



VALIDATION REPORT

CLIMATE BRIDGE LTD.

HUNAN TONGDAO YAOLAITAN 5.55MW
HYDRO POWER PROJECT

Report No: QT-EC1002-08- 08/519

Date: 2009-09-14

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Client: Climate Bridge Ltd.	Client ref.: Alex Wyatt
Summary:	<input checked="" type="checkbox"/> positive validation opinion <input type="checkbox"/> negative validation opinion
<p>Climate Bridge Ltd. has commissioned the TÜV NORD JI/CDM Certification Program (CP) to validate the project: "Hunan Tongdao Yaolaitan 5.55MW Hydro Power Project" with regard to the relevant requirements of the UNFCCC for CDM project activities, as well as criteria for consistent project operations, monitoring and reporting. UNFCCC criteria include article 12 of the Kyoto Protocol, the modalities and procedures for CDM (Marrakech Accords), the simplified modalities and procedures for small scale CDM project activities of annex II to decision 21/CP.8 and the relevant decisions by COP/MOP and CDM Executive Board.</p> <p>The project activity exports the electrical power from a renewable energy source to the Central China Power Grid (CCPG). The project intends to reduce GHG emissions to the extent of equivalent electricity generated by fossil fuels based power plants of CCPG.</p> <p>A risk based approach has been followed to perform this validation. In the course of the pre-validation, 11 Corrective Action Requests (CARs) and 1 Clarification Requests (CLs) were raised and successfully closed.</p> <p>The review of the project design documentation and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and review of comments by parties, stakeholders and NGOs have provided TÜV NORD JI/CDM CP with sufficient evidence to validate the fulfilment of the stated criteria.</p> <p>In detail the conclusions can be summarised as follows:</p> <ul style="list-style-type: none"> - The project is in line with all relevant host country criteria (China) and all relevant UNFCCC requirements for CDM. Project activity approval has been obtained from DNA of China vide the Letter of Approval (HCA) dated 18th February 2009 for project participant Tongdao Yaolaitan Hydro Power Development Co. Ltd, from DNA of UK vide the Letter of Approval (LOA-1) dated 09th June 2009 for project participant Climate Bridge Ltd. The Letter of Approval (LOA-2) for project participant Noble Carbon Credits Limited has been issued by UK's DNA on 9th September 2009 upon positive validation opinion from the DOE. - The project additionality is sufficiently justified in the PDD. - The monitoring plan is transparent and adequate. - The calculation of the project emission reductions is carried out in a transparent and conservative manner, so that the calculated annual emission reductions of 20,576tCO₂e are most likely to be achieved within the 1st renewable crediting period (01/12/2009 to 30/11/2016.). <p>The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria</p>	

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Indexing terms

Climate protection
Kyoto Protocol
CDM
Validation

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Abbreviations

BAU	Business as usual
CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification Request
CO₂	Carbon dioxide
CO_{2e}	Carbon dioxide equivalent
CP	Certification Program
DNA	Designated National Authority
EB	CDM Executive Board
EIA	Environmental Impact Assessment
FAR	Forward Action Request
GHG	Greenhouse gas(es)
IPCC	Intergovernmental Panel on Climate Change
PDD	Project Design Document
QC/QA	Quality control/Quality assurance
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual
YLT	Tongdao Yaolaitan Hydro Power Development Co. Ltd

Table of Contents	Page
1 OBJECTIVE / SCOPE	5
2 GHG PROJECT DESCRIPTION.....	6
2.1 Project Characteristics	6
2.2 Involved Parties and Project Participants	6
2.3 Project Location	7
2.4 Technical Project Description	7
3 METHODOLOGY AND VALIDATION SEQUENCE.....	8
3.1 Validation Steps	8
3.2 Contract review	9
3.3 Appointment of team members and technical reviewers	9
3.4 Consideration of Public Stakeholder Comments	10
3.5 Validation Protocol	10
3.6 Review of Documents	11
3.7 Follow-up Interviews	11
3.8 Project comparison	12
3.9 Resolution of Clarification and Corrective Action Requests	12
3.9.1 Definition	12
3.9.2 Draft Validation	12
3.9.3 Final Validation	12
3.10 Technical review	13
3.11 Final approval	13
4 VALIDATION FINDINGS	14
5 VALIDATION ASSESSMENT SUMMARY	21
6 VALIDATION OPINION	28
7 REFERENCES	30
ANNEX 1: VALIDATION PROTOCOL.....	37
ANNEX 2: ASSESSMENT OF BASELINE IDENTIFICATION	64
ANNEX 3: ASSESSMENT OF FINANCIAL PARAMETERS.....	65
ANNEX 4: ASSESSMENT OF BARRIER ANALYSIS	70
ANNEX 5: OUTCOME OF THE GSCP	71
ANNEX 6: APPOINTMENT CERTIFICATES OF TEAM MEMBERS.....	72

1 OBJECTIVE / SCOPE

The purpose of a validation is to have an independent third party assess the project design. In particular the project's baseline, the monitoring plan (MP), and the project's compliance with

- the requirements of Article 12 of the Kyoto Protocol;
- the CDM modalities and procedures as agreed in the Marrakech Accords under decision 3/CMP.1
- the annex to the decision;
- subsequent decisions made by COP/MOP & CDM Executive Board and
- other relevant rules, including the host country legislation and sustainability criteria

are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is seen as necessary to provide assurance to stakeholders on the quality of the project and its intended generation of certified emission reductions (CERs).

The validation scope is given as a thorough independent and objective assessment of the project design including especially: the correct application of the methodology, the project's baseline study, additionality justification, local stakeholder commenting process, environmental impacts and monitoring plan, which are included in the PDD and other relevant supporting documents, to ensure that the proposed CDM project activity meets all relevant and applicable CDM criteria.

The information included in the PDD and the supporting documents were reviewed against the requirements as set out by the UNFCCC. The validation team has, based on the requirements in the Validation and Verification Manual^{VVM}, carried out a full assessment of all evidences to assess the compliance of the project with the key areas as outlined in section V.E. and V.F. of the VVM (version 1, EB 44).

The validation is based on the information made available to TÜV NORD JI/CDM CP and on the contract conditions. TÜV NORD JI/CDM CP can not be held liable by any entity for making its validation opinion based on any false or misleading information supplied to it during the course of validation.

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

2 GHG PROJECT DESCRIPTION

2.1 Project Characteristics

Essential data of the project is presented in the following Table 2-1.

Table 2-1: Project Characteristics

Item	Data
Project title	Hunan Tongdao Yaolaitan 5.55MW Hydro Power Project
Project size	<input type="checkbox"/> Large Scale <input checked="" type="checkbox"/> Small Scale
Project Scope (according to UNFCCC sectoral scope numbers for CDM)	<input checked="" type="checkbox"/> 1 Energy Industries (renewable- /non-renewable sources)
	<input type="checkbox"/> 2 Energy distribution
	<input type="checkbox"/> 3 Energy demand
	<input type="checkbox"/> 4 Manufacturing industries
	<input type="checkbox"/> 5 Chemical industry
	<input type="checkbox"/> 6 Construction
	<input type="checkbox"/> 7 Transport
	<input type="checkbox"/> 8 Mining/Mineral production
	<input type="checkbox"/> 9 Metal production
	<input type="checkbox"/> 10 Fugitive emissions from fuels (solid, oil and gas)
	<input type="checkbox"/> 11 Fugitive emissions from production and consumption of halocarbons and hexafluoride
	<input type="checkbox"/> 12 Solvents use
	<input type="checkbox"/> 13 Waste handling and disposal
	<input type="checkbox"/> 14 Afforestation and Reforestation
	<input type="checkbox"/> 15 Agriculture
Applied Methodology	AMS.I.D. Ver. 13, Grid connected renewable electricity generation
Crediting period	<input checked="" type="checkbox"/> Renewable Crediting Period (7 y) <input type="checkbox"/> Fixed Crediting Period (10 y)
Start of crediting period	December 1 st 2009, or on the date of registration of the CDM project activity, whichever is later.

2.2 Involved Parties and Project Participants

The following parties to the Kyoto Protocol and project participants are involved in this project activity (Table 2-2).

Table 2-2: Project Parties and project participants

Characteristic	Party	Project Participant
Host party	People's Republic of China	Tongdao Yaolaitan Hydro Power Development Co., Ltd
Other involved party/ies	United Kingdom of Great Britain and Northern Ireland	Climate Bridge Ltd.
Other involved party/ies	United Kingdom of Great Britain and Northern Ireland	Noble Carbon Credits Limited

2.3 Project Location

The details of the project location are given in table 2-3:

Table 2-3: Project Location

Host Country	Peoples Republic of China
Region	Hunan Province
Project location address	Xianxi Town, Tongdao Dong Minority Autonomous County Huaihua City
Latitude	26°21'15"N
Longitude	109°39'32"E

2.4 Technical Project Description

The technical key data are provided in tables 2-4a and 2-4b below

Table 2-4a: Technical Data of the Turbine

Parameter	Unit	Value
Type:	-	GD008-WZ-275
Manufacturer	-	Gaoyou City Water Pump Plant
Quantity:	-	3
Rated Capacity	kW	1.89
Rated Rotation Speed:	r/min	154.96
Rated Water Head:	m	5.0
Designed Flow Rate:	m ³ /s	44.06

Table 2-4b: Technical Data of the generator

Parameter	Unit	Value
Type:	-	SFW-J1850-8/1430
Manufacturer:	-	Zhejiang Linhai Motor Plant
Quantity:	-	3
Rated Capacity:	kW	1850
Rated Voltage:	kV	6.3
Rated Power Coefficient	-	0.8

3 METHODOLOGY AND VALIDATION SEQUENCE

3.1 Validation Steps

The validation of the project consisted of the following steps:

- Contract review
- Appointment of team members and technical reviewers
- Publication of the project design document (PDD)
- A desk review of the PDD^{/PDD/} submitted by the client and additional supporting documents with the use of customised validation protocol^{/CPM/} according to the Validation and Verification Manual^{/VVM/},
- Validation planning,
- On-Site assessment,
- Background investigation and follow-up interviews with personnel of the project developer and its contractors,
- Draft validation reporting
- Resolution of corrective actions (if any)
- Final validation reporting
- Technical review
- Final approval of the validation.

The sequence of the validation is given in the table 3.1 below:

Table 3.1: Validation sequence

Topic	Time
Assignment of validation	10 Nov 09
Submission of PDD for global stakeholder commenting process	27 Nov 08 - 26 Dec 08
On-site visit	3 -4 Dec 08
Draft reporting finalised	04 Feb 09
Technical review on draft reporting finalised	05 Feb 09
Final reporting finalised	29 Jun 09
Technical review on final reporting finalised	14 Sept 09

3.2 Contract review

To assure that

- the project falls within the scopes for which accreditation is held,
- the necessary competences to carry out the verification can be provided,
- Impartiality issues are clear and in line with the CDM accreditation requirements

a contract review was carried out before the contract was signed.

3.3 Appointment of team members and technical reviewers

On the basis of a competence analysis and individual availabilities a verification team, consistent of 1 team leader and 2 additional team members, were appointed. Furthermore also the personnel for the technical review and the final approval were determined.

The list of involved personnel, the tasks assigned and the qualification status are summarized in the table 3-2 below.

Table 3-2: Involved Personnel

	Name	Company	Function ¹	Qualification Status ²	Sectoral competence	Technical competence	Host country Competence	Controlling competence
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Yong Jun LI	TUV NORD China, Shanghai	TL	A	x	x	x	x
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Rainer Winter	TÜV NORD Germany	TR, FA	SA	x	x	-	x
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Martin Saalmann	TÜV NORD Germany	TM	A	x	x	-	x
<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	Yan Wei Chen	TUV NORD China, Shanghai	TM	E	x	x	x	-

¹⁾ TL: Team Leader; TM: Team Member, TR: Technical review; FA: Final approval

²⁾ GHG Auditor Status: A: Assessor; E: Expert; SA: Senior Assessor; T: Trainee; TE Technical Expert

Certificates of appointment for the above mentioned team members are enclosed in annex 6 of this report.

3.4 Consideration of Public Stakeholder Comments

Acc. to the modalities and procedures the draft PDD, as received from the project participants, has been made publicly available on the dedicated UNFCCC CDM website prior to the validation activity commenced. Stakeholders have been invited to comment on the PDD within the 30 days public commenting period.

In case comments were received, they are taken into account during the validation process. The comments and the discussion of the same are documented in annex 5 of this report.

3.5 Validation Protocol

In order to ensure consideration of all relevant assessment criteria, a validation protocol is used. The protocol shows, in a transparent manner, criteria and requirements, means of validation and the results from pre-validating the identified criteria. The validation protocol reflects the generic CDM requirements each CDM project has to meet as well as project specific issues as applicable. The validation protocol serves the following purposes:

- It organises, details and clarifies the requirements that a CDM project is expected to meet;
- It ensures a transparent validation process where the validating entity will document how a particular requirement has been validated and the result of the determination.

The validation protocol as described in Figure 1.

Validation Protocol Table A-1: Requirement checklist				
Checklist Item	Validation Team Comment	Reference	Draft Conclusion	Final Conclusion
<i>The checklist items in Table A-1 are linked to the various requirements the project should meet. The checklist is organised in various sections. Each section is then further sub-divided as per the requirements of the topic and the individual project activity.</i>	<i>The section is used to elaborate and discuss the checklist item in detail. It includes the assessment of the validation team and how the assessment was carried out. The reporting requirements of the VVM shall be covered in this section.</i>	<i>Gives reference to the information source on which the assessment is based on</i>	<i>Assessment based on evidence provided if the criterion is fulfilled (OK), or a CAR, CL or FAR (see below) is raised. The assessment refers to the draft validation stage.</i>	<i>In case a corrective action or a clarification the final assessment at the final validation stage is given.</i>

Figure 1: Validation protocol tables

The completed validation protocol is enclosed in Annex 1 to this report.

3.6 Review of Documents

The published PDD (version 1) and supporting background documents related to the project design and baseline were reviewed.

Furthermore, the validation team used additional documentation by third parties like host party legislation, technical reports referring to the project design or to the basic conditions and technical data.

3.7 Follow-up Interviews

The validation team has carried out interviews in order to assess the information included in the project documentation and to gain additional information regarding the compliance of the project with the relevant criteria applicable for CDM.

During validation the validation team has performed interviews to confirm selected information and to resolve issues identified in the document review. The main topics of the interviews are summarized in table 3-3.

Table 3-3: Interviewed persons and interview topics

Interviewed Persons / Entities	Interview topics
Project proponent representatives /IM01/	<ul style="list-style-type: none"> - Chronological description of the project activity - Technical details of the project realisation - Host Country Approval - Approval procedures and status - Quality management system - Monitoring and measurement equipment - Crediting period and its starting date - Project activity starting date - Power purchase agreement - Sustainable development issues - Analysis of local stakeholder consultation - Operational data – technical specification - Training & competency of the staff members w.r.t project management, monitoring and reporting
Project Developer /IM02/	<ul style="list-style-type: none"> - Editorial aspects of PDD - Procedural aspects - Baseline study and additionality - Details of emissions reduction calculation
Local stakeholders /IM03/	<ul style="list-style-type: none"> - The environment impact of the project - The legislative aspects of the projects - The impact of the project to local stakeholders

A comprehensive list of all interviewed persons is part of section 7 'References'.

3.8 Project comparison

The validation team has compared the proposed CDM project activity with similar projects or technology that have similar or comparable characteristics and with similar projects in the host country in order to achieve additional information esp. regarding:

- Project technology
- Additionality issues
- Reasons for reviews, requests for reviews and rejections within the CDM registration process.

3.9 Resolution of Clarification and Corrective Action Requests

3.9.1 Definition

A **Corrective Action Request (CAR)** will be established where:

- mistakes have been made in assumptions, application of the methodology or the project documentation which will have a direct influence the project results,
- the requirements deemed relevant for validation of the project with certain characteristics have not been met or
- there is a risk that the project would not be registered by the UNFCCC or that emission reductions would not be able to be verified and certified.

A **Clarification Request (CL)** will be issued where information is insufficient, unclear or not transparent enough to establish whether a requirement is met.

A **Forward Action Request (FAR)** will be issued when certain issues related to project implementation should be reviewed during the first verification.

3.9.2 Draft Validation

After reviewing all relevant documents and taken all other relevant information into account, the validation team issues all findings in the course of a draft validation report and hands this report over to the project proponent in order to respond on the issues raised and to revise the project documentation accordingly.

3.9.3 Final Validation

The final validation starts after issuance of the proposed corrective action (CA) of the CARs CLs and FARs by the project proponent. The project proponent has to reply on those and the requests are “closed out” by the validation team in case the response

is assessed as sufficient. In case of raised FARs the project proponent has to respond on this, identifying the necessary actions to ensure that the topics raised in this finding are likely to be resolved at the latest during the first verification. The validation team has to assess whether the proposed action is adequate or not.

In case the findings from CARs and CLs cannot be resolved by the project proponent or the proposed action related to the FARs raised cannot be assessed as adequate, no positive validation opinion can be issued by the validation team.

The CAR(s) / CL(s) / FAR(s) are documented in chapter 4.

3.10 Technical review

Before submission of the final validation report a technical review of the whole validation procedure is carried out. The technical reviewer is a competent GHG auditor being appointed for the scope this project falls under. The technical reviewer is not considered to be part of the verification team and thus not involved in the decision making process up to the technical review.

As a result of the technical review process the validation opinion and the topic specific assessments as prepared by the validation team leader may be confirmed or revised. Furthermore reporting improvements might be achieved.

3.11 Final approval

After successful technical review of the final report an overall (esp. procedural) assessment of the complete validation will be carried out by a senior assessor located in the accredited premises of TÜV NORD.

Only after this step the request for registration can be started (in case of a positive validation opinion).

4 VALIDATION FINDINGS

In the following table the findings from the desk review of the published PDD, visits, interviews and supporting documents are summarised:

Table 4-1: Summary of CARs, CLs and FARs issued

Validation topic ¹⁾	No. of CAR	No. of CR	No. of FAR
General description of project activity (A) - Project specification - Technical project description - Participation - Contribution to sustainable development - PDD editorial aspects - Technology to be employed	2	-	-
Project Baseline, Additionality and Monitoring Plan (B) - Application of the Methodology - Project Boundary - Baseline identification - Calculation of GHG emission reductions Project emissions Baseline emissions Leakage - Additionality determination - Monitoring Methodology - Monitoring Plan - Project management planning	7	1	-
Duration of the Project / Crediting Period (C)	1	-	-
Environmental impacts (D)	-	-	-
Stakeholder Comments (E)	1	-	-
SUM	11	1	-

¹⁾ The letters in brackets refer to the validation protocol

The following tables include all raised CARs, CLs and FARs. For an in depth evaluation of all validation items it should be referred to the validation protocols (see Annex 1).

The findings of validation process are summarized in the tables below.

Finding A1			
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	At the time of the (pre-) validation the letters of approval of all involved parties are pending (China, UK).		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The LoA from China and the LoA from UK for Climate Bridge are available and sent to DOE.		
DOE Assessment #1	<p>The 2 documents (HCA from China DNA and LOA for Climate Bridge from UK DNA) are received from the project participant. Authenticity of the approvals is with no doubt. The precise title of the project in HCA and LOA is: Hunan Tongdao Yaolaitan 5.55MW Hydro Power Project, which is consistent with PDD.</p> <p>Project participants are listed in tabular form in section A.3 of the PDD. Validation team has checked that this information is consistent with the contact details provided in annex 1 of the PDD.</p> <p>However, compared to the published PDD, the updated PDD has a new project participant Noble Carbon Credits Limited. LOA for Nobel Carbon Credits Limited. should also be submitted.</p>		
Corrective Action #2 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	LOA for Nobel Carbon Credits Limited. will be obtained upon positive FVR.		
DOE Assessment #2	LoA authorizing Nobel Carbon Credits Limited as a project participant has been issued by UK's DNA upon positive validation from the DOE and made available by the project owner to the validation team for cross-checking. The precise title of the project has been correctly stated in the LoA and its authenticity has been proved. Therefore this CAR has been closed.		
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Appropriate action was taken <input type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements		

Finding A2			
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>Surface area of reservoir needs data reference.</p> <p>Also, the height of dam indicated in A.4.2. is incorrect.</p>		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>The Surface area of reservoir is sited from the EIA;</p> <p>The height of the dam has been corrected.</p>		
DOE Assessment #1	<p>Upon checking revised PDD it is confirmed that section A.4.2 has been corrected.</p> <p>Therefore this CAR has been closed out.</p>		

	Finding A2
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

	Finding B1
Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	The literature in the web link (footnote 6 on page 8 of published PDD) is not consistent with the data used in baseline scenario. Literature in web link is based on statistics data up to 2005 while the baseline EF is actually upon statistics data from up to 2007.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	Revised.
DOE Assessment #1	Upon checking PDD the revision is confirmed. Therefore CL B1 is assessed as closed out.
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

	Finding B2
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	According to device purchase contract, the turbine and generators were purchased on 14/07/2005. Starting date should be revised.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The starting date is revised.
DOE Assessment #1	After checking the revised PDD and the purchase contract it is confirmed that this issue has been corrected and now the starting date is in accordance with the glossary of CDM terms, EB41, Para 67 and consistent to all relevant evidences. Therefore this CAR has been closed out.
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

	Finding B3
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Finding B3	
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	CDM related events should be included in the key event time table.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	CDM related events have been included in the key event time table
DOE Assessment #1	The section B.5 of the revised PDD includes now a consistent and credible key CDM events list. The validation team has cross-checked those with the evidences provided. Therefore, it is confirmed that the necessary corrections have been done. Therefore this CAR has been closed out.
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

Finding B4	
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>There are some issues in IRR calculation:</p> <ol style="list-style-type: none"> total static investment indicated in PDD and IRR spreadsheet is 35,137,000 RMB, which is inconsistent with PDR (34,818,700 RMB) in cashflow sheet of IRR calculation, construction period is 3 years while construction period in PDR is 2 years. the calculation approach/result of depreciation, operational cost, working capital, income tax without CDM, etc. are not exactly the same as in PDR. Corrective action or clarification is necessary.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	All the issues related to IRR calculation have been corrected
DOE Assessment #1	The mentioned financial parameters have been corrected and inconsistencies with the evidences provided have been cleared out. The validation team confirms that the financial analysis has been carried out in compliance with the Guidance on the Assessment of Investment Analysis, EB41, Annex 45. Therefore this CAR has been closed out.
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

Finding B5	
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	The possibilities of key parameters variation should be justified in B.5, using actual total investment, actual electricity tariff, income tax rate, etc. since the project has finished construction.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The evidence of actual total investment has been provided and justified; The evidence of actual electricity tariff is also provided.
DOE Assessment #1	Since the project has already finished construction current values for critical financial parameters differ from those referred to the time at which the investment decision was taken. This has been addressed in the section B.5 of the revised PDD and the validation team has checked that the current values are still within the sensitivity range and therefore this analysis is still valid. Therefore this CAR has been closed out.
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

Finding B6	
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	The previously used EF result has some error in the calculation resulted from different choice of data when calculating newly capacity addition, which has been confirmed and corrected by the NDRC. EF needs to be updated using the correct approach (based on the same data at the time of GSP).
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The EF calculation has been updated using the correct approach.
DOE Assessment #1	Upon checking PDD it is confirmed that the revisions are in place. Therefore the CAR is assessed as closed out.
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

Finding B7	
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR

	Finding B7
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>There are some issues with monitoring plan:</p> <ol style="list-style-type: none"> 1. According to on-site information, there is a 10kv backup power line; 2. According to on-site information, M4 is not at transformer substation. Instead, it is at project plant house.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<ol style="list-style-type: none"> 1.The 10KV power line is only used for the construction period and will not be used when the plant is in operation;. 2.The position of M4 is in the power plant <p>The power connection diagram is updated to give clearer description.</p>
DOE Assessment #1	<p>Upon checking revised PDD it is confirmed that the necessary revisions are in place. Therefore this CAR has been closed out.</p>
Conclusion <i>Tick the appropriate checkbox</i>	<p> <input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements </p>

	Finding B8
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>Meter accuracy was indicated as 0.2S in B.7.1 and 0.5S in B.7.2. while the actual meter accuracy is 0.5 according to on-site information.</p>
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>The actual meter accuracy is 0.5</p>
DOE Assessment #1	<p>Upon checking PDD it is confirmed that the relevant revision is in place. Therefore CAR B8 is assessed as closed out.</p>
Conclusion <i>Tick the appropriate checkbox</i>	<p> <input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements </p>

	Finding C1
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>The start of crediting period 01/01/2009 is not reasonable thus should be revised.</p>
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>The start of crediting period is estimated to be on the 1st of December 2009 or the registration date, whichever is later.</p>

	Finding C1
DOE Assessment #1	The revised starting date for the 1 st crediting period is now reasonable. The validation team has checked that all relevant documentation including this information have been amended accordingly. Therefore this CAR has been closed out.
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

	Finding E1
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	The description of due account taken is not fully according to stakeholder feedback. Eg. in local area irrigation is mainly from springs and small rivers, thus it is not convincing that the project improves local vegetation. Also, it should be clarified how the project contributes to local agricultural growth, etc.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	Revised.
DOE Assessment #1	Upon checking updated PDD, section E.3, the revision is confirmed. Therefore the CAR has been closed out.
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

5 VALIDATION ASSESSMENT SUMMARY

5.1 General Description of the Project Activity

5.1.1 Participation

LOAs

People's Republic of China and United Kingdom of Great Britain and Northern Ireland, both of which are Parties to the Kyoto Protocol, are involved in this project activity.

Host Country Approval from China for the project activity as Clean Development Mechanism Project was issued by China DNA, National Development and Reform Commission (NDRC) of the People's Republic of China, on 28th Oct 2008 ^{/HCA/}. It confirms that the project complies with the requirements of host country and assists in achieving Sustainable Development.

Letter of Approval from the UK authorising Climate Bridge as Project Participant for the project activity was issued by the UK's DNA, Department of Energy and Climate Change, on 09th June 2009 ^{/LOA-1/}. The project complies with the permission requirements of Annex I Country.

The validation team has confirmed that the LoA were issued by the DNA as listed in the UNFCCC website. Both LoAs were received from the project participant.

Authenticity of the LoAs is with no doubt.

The precise title of the project in the HCA^{/HCA/} and the LOA^{/LOA-1/} is: Hunan Tongdao Yaolaitan 5.55MW Hydro Power Project, which is consistent with PDD.

Letter of Approval^{/LOA-2/} authorizing Noble Carbon Credits Limited as a project participant in the project activity has been issued by the UK's DNA upon positive validation opinion from the DOE. The LoA has been issued on the 9th September 2009. Authenticity of the LoA is with no doubt. The precise title of the project has been quoted.

Project Participants

The project participants are:

- Tongdao Yaolaitan Hydro Power Development Co. Ltd. Authorised by the Government of China ^{/HCA/},
- Climate Bridge Ltd. authorized by the Government of the UK ^{/LOA-1/}, and
- Noble Carbon Credits Limited., whose letter of approval has been obtained upon positive validation opinion from the DOE.

Project participants are listed in tabular form in section A.3 of the PDD. The validation team has checked that this information is consistent with the contact details provided in annex 1 of the PDD.

No entities other than those approved as project participants are included in these sections of the PDD.

5.1.2 PDD Editorial Aspects

The project design document's version is 03, as per EB28, Annex 34, and complies with the latest PDD template and guideline, EB34, Annex 09.

5.1.3 Technology to be employed

Interviews, background research and document review are used as means of validation.

A clear and sufficient description of the project activity is provided in PDD, covering all relevant aspects. Precise nature of the project activity and the technical aspects of its implementation are presented in an understandable manner.

The project does not involve alteration of the existing installation or process. The technology employed is environmentally safe and sound. There is no technology transfer.

5.1.4 Small Scale Projects

The project is a hydropower project and its capacity is below 15MW. Therefore it falls under the SSC type.

5.2 Project Baseline, Additionality and Monitoring Plan

5.2.1 Application of the Methodology

The validation team has confirmed that the project applies to a valid version of a CDM Methodology approved by the Executive Board.

Approved small scale methodology AMS-I.D. "Grid Connected renewable electricity generation" (Version 13) is applied.

According to AMS-I.D., "Tool to calculate the emission factor for an electricity system" (Version 01.1) is used.

The methodology and tools are available at:

<http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.html>

5.2.2 Project Boundary

According to methodology AMS-I.D. (version 13), the project boundary encompasses

the physical, geographical site of the renewable generation source. For the proposed project, the boundary therefore is the project power plant including the dam, and the power house.

Electricity generated will be exported to Central China Power Grid and there may also be electricity import from the Central China Power Grid. Central China Power Grid covers Henan Province Power Grid, Hubei Province Power Grid, Hunan Province Power Grid, Jiangxi Power Grid, Sichuan Power Grid and Chongqing Power Grid.

5.2.3 Baseline Identification

The description of baseline identification in the PDD is transparent and verifiable.

According to AMS-I.D. (version 13), the baseline emissions can be determined by the electricity produced by the proposed project multiplied by an emission coefficient which is calculated according the option a) of the methodology, as a combined margin (CM) which consists of the combination of operating margin (OM) and build margin (BM) of the CCPG.

5.2.4 Calculation of GHG Emission Reductions

The calculation is done as per applied methodology AMS-I.D. and relevant methodology tools.

The ER_y of the project activity during the crediting period is the difference between the baseline emissions (BE_y) and project emissions (PE_y). Leakage is not considered since the project activity does not transfer technology from or to another project activity.

Baseline Emissions:

As per the "Tool to calculate the emission factor for an electricity system" (Version 01.1), the baseline emission factor EF_y is determined ex-ante and estimated as a combined margin (CM), consisting of the weighted average of operating margin (EF_{OM}) and build margin (EF_{BM}) factors.

The calculation method of OM and BM is derived from the methodology tool. Data used in the calculation of OM and BM are from China Energy Statistical Yearbook 2005, 2006 & 2007 and China Electric Power Yearbook 2005, 2006 & 2007, which are all publicly available at the time of GSP, summarized in Bulletin on the Baseline Emission Factors of the China's Regional Grids by the Chinese DNA. This calculation result is the same as calculation result of Chinese DNA based on the same data sources ^{/GEF/} (<http://cdm.ccchina.gov.cn/english/index.asp>).

$EF_{OM,y}$ calculation: Due to the fact that the low-cost/must-run resources constituting less than 50% to the total grid generation and that the data for "Dispatch Data Analysis" is not available, the simple OM emission factor ($EF_{OM,y}$) calculation method is applied. The OM factor is calculated considering generation sources serving the

system (not including the low-cost and must-run power plants) and three years average data (2004-2006). The $EF_{OM,y}$ is calculated to be 1.2783 tCO₂e/MWh and will not be changed during the first crediting period.

$EF_{BM,y}$ calculation: Due to unavailability of data at the power plant level in China and in accordance to the “clarification on use of approved methodology AM0005 for several projects in China” from EB, the $EF_{BM,y}$ is calculated to be 0.6687 tCO₂e/MWh and will not be changed during the first crediting period.

In accordance with the tool to calculate the emission factor for an electricity system (version 01), weight factors of $w_{OM} = w_{BM} = 0.5$ have been used and the resultant electricity baseline emission factor EF_y reads 0.9735 tCO₂e/MWh.

The validation team is convinced of the result of the emission coefficient calculation. It is deemed to be adequate and transparent.

Project Emissions:

According to the methodology AMS-I.D., project emissions are zero.

5.2.5 Additionality Determination

Consideration of CDM in decision making (if project start before validation)

The starting date of the project is 14.07.2005, as per the date of equipment purchase contract. Enough evidences have been provided to the validation team and hereby it confirms that this is the earliest date of project construction, implementation or real action, in compliance with the latest glossary of CDM terms, EB41, Para 67. Therefore the project start date is before validation and also falls under the category of “Existing project activities” according to the “Guidance on the Demonstration and Assessment of prior consideration of the CDM”, EB41, Annex 46, with a project start date before 2 August 2008. Projects under this category are required to demonstrate that the CDM was seriously considered in the decision to implement the project activity. Evidences have been provided by the project participant and are listed below:

- In May 2005, Preliminary Design Report ^{/PDR/} was completed, showing low financial attractiveness with a low IRR.
- On 15.05.2005, after the results of the PDR are presented, the project owner YLT held a meeting and decided to apply for CDM ^{/CDM-2/}.
- On 07.06.2005, the Hunan Province Construction Bank, Tongdao County Branch sent a letter to project owner YLT regarding bank loan, on which CDM is mentioned ^{/CDM-3/}. CDM application of the proposed project is mentioned in the letter of the bank, noting they were aware of it.

- On 21.06.2005 the PDR was approved by local authority ^{/PDRA/}.
- On 14.07.2005, the equipment purchase contract was signed, which is the start date of the project activity ^{/TGC/}.
- On 05.12.2005, the bank loan contract was signed ^{/BLC/}.
- On 31.08.2006, the CDM consultation agreement was signed ^{/CDM-4/}.
- On 20.11.2007, the ERPA with Climate Bridge Ltd. was signed ^{/CDM-5/}.
- On 27.11.2008, the project started GSP ^{/unfccc/}.

Based on the evidence of validation, CDM was seriously considered before the start of the project and continuous actions were taken to ensure the CDM application after the start of the project.

Application of methodology / methodological tools

The additionality was demonstrated acc. to § 28 of the simplified modalities and procedures for small-scale CDM project activities in connection with attachment A to appendix B as a barrier analysis ^{/SMP/}.

The individual arguments presented in the PDD to justify the additionality were summarised in table 4-2. This table also includes the assessment of the validation team.

Table 5-1: Additionality assessment

Type of barrier ¹⁾	Argument	Assessment
(a)	<p>The PP chooses the investment barrier analysis to proof additionality: The post-tax project IRR is 7.72% without CDM revenue, thus lower than the benchmark value of 10% which is based on Economic Evaluation Code for Small Hydropower Projects, an official and commonly used source to justify the benchmark value. Thus the project scenario is not the most economically feasible without benefits from CER sales.</p> <p>4 parameters are chosen for sensitivity analysis: Feed in tariff, O & M costs, Total investment, and Operating hours. The PP has evaluated the possibility that their variations, may make the project IRR reach the benchmark, however concluding that this is unlikely to happen..</p> <p>The assessment strictly follows annex</p>	<p><input type="checkbox"/> Argument not justified</p> <p><input type="checkbox"/> Argument not convincing</p> <p><input type="checkbox"/> Argument justified but not a decisive barrier</p> <p><input checked="" type="checkbox"/> Argument justified / significant barrier</p>

Type of barrier ¹⁾	Argument	Assessment
	45 of EB41 "Guidance on the Assessment of Investment Analysis" and Validation and Verification Manual /VVM/. For details of the assessment of financial parameters used in investment analysis, please refer to Annex 3 below.	
Assessment of the validation team		<input checked="" type="checkbox"/> Project is additional <input type="checkbox"/> Project is not additional

¹⁾ Classification acc. to Attachment A to Appendix B of the simplified modalities and procedures
a) investment barrier; b) technological barrier; c) barrier due to prevailing practice; d) other barriers

Summary

Based on assessment of CDM serious consideration and investment barrier analysis which are demonstrated in above sections, the project can be concluded as additional.

5.2.6 Monitoring Methodology

The monitoring plan is in compliance with the applied monitoring methodology AMS I.DI "Grid-connected renewable electricity generation" Version 13.

5.2.7 Monitoring Plan

According to the applied methodology AMS I.D., ver. 13, all monitoring parameters required are contained in the monitoring plan.

The project monitoring consists of metering the total electricity supplied by the project activity to the grid ($EG_{\text{export},y}$), the electricity imported from the grid ($EG_{\text{import},y}$), and the net electricity delivered to the grid (EG_y).

The monitoring plan is in compliance with the methodology and all the monitoring arrangements are feasible within the project design.

5.2.8 Project Management Planning

Management structure of the monitoring plan is defined in Section B.7.2. The general manager takes the overall responsibility, with the help of monitoring officers and internal verifiers.

5.2.9 Crediting Period

The starting date of project's 1st renewable crediting period is 01.12.2009 or the date of registration, whichever is later.

5.2.10 Environmental Impacts

In China, according to Chinese legislation, an Environmental Impacts Assessment is required for this type of projects. The EIA report of the project has been approved by local government^{/EIA/}. The analysis of the environmental impacts of the project activity is sufficiently described according to EIA. According to the EIA, there is no trans-boundary environmental impact created by the project activity.

5.2.11 Comments by Local Stakeholders

Based on the on-site validation investigation, relevant local stakeholders have been invited to comment on the project and a summary of comments is available in the PDD in section E.2. And provided that only positive comments were received, no due account is required.

6 VALIDATION OPINION

Climate Bridge Ltd. has commissioned the TÜV NORD JI/CDM Certification Program (CP) to validate the project: "Hunan Tongdao Yaolaitan 5.55MW Hydro Power Project" with regard to the relevant requirements of the UNFCCC for CDM project activities, as well as criteria for consistent project operations, monitoring and reporting. UNFCCC criteria include article 12 of the Kyoto Protocol, the modalities and procedures for CDM (Marrakech Accords), the simplified modalities and procedures for small scale CDM project activities of annex II to decision 21/CP.8 and the relevant decisions by COP/MOP and CDM Executive Board.

In the course of the pre-validation, 11 Corrective Action Requests (CARs) and 1 Clarification Requests (CLs) were raised and successfully closed.

The review of the project design documentation and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and review of comments by parties, stakeholders and NGOs have provided TÜV NORD JI/CDM CP with sufficient evidence to validate the fulfilment of the stated criteria.

In detail the conclusions can be summarised as follows:

- The project is in line with all relevant host country criteria (China) and all relevant UNFCCC requirements for CDM. Project activity approval has been obtained from DNA of China for project participant Tongdao Yaolaitan Hydro Power Development Co. Ltd vide the Letter of Approval (HCA) on 18th Feb 2009, from DNA of The UK for project participant Climate Bridge vide the Letter of Approval (LOA-1) on 09th June 2009. The Letter of Approval (LOA-2) for project participant Noble Carbon Credits Limited has been issued by UK's DNA upon positive validation opinion from the DOE.
- The project additionality is sufficiently justified in the PDD.
- The monitoring plan is transparent and adequate.
- The calculation of the project emission reductions is carried out in a transparent and conservative manner, so that the calculated annual emission reductions of 20,576 tCO₂e are most likely to be achieved within the 1st renewable crediting period (01/12/2009 to 30/11/2016.).

The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria applicable for the validation.

Shanghai, 2009-09-14



Li Yong Jun
TÜV NORD JI/CDM CP
Validation Team Leader

Essen, 2009-09-14



Rainer Winter
TÜV NORD JI/CDM CP
Final Approval

7 REFERENCES

Table 7-1: Documents provided by the project participant

Reference	Document
/AWR/	Approval of the Water Resource Demonstration, issued by Huaihua City Hydro Bureau, HuaiShuiZhengZi[2005]97, 03/08/2005.
/BL/	Business License of Tongdao Yaolaitan Hydro Power Development Co., Ltd.
/BLC/	Bank loan contract, 05/12/2005.
/CC/	Construction Contract, 28/12/2005
/CC35/	Construction Contract of 3.2 km 35kv transmission line, 29/10/2007
/CDM/	CDM Management decision related documents: 1. Invitation letter of CDM seminar, issued by Tongdao County Development and Reform Bureau, 06/05/2005. 2. Board meeting decision regarding CDM, 15/05/2005. 3. loan rejection letter with CDM indicated, issued by Hunan Province Construction Bank, Tongdao County Branch, 07/06/2005 4. CDM project consultation contract with Beijing Shihang Environment Investment Consulting Co., Ltd., 31/08/2006. 5. Emission Reduction Purchase Agreement, 20/11/2007
/CP/	Construction permission, 02/08/2006
/EIA/	Environment Impact Assessment, September 2004.
/EIAA/	Environment Impact Assessment Approval, issued by Huaihua City Environment Protection Bureau, HuaiHuanHan[2004]74, 25/10/2004.
/ER/	Emission Reduction Calculation Spreadsheet (<i>pending</i>)
/ETE/	Document about Electricity tariff (<i>pending</i>) Document from Tongdao County Price Bureau regarding the electricity tariff of the project activity, 11/11/2008.
/FSRA/	Feasibility Study Report Approval, issued by Huaihua City Development and Planning Commission, HuaiJiNeng[2004]16, 07/06/2004.
/GCA/	Grid connection Agreement, 20/12/2005
/GR/	Geologic risks Assessment Report and its approval, June 2006

Reference	Document
/HCA/	Host Country Approval from DNA of China, dated 18/02/2009. LoA Number: 1832 <i>(pending)</i>
/IRR/	IRR Calculation spreadsheet
/LA/	Land occupation compensation documents
/LOA/	Letter of Approval from DNA of Annex I Country 1. LoA of UK for Climate Bridge, 09/06/2009; 2. LoA of UK for Noble Carbon Credits Limited <i>(pending)</i> :
/LUC/	Land Usage Certificate, 30/06/2006
/MOC/	Modalities of communication <i>(pending)</i>
/PCD/	Power connection diagram <i>(pending)</i>
/PDD-1/	Project Design Document entitled "Hunan Tongdao Yaolaitan 5.55MW Hydro Power Project" Version 01; 30/10/2008 (hosted for public comments during 27/11/2008 to 26/12/2008)
/PDD-2/	Final Project Design Document entitled "Hunan Tongdao Yaolaitan 5.55MW Hydro Power Project" Version 02; 03/07/2008
/PDD-3/	Final Project Design Document entitled "Hunan Tongdao Yaolaitan 5.55MW Hydro Power Project" Version 03; 11/09/2009
/PDR/	Preliminary Design Report, May 2005
/PDRA/	Preliminary Design Report Approval, along with assessment opinion, issued by Huaihua City Hydro Bureau, HuaiShuiDianZi[2005]141, 21/06/2005.
/PSL/	Project site layout
/SCD/	Stakeholder consultation documentation: 1. questionnaires 2. stakeholder consultation notice on local newspaper, 26/03/2008 3. stakeholder meeting attendance list 4. stakeholder meeting memo <i>(pending)</i>
/TGA/	Turbine & Generator technical Agreement, July 2005
/TGC/	Turbine & Generator Business Contract, 14/07/2005
/TRC/	Training Records / Operator Certificates <i>(pending)</i>

Reference	Document
/WRD/	Water Resource Demonstration Report, March 2005
/WSP/	Water and Soil Protection Plan Certificate, 28/06/2005

Table 7-2: Background investigation and assessment documents

Reference	Document
/AMS I.D./	"Grid-connected renewable electricity generation" (Version 13)
/CEY/	China Energy Yearbook 2003-2007
/CPM/	TÜV Nord JI / CDM CP Manual (incl. CP procedures and forms)
/CTU/	Notice of the General Office of the State Council concerning the Strict Prohibition of the Construction of Thermal Power Units with a Capacity of 135MW or below, issued by the General Office of the State Council [2002]Document No.6
/GCSCP/	UNFCCC: Guidelines for completing the simplified project design document (CDM-SSC-PDD) and the form for submissions on methodologies for small-scale CDM project activities (F-CDM-SSC-Subm)
/GEF/	Official data sources for Grid Emission Factor (CCPG Grid) published by the Chinese DNA.
/IPCC-GP/	IPCC Good Practice Guidance & Uncertainty Management in National Greenhouse Gas Inventories, 2000
/IPCC-RM/	Revised 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual
/KP/	Kyoto Protocol (1997)
/MA/	Decision 17/CP. 7 (Marrakesh – Accords & Annex to decision 17/CP.7)
/SL16-95/	Economic Evaluation Code for Small Hydropower Projects, issued by The Ministry of Water Resources of P. R. China, Hydropower [Decree 1995] No. 186
/SMP/	Simplified modalities and procedures for small-scale clean development mechanism project activities (Annex II to Decision 21/CP.18)

Reference	Document
/TEF/	Tool to calculate the emission factor for an electricity system, (Version 1.1)
/TRE/	<p>Tax rate evidences:</p> <ol style="list-style-type: none"> 1. Interim Regulations on the People's Republic of value-added tax 2. People's Republic of China Enterprise Income Tax Law 3. Interim Regulations on People's Republic of China's City Maintenance and Construction Tax 4. State Council Notice on Education Tax, GuoFaMingDian[1994]2,07/02/1994 5. Document No.[1994]004, issued by the National Financial Ministry and National Revenue Ministry regarding Value Added Tax, 6. Document [1998]843 and [2006]47 issued by National Revenue Ministry regarding Value Added Tax. 7. Notice from National Tax Bureau about adjusting the residual value rate of fixed assets, [2005]883
/VVM/	UNFCCC Validation and Verification Manual (Version as per EB 44)

Table 7-3: Websites used

Reference	Link	Organisation
/dna-c/	http://cdm.ccchina.gov.cn/english/index.asp	National Development and Reform Commission (DNA of China)
/ipcc/	www.ipcc-nggip.iges.or.jp	IPCC publications
/unfccc/	http://cdm.unfccc.int	UNFCCC

Table 7-4: List of interviewed persons

Reference	Mol ¹		Name	Organisation / Function
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Yang Yujin	Yaolaitan Hydro Power Station / Legal representative
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Zhou Wenge	Yaolaitan Hydro Power Station / Vice General Manager
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Yang Fu'an	Yaolaitan Hydro Power Station / Station master
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Yang Xing	Yaolaitan Hydro Power Station / Technician
/IM02/	V	<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	Hu Lijiao	Climate Bridge Ltd. / Project Analyst
/IM03/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Zhu Guobing	Tongdao County Xianxi Township Gaozhai Village, Group 1
/IM03/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Yang Liangshan	Tongdao County Xianxi Township Gaozhai Village, Group 6
/IM03/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Wu Guowen	Tongdao County Environment Protection Bureau / Vice Director
/IM03/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Gao Chenbiao	Tongdao County Hydro Affair Bureau
/IM03/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Zuo Shouming	Tongdao County Political Consultative Conference / Vice President

Reference	Mol ¹		Name	Organisation / Function
/IM03/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Xu Xianqian	Tongdao County Development and Reform Bureau / Director
/IM03/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Shen Xianping	Tongdao County Hydro Affair Bureau

¹⁾ Means of Interview: (Telephone, E-Mail, Visit)

ANNEX

- A1:** Validation Protocol
- A2:** Assessment of Baseline Identification
- A3:** Assessment of Financial Parameters
- A4:** Assessment of Barrier analysis
- A5:** Outcome of the GSCP
- A6:** Appointment certificates of the team members

ANNEX 1: VALIDATION PROTOCOL

Table A-1: Requirements Checklist

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
A. General Description of Project Activity				
A.1. Approval <i>The written approval of the parties involved is a mandatory requirement</i>				
A.1.1. Has the project provided written approvals of all parties involved? <i>Indicate whether a letter of approval has been received, with a clear reference to the supporting documentation.</i> <i>Indicate whether this letter was provided to the DOE by the project participants or directly by the DNA</i>	At the time of the (pre-) validation the letters of approval of all involved parties are pending (China, UK).	/HCA/ /LOA/	CAR A1	
A.1.2. Are the approvals issued from organisations listed as DNAs on the UNFCCC CDM website? <i>Indicate the means of validation employed to assess the authenticity</i>	The DNA in China is the National Development and Reform Commission. The DNA in the UK is the Department of Energy and Climate Change. At the time of the (pre-) validation the letters of approval of all involved parties are pending (China, UK).	/PDD/ /HCA/ /LOA/	CAR A1	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
A.1.3. Do the written approvals confirm that the corresponding party is a Party to the Kyoto Protocol?	At the time of the (pre-) validation the letters of approval of all involved parties are pending (China, UK).	/LOA/	CAR A1	
A.1.4. Do the written approvals confirm that the participation is voluntary?	At the time of the (pre-) validation the letters of approval of all involved parties are pending (China, UK).	/HCA/ /LOA/	CAR A1	
A.1.5. Does the written approval from the host country confirm that the project contributes to the sustainable development in the country?	At the time of the (pre-) validation the letters of approval of all involved parties are pending (China, UK).	/LOA/	OK	
A.1.6. Do the written approvals refer to the precise project title in the PDD submitted for registration?	At the time of the (pre-) validation the letters of approval of all involved parties are pending (China, UK).	/LOA/	CAR A1	
A.1.7. Are the written approvals unconditional with regard to A.1.3 to A.1.6?	At the time of the (pre-) validation the letters of approval of all involved parties are pending (China, UK).	/HCA/ /LOA/	CAR A1	
A.1.8. Is the information regarding the project participants listed in section A3 and in Annex 1 of the PDD internally consistent to each other?	Yes, the information regarding project participants listed in section A3 and in Annex 1 of PDD is consistent with each other.	/PDD/	OK	
A.1.9. Are all project participants listed in the PDD approved at least by one Party involved? <i>Indicate whether the participation of the project participant(s) has been approved by a Party to the Kyoto Protocol.</i> <i>Describe the means of validation employed to draw this conclusion.</i>	At the time of the (pre-) validation the letters of approval of all involved parties are pending (China, UK).	/HCA/ /LOA/ /PDD/	CAR A1	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
A.1.10. Are any other project participants approved but not listed in the PDD?	At the time of the (pre-) validation the letters of approval of all involved parties are pending (China, UK).	/HCA/ /LOA/ /PDD/	CAR A1	
A.2. Contribution to Sustainable Development <i>The project's contribution to sustainable development is assessed.</i>				
A.2.1. Has the host country confirmed that the project assists it in achieving sustainable development? <i>Contain a statement confirming whether the letter of approval by the DNA of the host party confirmed the contribution of the project to the sustainable development of the Host Party.</i>	The Chinese DNA has not issued the HCA, in which the contribution to sustainable development is addressed and confirmed.	/HCA/	CAR A1	
A.2.2. Will the project create other environmental or social benefits than GHG emission reductions? <i>Describe the other positive aspects not related to GHG emission reduction on the environment</i>	The view of the project participants on the contribution of the project activity towards sustainable development is briefly described in section A.2. Besides delivery of clean electricity and GHG reduction, the project also stimulates local economy development and provides job opportunities to the local region.	/PDD/ /SCD/	OK	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
A.3. PDD editorial aspects <i>The PDD used as a basis for validation shall be prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM website.</i>				
A.3.1. Has the latest version of the PDD form been applied?	Yes. The version applied is the number 03, as per EB28, Annex 34.	/PDD/	OK	
A.3.2. Has the PDD been duly filled in accordance with the latest guidance(s)?	Please refer to the CARs and CLs.	/PDD/	Not ok yet	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
A.4. Technology to be employed <i>Validation of project technology focuses on the project engineering, choice of technology and competence/maintenance needs. The DOE should ensure that environmentally safe and sound technology and know-how is used.</i>				
<p>A.4.1. Does the PDD contain a clear, accurate and complete project description? <i>The PDD shall contain a clear description of the project activity which provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation.</i> <i>Pl. consider esp. chapters A.2, A.4.2 and A.4.3 (in case of LSC PDD) for assessment.</i> <i>Describe the process undertaken to validate the accuracy and completeness of the project description.</i> <i>Contain the DOE's opinion on the accuracy and completeness of the project description.</i></p>	<p>The project consists in the construction and operation of a hydropower plant. The core units of the projects are the dam and power house.</p> <p>In PDD section A.4.2 description of the technology is provided in condensed form. The technology is environmentally safe and sound and technology is of indigenous origin. The technology used is domestic and mature.</p> <p>However, surface area of reservoir needs data reference. Also, the height of dam indicated in A.4.2. is incorrect.</p>	/PDD/	CAR A2	OK
<p>A.4.2. Is this description in accordance with the real situation or (in case of greenfield projects) is it most likely that the project will be implemented acc to the project description</p>	<p>Yes, the description is in accordance with the real situation.</p>	/PDD/ /TGA/ /TGC/	OK	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
<p>A.4.3. In case the project involves alteration of the existing installation or process, is a clear description available regarding the differences between the project and the pre-project situation?</p> <p><i>Describe the steps taken to validate this issue.</i></p>	<p>Not applicable. The project does not involve alteration of the existing installation or process since the project is a Greenfield project..</p>	<p>/PDD/ /IM01/ /PDR/ /TGA/ /TGC/</p>	<p>N/A.</p>	
<p>A.4.4. Does the project design engineering reflect current good practices?</p> <p><i>Consider the equipment specifications, literature (e.g. EU BREF papers) and professional experiences. Describe the process undertaken to assess the engineering.</i></p>	<p>Yes, the project design engineering reflects good practices.</p> <p>In PDD section A.4.3 description of the technical parameters is provided in condensed form. The technology is environmentally safe and sound and technology is of indigenous origin.</p>	<p>/PDD/ (A.4.3.) /IM01/</p>	<p>OK</p>	
<p>A.4.5. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?</p> <p><i>Describe the process undertaken to assess the state of the art technology.</i></p>	<p>The project uses state of the art technology. This is confirmed through document review.</p>	<p>/PDD/ (A.4.3.) /IM01/ /PDR/ /TGA/ /TGC/</p>	<p>OK</p>	
<p>A.4.6. Does the project make provisions for meeting training and maintenance needs?</p> <p><i>Describe the process undertaken to assess the maintenance and training needs.</i></p>	<p>Training and maintenance needs for the monitoring staff and operators are provided. This was confirmed during interview with relevant representatives.</p>	<p>/PDD/ (B.7.2.) /IM01/ /TRC/</p>	<p>OK</p>	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
A.5. Small scale project activity <i>It is assessed whether the project qualifies as small-scale CDM project activity</i>				
A.5.1. Does the project qualify as a small scale CDM project activity as defined in decision 4 / CMP.1 annex II? <i>Describe the steps taken to validate this issue.</i>	Yes, the project is a hydropower project and its capacity is 5.55 MW, below the 15MW type I projects threshold; thus it is qualified as a small scale CDM project activity.	/PDD/	OK	
A.5.2. Does the project apply one of the approved small scale categories and any methodology and tool referred therein? <i>Describe the steps taken to validate this issue. Check, if applicable the expiry dates of the applied methodology.</i>	Yes, approved small scale methodology AMS-I.D. "Grid Connected renewable electricity generation" (Version 13) is applied, along with the Methodology tool 'Tool to calculate the emission factor for an electricity system' (version 01.1) Both are valid versions. However, since a new version of the methodology is already available, projects underlying this methodology can submit request for registration till 30 March 2010.	/PDD/ /AMS.I.D / /TEF/	OK	
A.5.3. Is the small scale project activity not a debundled component of a larger project activity? <i>Describe the steps taken to validate this issue. Pl refer to the Compendium of guidance on debundling (EB 36, Annex 27).</i>	The small scale project activity is not a debundled component of a larger project activity, since the project owner only developed the only hydropower project within 1 km's distance. This is confirmed through site visit and interview.	/PDD/ /IM01/ /unfccc/	OK	
B. Project Baseline, Additionality and				

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
Monitoring Plan				
B.1. Application of the Methodology				
B.1.1. Does the project apply an approved and applicable CDM methodology and a valid version thereof? <i>Describe the steps taken to validate this issue.</i>	Yes. The project applies Baseline methodology AMS. I.D. (Ver.13). The methodology tool, "Tool to calculate the emission factor for an electricity system (Version 01.1)" is also applied: - Both are valid versions of approved and applicable CDM methodology.	/PDD/ (B.1., B.4.)	OK	
B.1.2. Is the applied CDM methodology identical with the version available on the UNFCCC website? <i>Describe the steps taken to validate this issue.</i>	Yes, the applied CDM methodology is identical with the version available on the UNFCCC website.	/PDD/ (B.1., B.4.)	OK	
B.1.3. Are all applicability criteria in the methodology, the applied tools or any other methodology component referred to therein fulfilled? <i>Describe for each applicability criterion listed in the selected approved methodology the steps taken to assess the information contained in the PDD.</i>	Yes, the project fulfils the applicability criteria of AMS. I.D. (Ver. 13). The project consists in a new-built grid connected renewable hydropower unit and dispatches electricity to the grid, therewith displacing electricity that otherwise would have been produced by mainly fossil-fuel fired power plants.	/PDD/ (B.2.)	OK	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
<p>B.1.4. Is the project in accordance to every other stipulation or requirement mentioned in all sections of the methodology?</p> <p><i>Describe the steps taken to check whether the proposed project activity meets <u>all the other possible stipulations and/or limitations</u> mentioned in all sections of the approved methodology selected.</i></p>	Yes, the project is in accordance with the methodology.	/PDD/	OK	
<p>B.2. Project Boundaries</p> <p><i>Project Boundaries are the limits and borders defining the GHG emission reduction project</i></p>				
<p>B.2.1. Are the project's spatial boundaries (geographical) clearly defined?</p> <p><i>Provide information on how the validation of the geographical boundary has been performed either based on reviewed documented evidence or by describing what was observed/viewed during a site visit.</i></p>	<p>The project is located in the upper range of Qushui River in Xianxi Town, Tongdao Dong Minority Autonomous County in Huaihua City, Hunan Province, P. R. China. The Unique geographical identification of the project is: 109°39'32"E, 26°21'15" N.</p> <p>Electricity generated by the project activity is sent through local grid to Hunan Grid, which is part of the Central China Power Grid. This is confirmed through document review and on-site visit.</p>	/PDD/ /PDR/	OK	
<p>B.2.2. Are all sources and GHGs included in the project boundary as required in the applied methodology?</p> <p><i>Provide information on how the validation of the GHGs and sources has been performed either based on reviewed documented evidence or by describing what was observed/viewed during a site visit.</i></p>	Not applicable, the methodology does not require including sources and GHGs.	/PDD/ (Table B1)	n/a	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
<p>B.2.3. In case the methodology allows to choose whether a source and/or gas is to be included, is the choice sufficiently explained and justified?</p> <p><i>Confirm if the justification provided by the PPs is reasonable, based on assessment of supporting documented evidence provided by the PPs or by onsite observations.</i></p>	<p>Not applicable, as above.</p>	<p>/PDD/ (Table B1)</p>	<p>n/a</p>	
<p>B.3. Baseline Identification</p> <p><i>The choice of the baseline scenario will be validated with focus on whether the baseline is a likely scenario, and whether the methodology to define the baseline scenario has been followed in a complete and transparent manner.</i></p>				
<p>B.3.1. What possible baseline scenarios have been considered?</p> <p><i>Fill in all alternatives in table A-2.</i></p>	<p>The baseline scenario considered is as defined by AMS. I.D is clearly indicated in section B.4 of the PDD as the electricity generated by the proposed renewable electricity generating unit multiplied by an emission coefficient.</p>	<p>/PDD/ (B.4)</p>	<p>OK</p>	
<p>B.3.2. Is the list of alternatives complete?</p> <p><i>Describe how it was validated that all alternatives are plausible and no plausible alternative is excluded from the consideration</i></p>	<p><input type="checkbox"/> All plausible alternative scenarios listed in the approved methodology have been considered. In the course of document review and site visit, it has been validated that no other alternatives which supply comparable outputs and / or services are to be taken into consideration. Thus no plausible scenario has been omitted.</p> <p><input type="checkbox"/> The following alternative scenarios/options have been omitted. Corresponding CAR(s)/CL(s) has /have been</p>	<p>/PDD/ (B.4)</p>	<p>OK</p>	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
	issued Not applicable. It is not necessary to list alternatives, according to the methodology.			
B.3.3. What has been identified as the baseline scenario? <i>Describe the chosen BL scenario</i>	The baseline scenario is the electricity generated by the proposed renewable electricity generating unit multiplied by an emission coefficient, which is in compliance with AMS I.D.	/PDD/ (B.4)	OK	
B.3.4. Has the baseline scenario been determined according to the methodology? <i>Describe how it is validated that the identification of the most plausible baseline scenario is carried out in accordance with the applied methodology and applied methodological tools. Please refer to table A-2.</i>	For details of the assessment regarding the evaluation of the baseline scenario pl. refer to table A-2. <input checked="" type="checkbox"/> The determination has been carried out as per the applied methodology. <input type="checkbox"/> The following CARs / CLs have been identified with respect to the selection of the baseline scenario:	/PDD/	OK	
B.3.5. Has any plausible alternative scenario been excluded? <i>Describe how it is validated that no plausible alternative scenario has been excluded.</i>	For details of the assessment regarding the evaluation of the baseline scenario pl. refer to table A-2. <input type="checkbox"/> No plausible baseline scenario has been excluded. <input type="checkbox"/> The following plausible baseline scenarios have been excluded though no adequate justification has been provided for elimination. The following CARs / CLs have been issued: Not applicable. It is not necessary since no alternative scenarios have to be identified according to the methodology.	/PDD/	OK	
B.3.6. Has the baseline scenario been determined using conservative assumptions where	<input checked="" type="checkbox"/> The baseline scenario has been determined using conservative assumptions where possible. Please refer to comments in table A-2 and sections B.3.2 to B.3.5	/PDD/	OK	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
possible? <i>Describe whether the choice of the identified baseline scenario is reasonable by validating the <u>key assumptions, calculations and rationales</u> used in the PDD. Describe whether these are <u>conservatively interpreted</u> in the PDD.</i>	above. <input type="checkbox"/> The following CARs / CLs have been issued because assumptions used in the baseline determination have been assessed to be not conservative			
B.3.7. Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations? <i>Describe whether the PP has shown that all relevant policies and circumstances have been identified and correctly considered in the PDD in accordance with the guidance by the Board. Pl. consider the guidance EB 22 annex 3 (regarding E+ and E- policies).</i>	Yes, the baseline scenario sufficiently takes into account relevant national and/or sectoral policies.	/PDD/ (B.4.)	OK	
B.3.8. Is the baseline scenario determination compatible with the available data and are all literature and sources clearly referenced? <i>Describe whether the documents and sources referred to in the PDD are correctly quoted and clearly referenced.</i>	The literature in the web link (footnote 6 on page 8 of published PDD) is not consistent with the data used in baseline scenario. Literature in web link is based on statistics data up to 2005 while the baseline EF is actually upon statistics data from up to 2007.	/PDD/	CL-B+	OK
B.4. Additionality Determination <i>The assessment of additionality will be validated with focus on whether the project itself is not a likely baseline scenario.</i>				
B.4.1. Methodology				

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
B.4.1.1. Did the additionality justification follow the requirements of the applied methodology and/or methodological tools? <i>Describe how it is validated that additionality justification is carried out in accordance with the applied methodology and/or applied methodological tools.</i>	The project additionality is demonstrated by applying the Appendix A to B of the UNFCCC's Simplified Modalities and Procedures for Small-scale CDM Project Activities.	/PDD/	OK	
B.4.2. Consideration of CDM before project start				
B.4.2.1. Is the project starting date reported in accordance with the CDM glossary of terms? <i>Describe the steps taken to validate this issue.</i>	According to device purchase contract, the turbine and generators were purchased on 14/07/2005. Starting date should be revised.	/PDD/	CAR B2	OK
B.4.2.2. In case the project start date is before commencing of validation, was the incentive from the CDM seriously considered and are details given in the PDD? <i>Describe whether the evidence to support such consideration is adequately and transparently described in the PDD.</i>	The starting date of the project activity is before the date of the validation. CDM related events should be included in the key event time table.	/PDD/ (B.5.) /CDM.	CAR B3	OK
B.4.2.3. How and when was the decision to proceed with the project taken? <i>Describe the steps taken to validate the starting date.</i>	CDM was considered after the PDR shows that the project is financial unattractive with a low IRR. The board meeting decision was made on 15 th May 2005.	/PDD/ /PDR/ /CDM/	OK	
B.4.2.4. Is the project start date consistent with the	CAR B2 needs to be closed out first.	/PDD/ (B.5.)	CAR	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
available evidences? <i>Describe the evidence assessed regarding the prior consideration of the CDM (if necessary). Describe whether the evidence to support such consideration is adequately and transparently described in the PDD.</i>		/TGC/	B2	
B.4.2.5. Was the decision to proceed with the project taken by a person which has the authority to do so? <i>Describe the steps taken to validate this issue.</i>	Yes, the decision to proceed with the project was taken by HFXG, the project owner. This is confirmed through document review.	/PDD/ /CDM/	OK	
B.4.2.6. How was the CDM involved in the decision making process? <i>Describe the steps taken to validate this issue.</i>	CDM was considered after the PDR shows the project has a low IRR and unattractive financial prospective. The board meeting decision was made on 15 th May 2005. This is confirmed through document review.	/PDD/ (B.5.) /CDM/	OK	
B.4.2.7. Can the CDM involvement in the decision assessed as serious? <i>Describe whether or not the project would have been undertaken without the incentive of the CDM.</i>	Yes. The CDM involvement in the decision is early and serious as the evidences show. Therefore the validation team can conclude that the project would not have been undertaken without CDM.	/PDD/ (B.5.)	OK	
B.4.3. Identification of alternatives Step 1 (in case of SSC projects pl. skip steps 1 and 2)				
B.4.3.1. Have all realistic alternatives been identified to the project? <i>Describe whether the list of alternatives is complete. Describe how it is validated that the alternatives are realistic.</i>	Not applicable.	/PDD/	n/a	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
B.4.3.2. Contains the list of alternatives at least the status-quo situation and the project not undertaken as a CDM project? <i>Describe the steps taken to validate this issue.</i>	Not applicable.	/PDD/	n/a	
B.4.3.3. Do all identified alternatives comply with applicable regulation? <i>Describe the steps taken to validate this issue. Refer to the regulations.</i>	Not applicable, since the methodology does not require alternative identification.	/PDD/	OK	
B.4.4. Investment analysis Step 2 <i>In case the investment analysis as per step 2 is chosen to justify the additionality Annex 2 "Assessment of Financial Parameters" has to be used to provide additional details of the calculation parameters..</i>				
B.4.4.1. Is an appropriate analysis method chosen for the project (simple cost analysis, investment comparison analysis or benchmark analysis)? <i>Describe why the selected analysis method is appropriate under consideration of potential revenues and costs, potential project alternatives and potential available benchmark values.</i>	Yes. Benchmark analysis approach is chosen, since the project gets revenues from electricity sales and there is no other investment alternative to compare with.	/PDD/	OK	
B.4.4.2. Is a clear, viewable and unprotected Excel spreadsheet available for the investment calculation?	Yes. The Excel spreadsheet of the project for investment calculation is viewable and unprotected.	/IRR/	OK	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
<i>Describe the steps taken to validate this issue.</i>				
<p>B.4.4.3. Does the period chosen for the investment analysis reflect the technical lifetime of the project activity or in case a shorter period is chosen, is the fair value of the project activity's assets at the end of the investment analysis period (as a cash inflow) included?</p> <p><i>Describe how the technical lifetime / period chosen for calculating financial parameter(s) is reviewed and which documents were utilised in the course of review. Describe furthermore the approach used to check the inclusion of a potential fair value.</i></p>	The period chosen for the investment analysis reflects the technical lifetime of the project which is 20 years. This is confirmed with the PDR.	/PDD/ /IRR/ /PDR/	OK	
<p>B.4.4.4. Is the fair value calculated in accordance with local accounting regulations (where available) or international best practice?</p> <p><i>State the accounting regulations applied for calculating the fair value and describe why these are applicable under the project specific circumstances. Describe potential mismatches between regulations and the approach applied for calculating the fair value.</i></p>	Not applicable, since the chosen period for the investment analysis already reflects the technical lifetime of the project activity.	/PDD/ /PDR/	n/a	
<p>B.4.4.5. Is the book value as well as the expectation of the potential profit or loss included in the fair value calculation?</p>	Not applicable, since the chosen period for the investment analysis already reflects the technical lifetime of the project activity.	/PDD/ /PDR/	n/a	
<p>B.4.4.6. Are depreciation and other non-cash</p>	Yes, depreciation and other non-cash related items added	/PDD/	OK	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
related items added back to net profits for the purpose to calculate the financial indicator?	back to cash inflow.	/PDR/ /IRR/		
B.4.4.7. Is taxation excluded in the investment analysis or is the benchmark intended for post tax comparisons?	The benchmark is intended for post tax comparison.	/PDD/ /PDR/ /IRR/	OK	
B.4.4.8. Were the input values used in the investment analysis valid and applicable at the time of the investment decision?	<p>Yes, all input values used in the investment analysis are from PDR, which is valid and applicable at the time of the investment decision.</p> <p>However, there are some issues w.r.t. the IRR calculation:</p> <ol style="list-style-type: none"> total static investment indicated in PDD and IRR spreadsheet is 35,137,000 RMB, which is inconsistent with the value given in PDR (34,818,700 RMB) in cashflow sheet of IRR calculation, construction period is 3 years while construction period in PDR is 2 years. the calculation approach/result of depreciation, operational cost, working capital, income tax without CDM, etc. are not exactly the same as in PDR. Corrective action or clarification is necessary. <p>Also, the possibilities of key parameters variation should be justified in B.5, using actual total investment, actual electricity tariff, income tax rate, etc. since the project has finished construction.</p>	/PDD/ /PDR/ /PDRA/	<div>CAR B4</div> <div>CAR B5</div>	<div>OK</div> <div>OK</div>

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
B.4.4.9. In case of project IRR: Are the costs of financing expenditures (loan repayments and interests) excluded from the calculation of project IRR?	Yes, the costs of financing expenditures (loan repayments and interests) were excluded from the cash flow out of the project IRR.	/PDD/ /PDR/ /SL16-95/	OK	
B.4.4.10. In case of equity IRR: Is the part of the investment costs, which is financed by equity considered as net cash outflow and is the part financed by debt excluded in net cash outflow?	Not applicable, since the project applies project IRR.	/PDD/ /PDR/	n/a	
B.4.4.11. Is the type of benchmark chosen appropriate for the type of IRR calculated (e.g. local commercial lending rates or weighted average costs of capital for project IRR; required/expected returns on equity for equity IRR)?	Benchmark value of 10% is taken, based on Economic Evaluation Code for Small Hydropower Projects ^{/SL16-95/} .	/PDD/ /PDR/ /SL16-95/	OK	
B.4.4.12. Is the benchmark value suitable for the project activity?	Yes, the benchmark value is suitable for the project activity.	/PDD/ /PDR/ /SL16-95/	OK	
B.4.4.13. Is it ensured that the project cannot be developed by other developers than the PP?	This project uses sectoral benchmark IRR thus this question is not applicable.	/PDD/ /PDR/ /IRE/	OK	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
B.4.4.14. Was the benchmark consistently used in the past for similar projects with similar risks?	Yes, the benchmark is commonly and consistently used in the past for similar projects.	/PDD/ /PDR/ /unfccc/	OK	
B.4.5. Barrier analysis Step 3 or SSC additionality assessment				
B.4.5.1. Are there any barriers given which have a clear and definable impact on the profitability of the project?	Not applied.	/PDD/ (B.5)	n/a	
B.4.5.2. How is it justified and evidenced that the barriers given in the PDD are real?	Not applied.	/PDD/ (B.5)	n/a	
B.4.5.3. How is it justified that one or a set of real barriers prevent(s) the implementation of the project activity?	Not applied.	/PDD/ (B.5)	n/a	
B.4.6. Common practice analysis Step 4 (in case of SSC projects skip this step)				
B.4.6.1. Is the defined region for the common practice analysis appropriate for the technology/industry type?	Not applied.	/PDD/ (B.5)	n/a	
B.4.6.2. To what extent similar projects have been undertaken in the relevant region?	Not applied.	/PDD/ (B.5)	n/a	
B.4.6.3. In case similar projects are identified, are	Not applied.	/PDD/	n/a	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
there any key differences between the proposed project and existing or ongoing projects and what kind of differences are observed?		(B.5)		
B.5. Ex-Ante Calculation of GHG Emission Reductions <i>It is assessed whether the ex-ante calculations of project emissions, baseline emissions, leakage emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified. Furthermore calculation of emission reductions shall be assessed.</i>				
B.5.1. Are the equations applied correctly according to the applied approved methodology? <i>Describe clearly the steps taken to assess whether The methodology has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions.</i>	<input type="checkbox"/> The equations applied for calculation are correctly applied according to the approved methodology. <input checked="" type="checkbox"/> The following mistakes have been identified in this context: The previously used EF result has some errors in the calculation, which has been confirmed and corrected by the NDRC. EF needs to be updated using the correct approach (based on the same data at the time of GSP).	/PDD/ (B.6)	CAR B6	OK
B.5.2. In case the methodology allows for different methodological choices, are the equations applied properly justified and have they been used reflecting the other methodological	Yes, equations applied are properly justified. The methodology does not allow for different methodological choices to reflect different baseline scenarios.	/PDD/	OK	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
choices (i.e. baseline identification)? <i>Describe whether proper justification has been provided (based on the choice of the baseline scenario, context of the project activity and other evidence provided) and whether the correct equations have been used reflecting the relevant methodological choices.</i>				
B.5.3. Have conservative assumptions been used when calculating the project emissions? <i>Describe clearly the steps taken to assess whether all the assumptions and data used by the PP are listed in the PDD including references and sources and are conservatively interpreted in the PDD.</i>	Refer to CAR B6.	/PDD/ (B.6)	CAR B6	OK
B.5.4. Are all data and parameters which remain fixed throughout the crediting period correct, applicable to the project and will lead to a conservative estimation of emission reductions? <i>Describe clearly the steps taken to assess whether the values used for the fixed parameters are considered reasonable, correct and applicable in the context of the project activity. Check esp. chapter 6.2 of the PDD.</i>	The EF will be calculated ex-ante and will be fixed during the crediting period. All data used to calculate EF are available. The calculation is published by China DNA and is assessed as reasonable and conservative.	/PDD/ (B.6.2)	OK	
B.5.5. Are all ex-ante calculation values for monitoring parameters (as defined as per chapter B.7.1) reasonable? <i>Describe clearly the steps taken to assess whether the values used for the monitoring parameters are considered reasonable, applicable and conservative in the context of the</i>	Yes, values for the net electricity supplied to the grid, the electricity supplied by the grid to the project activity and the total electricity supplied to the grid have been assessed as reasonable.	/PDD/ (B.7)	OK	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
<i>project activity</i>				
B.5.6. Are the emission reductions real, measurable and give long-term benefits related to the mitigation of climate change. <i>Describe the steps taken to validate this issue.</i>	The CARs/CLs given related to section B have to be closed satisfactorily before forming an opinion.	/PDD/	Not ok yet	OK
B.6. Monitoring of Emission Reductions <i>It is assessed whether the monitoring plan is appropriate for the project activity and in line with the applied methodology.</i>				
B.6.1. Are all monitoring parameters required by the applied methodology contained in the monitoring plan? <i>Assess whether all applicable parameters listed in the methodology are included in the monitoring plan.</i> <i>Pl. check further whether the selection of parameters not to be monitored (section B.6.2) is appropriate and in line with the applied methodology.</i> <i>In case of different approaches can be chosen acc. to the methodology assess whether the selection of parameters is justified and correct.</i>	Yes. The monitoring plan is documented according to methodology AMS. I. D. Parameters monitored are electricity export to grid, electricity import from grid, and net electricity delivery to the grid.	/PDD/	OK	
B.6.2. Are the means of monitoring of all parameters contained in the monitoring plan in accordance with the requirements of the applied methodology?	The means of monitoring of all parameters are in accordance with the methodology requirements.	/PDD/ (B.7.1)	OK	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
<p><i>Assess whether the provided information for all parameters w.r.t.</i></p> <ul style="list-style-type: none"> a) <i>Label (name of the data / parameter)</i> b) <i>data unit</i> c) <i>description</i> d) <i>source of data</i> e) <i>measurement equipment / method / procedure</i> f) <i>monitoring frequency</i> g) <i>QA/QC procedures</i> <p><i>are appropriately described and in compliance with the requirements of the methodology..</i></p>				
<p>B.6.3. Have all equations necessary for ex-post emission reduction calculation been described clearly and in line with the methodology?</p> <p><i>Check whether all necessary equations have been provided in the PDD. Pl. consider that ex-post and ex-ante calculations might be different.</i></p> <p><i>Please consider that additional equations might be necessary to calculate auxiliary parameters.</i></p>	<p>Yes, all the equations are described clearly and in line with the methodology.</p>	/PDD/ (B7)	OK	
<p>B.6.4. Is it likely that the monitoring arrangements described in the PDD can properly be implemented in the context of the project activity?</p> <p><i>Assess whether the described monitoring arrangements are</i></p>	<p>There are some issues with monitoring plan:</p> <ol style="list-style-type: none"> 1. According to on-site information, there is a 10kv backup power line; 2. According to on-site information, M4 is not at transformer substation. Instead, it is at project plant house 	/PDD/ (B7)	CAR B7	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
<i>sufficient and realistic to enable a thorough monitoring. Pl. consider also special monitoring conditions, e.g. downtimes of monitoring equipment etc.</i>				
<p>B.6.5. Are the QA/QC procedures appropriate sufficient to ensure the emission reductions achieved from the project activity can be reported ex-post and verified?</p> <p><i>Please consider the description given in section B.7.2. Describe which QA/QC provisions are considered. Address Quality Management System provisions, calibration and maintenance of equipment. Address further any review procedures.</i></p>	Meter accuracy was indicated as 0.2S in B.7.1 and 0.5S in B.7.2. while the actual meter accuracy is 0.5 according to on-site information.	/PDD/ (B7.2)	CAR B8	OK
<p>B.6.6. Are procedures identified for data management?</p> <p><i>Check whether appropriate provisions are considered for data management including responsibilities, what records to keep, storage area of records and how to process performance documentation</i></p> <p><i>Check further the data archiving provisions for the project activity and ensure that provisions are made to archive data for the whole crediting period + 2 years.</i></p>	Procedures for review of reported results/data are identified.	/PDD/ (B7.2)	OK	
<p>C. Duration of the Project/ Crediting Period</p> <p><i>It is assessed whether the temporary boundaries of the project are clearly defined.</i></p>				

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
<p>C.1. Is the project's starting date clearly defined and evidenced?</p> <p><i>Check whether the starting date is correct. Apply the definition of the project starting date as per the "Glossary of CDM terms".</i></p>	<p>According to device purchase contract, the turbine and generators were purchased on 14/07/2005. starting date should be revised</p>	<p>/PDD/ (C.1.) /IM01/ /TGC/</p>	<p>CAR B2</p>	<p>OK</p>
<p>C.2. Is the project's operational lifetime clearly defined and evidenced?</p> <p><i>Check whether the project lifetime is correctly defined. Consider the guidance on the assessment of investment analysis (annex to the additionality tool).</i></p> <p><i>Check in case of phased implementation this has been reflected throughout the whole PDD incl. the financial assessment, if applicable.</i></p>	<p>Yes. The project lifetime is 20 years.</p>	<p>/PDD/ (C.1.) /IM01/ /PDR/</p>	<p>OK</p>	
<p>C.3. Is the start of the crediting period clearly defined and reasonable?</p> <p><i>Check whether the envisaged starting date of the crediting period is realistic, taking into consideration the times needed for validation and registration.</i></p>	<p>The starting date of the crediting period in PDD is 01/01/2009.</p> <p>However, the start of crediting period 01/01/2009 is not reasonable thus should be revised.</p>	<p>/PDD/ (C.2.) /IM01/</p>	<p>CAR G1</p>	<p>OK</p>
<p>D. Environmental Impacts</p> <p><i>Documentation on the analysis of the environmental</i></p>				

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
<i>impacts will be assessed, and if deemed significant, an EIA should be provided to the DOE.</i>				
D.1.1. Are there any Host Party requirements for an Environmental Impact Assessment (EIA)? <i>Check the host party regulations, regarding EIA.</i>	Yes. In China, an EIA for this type of projects is required by Chinese legislation.	/EIA/	OK	
D.1.2. In case an Environmental Impact Assessment (EIA) is requested by the host party, has it been carried out and if applicable duly approved? <i>Check the EIA and its approval, if applicable.</i>	Yes. The EIA report has been approved by local government.	/EIAA/	OK	
D.1.3. Has an analysis of the environmental impacts of the project activity been sufficiently described and in line with the host party environmental legislation? <i>Check the PDD (section D). Check whether the project will create any adverse environmental effects.</i> <i>Check the relevant national environmental legislation.</i>	Yes, the analysis of the environmental impacts of the project activity is sufficiently described according to EIA.	/EIA/ /PDD/	OK	
D.1.4. Are transboundary environmental impacts considered in the analysis? <i>Check the documents and local official sources / expertise regarding transboundary environmental impacts.</i>	No. According to the EIA, there is no trans-boundary environmental impact created by the project activity.	/PDD/ (D1)	OK	
E. Stakeholder Comments <i>The DOE should ensure that stakeholder comments</i>				

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
<i>have been invited with appropriate media and that due account has been taken of any comments received.</i>				
<p>E.1. Have relevant local stakeholders been invited to consultation prior to the publication of the PDD?</p> <p><i>Check by means of document review and interviews with local stakeholders if and when a local stakeholder consultation process has been carried out.</i></p>	<p>Yes, the stakeholders were consulted through questionnaires and a stakeholder meeting prior to the publication of the PDD took place on 2 April 2008^{/SCD/}.</p>	<p>/PDD/ (E.1.)</p>	<p>OK</p>	
<p>E.2. Can the local stakeholder consultation process be assessed as adequate?</p> <p><i>Describe what assessment steps have been undertaken to assess the adequacy of the stakeholder consultation process. Give a final opinion on the adequacy.</i></p> <p><i>Please consider the following requirements in this context:</i></p> <p><i>(a) Comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity, have been invited;</i></p> <p><i>(b) The summary of the comments received as provided in the PDD is complete;</i></p> <p><i>(c) The project participants have taken due account of any comments received and have described this process in the PDD.</i></p>	<p>Yes, the stakeholder consultation process was performed in form of questionnaires and a stakeholder meeting. 25 questionnaires were sent to the stakeholders including questions related to the project activity. 20 were returned fulfilled.</p> <p>However, the description of due account taken is not fully according to stakeholder feedback. Eg. in local area irrigation is mainly from springs and small rivers, thus it is not convincing that the project improves local vegetation. Also, it should be clarified how the project contributes to local agricultural growth, etc.</p>	<p>/PDD/ (E.1.)</p>	<p>CAR E1</p>	<p>OK</p>

ANNEX 2: ASSESSMENT OF BASELINE IDENTIFICATION

Table A-2: Assessment of Baseline Identification

<input type="checkbox"/>	Baseline is not identified
<input checked="" type="checkbox"/>	Assessment of baseline see below

Baseline Alternatives identified	Inline with the Methodology?	Eliminated	Reasons for elimination / non-elimination from list of alternatives	Evidence used	DOE Assessment	
					Appropriateness of elimination	Assessment of validation team (results and means of assessment)
The electricity produced by the proposed project multiplied by an emission coefficient, calculated as a combined margin (CM) which consists of the combination of operating margin (OM) and build margin (BM) of the CCPG.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Decided by the methodology.	/AMS. I.D./	<input checked="" type="checkbox"/>	OK

ANNEX 3: ASSESSMENT OF FINANCIAL PARAMETERS

Table A-3: Assessment of Financial Parameters

Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT		
					Correctness of value applied	Appropriateness of information source	Comment
Annual electricity delivery to grid	21,136	MWh	Preliminary Design Report/ page 200	/IRR/ /PDR/ /SL16-95/	☒	☒	<p>The value is calculated based on the project capacity, annual operation time, effective electricity coefficient, and plant use factor, as follows:</p> $\text{project capacity} * \text{annual operation time} * \text{effective electricity coefficient} * (1 - \text{plant use factor}).$ <p>This equation is from SL16-95 and is commonly accepted in China.</p> <p>The project capacity is 5.55MW. The annual operation time of 4029 hours, estimated based on historical hydrological condition and device technical information.</p> <p>This value has been validated in accordance to the EB48, Annex 11, "Guidelines for the reporting and validation of plant load factors". This value is the same value used in the PDR, which has been approved by Huaihua City Hydro Bureau on 21st June 2005.</p>

							<p>The effective electricity coefficient is 0.95. According to SL16-95, for grid-connected small hydropower plants where the grid does not restrict electricity absorption in wet season and nighttime, the effective electricity coefficient should be above 0.80. Thus the value used in here is reasonable and conservative.</p> <p>The plant use factor is 0.5%. This value is validated as appropriate according to the experience of the validation team.</p> <p>More over, even if we select 1 as effective electricity coefficient and 0 as plant use factor, the IRR is still well below benchmark.</p>
Total static Investment	3,481.86	10 ⁴ RMB	Preliminary Design Report/ page 199	/PDR/ /IRR/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<p>The value of total static investment is from Preliminary Design Report.</p> <p>The unit cost of the proposed project is 6330 RMB/KW, which is lower than 8000 RMB/KW, the average unit cost of under-construction hydropower stations in Hunan province in 2008 (http://news.hexun.com/2008-04-03/104993775.html).</p> <p>Sensitivity analysis shows that in order to make IRR reach the benchmark, total static investment needs to decrease largely, which is unrealistic, considering real investment already happened.</p> <p>Thus the total static investment used in IRR calculation is credible and conservative.</p>
Electricity tariff (VAT Incl.)	0.25	RMB/ kWh	Preliminary Design Report/ page 201	/PDR/ /ETE/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<p>The tariff is derived from the approved Preliminary Design Report which was compiled</p>

			Electricity Tariff Evidence				<p>by a national authorized entity- Hunan Province Huaihua City Water and Electricity Design Institution. The value was estimated based on the design institution's sectoral knowledge and experience. The value is the basis of investment decision. The time between PDR and start of the project is only 2 months, sufficient short.</p> <p>Current electricity tariff is also used for cross-check. According to Document from Tongdao County Price Bureau regarding the electricity tariff of the project activity, 11/11/2008, the electricity tariff of the project is 0.29 RMB/kWh. However, based on sensitivity analysis, in order to make the project IRR reach benchmark, electricity tariff has to go as high as 0.302 RMB/kWh. Thus even with the actual electricity tariff, the project still has an unfavorable IRR and still faces barrier.</p> <p>Based on the information above, electricity tariff (VAT Incl.) is correct and appropriate.</p>
Annual O&M costs	45.6829	10 ⁴ RMB	Preliminary Design Report/ page 200, Annex table 2	/PDR/ /SL16-95/	☒	☒	<p>The O&M consists of salary, welfare, water resource fee, maintenance, and other operating expenses.</p> <p>The salary costs are estimated in 144,000 RMB/yr, calculated as the number of employees (15) multiplied by the average annual salary (9,600 RMB/person). And then the average monthly salary is 800 RMB/Employee. It is lower than 1143 RMB/person, which is the average monthly salary in Hunan Province in 2005 (http://www.hrqq.com/hunan/shpigz.html).</p>

							<p>The welfare is 57,600 RMB/yr, calculated as 40 % of total value of payroll. This is in compliance with national policy of social insurance.</p> <p>The water resource fee is 21,136 RMB/yr, calculated as 0.001 RMB/kWh multiplied by the net electricity delivery.</p> <p>Maintenance fee is 174,093 RMB/yr, calculated as 0.5% of total static investment.</p> <p>Other operating expenses calculated in 60,000 RMB/yr, as the installed capacity multiplied by a factor of 12 RMB/KW.</p> <p>The above calculations are in compliance with the requirements defined in SL16-95 and assessed as appropriate.</p> <p>In conclusion, the O&M costs are in average only about 1.3 % of total investment. After comparing this value against the values quoted in other similar projects, it is concluded that it is appropriate.</p>
City maintenance & construction tax plus surtax for education expenses	4	%	National policy	/TRE/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	City maintenance & construction tax is 1 % of VAT while Surtax for education expenses is 3% of VAT, which are derived from Interim Regulations on People's Republic of China's City Maintenance and Construction Tax, and State Council Notice on Education Tax. Thus, these value are appropriate.
Value Added Tax	6	%	National policy	/TRE/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	The value is derived from the document No.[1994]004, issued by the National Financial

							Ministry and National Revenue Ministry, which was also confirmed in document [1998]843 and [2006]47 issued by National Revenue Ministry.
Income tax rate	33	%	Preliminary Design Report/ page 201	/PDR/ /TRE/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	The value is derived from Preliminary Design Report and is in compliance with Corporate Income tax Temporary Terms of People's Republic of China published on 23/12/1993 which is valid until year 2007. (http://www.lawtime.cn/zhishi/sszsglf/xiangguafagui/20070426/63781.html)
Depreciation residue value	5	%	Economic Evaluation Code for Small Hydropower Projects Notice from National Tax Bureau about adjusting the residual value rate of fixed assets	/SL16-95/ /TRE/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	The depreciation residue value is 5%, in compliance with SL16-95. It is also confirmed by Notice from National Tax Bureau about adjusting the residual value rate of fixed assets [2005]883.
Installed capacity	5.55	MW	Preliminary Design Report	/PDR/ /TGC/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	The capacity is from Preliminary Design Report and is evidenced by device purchasing contract.
Project Lifetime	20	year	Feasibility Study Report	/PDR/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	The value is from Preliminary Design Report and is assessed as credible.

ANNEX 4: ASSESSMENT OF BARRIER ANALYSIS

Table A-4: Assessment of Barrier Analysis

<input checked="" type="checkbox"/>		No barrier parameters are used for additionality justification		
<input type="checkbox"/>		Assessment of barriers see below		
Kind of Barrier (invest, tech, other)	Description of Barrier	Evidence used	Assessment of validation team	
			Appropriateness of information source	Explanation of final result
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	
			<input type="checkbox"/>	

ANNEX 5: OUTCOME OF THE GSCP

Table A-5: Outcome of the Global Stakeholder Consultation Process

<input checked="" type="checkbox"/>	No comments were received during the global stakeholder consultation period					
<input type="checkbox"/>	Comments were received during the global stakeholder consultation period. The comments (in unedited form) and the consideration/response of the validation team are presented below:					
Com ment No.:	Comment by:	Inserted on:	Subject	Comment ^{*)}	Response validation team ^{*)}	Conclusion (incl. CARs CLs or FARs)

^{*)} In case clarifications have been requested by the validation team corresponding rows shall be added

ANNEX 6: APPOINTMENT CERTIFICATES OF TEAM MEMBERS



CERTIFICATE OF APPOINTMENT

Mr. Martin Saalmann
born on 1976-02-23
satisfies the requirements as specified in the TÜV NORD
JI/CDM CP directives and is hereby appointed as

TÜV NORD JI/CDM Assessor

For the following scopes: 1, 2, 3, 4, 7, 13, 15
The present appointment will terminate on 2011-11-19
Certification registration No. 08 11 01 - 22

Essen, 2008-11-20



Head of TÜV NORD JI/CDM Certification Program
of TÜV NORD CERT GmbH



CERTIFICATE OF APPOINTMENT

Ms. Grace Chen
born on 1982-11-05
satisfies the requirements as specified in the TÜV NORD
JI/CDM CP directives and is hereby appointed as

TÜV NORD CDM Expert

For the following scopes: 1, 4, 5, 13
The present appointment will terminate on 2011-05-13
Certification registration No. 08 05 01 - 54

Essen, 2008-05-14



Head of TÜV NORD JI/CDM Certification Program
of TÜV NORD CERT GmbH