 as above 3.16. 3.	Pending	OK
3.24.3. If this starting date is earlier than the date of publication of the CDM-SSC-PDD for global stakeholder consultation by a DOE, description in Section B.5 contain a explanation of how the benefits of the CDM were seriously considered prior to the starting date (EB41, Para 67).	EB 34	Ann 09	Pending on CAR-4 as above 3.16. 3.	Pending	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
3.25. In CDM-SSC-PDD section C.1.2, is the expected operational lifetime of the project activity in years and months provided?	EB 34	Ann 09	30 years 0 month but not specified for each power plants.	CL-5	OK
3.26. In CDM-SSC-PDD section C.2, is it stated whether the project activity will use a renewable or a fixed crediting period and is C.2.1 or C.2.2 completed accordingly?	EB 34	Ann 09	Yes. A renewable crediting period is chosen and C.2.1 was completed accordingly.	OK	OK
3.27. In CDM-SSC-PDD section C.2.1, is it indicated that each crediting period shall be at most 7 years and may be renewed at most two times, provided that, for each renewal, a designated operational entity determines and informs the Executive Board that the original project baseline is still valid or has been updated taking account of new data where applicable?	EB 34	Ann 09	Yes. 3x7 years This baseline determination is for the first 7 years.	OK	OK
3.28. In CDM-SSC-PDD section C.2.1.1, are dates in the following format: (DD/MM/YYYY) provided?	EB 34	Ann 09	Yes. 01/01/2010 in the PDD ver.04.	OK	OK
3.29. In CDM-SSC-PDD section C.2.1.2, is the length of the first crediting period in years and months provided?	EB 34	Ann 09	Yes. 7 y and 0 m	OK	OK
3.30. In CDM-SSC-PDD section C.2.2, is the fixed crediting period at most ten (10) years provided?	EB 34	Ann 09	N/A.		
3.31. In CDM-SSC-PDD section C.2.2.1, are the dates provided in the following format: (DD/MM/YYYY)?	EB 34	Ann 09	N/A.		

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
3.32. In CDM-SSC-PDD section C.2.2.2, is the length of the crediting period in years and months provided?	EB 34	Ann 09	N/A.		
3.33. In CDM-SSC-PDD section D.2, are the conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the Host Party, if environmental impacts are considered significant by the project participants or the Host, provided?	EB 34	Ann 09	The conclusion stated. The support document has been provided during on-site assessment.	OK	OK
3.34. In CDM-SSC-PDD section E.1, are the following provided?	EB 34	Ann 09			
3.34.1. The process by which comments by local stakeholders have been invited and compiled. An invitation for comments by local stakeholders shall be made in an open and transparent manner, in a way that facilitates comments to be received from local stakeholders and allows for a reasonable time for comments to be submitted.	EB 34	Ann 09	Yes. Local villagers and residents in the area were interviewed by distributing questionnaires to household in 2006.	OK	OK
3.34.2. The project activity is described in a manner, which allows the local stakeholders to understand the project activity, taking into account confidentiality provisions of the CDM modalities and procedures.	EB 34	Ann 09	Yes. By distributing questionnaires through the symposium.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
3.34.3. The local stakeholder process has been, completed before submitting the proposed project activity to the DOE for validation.	EB 34	Ann 09	Yes Completed in Apr. 2007	OK	OK
3.35. In CDM-SSC-PDD section E.2, are following provided?	EB 34	Ann 09			
3.35.1. Identification of local stakeholders that have made comments	EB 34	Ann 09	Yes. Local villagers and residents in the area were interviewed.	OK	OK
3.35.2. A summary of these comments.	EB 34	Ann 09	Yes. See PDD Section E.2	OK	OK
3.36. In CDM-SSC-PDD section E.3 is the explanation of how due account have been taken of comments received from local stakeholders provided?	EB 34	Ann 09	Yes. The stakeholders are all supportive of the proposed project and to date there has been no need to modify the project design according to the comments received.	OK	OK
3.37. In CDM-SSC-PDD Annex 1, are the following provided?	EB 34	Ann 09			
3.37.1. Contact information of project participants	EB 34	Ann 09	Yes.	OK	OK
3.37.2. For each organisation listed in section A.3 the following mandatory fields:	EB 34	Ann 09	Yes.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
Organization, Name of contact person, Street, City, Postfix/ZIP, Country, Telephone and Fax or e-mail					
3.38. In CDM-SSC-PDD Annex 2, is information from Parties included in Annex I on sources of public funding for the project activity which shall provide an affirmation that such funding does not result in a diversion of official development assistance and is separate from and is not counted towards the financial obligations of those Parties provided?	EB 34	Ann 09	Yes.	OK	OK
3.39. In CDM-SSC-PDD Annex 3, is the background information used in the application of the baseline methodology provided?	EB 34	Ann 09	Yes.	OK	OK
3.40. In CDM-SSC-PDD Annex 4, is the background information used in the application of the monitoring methodology provided?	EB 34	Ann 09	Not provided. Refer to PDD Section B.7.2.	OK	OK
4. Baseline and monitoring methodology					
4.1. General requirement			Refer to 3.12 above.	OK	OK
4.2. Applicability of the selected methodology to the project activity			Refer to 3.13 above.	OK	OK
4.3. Project boundary			Refer to 3.14 above.	OK	OK
4.4. Baseline identification			Refer to 3.15 above.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
4.5. Algorithms and/or formulae used to determine emission reductions			Refer to 3.17 to 3.20 above.	OK	OK
5. Additionality of a project activity					
5.1. General checklist for additionality					
5.1.1.Has the PP demonstrated additionality by explaining Investment barrier, Access-to-finance barrier, Technological barrier, Barrier due to prevailing practice or other barriers?	EB 35 VVM	Ann 34 93	Yes. The Investment barrier is analyzed in the PDD Section B.5.	OK	OK
5.1.2.Does the CDM-SSC-PDD state the latest version of the additionality tool being used?	VVM	94	Yes. The approved "Tool for the Demonstration and Assessment of Additionality" ver. 05.2 is used for financial analysis of this SSC project.	OK	OK
5.1.3.In step 2, have all the sub-steps as below been followed?	EB 39	Ann 10	Yes.	OK	OK
5.1.3.1. Sub-step 2a: Determine appropriate analysis method;	EB 39	Ann 10	Yes. The three analysis methods suggested by Tools for the demonstration and assessment of additionality are simple cost analysis (Option I), investment comparison analysis (Option II) and benchmark analysis (Option III)	OK	OK
5.1.3.2. Sub-step 2b: Option I. Apply simple cost analysis;	EB 39	Ann 10	It is considered not applicable to the Project since this project will generate financial/economic	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.												
			benefits other than CDM-related income														
5.1.3.3. Sub-step 2b: Option II. Apply investment comparison analysis;	EB 39	Ann 10	Not used.	OK	OK												
5.1.3.4. Sub-step 2b: Option III. Apply benchmark analysis;	EB 39	Ann 10	Yes, the Option III is more applicable as the baseline scenario of the Project is the supply of electricity from a grid rather than a new investment project.	OK	OK												
5.1.3.5. Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III);	EB 39	Ann 10	Yes. <table border="1" data-bbox="1176 707 1809 933"> <thead> <tr> <th>Items</th> <th>Stage 1</th> <th>Stage 2</th> </tr> </thead> <tbody> <tr> <td>Without income of CERs</td> <td>7.14%</td> <td>7.54%</td> </tr> <tr> <td>Benchmark rate</td> <td>10%</td> <td>10%</td> </tr> <tr> <td>With income of CERs</td> <td>11.18%</td> <td>11.75%</td> </tr> </tbody> </table>	Items	Stage 1	Stage 2	Without income of CERs	7.14%	7.54%	Benchmark rate	10%	10%	With income of CERs	11.18%	11.75%	OK	OK
Items	Stage 1	Stage 2															
Without income of CERs	7.14%	7.54%															
Benchmark rate	10%	10%															
With income of CERs	11.18%	11.75%															
5.1.3.6. Sub-step 2d: Sensitivity analysis (only applicable to Options II and III).	EB 39	Ann 10	Yes.	OK	OK												
5.1.4. Has the below guideline followed for Sub-step 2b: Option III. Apply benchmark analysis?	EB 39	Ann 10															
5.1.4.1. Identify the financial/economic indicator, such as IRR, most suitable for the project type and decision context.	EB 39	Ann 10	Yes, project IRR was identified as the financial indicator.	OK	OK												
5.1.4.2. When applying Option II or Option III,	EB	Ann	Yes.	OK	OK												

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
the financial/economic analysis shall be based on parameters that are standard in the market, considering the specific characteristics of the project type, but not linked to the subjective profitability expectation or risk profile of a particular project developer. Only in the particular case where the project activity can be implemented by the project participant, the specific financial/economic situation of the company undertaking the project activity can be considered.	39	10	The <i>Economic Evaluation Code for Small Hydropower Projects</i> (Document No. SL16-95) issued in 1995 by Ministry of Water Resources of P.R,China is widely applied in small hydro power sector in China.		
5.1.4.3. Discount rates and benchmarks shall be derived from: (a) Government bond rates, increased by a suitable risk premium to reflect private investment and/or the project type, as substantiated by an independent (financial) expert or documented by official publicly available financial data; (b) Estimates of the cost of financing and required return on capital (e.g. commercial lending rates and guarantees required for the country and the type of project activity concerned), based on bankers views and private equity investors/funds' required return on comparable projects; (c) A company internal benchmark (weighted average capital cost	EB 39	Ann 10	Yes. The benchmark rate of 10% is derived from (d). Both the discount rate and fair value of the project activity is not stated in the PDD Table 4 and 6.	CL-6	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
of the company), only in the particular case referred to above in 2. The project developers shall demonstrate that this benchmark has been consistently used in the past, i.e. that project activities under similar conditions developed by the same company used the same benchmark; (d) Government/official approved benchmark where such benchmarks are used for investment decisions; (e) Any other indicators, if the project participants can demonstrate that the above Options are not applicable and their indicator is appropriately justified. Please specify benchmark and justify.					
5.1.5. Has the below guideline followed for Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III)?	EB 39	Ann 10	Yes.	OK	OK
5.1.5.1. Calculate the suitable financial indicator for the proposed CDM project activity and, in the case of Option II above, for the other alternatives. Include all relevant costs (including, for example, the investment cost, the operations and maintenance costs), and revenues (excluding CER revenues, but possibly including inter alia subsidies/fiscal	EB 39	Ann 10	Yes. According to the Code "SL-16-95", below four indicators are identified, <ul style="list-style-type: none"> ➤ Total investment ➤ Annual electricity output amount ➤ Electricity tariff ➤ Operational cost 	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
incentives, ODA, etc, where applicable), and, as appropriate, non-market cost and benefits in the case of public investors if this is standard practice for the selection of public investments in the host country.					
5.1.5.2. Present the investment analysis in a transparent manner and provide all the relevant assumptions, preferably in the CDM-SSC-PDD, or in separate annexes to the CDM-SSC-PDD.	EB 39	Ann 10	Yes. IRR calculation spread sheet has been provided.	OK	OK
5.1.5.3. Justify and/or cite assumptions.	EB 39	Ann 10	Yes. All indicators are from the approved FSR.	OK	OK
5.1.5.4. In calculating the financial/economic indicator, the project's risks can be included through the cash flow pattern, subject to project-specific expectations and assumptions.	EB 39	Ann 10	Yes. The relevant costs are included per methods of project IRR.	OK	OK
5.1.5.5. Assumptions and input data for the investment analysis shall not differ across the project activity and its alternatives, unless differences can be well substantiated.	EB 39	Ann 10	Not applicable as Option III is used.	OK	OK
5.1.5.6. Present in the CDM-SSC-PDD a clear comparison of the financial indicator for the proposed CDM activity. Please specify	EB 39	Ann 10	Yes. Refer to 5.1.4.5 above	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
details for above.					
5.1.6. Has the below guideline followed for Sub-step 2d: Sensitivity analysis (only applicable to Options II and III)? Include a sensitivity analysis that shows whether the conclusion regarding the financial/economic attractiveness is robust to reasonable variations in the critical assumptions.	EB 39	Ann 10	Yes. All the four indicators are subject to sensitivity analysis with a variation range from -10% ~ +10% and further on the critical point at which the project IRR can reach the benchmark of 10%.	OK	OK
5.1.7. Has the outcome of Step 2 clearly mentioned with justification?	EB 39	Ann 10	Yes. The proposed project is not financially feasible without the revenue of CERs.	OK	OK
5.1.8. Has it been proved that the project is additional?	EB 39	Ann 10	Yes.	OK	OK
5.2. Prior consideration of the clean development mechanism					
5.2.1. Is the project activity start date prior to the date of publication of the PDD for stakeholder comments?	VVM	96	Yes, the start date is 26/05/2007 (Permit of launching the construction of the Project issued by local authority) which was confirmed during site visit, prior to the date of publication of the PDD for stakeholder comments on 24/01/2008.	OK	OK
5.2.2. If yes, were the CDM benefits considered necessary in the decision to undertake the project as a proposed CDM project activity?	VVM	96	Yes. According to the conclusion of the FSR, the additional support from CDM was considered by	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
			<p>the PP to make the Project to be financial attractive.</p> <p>The supporting evidences include:</p> <ul style="list-style-type: none"> ➤ Relevant description in the approved FSR; ➤ The board meeting minutes; ➤ The signed consulting service agreement; ➤ The ERPA signed with the carbon buyer; ➤ The approval of the FSR issued by the local authority. ➤ The Permit of launching the construction of the Project issued by local authority ➤ The equipment purchase contracts signed with the domestic suppliers; ➤ The LoA issued by China's DNA <p>The above documents have been provided and checked during on-site visit.</p>		
<p>5.2.3. Is the start date of the project activity, reported in the PDD, in accordance with the "Glossary of CDM terms", which states that "The starting date of a CDM project activity is the earliest date at which either the implementation or construction or real action</p>	VVM	97	<p>Pending close CAR-4 in 3.16.3 above.</p> <p>The date 01/01/2007 in the initial PDD is not clearly specified. Refer to CL-4 in 3.16.3 above.</p>	Pending	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
of a project activity begins”?					
5.2.4. Does the project activity require construction, retrofit or other modifications?	VVM	97	Not required.	OK	OK
5.2.5. If yes, is it ensured that the date of commissioning cannot be considered as the project activity start date?	VVM	97	N/A.	OK	OK
5.2.6. Is it a new project activity (project activities with starting date on or after 02 August 2008) or an existing project activity (project activities with a start date before 02 August 2008)?	VVM	98	It is an existing project activity	OK	OK
5.2.7. For a new project, 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, had the PP 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? (Provide reference to such confirmation from Host Party DNA and/or UNFCCC secretariat).	VVM	99	Not applicable	OK	OK
5.2.8. For an existing project activity, for which the start date is prior to the date of publication of the PDD for global stakeholder consultation, are the following evidences provided:	VVM	100		OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
5.2.8.1. 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, including, inter alia:	VVM	100	Yes.	OK	OK
5.2.8.1.1. 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?			Yes. ➤ The board meeting minute dated 16/09/2006 has been provided and checked during on-site visit.	OK	OK
5.2.8.2. 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, including, inter alia:	VVM	100	Yes. ➤ The draft PDD finished and submitted to China's DNA for approval by October 2007	OK	OK
5.2.8.2.1. Contract with consultants for CDM/PDD/methodology services?	VVM	100	Yes. ➤ The signed consulting service agreement dated 16/10/2006;	OK	OK
5.2.8.2.2. Emission Reduction Purchase Agreements or other documentation related to the sale of the potential CERs (including correspondence with multilateral financial institutions or carbon funds)?	VVM	100	Yes. The ERPA signed with the carbon buyer on 30/08/2007	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
5.2.8.2.3. Evidence of agreements or negotiations with a DOE for validation services?	VVM	100	Yes. The validation agreement was signed in Jan,2008 and well kept by BVC.	OK	OK
5.2.8.2.4. Submission of a new methodology to the CDM Executive Board?	VVM	100	Not applicable		
5.2.8.2.5. Publication in newspaper?	VVM	100	Not applicable		
5.2.8.2.6. Interviews with DNA?	VVM	100	Yes. Refer to the web link of the Bulletin on 40 th Meeting of National CDM Board issued by China's DNA on 20/11/2007 provided.	OK	OK
5.2.8.2.7. Earlier correspondence on the project with the DNA or the UNFCCC secretariat?	VVM	100	Not applicable		
5.3. Identification of alternatives					
5.3.1.Does the approved methodology that is selected by the proposed CDM project activity prescribe the baseline scenario and hence no further analysis is required?	VVM	103	Yes. Refer to 3.15.2	OK	OK
5.3.2.If no, does the PDD identify credible alternatives to the project activity in order to determine the most realistic baseline	VVM	103	Not applicable		

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
scenario?					
5.3.3. Does the list of alternatives given in the PDD ensure that:	VVM	104	Not applicable	OK	OK
5.4. Investment analysis					
5.4.1. Has investment analysis been used to demonstrate the additionality of the proposed CDM project activity?	VVM EB39	106 Ann 10	Yes. The Step 2 -Investment analysis is used per the Attachment A to Appendix B of the Simplified Modality and Procedures for Small-Scale CDM Project Activity.	OK	OK
5.4.2. Investment analysis to determine that the proposed project activity is either: (1) not the most economically or financially attractive, or (2) not economically or financially feasible? (Step 2)	EB 39 VVM	Ann 10 106	Yes, (2) is used. The appropriate analysis method is clearly discussed and determined in the PDD. Option III (benchmark analysis) is chosen for investment analysis.	OK	OK
5.4.3. Was this shown by one of the following approaches?	VVM	107	Yes.	OK	OK
5.4.3.1. 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.	VVM	107	Not applicable.		



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
5.4.3.2. The financial returns of the proposed CDM project activity would be insufficient to justify the required investment.	VVM	107	Yes.	OK	OK
5.4.4. Is the period of assessment limited to the proposed crediting period of the CDM project activity?	EB 41	Ann 45	No. The period of assessment is lifetime of the equipments which is 30 years, longer than the crediting period of the Project.	OK	OK
5.4.5. Does the project IRR and equity IRR calculations reflect the period of expected operation of the underlying project activity (technical lifetime), or - if a shorter period is chosen - include the fair value of the project activity assets at the end of the assessment period?	EB 41	Ann 45	2 year for construction period and 30 years for operation period per the approved FSR.	Pending	OK
5.4.6. Does the IRR calculation include the cost of major maintenance and/or rehabilitation if these are expected to be incurred during the period of assessment?	EB 41	Ann 45	Yes.	OK	OK
5.4.7. Do the project participants justify the appropriateness of the period of assessment in the context of the underlying project activity, without reference to the proposed CDM crediting period?	EB 41	Ann 45	Yes. The 30 years used in the PDD is reasonable according to "Tool for the demonstration and assessment of additionality" version 05.2.	OK	OK
5.4.8. Does the cash flow in the final year include a	EB	Ann	Not addressed.	CL-7	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
fair value of the project activity assets at the end of the assessment period?	41	45			
5.4.9. Has the fair value been calculated in accordance with local accounting regulations where available, or international best practice?	EB 41	Ann 45	Pending close CL-7	Pending	OK
5.4.10. Was 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 conducted?	VVM	109	Yes. 1. The total investment of the proposed project is impossible to be decreased by over 10% which is cross-checked by reviewing the contract value of main equipment. 2. The historical hydro resources more than 40 years measured by the local authority are used in the FSR. 3. The document of the tariff issued by the local pricing administration as referred to in the FSR and further cross-checked with the power connection agreement signed with the local grid company.	OK	OK
5.4.11. Were the parameters cross-checked against third-party or publicly available sources, such as invoices or price indices?	VVM	109	Yes. Refer to 5.4.10 above.	OK	OK
5.4.12. Were feasibility reports, public announcements and annual financial reports	VVM	109	The FSR has been reviewed. In addition, the public information about the losses of	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
related to the proposed CDM project activity and the project participants reviewed?			19 million RMB in caused by the earthquake has also been checked. http://www.zf119.com/Article/niugu/qfii/200808/74034.htm		
5.4.13. Was the correctness of computations carried out and documented by the project participants assessed?	VVM	109	Yes	OK	OK
5.4.14. Was the sensitivity analysis by the project participants to determine under what conditions variations in the result would occur and the likelihood of these conditions assessed?	VVM	109	No. A further elaboration in the PDD to show whether the variables will exceed -10% or +10% so as to the IRR of the project could reach the benchmark is required.	CL-8	OK
5.4.15. To determine this, was it assessed whether it is reasonable to assume that no investment would be made at a rate of return lower than the benchmark by:	VVM	110			
5.4.15.1. Assessing previous investment decisions by the project participants involved?	VVM	110	Yes.	OK	OK
5.4.15.2. Determining whether the same benchmark has been applied?	VVM	110	The benchmark of 10% is widely used for hydro power projects similar to the Project in China.	OK	OK
5.4.15.3. Determining if there are verifiable circumstances that have led to a change in the benchmark?	VVM	110	No other benchmark rate can be applied in China power sector.	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
5.4.16. Did the project participants rely on values from Feasibility Study Reports (FSR) that are approved by national authorities for proposed project activities?	VVM	111	Yes. The input values are sourced from the FSR which was approved by the local government.	OK	OK
5.4.17. If yes: (EB38 para.54)	VVM	111			
5.4.17.1. Has the FSR 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?	VVM	111	Yes, as interviewed, the PP's final decision to proceed with the investment in the Project was made based on the FSR conducted by Sichuan Province Dazhou City Hydropower Survey & Design Institute in Oct. 2006 and decided to soon on 16/09/2006 on the board meeting with consideration of CDM revenues. BVC therefore is confident that it is unlikely in the context of the underlying project activity that the input values would have materially changed.	OK	OK
5.4.17.2. Are the values used in the PDD and associated annexes fully consistent with the FSR? 5.4.17.3. If not, was the appropriateness of the values validated?	VVM	111	All parameters used in the PDD are fully consistent with the FSR.	OK	OK
5.4.17.4. On the basis of its specific local and sectoral expertise, is confirmation provided, by cross-checking or other appropriate manner, that the input values from the FSR are valid and applicable at the time of the	VVM	111	The main equipment purchase contract and the construction contract have been checked and found the actual cost of these main equipment is a higher than those estimated in the FSR due to the earthquake of degree 8 in local area	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
investment decision?			dated 12/05/2008. The input values in the PDD are thus confirmed more conservative. BVC also verified values of O&M costs and various taxes through cross-check with the relevant codes or taxation rules conducted by local government and found the full consistency.		
5.5. Barrier analysis					
5.5.1.Has barrier analysis been used to demonstrate the additionality of the proposed CDM project activity?	VVM	113	Not applied in the PDD.	OK	OK
6. Monitoring plan					
6.1. Does the PDD include a monitoring plan?	VVM	120	Yes.	OK	OK
6.2. Is this monitoring plan based on the approved monitoring methodology applied to the proposed CDM project activity?	VVM	120	Yes.	OK	OK
6.3. Was the list of parameters required by the selected methodology identified?	VVM	121	Yes.	OK	OK
6.4. Does the monitoring plan contain all necessary parameters?	VVM	121	Yes. Only the quantity of annual net electricity delivered to the grid by the proposed project (EG _y) is required by the monitoring methodology and it has been included in the Monitoring Plan.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
6.5. Are the parameters clearly described?	VVM	121	Yes EG _y is the quantity of annual net electricity delivered to the grid by the proposed project.	OK	OK
6.6. Do the means of monitoring described in the plan comply with the requirements of the methodology?	VVM	121	Yes.	OK	OK
6.7. Specific questions per methodology regarding parameters.			Yes. The electricity will be continuously measured and monthly recorded, commercial receipts will be kept for cross-check	OK	OK
6.8. Are the monitoring arrangements described in the monitoring plan feasible within the project design?	VVM	121	Yes. In line with local practices in power sector	OK	OK
6.9. Are the following means of implementation of the monitoring plan sufficient to ensure that the emission reductions achieved by/resulting from the proposed CDM project activity can be reported ex post and verified:	VVM	121	Yes.	OK	OK
6.9.1. Data management procedures?	VVM	121	Yes. The procedures are appropriate and practicable.	OK	OK
6.9.2. Quality assurance procedures?	VVM	121	Yes. The procedures are appropriate and practicable.	OK	OK
6.9.3. Quality control procedures?	VVM	121	Yes. The procedures are appropriate and practicable.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
7. Sustainable development					
7.1. Does the CDM project activity assists Parties not included in Annex I to the Convention in achieving sustainable development?	VVM	123	Pending close out above CAR-1,CAR-2	Pending	OK
7.2. Does the letter of approval by the DNA of the host Party confirm the contribution of the proposed CDM project activity to the sustainable development of the host Party?	VVM	124	Pending close out above CAR-1,CAR-2	Pending	OK
8. Local stakeholder consultation					
8.1. Were local stakeholders (public, including individuals, groups or communities affected, of likely to be affected, by the proposed CDM project activity or actions leading to the implementation of such an activity) invited by the PPs to comment on the proposed CDM project activity prior to the publication of the PDD on the UNFCCC website?	VVM	126	Yes. The local stakeholders including local villagers and residents in the area, 50 pieces of questionnaires were distributed in 2006 and 50 were returned.	OK	OK
8.2. Have comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity been invited?	VVM	127	Yes. The stakeholders are all supportive of the proposed project and to date there has been no need to modify the project design according to the comments received.	OK	OK
8.3. Is the summary of the comments received as provided in the PDD complete?	VVM	127	Yes. Sampled questionnaires have been cross-checked with the description in the PDD E.7.2.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl.	Final Concl.
8.4. Have the project participants taken due account of any comments received and described this process in the PDD?	VVM	127	Yes. PDD section E.7.3. The stakeholders are all supportive of the proposed project and to date there has been no need to modify the project design according to the comments received.	OK	OK
9. Environmental impacts					
9.1. Have the project participants submitted documentation on the analysis of the environmental impacts of the project activity?	VVM	129	Yes. EIA and its approval made by local EPA are presented.	OK	OK
9.2. Have the project participants undertaken an analysis of environmental impacts?	VVM	130	Yes. EIA worked out by Research Institute of Environment Science of Chengdu University.	OK	OK
9.3. Does the host Party require an environmental impact assessment?	VVM	130	Yes.	OK	OK
9.4. If yes, have the environmental impact assessment approved by local government?	VVM	130	Yes. Approved by Sichuan Province Environmental Protection Bureau on 28/04/2007.	OK	OK

Table 2. Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. in table 1	Summary of project owner response	Validation team conclusion
CAR-1 Letter of Approval from China's DNA has not	1.1	LoA of China has been provided to DOE.	Letter of Approval from DNA of China (Host country) dated 28/10/2008 with a confirmation letter

VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. in table 1	Summary of project owner response	Validation team conclusion
been presented yet.			on bundle project dated 03/09/3009 has been provided and found reliable; hence CAR-1 is closed.
CAR-2 Letter of Approval from SWEDEN.'s DNA has not been presented yet.	1.1	LoA of SWEDEN. has been provided to DOE.	Letter of Approval from DNA of SWEDEN. (Annex 1 party) dated 27/11/2008 has been provided and found reliable; hence CAR-2 is closed.
CAR-3 The Attachment A to Appendix B of the Simplified Modalities and Procedures for Small-scale CDM project activities is not used in the PDD for demonstration of the additionality of the Project. Please improve accordingly.	3.16.1	It has been addressed in the revised PDD.	The appropriate requirement has been verified correct in the revised PDD. Hence the CAR-3 is closed.
CAR-4 Please address if the PP seriously considered the CDM in the decision to proceed with the project activity in PDD Section B.5	3.16.3	It has been addressed in the revised PDD. The PP considered seriously the CDM support to the Project prior to the start of the Project. The evidences have also been presented.	The supplemented description with the relevant supporting evidences have been verified and concluded that the PP considered the CDM support and made the decision to project implementation in Sep.2006 within month after the FSR finalized. Hence the CAR-4 is closed.
CL 1 The projects information was not specified	3.11.ii.	Revised in the updated PDD. There were not project activity under CDM or an application to register another small-sale	The requirements have been found properly complied and addressed in the revised PDD. The Project has

VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. in table 1	Summary of project owner response	Validation team conclusion
properly in accordance with the "Appendix C of the Simplified Modalities and Procedures for Small-Scale CDM project" and later "Compendium of guidance on the debundling for SSC project activities" EB 35 Annex 27.		project activity with the same PP and/or registered within the period of 2 years.	been concluded not a debundled component of a larger project activity. Hence CL1 is closed.
CL 2 Please clarify the data sources in identifying the categories of the Project	3.13.2	The data used for identifying the categories are fully taken from the approved FSR of the Project. The FSR has been presented to DOE during site visit.	The data has been verified consistent with the FSR and the identification of categories of the Project can be confirmed appropriate, hence CL 2 is closed.
CL 3 Please specify the power grid the Project connected to in addressing the baseline scenario and baseline emissions of the Project in PDD B.4.	3.15.1	It is CCPG. Refer to the revised PDD.	The CCPG is the regional electricity system and the boundary of Project per the methodology. Hence CL 3 is closed.
CL 4 Please clarify the way of defining the starting date of the Project	3.16.3	The earliest date of the Project implementation shall be the date of permit of construction issued, from then on the tunnel engineering launched. The right date has been applied in the PDD.	Hence CL 4 is closed.
CL 5 Please describe the metering system in more details, in particular the place, accuracy and functions etc.	3.20.2.b.	The details information of the meters has been added in the revised PDD. Both main meter and back-up meter are bi-direction electricity meters, and these meters will be	The metering system with a figure has been specified in the revised PDD, which is found functional and capable for the monitoring activity



VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. in table 1	Summary of project owner response	Validation team conclusion
		installed in accordance with Chinese Sectional Regulations. The accuracy of the meters is 0.5s.	per the monitoring methodology. Hence CL 5 is closed.
CL 6 Please specify the life time for power plant Stage 1 and Stage 2 respectively.	5.1.4.3.	It has been specified in the revised PDD. The life time of the two power plants is the same.	The life time has been verified per the national standard "SL16-95". Hence CL 6 is closed.
CL 7 The fair value and the annual depreciation rate of the FSR of the Project are need to be stated in the PDD Table 4 and 6.	5.4.14.	The fair value of 5% and discount rate of 5% are stated in the PDD Table 4 and 6. The relevant national tax regulation i.e. GSH [2005] No. 883 guiding to use a fair value of 5% can be cited.	The values have been verified against the approved FSR and found the consistency and reasonable. Hence CL 7 is closed.
CL 8 Please further address the variation extent of the critical points of the four financial indicators and analyze the possibilities.	5.4.14	The critical points have been calculated and stated in the revised PDD. The possibility of reaching the critical points has also been addressed respectively.	A further elaboration has been verified and found robust, hence CL 8 is closed.



APPENDIX B: VERIFIERS CV'S

Ms. (Jasmine) Tang Xuemei	Bureau Veritas Certification, China	<p>Team Leader, CDM Lead Verifier</p> <p>She has 2 years experiences in the field of CDM and mainly focusing on energy and agriculture sector. She was involved in approximate 30 CDM projects in P.R China. She has undergone intensive trainings on the Clean Development Mechanism and EMS ISO14000 in Bureau Veritas.</p>
Mr.Liao Ling	Bureau Veritas Certification, China	<p>Team member, CDM Verifier.</p> <p>He holds a Bachelor Degree in Atmosphere Science. He was involved in approximate 20 CDM projects in P.R China. He has undergone intensive trainings on the Clean Development Mechanism and EMS ISO14000 in Bureau Veritas.</p>
Mr.Zeng Ziyuan	Bureau Veritas Certification, China	<p>Team Member, CDM Verifier</p> <p>He holds a bachelor degree in Building Environment and Facility Engineering. He has 2 years of environmental Software and Building Automation engineering experience. He has undergone intensive trainings on the Clean Development Mechanism and EMS ISO14000 in Bureau Veritas.</p>
Mr. (Robin) Wang Jing	Bureau Veritas Certification, China	<p>Internal Reviewer, CDM Lead Verifier.</p> <p>He has total experience of twelve years and has worked in energy sector in oil or gas companies in PR China. He obtained the certificate of CDM Lead Verifier and Lead Auditor for EMS ISO14000. He was involved in approximate 50 CDM projects in PR China.</p>